1. Legal Ad

    Documents:

        PB LEGAL AD 3-28-17.PDF

2. Agenda

    Documents:

        PB AGENDA 3-28-17- CORRECTED.PDF

3. IOZ Text Amendments

    3.I. Report And Attachments

        Documents:

            3-28 REPORT AND ATTACHMENTS.PDF

    3.II. Addendum

        Documents:

            IOZ ADDENDUM.PDF

4. 161 York Street

    4.I. Report

        Documents:

            YORK ST. - 161 (REPORT).PDF

    4.II. Staff Attachments

        Documents:

            YORK ST. - 161 (STAFF ATTACHMENTS).PDF

    4.III. Applicants Submittal

        Documents:

            YORK ST. - 161 (APPLICANTS SUBMITTAL).PDF

    4.IV. Public Comments

        Documents:

            YORK ST. - 161 (PUBLIC COMMENTS).PDF

    4.V. Plans

        Documents:

            YORK ST. - 161 (PLANS).PDF

5. 23 Orono Street

    5.I. Report

        Documents:

            ORONO ST. - 23 (REPORT).PDF

    5.II. Applicants Submittal

        Documents:

            ORONO ST. - 23 (APPLICANTS SUBMITTAL).PDF

    5.III. Plans

        Documents:

            ORONO ST. - 23 (PLANS).PDF

6. 185 Lancaster Street

    6.I. Report

        Documents:

            PB REPORT 03.28.2017.PDF

    6.II. Staff Attachments

        Documents:

            LANCASTER ST. - 185 (STAFF ATTACHMENTS).PDF

    6.III. Applicants Submittal

        Documents:

            LANCASTER ST. - 185 (APPLICANTS SUBMITTAL).PDF

    6.IV. Public Comments

Documents:

LANCASTER ST. - 185 (PUBLIC COMMENTS).PDF

6.V. Plans

Documents:

LANCASTER ST. - 185 (PLANS).PDF

7. 502 Stevens Avenue

7.I. Report

Documents:

STEVENS AVE. - 502 (REPORT).PDF

7.II. Staff Attachments

Documents:

STEVENS AVE. - 502 (STAFF ATTACHMENTS).PDF

7.III. Applicants Submittal

Documents:

STEVENS AVE. - 502 (APPLICANTS SUBMITTAL).PDF

7.IV. Public Comment

Documents:

STEVENS AVE. - 502 (PUBLIC COMMENT).PDF

7.V. Plans

Documents:

STEVENS AVE. - 502 (PLANS).PDF

LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will meet on Tuesday, March 28, 2017, Council Chambers, 2nd Floor, City Hall, 389 Congress Street.

Public comments will be taken for each item on the agenda during the estimated allotted time and written comments should be submitted to planningboard@portlandmaine.gov

Afternoon Public Hearing – 4:30 p.m.

i. Institutional Overlay Zone; City of Portland, Applicant. (4:30 – 6:00 p.m. estimated time) The Board will hold a public hearing on the proposed Land Use Code text amendments for an Institutional Overlay Zone (IOZ), including the process and submission requirements for an Institutional Overlay Zone and the accompanying Institutional Development Plan (IDP) and Regulatory Framework. The purpose of the ordinance is to provide a predictable growth management and planning process for the major institutions in Portland.

Evening Public Hearing – 7:00 p.m.

Unfinished Business:

i. Level III Site Plan and Subdivision; 161 York Street; York Street Redevelopment, LLC., Applicant. (7:00 –7:30 p.m. estimated time). The Board will consider a proposed 11 unit residential project which includes 20 parking spaces and access to parking will be from York Street and Guilford Court. The project is located within the R-6 zone and will also be reviewed under the Conditional Use Application to meet Ensure Workforce Housing requirements. This item was tabled from 2/28/17 to this meeting date.

New Business:

ii. Level III Site Plan and Conditional Use; 23 Orono Street; Hall School; City of Portland, Applicant. (7:30 – 8:30 p.m. estimated time). The Board will consider a revised site plan application for the construction of a new elementary school at 23 Orono Road. The proposed two-story school has a footprint of 64,000 sq. ft. and a total floor area of 85,000 sq. ft. with the capacity to serve 558 students. Access to the site will be from Lomond Street (via Riggs Street) with a parking area for 98 vehicles and a designed parent drop off location. A separate bus loop will be accessed from Warwick and Orono Streets. The 21 acres site is located in the R-3 zone and it will be reviewed under the conditional use and site plan standards.

iii. Level III Site Plan; 185 Lancaster Street; Relocation of Baxter Academy; Baxter Academies of Maine, Applicant. (8:30 – 9:00 p.m. estimated time) The Board will consider a proposal by Baxter Academies of Maine to relocate Baxter Academy from 54 York Street to 185 Lancaster Street. The proposal is to convert 31,571 sq. ft. of existing office space into a charter high school with 410 students and 60 employees. The project will be reviewed under Portland's site plan ordinance and under deleted review for a traffic movement permit.

iv. Level III Site Plan and Subdivision; 502 Stevens Avenue; Mixed Use Building; Denis Lachman, Applicant. (9:00 p.m. estimated time) The Board will consider a mixed use building replacing a single family home at 502 Stevens Avenue. The ground floor would have commercial uses and a total of six (6) residential units are proposed on the 2nd and 3rd floors. A shared driveway with parking for 10 vehicles is proposed on the lot. The site is in the B-1b zone.

ELIZABETH BOEPPLE, CHAIR - PORTLAND PLANNING BOARD

CITY OF PORTLAND, MAINE
PLANNING BOARD

Elizabeth Boepple, Chair
Sean Dundon, Vice Chair
Carol Morrissette
David Eaton
Kristien Nichols
Maggie Stanley
Lisa Whited

AGENDA
PORTLAND PLANNING BOARD MEETING

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(THERE IS NO WORKSHOP PORTION OF THIS MEETING)

AFTERNOON PUBLIC HEARING : 4:30 P.M.

1. ROLL CALL AND DECLARATION OF QUORUM
2. COMMUNICATIONS AND REPORTS
3. REPORT OF ATTENDANCE AT THE MEETING HELD ON MARCH 23, 2017:

Public Hearing: Dundon, Eaton, Morrissette, Nichols, Stanley, and Whited. Boepple absent.

4. REPORT OF DECISIONS AT THE MEETING HELD ON MARCH 23, 2017:

i. City of Portland's Proposed New Comprehensive Plan. Whited moved and Morrisstte seconded a motion to continue the public hearing to April 13, 2017 at 6:00 p.m. Vote: 6-0, Boepple absent.

5. NEW BUSINESS: AFTERNOON PUBLIC HEARING – 4:30 p.m.

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PLANNING BOARD REPORT
PORTLAND, MAINE

Proposed Text Amendment
Institutional Overlay Zone (IOZ)
City of Portland, Applicant

Submitted to: Portland Planning Board	Prepared by: Jean Fraser and Nell Donaldson, Planning Division
Public Hearing Date: March 14, 2017	Report Prepared: March 10, 2017

I. INTRODUCTION

The purpose of this report is to present the final draft of a city-initiated text amendment to the land use code that would create an Institutional Overlay Zone (IOZ). Staff developed this final draft based on four prior workshops with the Planning Board, its own research, and the input of numerous stakeholders. This report presents background on the evolution of the IOZ text, a compendium of comments received over the course of the review, a comprehensive plan analysis, and finally, a motion for the Board to consider in recommending the text amendment to the City Council.

In addition to a legal ad appearing in the March 6, 2017 and March 7, 2017 editions of the *Portland Press Herald*, notices were also sent to the city's list of interested parties.

II. BACKGROUND

The city's work to develop an Institutional Overlay Zone began in 2016 with preliminary discussions with each of the city's four major institutions: Maine Medical Center (MMC), Mercy Hospital, University of Southern Maine (USM), and the University of New England (UNE). At least three of these institutions were considering major changes to their core campuses, and, for some, the existing zoning context presented challenges. For example, MMC's contract zone, developed in 2005, did not support their long-term vision, and UNE's existing zoning, consisting of five disparate zones, presented challenges for their future planning as well *(Table 1).*

Table 1: Major Institutions, Existing Zoning Context

Institution	Current zoning	Surrounding zones
Maine Medical Center (MMC)	Contract Zone (2005)	Mostly R6 plus B2, RP, ROS, R4
Mercy Hospital	Contract Zone (2001)	State St. - R6 Fore River Parkway – IL, IMb, IH
USM	USM Overlay Zone (2006)	R5, B2
UNE	R5, R3, IM, IH, B2	R5, ROS, B2

The city recognizes that the growth and change contemplated by each of these institutions is integral to their long-term health, and, given their central economic, academic, and health care roles, also critically important to the health of the city, region, and state. However, the city also recognizes that institutional growth and change can place pressure on surrounding neighborhoods and the city more broadly, and that the changes anticipated by these institutions need to be addressed as part of a broader long-term plan for each institution. Such long-range planning would allow the city to better anticipate municipal needs and would foster healthy relationships with surrounding neighbors. In this context, the city developed the concept of the Institutional Overlay Zone.

III. DEVELOPMENT OF THE INSTITUTIONAL OVERLAY ZONE ORDINANCE TEXT

The development of the concept and detailed language for the Institutional Overlay Zone involved concurrent research and outreach with stakeholders and the public, including:

A. Research

Staff reviewed numerous examples of institutional zoning from around the country for guidance in developing the Institutional Overlay Zone. Five examples were attached to the January, 2017 Planning Board workshop memo to show the range of approaches, and seven are featured in *Attachment 4a* to provide a comparison of how key issues have been addressed elsewhere (discussed further below). No one example addresses the unique circumstances in Portland, but staff has used these examples for guidance on particular aspects of the IOZ draft, from content requirements for the Institutional Development Plan to requirements for public involvement.

In addition, staff reviewed elements of the city's existing land use code, including the city's existing overlay zones, the code provisions for master development plans (under the site plan ordinance), and the India Street Form-Based Code Zone. These provisions informed various elements of the IOZ draft, including the text on amendments, historic preservation, and the Institutional Development Plan.

B. Outreach

Staff has conducted outreach as follows:

- *Institutions:* Staff have met with each of the four main institutions and/or their representatives and held follow up discussion on particular issues. The institutions have been invited to comment on the drafts included within the two most recent Planning Board memos and on two other versions in late January and late February. Their most recent comments are attached (*Attachment 1*). Staff have reviewed these comments in detail and incorporated much of this feedback in the final IOZ text, as outlined in more detail below in Section XII below.
- *Interested parties:* Outreach comprised both informal references, for example as part of the Comprehensive Plan discussions, and noticing via the city's website and "notify me"/e-mail group noticing lists. Additional noticing to MMC neighbors was undertaken in relation to MMC's intention to follow the new IOZ process and prepare an Institutional Development Plan. Approximately 20 parties either submitted written comments or spoke at Planning Board workshops. The comments are included in *Attachment 2* and considered below in Section VII.

Staff has worked with other city departments to develop the ordinance, and the final draft reflects input from the Associate Corporation Counsel, Department of Public Works and other departments.

C. Planning Board Workshops

The Planning Board held four public workshops on the Institutional Overlay Zone, beginning in November of 2016. These workshops allowed the Board to weigh in on the nascent concept of the IOZ, modify the text as it developed, and provide guidance on core issues. A note summarizing the Board discussions is included at *Attachment 3.*

The proposed final draft presented here aims to address the comments and concerns raised at these workshops, including comments regarding the planning horizon and treatment of amendments. Among these, the final draft ordinance also attempts to address whether the creation of Institutional Development Plans (IDP) and designation as Institutional Overlay Zones (IOZ) should be voluntary or mandatory for Eligible Institutions. In the final draft, the Institutional Overlay Zone ordinance continues to present designation as a voluntary endeavor ("*The city's four primary medical and higher education institutions are eligible to apply for designation as Institutional Overlay Zones*.") Staff feel that the IDP process provides significant benefits to the Eligible Institutions, the community, and the city, and that over time adoption will be universal. However, staff has added language to more strongly encourage designation as an IOZ, writing *"[d]esignation as an IOZ is the preferred mechanism where the Eligible Institution's proposed development is inconsistent with the existing zoning"* (Section II.)

D. Drafting of IOZ Text

Over the course of the evolution of the IOZ ordinance, staff prepared and circulated a number of drafts, each amended to address comments and suggestions from a range of stakeholders. Key changes included:

- Modification of the structure of the Institutional Overlay Zone (the enabling legislation) to clarify the status and relationship of the Institutional Development Plan (IDP) and the Regulatory Framework;

- Amplification of the required content of an IDP in response to detailed concerns about specific impacts and transitions between the institution and the adjacent neighborhood;
- Clarification regarding IDP content, that some elements would be "framed" at a more strategic level, and subsequently fleshed out at the site plan stage;
- Clarification of the required public engagement in the development of an institution's IOZ ;
- Introduction of the concept of a scoping meeting to confirm content requirements and the ability of the Planning Authority/Board to modify some requirements;
- Clarification on review criteria, largely in response to Planning Board comments;
- Modification of wording to deal with the more complicated issues, such as how institutional property outside the IOZ would be addressed in the IDP, when an IOZ would be required of an institution, and what certainty would be conferred by IOZ status.

IV. BASIC CONCEPTS OF THE INSTITUTIONAL OVERLAY ZONE ORDINANCE

The proposed Institutional Overlay Zone (IOZ) ordinance establishes a consistent process for subsequent development for each major institution by establishing the boundaries of the institution's IOZ on the zoning map, and by creating a regulatory framework specific to each institution which is adopted in zoning under the umbrella of the institution-specific IOZ and its accompanying Institutional Development Plan.

A flow chart of the zoning process and subsequent review process are depicted in *Figure 1* (and *Attachment 4c*) and summarized below:

A. Eligible Institution's IOZ Review

In the final draft of the Institutional Overlay Zone ordinance, each of the city's four major institutions are defined as eligible for designation as an IOZ. In order for the designation to be applied, these basic submittals are required:

- *Institutional Development Plan (IDP):* The IDP is a longer term development or master plan, to be developed by the eligible institutions, which would guide each institution's development over the life of the plan. The IDP is envisioned as the basic building block of the Institutional Overlay Zone. The IDP is intended as a stand-alone document. This would be approved by the Planning Board.
- *Regulatory Framework:* The Regulatory Framework is essentially the 'zoning' for each institution, and is meant to evolve from the IDP. The Regulatory Framework would establish the parameters to allow each institution to grow as envisioned in the IDP, yet also formalize requirements, guidelines, and performance measures that address the major ramifications of institutional growth and change. The Regulatory Framework would be adopted into the land use code by the City Council.
- *IOZ - Zoning Map:* The boundaries of each institution's IOZ would be defined as a geographic element represented as an amendment to the city's zoning map. This would be adopted by the City Council.

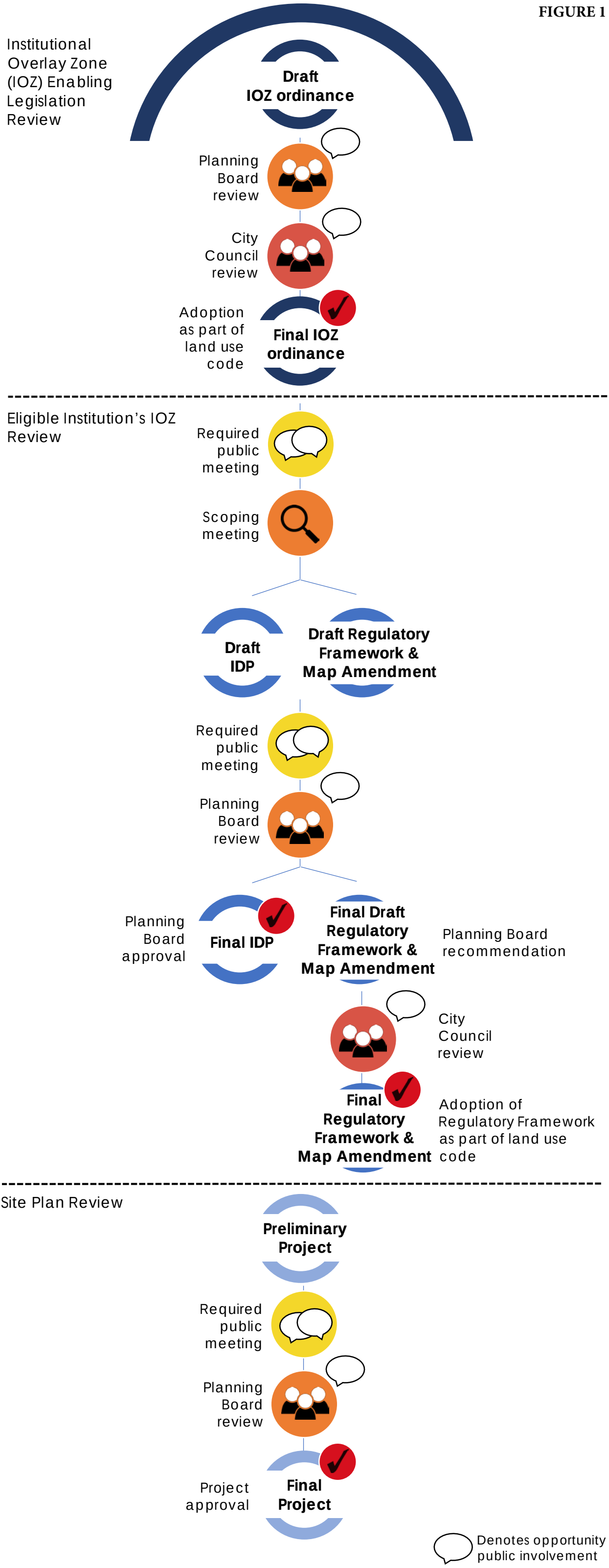
The final draft ordinance requires a public meeting prior to an institution's submission of a draft IDP and Regulatory Framework. The ordinance also requires a scoping meeting with city staff, where the basic content of the IDP would be established. An additional public meeting would be required following IDP and Regulatory Framework submission.

Pursuant to staff and Planning Board review, an IDP would be voted on and either approved or denied by the Planning Board, and the Regulatory Framework, as the 'zoning' for the institution, would either be recommended or not to the City Council. The Council would subsequently conduct their review, and following adoption of the Regulatory Framework, it would be incorporated into the land use code. At the same time, the zoning map would be amended to show the institution's Institutional Overlay Zone.

B. Eligible Institution's Site Plan Review

Following creation of the institution-specific IOZ, site plan-level projects initiated by an institution would be reviewed by the Planning Board for consistency with the IDP, the Regulatory Framework, as well as the site plan standards of the land use code.

FIGURE 1


Institutional Overlay Zone (IOZ) Enabling Legislation Review
Draft IOZ ordinance
Planning Board review
City Council review
Adoption as part of land use code
Final IOZ ordinance
Eligible Institution's IOZ Review
Required public meeting
Scoping meeting
Draft IDP
Draft Regulatory Framework & Map Amendment
Required public meeting
Planning Board review
Planning Board approval
Final IDP
Final Draft Regulatory Framework & Map Amendment
Planning Board recommendation
City Council review
Final Regulatory Framework & Map Amendment
Adoption of Regulatory Framework as part of land use code
Site Plan Review
Preliminary Project
Required public meeting
Planning Board review
Project approval
Final Project
Denotes opportunity for public involvement

V. PROPOSED INSTITUTIONAL OVERLAY ZONE TEXT AMENDMENT

I. Purpose of the Institutional Overlay Zone

The Institutional Overlay Zone (IOZ) designation provides a regulatory mechanism available to the city's four major medical and higher education campuses where an improved regulatory structure is needed to facilitate a consistent, predictable, and clear growth management process. The purposes of the Institutional Overlay Zone are to:

a. Acknowledge that the city's major academic and medical institutions play a prominent role in the health and well-being of the local and regional community, and in order to sustain that role, these institutions need flexibility to change and grow;

b. Encourage proactive planning for institutional change and growth which identifies and addresses likely long-term institutional needs and cumulative impacts while leveraging potential benefits at the neighborhood, city, and regional level;

c. Ensure that institutional change and growth both complements and, as appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions;

d. Support the formation and continuation of mutually beneficial public-private cooperation;

e. Support an ongoing public engagement process that benefits both the institutions and nearby neighborhoods;

f. Reflect Comprehensive Plan and other policy objectives; and

g. Provide a consistent regulatory approach to all major institutions which allows unique regulatory requirements that balance the particular needs of institutions with the needs of the surrounding neighborhood and wider community.

II. Location and Applicability

The city's four primary medical and higher education institutions are eligible to apply for designation as Institutional Overlay Zones. The Eligible Institutions are the two major hospital institutions of Maine Medical Center and Mercy Hospital and the two major academic institutions of University of Southern Maine and University of New England, their successors and assigns. Designation as an IOZ is the preferred mechanism where the Eligible Institution's proposed development is inconsistent with the existing zoning.

III. Establishment of an Institutional Overlay Zone

a. *Application for an Institutional Overlay Zone.* Where the Eligible Institution seeks designation as an IOZ, they shall submit a zone change application consisting of two components:

   i. An Institutional Development Plan (IDP) (see Section IV).

   ii. A Regulatory Framework (see Section V) that would, when and if adopted, be the text and map amendment to the City's Land Use Code and Zoning Map.

b. *Required Public Involvement.* At least two neighborhood meetings shall be required. The first shall be held prior to the formal submission of a zone change application for an Institutional Overlay Zone and the second shall be held during the City's review. Meetings shall identify the concerns, if any, of affected residents and property owners, and inform the development of the Institutional Development Plan (IDP) and Regulatory Framework. Meetings shall be held in a convenient location proximate to the institution. The applicant shall provide written notification to property owners of record within 500 feet of the proposed IOZ boundary at least ten days prior to the meeting dates and maintain written records of the meetings.

c. *Required Scoping Meeting*. The Eligible Institution shall meet with the Planning Authority after the first required neighborhood meeting and prior to submission of the zone change application to confirm the focus of the Institutional Development Plan (IDP) and Regulatory Framework, including associated study areas that may be outside of the proposed IOZ boundary. The IDP and Regulatory Framework will vary in detail and focus depending on the Eligible Institution and its particular context. The content requirements in Sections IV and V and the comments from neighborhood meeting(s) shall provide direction for the content of the IDP. The Planning Authority or Planning Board may require additional information or modify content requirements as is relevant to the Eligible Institution (see Section IV.c).

d. *Reviewing Authority.*

i. The Planning Board shall review the zone change application, including the IDP and Regulatory Framework. At least one public workshop and a public hearing before the Planning Board are required.

ii. Upon recommendation of the Planning Board, the City Council shall review and consider adoption of the Institutional Overlay Zone and the accompanying Regulatory Framework as an amendment to the city's code of ordinances.

e. *Future Institutional Development*.

i. All new development by the Eligible Institution within the boundary of the IOZ shall be compliant with the IOZ and accompanying Regulatory Framework, consistent with the IDP, consistent with the Comprehensive Plan, and meet applicable site plan standards, unless such standards are superseded by the Regulatory Framework.

ii. Any use/development proposed by the Eligible Institution outside the IOZ boundary that complies with the zoning for permitted uses in that location shall be reviewed under the standards of that zone. Any use/development proposed by an Eligible Institution outside of the IOZ boundary that is proposed in a residential zone shall be addressed by the IDP.

IV. Institutional Development Plan *(IDP)*

a. *Purpose.* Any use conducted by an Eligible Institution and any construction by an Eligible Institution in an Institutional Overlay Zone shall be consistent with an Institutional Development Plan (IDP) approved by the Planning Board in accordance with this ordinance. The purpose of the IDP is to establish baseline data about institutional land uses, facilities, and services and measure, analyze, and address the anticipated or potential impacts of planned institutional growth and change. The IDP shall serve as a background document that supports the proposed Regulatory Framework and frames subsequent site plan review(s).

b. *Planning Horizon.* An IDP shall provide the city and abutting neighborhoods with a clear outline of the anticipated or potential growth and change of the Eligible Institution for the short- to medium-term (e.g. 1-5 and 5-10 years respectively), as well as a conceptual vision for the long-term (e.g. 10 years or more); however, the specific planning horizons for each institution will be determined as part of the IDP approval process.

c. *Content.* The IDP submission shall address the following elements unless specifically modified by the Planning Authority or Planning Board, with the scope and level of detail to be clarified at the required Scoping Meeting:

i. Context Information

1. The institution's adopted mission, vision, or purpose statement
2. A summary of relevant baseline data on the institution, including:
    a) A neighborhood context plan;
    b) An inventory of current programs and services;
    c) A current census of the number of people using the institution (e.g., employees, enrollment, patients), with an indication of maximums and minimums over time;
    d) An inventory and/or plan of all existing property holdings within the main campus and within the City of Portland, including an indication of functional land use links between off-campus properties and the main campus (e.g. remote parking);
    e) An inventory and/or plan of existing facilities, including data on use, floor area, and any existing functional connections between facilities.
3. A summary of the baseline characteristics of the existing campus and context of the institution, based on identified study areas, including:
    a) A summary of existing resources, such as historic, open space, and natural resources;
    b) A summary of the existing transportation system, including vehicular, pedestrian, transit, bicycle, and parking supply, demand, and utilization;
    c) A summary of existing public infrastructure supporting the institution, including demand, utilization and any capacity issues;
    d) Relevant municipal plans, projects, and studies that may influence the IDP study area and opportunities for integrating institutional growth.
4. A summary of public involvement in the development of the IDP, including major areas of public concern.

ii. Assessment of Future Institutional Growth and Change

1. A description of institutional needs and areas of future institutional growth and change, including:
    a) Projected census of users (e.g., enrollment /employment/patient/visitor figures and anticipated variations over time);
    b) Institutional objectives for property both within and outside the IOZ boundary (e.g. acquisition and/or disposition), including an indication of any functional land use connection for sites outside the IOZ boundary to the main campus;
    c) A Development Plan addressing anticipated or potential institutional needs and physical improvements, including the proposed boundary of the IOZ and any phasing of the development.
2. Analysis and associated plans that address the following elements in terms of anticipated growth or potential impacts within the identified study area, and support the development parameters as set out in the Regulatory Framework:

a) Transportation and access

1) An analysis of the projected changes in parking demand, supply, and impacts to the off-street and on-street parking capacity, including an explanation of the proposed parking plan;
2) An analysis of the projected changes in vehicular, pedestrian, transit, and bicycle access routes and facilities, their capacity, and safety;
3) A transportation, access, and circulation plan, representing the synthesis of the analysis, and including a program of potential improvements or set of guidelines to address access deficiencies to and within the IOZ. The plan should outline proposed mechanisms and potential strategies to meet transportation objectives, including transportation demand management, phasing, and when a Traffic Movement Permit (TMP) may be required.

b) Environment

1) An analysis of potential cumulative impacts on natural resources and open spaces;
2) An analysis of projected energy consumption, hazardous materials generation, noise generation, and similar issues as relevant;
3) An environmental plan, representing the synthesis of the analysis and including a proposed program or set of guidelines for future preservation, enhancement, conservation, and/or mitigation.

c) Infrastructure

1) An analysis of projected public utility demand and the capacity of associated infrastructure;
2) An analysis of projected public safety needs and projected impacts to the capacity of these services;
3) An infrastructure plan, representing the synthesis of the analysis and including a proposed program or set of guidelines to support sustainable growth.

d) Design

1) An analysis of projected impacts to neighboring properties and public spaces, including potential shadow, wind, and lighting impacts, impacts of height and massing, and impacts to historic resources;
2) An analysis of transition areas between the institution and adjoining neighborhoods, including identification of key character defining components of the surrounding context;
3) An analysis of existing Crime Prevention Through Environmental Design issues and identification of how these principles would be addressed as part of the proposed campus development;
4) A conceptual built environment/public realm plan, representing the synthesis of the analysis and including a set of guidelines for urban design, landscape, open space, and streetscape treatments, with particular attention to the treatment of edges (both within and abutting the IOZ boundary) to achieve compatible transitions.

e) Neighborhood Engagement

1) A plan for ongoing community engagement that represents best practices, promotes collaborative problem solving around community concerns, fosters transparency, and identifies mechanisms for neighborhood feedback and institutional accountability;

2) A property management framework that identifies the institution's process for handling operational property issues with neighbors;

3) Strategies for assuring communication pertaining to property acquisition and disposition in surrounding neighborhoods;

4) A set of construction management principles, to apply to all institutional construction, that represent best practice, aim to minimize short- and long-term construction impacts on surrounding residents and businesses, and ensure a clear communication strategy is in place in advance of construction.

d. *Standards of Review*. The IDP shall:

i. Address all content requirements, unless explicitly modified by the Planning Authority or Planning Board;

ii. Reflect the issues/topics identified in the required public process;

iii. Demonstrate consistency with the city's Comprehensive Plan and the purpose of this ordinance;

iv. Demonstrate how the property ownership, proposed growth, and requested Regulatory Framework relate to the institution's mission;

v. Demonstrate that traffic and parking impacts have been anticipated and that the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands;

vi. Outline an approach to open space, natural, and historic resources that supports preservation and enhancement.

vii. Demonstrate that potential cumulative environmental impacts have been anticipated and can be minimized or satisfactorily mitigated;

viii. Demonstrate that utility impacts have been anticipated and can be minimized or satisfactorily mitigated;

ix. Reflect a comprehensive design approach that ensures appropriate transitions with the existing or future scale and character of the neighboring urban fabric;

x. Promote compatibility with existing or future uses in adjacent neighborhoods, maintain housing, and support local amenities;

xi. Anticipate future off-site improvements that would support the integration of the institution into the community and city-wide infrastructure;

xii. Conform with Portland's Historic Preservation Ordinance standards for designated landmarks or for properties within designated historic districts or designated historic landscapes, if applicable. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts, or historic landscapes, the IDP shall be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity; and

xiii. Incorporate strategies to support clear communication and ongoing public engagement between institutions and nearby neighbors.

e. *Approval.* Upon finding that an Eligible Institution's IDP meets the standards of review, the Planning Board shall approve, approve with conditions, or deny an IDP.

f. *Monitoring.* The IDP shall establish a schedule for reporting on IDP implementation at regular intervals of not more than ten years from the date of approval of the initial or amended IDP, and identify thresholds for IDP amendments;

g. *Amendments.* An approved IDP shall guide campus development unless and until amended. If at any time the Eligible Institutions request minor amendments to an approved IDP, the Planning Authority may approve such minor amendments, provided that they do not constitute a substantial alteration of the IDP and do not affect any condition or requirement of the Planning Board. The applicant shall apply with a written statement of the proposed amendment and proposed amended IDP to the Planning Authority, whose decision as to whether the amendment is minor shall be final. Major amendments shall be reviewed by the Planning Board. When the IDP is amended, the baseline data in the IDP shall be updated as appropriate.

V. Regulatory Framework

a. *Purpose*. The Regulatory Framework translates the IDP into a set of clear and specific zoning requirements for the IOZ that constitute the text and map amendments to the City's Land Use Code and Zoning Map. The zoning requirements are anticipated to include parameters that guide the growth and change of the institution as well as broad strategies to address potential impacts, with plans and details to be developed under site plan review.

b. *Applicability.* The Regulatory Framework shall apply only to properties that are within the IOZ boundary and to which the Eligible Institution holds right, title, or interest. For these properties, the Institutional Overlay Zone shall supersede the underlying zoning, and all new institutional development shall be conducted in compliance with the Regulatory Framework and the approved Institutional Development Plan. Properties located within the Institutional Overlay Zone not subject to right, title, or interest of the Eligible Institution shall continue to be governed by the regulations of the underlying zoning designation.

c. *Uses.* Institutional uses, including hospitals and higher education facilities, shall be permitted, as shall uses that are functionally integrated with, ancillary to, and/or substantively related to supporting the primary institutional use, consistent with the applicable approved IDP.

d. *Content*. The Regulatory Framework shall reflect the information and analysis of the IDP. The content shall be tailored to address the particular issues associated with the institution and its neighborhoods. The Regulatory Framework should be succinct and use tables and graphics as possible to address the following:

i. *Zoning boundary of the IOZ*: The area to which the regulations apply, as shown on the zoning map, subject to other provisions of this ordinance (i.e. the map amendment to the City's Zoning Map);

ii. *Phasing and schedules:* Requirements that relate to particular proposed phases; a chart showing the schedule or thresholds for submitting an amended IDP (or elements of an IDP, such as a Transportation Demand Management (TDM) Plan);

iii. *Uses:* Clarification, as necessary, on permitted uses.

iv. *Dimensional Requirements:* Graphics, sketches, or standards, including details for transition zones within the IOZ boundary;

v. *Transportation:* Elements such as TDM trip reduction targets or contribution to area-wide TDM measures; broad parameters for ensuring pedestrian, vehicular, bicycle and transit access and safety; parking ratios and management strategies; thresholds for access improvements;

vi. *Environment:* The approach to the inclusion of open space and preservation of environmentally-sensitive areas;

vii. *Mitigation measures:* The broad approach to identified mitigation measures, which would be addressed in greater detail in the site plan review process; thresholds for addressing deficiencies; goals for preservation/protection;

viii. *Design*: Graphics and standards to clarify building placement and envelope (height and massing); guidelines for integration of site features; required treatments for transition zones and treatment for all edges (both within and abutting the IOZ boundary); guidelines for establishing campus identity;

ix. *Neighborhood Integration:* Thresholds and strategies for neighborhood engagement; mitigation of impacts on neighboring properties, including construction impacts; buffering requirements; objectives for pedestrian linkages and safety; other requirements that address community concerns; and

x. *Monitoring:* A schedule for regular monitoring reports on IDP implementation in accordance with the IDP.

e. *Standards of Review:* The Regulatory Framework shall:

i. Be consistent with the Comprehensive Plan and the Institutional Development Plan;

ii. Provide a clear zoning framework, using graphics and tables as appropriate, to apply to future site plan reviews;

iii. Provide specific regulatory statements as appropriate that respond to concerns raised during the required public involvement; and

iv. Outline measurable goals and thresholds for improvements or other actions identified in the IDP to be advanced in subsequent site plan applications.

f. *Approval/Adoption.* The Planning Board shall review the proposed Regulatory Framework against the standards of review and make a recommendation on the institution's IOZ designation and Regulatory Framework to the City Council for adoption as part of this zoning ordinance.

g. *Amendments.* A Regulatory Framework and IOZ boundary as adopted by the City Council shall remain in force unless and until amended. Amendments to a Regulatory Framework and/or IOZ boundary brought forth by the city will require a supermajority of the City Council to take effect. Amendments to the IOZ boundary or Regulatory Framework shall be reviewed by the Planning Board and adopted by the City Council subject to the provisions of this ordinance.

VI. Regulatory Frameworks of Eligible Institutions (The regulatory frameworks adopted by the Council for each Eligible Institution will be codified within this section.)

VI. COMPREHENSIVE PLAN ANALYSIS

The city's draft comprehensive plan, currently under review, contemplates institutional development in several capacities. Supporting "sustainable growth in our educational and medical institutions" appears as an explicit economic goal of the plan, and promoting "the orderly expansion of institutional uses, such as educational and hospital campuses, which are central to workforce development, employment, and the health of the local and regional economies" is defined as one of many economic strategies for the future. Last, the main campuses of the four Eligible Institutions are identified on the Priority Nodes and Corridors map as areas for further study and investment.

The city's adopted comprehensive plan also contains goals and policy supporting a framework for long-range institutional planning, as is presented in the IOZ. The comprehensive plan community vision supports the city as "the economic service center for the region" and a place of "diverse job opportunities, quality employment, and a stable economy." The 1994 *Industry and Commerce Plan* highlights the need to "[e]nhance higher education and research and development opportunities."

VII. INSTITUTION COMMENTS and PUBLIC COMMENTS

A. Institution Comments

All four of the institutions to which the proposed IOZ applies have taken time to provide feedback on one or more versions of the draft IOZ text since mid-January. The letters in *Attachment 1* represent only the most recent comments (on the late February draft) in order to avoid confusion (comments on earlier drafts were circulated to the Board at the Workshops).

Many of the suggested revisions were helpful "wordsmithing" to avoid unintended interpretations and to improve clarity. There were several more substantive concerns that staff suggest have been addressed, although not necessarily in the way suggested. These include:

Table 2: Summary of Institution Comments and associated IOZ revisions (since January 2017)

Issue/Concern	How IOZ revised to address
Preferences were expressed as to the use of the terms "proposed" / "potential" / "projected" in relation to needs, growth, data or impacts associated with an institutions' plans	The IOZ language has been carefully reviewed to consider the meaning of these terms in the context of the clause and its intent. The wording has been modified to reflect the need for the IDP to provide information that allows other parties (e.g. the neighborhood, utilities, and the city) to understand broad future implications of the proposals, and that supports and links with the Regulatory Framework.
Concern that some of the information required in the IDP is sensitive in that it affects business decisions and ability to negotiate	The text has been modified to address this point. Where an institution has applied for an IOZ and is concerned about these requirements, the mechanism of the scoping meeting and associated modifications to content requirements would allow further consideration.
Some of the Regulatory Framework requirements are typically left to site plan review stage	The ordinance anticipates that there may be situations where the Regulatory Framework includes different standards than currently in the site plan ordinance and these would need to be articulated. In other cases, the Regulatory Framework would identify the broad approach expected in future site plan submissions in order to be consistent with new IOZ zone.
Would like to see clarification/examples of best practice e.g. construction management and ongoing neighborhood engagement	Staff suggest that these subjects would suitable for a Technical Standard that provides more space for details and can be updated to reflect the latest "best practice" in these areas.
Would like to see definitions e.g. minor and major amendments; functional land use link (of properties outside IOZ boundary), neighborhood context, and sustainable.	It is suggested that where the definition is important to the institution that it be discussed and agreed at the scoping meeting and/or defined in the IDP/Regulatory Framework. Staff have reviewed the IOZ language from other municipalities and in general find there is less definition and greater discretion for interpretation in most of the relevant examples as compared to the proposed IOZ ordinance for Portland.
Concern regarding permitted uses	Unlike many IOZ ordinances, the final draft text does not include an explicit list of permitted uses. The Regulatory Framework language provides the opportunity for each institution to be more explicit regarding permitted uses within their institution-specific IOZ.
Concern regarding level of certainty in regulation provided by IOZ and IDP process (i.e. "pending proceeding status")	Staff does not feel that the pending proceeding designation is applicable, since an IDP is not a project entitlement application but a planning and regulatory process. However, staff does strongly agree that some sort of certainty should result from the significant effort needed to properly complete an IDP. Staff has added language stating that, for regulatory changes to an IOZ brought forth independently by the city, a supermajority of the council be required.

Concern regarding treatment of property outside the proposed IOZ boundary	In the final draft text, staff has clarified language requiring that uses proposed by Eligible Institutions in residential zones be addressed by the IDP. Staff has also clarified language requiring the IDP to include *"strategies for assuring communication pertaining to property acquisition and disposition in surrounding neighborhoods."* The intent is to preserve some degree of discretion around real estate transactions by the institutions, but encourage a process whereby plans for expansion or disposition, particularly as they may relate to residential neighborhoods, are made reasonably transparent.

B. Public Comments

All of the public comments that have been received to date are included in *Attachment 2*. The most frequent comments have been collated and listed below along with an explanation of how the current IOZ text addresses the comment. The text aims to strike a balance between being too detailed at this zoning level, but also ensuring that the IDP and Regulatory Framework provide adequate information and regulations to anticipate the implications of an institution's growth plans and ensure these are adequately addressed in future site plan applications.

Table 3: Summary of Public Comments and associated IOZ revisions (December 2016-February, 2017)

Issue/Concern (in frequency order, highest to lowest)	**How IOZ revised to address**
Justification for the proposed parking provision and importance of TDM	The IOZ language has been strengthened to specifically include (in the IDP standards of review, IVdv) "*Demonstrate that….the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands*". The Regulatory Framework contents refers to trip reduction targets and TDM measures.
Height and design of new buildings and associated impacts e.g. shadows, edge massing and transitions Construction impacts e.g. noise, vibration, nuisance, construction parking Traffic impacts e.g. in neighborhood and on surrounding highways, including re pedestrian access Environmental impacts e.g. re drainage, loss of pervious surfaces, and noise	The IOZ language has introduced more detailed requirements for the IDP, including extensive information and analysis of the proposals, their impacts, and a proposed outline of measures /improvements/plans to address these. The IDP/Regulatory Framework review standards and Regulatory Framework contents include specific review criteria. The IOZ provides an overall framework, and these issues (as well as other impacts noted below) would be considered in greater detail when specific development proposals are considered during the site plan review.
Local impacts such as parking, lighting, and loss of open spaces	Clearer references to "open space" have been added to the IOZ text re submission content and standards of review. A standard of review for the Regulatory Framework is to "*Provide specific regulatory statements as appropriate that respond to concerns raised during the required pubic involvement"*- and this would address local issues as raised.
Need for constructive public engagement	The IDP content requirements includes a detailed section on "neighborhood engagement" that highlights the need for ongoing engagement that reflects "best practices" for communication and dialogue, and ensures that construction impacts and ongoing property management issues (eg employee smoking) are anticipated and addressed.
Encroachment into residential areas/divestment of properties in residential areas	The IDP content requires an inventory of all of the institution's property within the City of Portland, an indication of the functional land use links between off-campus properties and the main campus, and a statement of objectives for the properties as related to the mission of the institution. Where the use/proposal would be in a residential zone outside of the IOZ, it would need to be addressed in the IDP.
Need for long range planning and clearer timeframes	The IOZ text clarifies that the time horizon for the IDP would focus on the anticipated or potential growth and changes for the short to medium term, and include a conceptual vision for the long term (10+ years). The precise timeframes would be identified by the institution to reflect their mission and business plan.

Economic impacts	An institutional expansion or zoning change could have potential broad economic impacts such as on property values and tax revenues, but such impacts are very difficult to anticipate, quantify and evaluate as part of the IOZ process. More specific identifiable impacts would be addressed by the IDP and Regulatory Framework (and Site Plan re details).
Inclusion of other institutions	The focus for the initial IOZ is on the larger institutions that may require special zoning if their future development is not consistent with existing zoning. It is anticipated that the IOZ process would be extended once it has been fine-tuned.

VIII. RECOMMENDATION

The staff recommends that the Planning Board find that the proposed Institutional Overlay Zone text amendments are consistent with the Comprehensive Plan and recommend adoption to the City Council.

IX. MOTION FOR THE BOARD TO CONSIDER

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on March 14, 2017, and on the basis of the testimony presented at the public hearing, the Planning Board finds that the proposed Institutional Overlay Zone text amendment **[is or is not]** consistent with Portland's Comprehensive Plan and therefore **[recommends or does not recommend]** adoption of the amendments to the City Council.

ATTACHMENTS

1. Institution comments
    1. Letter from USM (Berstein Shur) 3.8.17
    2. Letter from Mercy 7.8.17
    3. Letter from UNE 3.6.17
    4. E-mail from MMC 3.2.17
2. Public Comments
    - PC-1. Barowitz correspondence 12.6.16
    - PC-2. Snyder correspondence 12.7.16
    - PC-3. St. John Valley Neighborhood Association correspondence 12-16
    - PC-4. Martin correspondence 12.13.16
    - PC-5. McKenzie Bowcott correspondence 12.11.16
    - PC-6. Bowcott correspondence 1.10.17
    - PC-7. Vilani correspondence 1.9.17
    - PC-8. McNamara correspondence 1.10.17
    - PC-9. Sabina correspondence 1.10.17
    - PC-10. Fuller correspondence 1.10.17
    - PC-11. Western Promenade Neighborhood Association (Pringle) correspondence 1.10.17
    - PC-12. Alexander correspondence 1.16.17
    - PC-13. Snyder correspondence 1.26.17
    - PC-14. Fuller correspondence 2.6.17
    - PC-15. Knoll correspondence 2.7.17
    - PC-16. Donnelly correspondence 2.10.17
    - PC-17. Barowitz correspondence 2.12.17
    - PC-18. Wells correspondence 2.13.17
    - PC-19. Fuller correspondence 2.19.17
    - PC-20. Pringle correspondence 3.7.17
3. Summary of the four IOZ PB Workshop discussions December 2016 - February 2017
4. Communication to the Planning Board dated 2.28.2017 including:
    - Examples of Institutional Zoning – Comparison of Key Provisions
    - Summary of Public Comments and Responses (extracted in Report)
    - IOZ Process Graphic

Att. 1

BERN
STEIN
SHUR

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Mary E. Costigan
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mcostigan@bernsteinshur.com

March 8, 2017

Portland Planning Board
389 Congress Street
Portland, ME 04101

RE: Draft IOZ Ordinance

Dear Chair Boepple and Planning Board Members:

I am writing on behalf of the University of Southern Maine regarding the latest draft text for the proposed IOZ Ordinance. Many of our comments have been addressed and we appreciate the staff's time and attention to our concerns. We would like to provide the following input on the few remaining areas left for discussion.

First, we support the current draft which leaves participation in the IOZ voluntary. If the Board were compelled to create a trigger for mandatory participation, it would seem that one based upon a request to amend the existing zoning would be appropriate. As you are aware, USM currently has an overlay zone, so triggers for mandatory participation based upon project size or a particular timeframe would be unduly burdensome to USM.

In regard to the question of regulatory certainty, while we appreciate the concept of requiring a supermajority to amend an IOZ when initiated by someone other than the institution, we believe it does not go far enough. This ordinance is requiring a lot of effort and expense on behalf of the institutions. In return, they should be provided the certainty that they can move forward with their development plans without the risk of the zoning changing in a way that would prevent them from doing so. Similar to a Master Development Plan, an Institutional Development Plan is a "cohesive and integral development program consisting of multiple buildings and associated site improvements built in phases over an extended timeframe." As such, IDPs should be afforded the same regulatory certainty as Master Development Plans. We suggest the following language: "Approval of the IDP shall confer pending proceeding status upon development within the IOZ with the effect of maintaining the applicability of regulations in effect at the time of approval for as long as the IDP remains valid."

Finally, with regard to the new language regarding the planning horizon, we would request that the long-term "growth plan" be characterized as a long-term "vision." The term provides more flexibility for deviations from that vision, as opposed to a plan.

Thank you for your review and consideration.

Sincerely,

Mary E. Costigan

Mercy
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www.mercyhospital.org

March 8, 2017

Stuart O'Brien, Planning Director
City of Portland Planning Authority
389 Congress Street, 4th Floor
Portland, Maine 04101

RE: Institutional Overlay Zone, 2-28-17 Revised Draft IOZ
Mercy Hospital Commentary

Dear Mr. O'Brien,

Thank you again for meeting with the Mercy team on 3/6/17.

Maintaining a regular dialogue on the proposed Institutional Overlay Zone (IOZ) has been informative. Based on our discussions, a zoning change is not required and thus Mercy will not have to apply for an IOZ. Mercy can proceed with development of the Fore River campus, in accordance with the current Contract Zone Agreement. Mercy's next step will be to submit a Level Three Site Plan application for review.

Mercy Hospital appreciates and supports the concept of the IOZ and how it facilitates an institution's need for flexibility to change and grow within a framework that reflects the City's needs and comprehensive planning objectives. At some point in the future Mercy Hospital may find it beneficial to apply for an IOZ. We want to take an active role in the development of the pending IOZ requirements. As you have requested, Mercy representatives have reviewed the draft IOZ materials. The following are our comments on the Revised Draft IOZ dated 2/28/17:

Section I.c Ensure that institutional change and growth both complements and, as appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions.
Comment: Adjacent neighborhoods are easily identifiable. Surrounding neighborhoods is more subjective. How and by who are surrounding neighborhoods identified? Further, what measures if any, within an IOZ, will help address potential future zoning of the surrounding neighborhood i.e. how does the institution possibly protect itself through an IOZ, from zoning changes sought by its neighbors, for example?

I.e Support an ongoing public engagement process that benefits both the institutions and nearby neighborhoods.
Comment: What does "ongoing public engagement" mean?

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II. Location and Applicability:
Comment: We interpret this paragraph to mean that an institutions application for an IOZ is strictly voluntary. We fully support this. Further, we believe that Mercy's Phase 2 plans are entirely consistent with the existing Contract Zone Agreement, thus, Mercy does not see a need for the IOZ at the Fore River Campus at the current time.

IV. c.i.2. a) A neighborhood context plan.
Comment: Is there a definition of this?

IV.c.i.2. c) A current census of the number of people using the institution.....
Comment: Will an institution be allowed to limit the amount of data it is required to submit given the potential for proprietary information and census data that relate to its competitive position in the market?

IV. c.i.2. d & e) An inventory and/or plan of all existing property holdings within the main campus and within the City of Portland, including an indication of functional land use links between off-campus properties and the main campus (e.g. remote parking):
Comment: There can be a significant difference in cost between an inventory and developing a plan. Who determines which is required? When declaring existing holdings, is this owned property only or does it include rental properties? There should be a definition of functional land use links as well as functional connections.

IV.c.ii.1. a) Projected census of users...
Comment: Will an institution be allowed to limit the amount of data it is required to submit given the potential for proprietary information and census data that relate to its competitive position in the market?

IV. c. ii. 1. b) Institutional objectives for property both within and outside the IOZ (e.g. acquisition and/or disposition), including an indication of any functional land use connection for sites outside the IOZ boundary to the main campus.
Comment: There is a concern that identifying future property acquisitions outside the zone could significantly impact future negotiations and property cost.

IV. d. x. Promote compatibility with surrounding uses in adjacent neighborhoods, maintain housing, and support local amenities.
Comment: What are the specific requirements to maintain housing? Does this mean that housing properties cannot be repurposed or the land repurposed? Would lost housing units need to be replaced?

IV. d. xi. Anticipate future off-site improvements that would support the integration of the institution into the community and city-wide infrastructure.

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Comment: This should have more definition to it. 'Future off-site improvements' is very broad and could potentially be very expensive.

V. b. Applicability
Comment: Should read 'Eligible Institution holds the right, title *or* interest.'

V.c. Uses
Comment: The terms "functionally integrated with, ancillary to, and/or substantively related to supporting the primary institutional use..." seem potentially restrictive, particularly in light of the Mercy Contract Zone Agreement schedule of allowed uses. Will Mercy be allowed to address uses within the Regulatory Framework? Even as an institutional use, Mercy seeks to maintain flexibility for future land use activity on the campus.

Our team plans to attend the upcoming Planning Board meeting on 03/14/17.

Thank you for your time and effort with this process.

Sincerely,

Michael Connolly
Senior Director of Support Services
Mercy Hospital
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Portland Campus
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Portland, ME 04103
(207) 797-7261 T

By Email
March 6, 2017

Stuart O'Brien,
Planning Director
City of Portland
389 Congress Street
Portland, ME 04101

Barbara Barhydt, Development
Review Mgr.
City of Portland
389 Congress Street
Portland, ME 04101

Helen Donaldson, Planner
City of Portland
389 Congress Street
Portland, ME 04101

Jean Fraser, Planner
City of Portland
389 Congress Street
Portland, ME 04101

Re: Institutional Overlay Zone Draft/Workshop

Dear Tuck, Barbara, Nell and Jean:

Nell has sent us the latest (2-28-2017) draft of the Institutional Overlay Zone (IOZ) language for our review and comment by the close of business today.

While the University of New England (UNE) continues to be encouraged by the Planning Staff's revisions to the draft IOZ language, a few issues in the language remain that concern UNE:

- The New Draft IDP "Assessment of Future Institutional Growth and Change" in IV.c..ii.2. continues to refer to "proposed" changes rather than "potential" changes as we had requested. We understood that what will be shown on an IDP is intended to be less detailed and more conceptual than what is shown on a site plan application. Similarly, the use of "would" rather than "could" in IV.c..ii.2.d)3) implies a more definitive level of design than what UNE can provide at the conceptual level that the IDP represents.

- It appears that the terms "major" and "minor," as these terms are used in IV.g. regarding amendments to an approved IDP, still need to be defined.

- We appreciate that it would take a supermajority of City Council votes to amend an approved IOZ where the institution is not the party requesting the change. However, this does not protect the IOZ Regulatory Framework against citizen initiatives and referenda.

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- Further, this draft still does not treat IOZ development as the current Ordinance treats master plan development, as it does not give projects included in the IDP "pending proceeding" status.

Thank you for your consideration of these comments.

Sincerely,

Alan Thibeault,
Assistant Vice-President for Planning
UNE

cc: William Bola, Vice-President for Operations, UNE
James N. Katsiaficas, Esq.

Att. 4.4

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

final text for IOZ

Penelope E. St Louis <STLOUP@mmc.org> Thu, Mar 2, 2017 at 12:18 PM
To: Jean Fraser <jf@portlandmaine.gov>
Cc: "Alexander M. Green" <AGreen@mmc.org>, "Alkan, Basak (Basak.Alkan@perkinswill.com)" <Basak.Alkan@perkinswill.com>, Mark Harris <HARRIM6@mainehealth.org>, "O'Brien, Stuart" <sgo@portlandmaine.gov>, "Barhydt, Barbara" <bab@portlandmaine.gov>, "Donaldson, Helen" <hcd@portlandmaine.gov>

Jean: Thank you. I am drafting this s I sit at Logan Airport. I read the text of the IOZ on the bus on the way down here and have been unable to confer with eh senior leaders at MMC regarding the staff changes.

Please excuse the typos etc.

I am most concerned about the following language:
III.e Future Inst Devel. The second sentence is problematic. If a property is purchased by an institution 3 years after the IDP is approved, and meets all of the requirements of the underlying zone, even if a conditional use, and it not functionally related to the operations of the main institutional campus, why would it need to be included in the IDP? I would understand if the use is functionally related to the IOZ campus. However, the current language states "any use/development," and I think that may create issues and unintended consequences.
IV. C. II 2 e 3. This requirement appears far reaching and is unfair to institutions who are entitled to negotiate for land purchases without having to disclose in advance such a thought or potential transaction. Such an obligation by an institution to disclose, in advance, would result in inflated prices for property purchased by non-profits. Folks cannot forget that non-profits must be good stewards of the finances entrusted to them to carry out their mission. I question if the City's economic development department or the City Manager would advocate for this obligation to attach to any business in the city including private or public. If what you intend in the language is communication following acquisition or disposition that may be more reasonable. The language should be amended to reflect that.
IV.C. II 2 d ix. I would ask this to be modified to add the terms "existing or future uses." The reason for this is that a transformation of a particular area in the City may be ripe for a different character. To be forced to design a project that is compatible with Morrill's Corner, for instance, when Morrill's Corner could be so much more than it is today with some short term planning, do you really want UNE to design to be compatible with that character??? Whereas, if you insert these additional words, you allow the institution to promote compatibility with the character that is to be achieved through redevelopment.
V. Regulatory Framework
a . Knowing that this is the zoning piece of the IOZ concept, it seems misplaced to insert "as well as clarify how potential impacts will be addressed" in the Purpose statement. If the Purpose statement has no legal effect because it is a mere introduction, that would need to be clarified. However, as written, you are asking for more of a site plan submission at the IDP level and, as I understand it, that is not the intent of the IOZ/IDP concept. I might suggest the removal of that text.
d. Vii. Again the request for mitigation would be more appropriately addressed during site plan and is not zoning.
Viii. I think Basak needs to comment of the Design text
Ix. Screening and buffering requirements are premature at the IDP level and buildings will not be designed at this stage in the process. Site plan thoroughly addresses screening
and buffering.

G. Finally, I am very concerned about the "Amendment" section as drafted. I suggest that to rezone from an IOZ/IDP, one must have right, title and interest in the property. The way this section is drafted it would appear anyone could request a rezoning of institutional property already approved under an IOZ/IDP . If this is the intent, it is in direct opposition to the issue Mary Costigan raised on behalf of USM and I discussed with Tuck O'Brien. There needs to be an element of security for an institution who has expended effort, time and money, that it will not be subject to rezoning requests by one or more dissatisfied individuals. I would suggest this section be altered or eliminated.

This is not complete and I. Would like to opportunity to discuss with you and others at the City to vet this issues rather than addressing them with the Planning Board on March 14. Thank you.

Sent from my iPad

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

Fwd: MMC Expansion notes for the Planning Board meeting Tuesday night

Jean Fraser <jf@portlandmaine.gov> Tue, Dec 6, 2016 at 12:45 PM
To: "Donaldson, Helen" <hcd@portlandmaine.gov>

for inclusion in the PB Memo on IOZ

---------- Forwarded message ----------
From: **Zack Barowitz** <zbarowitz@gmail.com>
Date: Mon, Dec 5, 2016 at 7:01 AM
Subject: MMC Expansion notes for the Planning Board meeting Tuesday night
To: jf@portlandmaine.gov
Cc: Tuck O'Brien <tuckobrien@me.com>, Damon Yakovleff <Damon.yakovleff@gmail.com>, Nikki Anderson <n.annetteanderson@gmail.com>, Norman Maze <nmaze@shalomhouseinc.org>, Emma Holder <pna@parksideneighborhood.org>, Anne Pringle <oldmayor@maine.rr.com>, Ian Jacob <iancasperjacob@gmail.com>

Jean,
Please review the following points for the Planning Board to consider in conjunction with the proposal to expand Maine Medical Center:

1. Implementation of the Libbytown traffic study, particularly the **restoration of two-way traffic on Congress Street between 295 and St. John Street**. Currently, the one-way streets are serving to divert through traffic *into* downtown. The current traffic alignment simply would not work. What's more, ambulances get stuck waiting for trains (this is a common enough occurrence that I was able to snap a picture--see attached). Thus, MMC needs to get on board with the traffic study recommendations for the expansion plan to work.

2. I wrote a column for the *Phoenix* outlining how the current agglomeration of **Maine Medical is blighting the surrounding streets and neighborhoods**. Were expansion to continue in the same manner the blight would undoubtedly spread and any economic development would have to be counter-balanced by decrease in value of abutting areas (e.g; tax revenue). You can find the article below or link to it here. My suggestions:
- Improve the streetscape for pedestrians and develop vibrant commercial spaces (24-hour cafe, pharmacy, restaurant, beauty salon) on Congress Street around the new entrance.
- Set backs to create a human-scale feel
- Buildings overhanging sidewalks (like in the wild west, to provide protection from weather)
- Heated sidewalks (currently they salt the heck out of the area with is costly and environmentally destructive)

3. Convert the surface parking lot on Brackett/Vaughn be turned into **housing**.

I have copied members of adjacent neighborhood association on this message.

Thanks,
Zack

Sick Building: The Maine Medical Center's $512,000,000 Expansion

Maine Medical Center dug through its couch cushions and came up with $512 million to spend on an expansion of its Portland campus. Although the plan doesn't add any new beds, it does call for 128 new rooms — which the hospital must have in order to meet new demands of patient care and stay competitive in a growing industry.

In addition to being a renowned hospital, Maine Medical Center is one of the largest employers in the state. So when it says it wants to build, it's fairly easy for officials to respond "how high?"

MMC's proposed expansion will create hundreds of jobs in the health care, construction and IT sectors. But those jobs come at a cost, and those that pay are unlikely to reap many benefits; a large hospital's effect on a neighborhood can be akin to having a cement block dropped on a flower pot.

So why is this?

Hospitals are notoriously among the most difficult types of buildings to design. The sheer volume of people, technology and movement, coupled with the turnover of all of the above, make their containment nearly impossible. Throw in the challenge of creating a building that is both sterile and uplifting, and it's enough to drive the most talented designer to review RFPs for wastewatertreatment plants.

Given the difficulties and contingencies of designing a hospital, it's little wonder that their exteriors often appear an afterthought. Situated high upon the Western Promenade, Maine Med's current configuration is an undistinguished agglomeration of stark Modernist edifices and brutalist parking structures crowded around a (somewhat gloomy) original 1874 structure. Fortress-like

facades have rendered blight beyond the castle walls to the boundary streets below. Gilman, Congress, Crescent, Wescott, Bramhall and Forest streets are all fairly run-down and have been for decades despite their proximity to some of the most valuable real estate in Maine.

Portland-area residents have every reason to be concerned with the planned Maine Med expansion; the shadows will loom longer, the winds will whip colder, parking garages will become larger, and the traffic will grow denser — adding to the spread of decay.

Ironically, the westward roll of commercial and residential development along Congress Street from Longfellow Square to Thompson's Point is hot, with hundreds of proposed housing units, restaurants and (of course) breweries. The break in the path is smack in the area designated for the bulk of the expansion. The quarter-mile stretch of Congress Street from Salvage BBQ to Bramhall Square has just two commercial spaces (La Bodega Latina and Portland Glass), not including the permanently "unfinished" storefronts in the MMC parking garage. The blight is attributable to a monotonous pedestrian experience: a steep hill, fast traffic and bleak streetscape of retaining walls and parking garages. It should come as little consolation that a recent beautification effort included hanging banners declaring competency in "Urology," "Gynecology" and "Cancer."

Were this projected expansion slated for an isolated green expanse (such as the MMC Scarborough campus), the peripheral pedestrian experience would be of little consequence. But in a dense urban environment, great care must be taken to scale and form but also to use.
Far from being a monument that sucks in automobiles, the hospital necessarily should learn how to interact with the street, starting with an improved pedestrian experience that heals the neighborhoods on its borders. Street-level commercial development — visitors' cafe, gift shop, pharmacy, restaurant and even a bookstore — will not only better serve hospital customers but make for a healthy bottom line, both for the institution and the city as a whole.

--
207-838-6120
917-696-5649
ZacharyBarowitz.com

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--
Jean Fraser, Planner
City of Portland
874 8728

IMG_0947.JPG
409K

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Notice From City of Portland Regarding - Vicinity of Maine Medical Center Questions

1 message

Karen Snyder <karsny@yahoo.com> Wed, Dec 7, 2016 at 2:39 PM
Reply-To: Karen Snyder <karsny@yahoo.com>
To: "jf@portlandmaine.gov" <jf@portlandmaine.gov>

Jean,

I have yet again got another notice of more development that affects me in the City of Portland.

This unnecessary yet huge Maine Medical Center project, what streets will this proposed development actually be on and how far and up does it go?

What exactly is an IOZ ordinance and does it actually protect local residents or yet once again allow developers to trample on the quality of life of residents?

Regards,

Property Owner on Gilman St.
K. Snyder

the Saint John Valley Neighborhood Association

Concerns regarding MMC proposed expansion

Project announcement

- Lack of transparency
- MMC is in breach of the current contract zone agreement (CRA) by failing to apprise members of the MMC Neighborhood Council of hospital development plans as mandated by the contract.
- How do we enforce the rules going forward?

Project design

- What will the new structures look like?
- At what point and in what forum will neighborhood input be considered relative to design, location, size and scope of the project?
- Neighborhood integration is important especially height
- How will traffic be affected?
- What will happen to current green space?
- Are there plans for streetscapes?

Proposed 13 story parking structure

- It's too big
- It doesn't compliment the existing buildings in the neighborhood
- Increase in traffic (How will this be managed?)
- Increased pollution
- Increased noise levels
- Reduced property values
- Contrary to neighborhood goals of enhanced livability and walkability
- Negative effect on sunlight and wind patterns
- Why haven't alternatives to this plan been proposed?
- Lack of security in current parking structures which leads to…
- Prostitution
- Drug use and public drinking
- Grafitti
- Suicide attempts
- Littering

Construction management

- How will the demolition of current structures be performed?
- How will demolition effect local residencies and businesses?
- What are the phases of construction? and How long will each phase of construction last?
- How will construction effect local residencies and businesses?
- How will any damage to local residencies and businesses be handled? (Remember the crane that toppled in 2006 crushing a house whilst the new MMC maternity wing was being built?)

- Baseline reads on our properties?
- Where will construction materials be stored?
- How will construction impact street parking?
- Where will construction workers park?
- What are the guidelines for acceptable noise levels during construction?
- Are there any provisions for loss of income to local businesses? and loss of rent due to tenants moving on?

Future planning

- What is MMC's master plan?
- They have already told us that they will need more parking and more beds in the future. What is their plan to accomplish this?

moses sabina <mosessabina@yahoo.com>
Nov 22 (7 days ago)

to Garry, Tuck, stjohnvalleyne., Helen, me
Please add impact to resident parking to that list. As of now, parking is at a premium, and next to impossible to find a spot when there is no parking on one side of the street. Happy Thanksgiving! -Moses

[12.13.16- St John Valley Neighborhood Association confirmed as public comment for 12.13.2016 PB Workshop]

PC4

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Hello Jean, If possible pls incude my memo in tonight's Planning Board workshop. Thank you . Sarah Martin

Sarah Martin <BOCCafe@hotmail.com> Tue, Dec 13, 2016 at 2:30 PM
To: "jf@portlandmaine.gov" <jf@portlandmaine.gov>

Memorandum

To: City of Portland Planning Board

From: Sarah Martin Valley Street, Portland Maine

Re: MMC Expansion

Date December 13, 2016

As an owner and occupant of a two family 1880's era home, I have great concern over the size, the scope and the likely negative impacts of Maine Medical's proposed expansion.

During one of the recent construction projects the constant driving of pilings, disturbed not only our tenants quiet enjoyment but the actual plaster in our home. Additional negative experiences included the use of surface lots in our neighborhood as trash covered construction dumps wrapped in broken and bent chain link often with torn, flapping, often vandalized green mesh. The precious few parking spots available to residents in the neighborhood were diminished by contracted workers and we all had the overall feeling that we were living on a construction job site for many months at a time.

While I agree that there may be some added value to the neighborhood by relocating the main entrance to Congress Street, the mere consideration of a thirteen story parking structure abutting our R6 neighborhood seems completely out of touch with the hospital's spoken commitment to being “good neighbors”.

Thirteen stories? I'm sure that the planning board is aware of this but consider for a moment a comparison in size.

The Holiday Inn on Spring Street-Eleven stories.

Peoples United Bank next to the library-Eleven stories.

Deering Pavillion-Eleven stories.

Portland House Condominiums -Eleven stories.

The Westin Portland Harborview(the old Eastland)-Thirteen stories

One City Center-Thirteen stories.

In fact there would only be three buildings in the entire city taller than this proposed structure, Franklin Towers, The Time and Temp building and Back Bay Towers.

I completely understand that the useful life of the existing employee garage is at its end. However, to expect to move 1,280 parking spots across Gilman street into a thirteen story parking structure higher than the treetops and towering over our buildings on Valley, Gilman and A Streets is just too much.

If we estimate a hundred cars per level, then why not dilute the impact a tower would have by relocating spots to other locations? The South lot on Bracket and Vaughn currently holds 400 cars. If the hospital were to go up one deck high in that lot, we have just reduced the tower to nine stories. Two levels brings the Gilman block proposal down to five!

I think the hospital owns the lot known as the Classic Eye lot on the one way section of Congress across from the jail entrance...about a hundred cars. How about developing a couple of stories of parking there? Two levels and we are down to seven stories on the Gilman lot. Another thought would be to lift the constraints of the current Contract zone and allow the hospital to purchase the properties on either side of their 887 Congress Street property to develop office/retail and parking in a structure similar in design to their surrounding buildings. This too would make more sense than pushing the development directly into the shadow of the residential piece(peace) of our neighborhood.

---

pb letter sarah.odt
29K

December 11, 2016

To the Portland Planning Board:

We are property owners of 8 A Street and co-owners of two businesses in the area effected by MMC's proposed expansion. We are writing about the impact of Maine Medical Center's construction plans within our neighborhood. We ask for your serious consideration to the many concerns we have about this project.

Parking Garage -
We oppose any changes to the MMC's zoning that would allow building heights to increase, especially as it pertains to the proposed parking garage on the Gilman Street lot. Our home, which we bought in 2006 and have spent considerable time and money renovating, is directly across the street from this lot. The proposed height of this garage would dwarf the residential buildings adjacent to it, encourage more traffic, and detract from the livability of the neighborhood. We feel certain that it will reduce our property values, increase pollution from car exhaust, become a hot spot for criminal activity and encourage further economic decline within the neighborhood.

One of the recommendations from the 2008 Peninsula Traffic Study was to enact parking policies that will decrease traffic volumes and “construct and promote remote parking, connected to downtown by frequent, reliable transit”. Where is MMC's progressive initiative to encourage remote parking and ride-sharing for it's employees? Rather than working with the city to reduce traffic congestion, MMC plans to build a larger garage which will only guarantee an increase in congestion on Portland's roadways. The more parking is made available for MMC's employees, the more its employees will drive into our neighborhood every day. We as residents would like to encourage a new plan that would make use of MMC's Scarborough campus or another remote commuter lot to reduce the congestion we witness every day in this neighborhood. At the very least, we ask that MMC build a replacement garage on the current location, set into the hillside, or increase the size of the existing garage on Forest Street. There are multiple options available that will avoid placing a giant parking garage the center of the neighborhood.

MMC Main Entrance -
We have been working with our neighbors for the last several years to make the neighborhood more livable. We have a vision which includes walkability, traffic calming, residential development, green spaces, and crime reduction. We see the neighborhood as being a distinct area of Portland with it's own appealing character and attractions, including the Inn at St. John, Sea Dogs, Salvage BBQ, and Pizza Villa. Having the main entrance to MMC located here could introduce many new challenges which would run contrary to our vision. There are many questions that will need to be answered before we can support the proposed location for the main entrance. For example, what will the hospital do about visitors and employees on the public streets smoking, littering and using parking spots that would ordinarily be available to residents without driveways? What will the structure look like and will it be in keeping with the scale of surrounding buildings? What will the hospital do to ensure minimal disruption to residents and business owners during the construction phase? How will green spaces be integrated into the design? Whatever plan comes to pass, we encourage MMC to be as transparent as possible and consider the goals of the neighbors who live and work in this neighborhood.

Sincerely,

Jenny MacKenzie and Garry Bowcott
8 A Street

PC6

1/10/2017

To the Planning Board,
After reviewing the Institutional development plan presented on 1/10/17, we have noticed some areas of concern regarding the proposed parking structure on the Gilman street block.

- A 13 story parking structure will stand out like a sore thumb in a residential neighborhood where the tallest building is 4 stories.
- There is no proposal for a setback to integrate the parking structure with the surrounding businesses and residencies.
- If fig 4.2 on page 41 is correct and the trend of employees utilizing alternative forms of transport continues then MMC will see a reduction in parking needs moving forward. Will we end up with a parking structure that is obsolete and cannot be used for any other purpose? Why are they proposing a larger parking structure if the demand for parking is decreasing over time?
- MMC has not offered any other solutions to their parking needs. There are numerous options available to them such as construction on the Vaughn Street surface lot, additional levels on the Forest Street lot and footprint expansion. All of these options are supported by the Saint John Valley Neighborhood Association but for some reason MMC refuses to acknowledge them as options.
- As the city is obviously in a state of rapid development, we need to start making wise decisions regarding parking and it's integration with neighborhoods. If we allow MMC to construct this parking behemoth we are destroying the livability of a neighborhood via pollution, traffic congestion, crime, decreased sunlight and street level interaction.

Please take these concerns into account as you consider MMC's institutional development plan.

Sincerely,

Garry Bowcott
8 A Street
Portland, ME
04102

1.9.2017

To whom it may concern,
I am writing to you about the proposed MMC construction project. As a business owner at 919 Congress St, Salvage BBQ I have concerns regarding how this will impact my business. Right now we have tremendous sunlight that illuminates the restaurant from the South and west. Increasing building heights in the neighborhood will block this light and impact our business negatively. We have worked hard to make our business a success in a neighborhood that was neglected and not seen as a viable business center. There was a similar attitude in Longfellow square when we opened Local 188 in 1999 and now Longfellow Square is a bustling mecca of restaurants and bars. I would like to see the same trend continue down Congress Street but the proliferation of institutional buildings impedes the type of pedestrian activity necessary to create such an environment.
I am also concerned about my business being disrupted during a lengthy construction phase. What are the plans for demolition of the existing buildings? How will traffic be impacted? How will pedestrian access be impacted? How will noise levels be managed?

Jay Villani
Salvage BBQ
919 Congress St.

My name is Tim McNamara and I live at 251 Valley Street.

I've read through the draft IDP submitted by Maine Med and have several questions relative to the rhetoric and the data offered in Chapter Four-Parking and Transportation.

My understanding is that the hospital needs to substantiate their request for change of zoning by proving need. I believe that the Chapter Four is an attempt to show that the hospital is doing all they can to reduce the number of vehicles on campus yet prove they still have the need to park 1,100 employees on Gilman Street. I write to challenge the positions taken by the hospital in Chapter Four.

At a December 6th meeting of neighbors, senior hospital management and City staff, we discussed ideas of alternatives or incentives offered by the hospital to employees to reduce the number of single passenger trips to and from campus. Our thought was ...fewer single passenger trips-fewer spots required in the new garage. Minutes from that meeting, recorded by hospital staff, reflect that Maine Med President Rich Peterson "*acknowledged that thought will be given to trying to provide additional incentives to Maine Med employees to car pool, bike or use other means of alternative transportation*". ...it was even discussed as to whether we are asking the hospital to alter societal norms embedded around car ownership and use or to attempt to change our behaviors.

At that meeting, senior hospital management made no reference to any Alternative Transportation Plan in place and certainly no mention of the "Get on Board" program. "Get on Board" is the program that Chapter Four hails as a "*focus of institutional policy.*" and "*an integral part of the fabric and culture of MMC*" (See pages 39/41of Draft IDP)

In the 2005 CRA between Maine Med and the City, Chapter 18 requires that "a*n analysis of effectiveness and functioning of the Alternative Transportation Plan shall be provided* (by the hospital)*to the City Council's Transportation Committee on an annual basis.* " I've reviewed agendas and minutes from that committee dating back to 2013.
Nowhere can I find a reference to a hospital report on the functioning or effectiveness of any ATP.

As residents who will be directly impacted by a 13 story garage plopped down in the middle of our neighborhood, we have asked the right questions and made the right suggestions relative to reducing single passenger trips without hearing from the hospital of any plan in place to achieve such. Then out of nowhere, Chapter Four of the IDP asks us to believe that in 2015 the hospital has "incentivized" 35 % of their employees, up from 14% in 2008, to commute to work by means of something other than a single occupancy vehicle trip?

From 14% to 35% in seven years? Pretty spectacular. Where did these numbers come from? If we are to believe these numbers, then can we anticipate that in five years that number will be 50%? then 65% ten years from today?

The problem is we can't believe these numbers.

In 2015 they claim that 1,571 employees participated in the program. They claim that that amounted to 35% of their employees. That would be true if the hospital employed 4,488 people. The Maine Med Website claims that they employ more than 6,000 people. So the real number is closer to 25% participation in the program. The percentages are off from the first year of their reporting. (2008, 648 participants reflected as 14% of all employees. More like 10%)

The number of employees they claim to be riding their bikes to work in 2015 is 229. Yet they only have the capacity to store 184 bikes.

The number of employees using “ride share” in 2015 is 1, 021. Let's say every one of those ride-share participants carpooled to work with two other people, (unlikely as that may be) that would mean according to Chapter Four, that 340 cars would “*be given access to preferred parking in a gated, ID card access only area of the Employee garage that connects directly to the main lobby on the ground floor of the hospital*.” 340 Cars? That's well more than a quarter of the total spots available in the current garage and would be physically impossible to accomplish.

The bottom line on Chapter Four is that the numbers and the stories just don't add up. I would encourage the Planning Board to kick the entire Chapter back to the hospital for a complete overhaul and to demand validation of their data so an accurate and legitimate parking and transportation baseline can be established .

Thank you.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Re: PB Workshop 1-10-2017 Institutional Overlay Zone (IOZ)/MMC Institutional Development Plan

1 message

moses sabina <mosessabina@yahoo.com> Tue, Jan 10, 2017 at 12:04 PM
Reply-To: moses sabina <mosessabina@yahoo.com>
To: Jean Fraser <jf@portlandmaine.gov>

To the Portland Planning Board:

My name is Moses Sabina, I am an owner/resident at 4 Gilman Street. I have attended MMC Neighborhood Council meetings quarterly since the inception of the council. The purpose of that council is to keep the neighbors of MMC apprised of any and all MMC developments.

In the case of these development plans, the council members were made aware of the plans three days before they were printed in the Press Herald. Neighbors were given no opportunity to be involved in a constructive dialogue to help MMC develop theirs needs with minimal impact, or even some improvement to the surrounding neighborhoods. Unfortunately, this selfish "close to vest" behaviour is exactly why the neighborhood council was created in the first place, and why it is all the more mockery now that MMC has dismissed including neighborhood representatives in an important discussion which should have included all the options for addressing their parking needs.

I ask you to consider their blatant disregard for their neighbors when you review their plans for the thirteen story dark tower they want us to live next to. I ask that you not give any variance over the height restriction in the current zoning until all other options for parking have been thoroughly vetted, regardless of the cost to MMC to divide the parking between more than one location. Otherwise, it will be the neighbors suffering the the long term price of this development plan.

Respectfully,
Moses Sabina

From: Jean Fraser <jf@portlandmaine.gov>
To: "Fraser, Jean" <jf@portlandmaine.gov>
Sent: Friday, January 6, 2017 5:42 PM
Subject: PB Workshop 1-10-2017 Institutional Overlay Zone (IOZ)/MMC Institutional Development Plan

Hello

I am sending this e-mail to those who sent me written comments on the proposed IOZ zone and/or on the MMC plans for expansion back in December, or who have contacted me about the proposed IOZ ordinance.

MMC have requested a zone change in order to expand/modernize - and the new IOZ ordinance is the City's proposed process - with an aim to provide a clear, predictable growth management structure for institutions that would allow flexibility but also require proactive planning and a more transparent and defined mechanism for understanding and addressing community concerns. As currently drafted, only the main campuses of

PC10

Re: UNE

My name is Robert P. Fuller, a resident, taxpayer and owner of #37 College Street. With the possible exception of parking and traffic, it is doubtful that anything planned in the immediate vicinity of College Street would be an issue except to its property owners. But a concern of one should have the same weight as an issue for many.

Back in December 2011 one of the Vice Presidents said that UNE wanted to become more responsible. Hopefully that translated into going to be more responsible and that means to all of us. In theory and in practice leaders of organizations are supposed to reach out into the community and not allow any one subordinate to create an aversarial role with the neighbors. Does anybody want a repeat of the hoo-rah on the Biddeford campus about 15 years ago?

In a 2011 magazine interview, the president of UNE said that they were just about where they wanted to be in terms of size. A year later, as part of an application submission, UNE said that they had been unsuccessful in being able to squeeze any more parking on the main campus.

Based on those two statements, there should be no changes from my bound toward Ginn and McDougall Halls on the west or for at least 25 feet out from the #33-37 College Street north line. Finally, the north side of College Street itself and sidewalk would remain where they are now. This is the way it should be. Remember, the greatest material investment for most of us is our real property. This is true for myself and my sister at #33-35 College Street.

When you review for the overlay and master plan for UNE, do not forget us residents. When you review according to a set of standards, do the parts add up to a whole? Does it look sensible? How does it fit with the human condition? There is no good reason, with proper planning, that UNE and all its neighbors cannot peacefully coexist in the same surroundings.

Robert P. Fuller
January 5, 2017

Western Promenade Neighborhood Association
Comment to Planning Board re IOZ **1/10/17**

Members of the Board, my name is Anne Pringle and I am commenting on the prosed IOZ framework on behalf of WPNA.

To echo David Eaton, I want to publicly thank MMC for agreeing to be the guinea pig for this new zoning concept and process. As some of you may know, there was a very contentious process when the Conditional Zone was approved. To date, this process and the dialogue has been much more open and we appreciate the early engagement.

Rather than comment on the specifics of the MMC IDP proposal, which will get a lot more scrutiny later and which I do think reflects the IDP framework, I want to comment on a few elements of the proposed IOZ framework:

First **institutional encroachment** has been a big issue in our neighborhood with two major institutions, MMC and Waynflete. The existing zoning protections, I think staff would agree, is inadequate as it gauges the impact of encroachment on a building-by-building basis, rather than on cumulate impact. The Waynflete IOZ recognizes this and precludes, I believe, school uses in buildings outside the zone boundary. So, the school cannot purchase or have donated a building outside the zone. To avoid institutional encroachment, WPNA believes the new IOZ should preclude intuitions from purchase or acceptance of donations of properties outside the proscribed zone, except for the sale of properties to free up funds for institutionl uses with the IOZ..

If an institution already owns property outside the IDP boundary, those properties should be identified and a plan, even a long-term plan, identified to relocate the institutional uses in those buildings to the IDZ area or a location outside a residential zone.

Second, it is recognized that these institutions have a major traffic and parking component. Since they each exist in already developed contexts, to a large extent

residential, significant and creative efforts should be made to reduce dangerous traffic impacts parking demand and assure that parking does not dominate the area and utilize land that might later be needed for institutional growth, leading to a subsequent request to expand the IDP boundaries.

Third, it has been suggested that MECA be included among institutions subject to the IOZ framework. With more residential housing downtown, the impact of MECA on its context should also be subject to the scrutiny that the proposed IOZ framework sets forth. Similarly, Waynflete should also be subject to the IOZ framework and process, should it at some point wish to revise its Overlay Zone.

Fourth, I have come to understand, through litigation, that purpose statement, no matter how helpful in understanding the basis for legislative action, have no legal import. In the proposed purpose statement I see some very good language that I believe should be pulled forward into the text to provide more explicit definition in the IOZ framework requirement, for example the reference to “carefully planned transitions”

Finally, there is no question that each of these institutions, including the two suggested to be added, are very valuable elements so our community. What the Board is seeking is to establish balance and predictability for both the institution and its neighborhood contact.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Public Comments on MMC Institutional Development Plan

1 message

toddmalexander@gmail.com <toddmalexander@gmail.com>
Mon, Jan 16, 2017 at 6:54 PM
To: "jf@portlandmaine.gov" <jf@portlandmaine.gov>
Cc: "basak.alkan@perkinswill.com" <basak.alkan@perkinswill.com>, "Western Prom Neighborhood Association <oldmayor@maine.rr.com>" <oldmayor@maine.rr.com>

Jean: Comments on MMC's draft IDP;

Generally, I am supportive of the long-term plan to;

i) create an IOZ to govern future campus development

ii) shift development activity to the Congress Street corridor

iii) allow for greater density and/or building heights along the Congress Street corridor to accommodate the plan

Either as a condition of an IOZ and/or included as a provision within the IOZ, the city should consider requirements for MMC to address the following;

i) Real estate holdings in abutting residential districts that may not be located in the areas covered by the IOZ. More specifically, the city could require MMC to develop and implement a divestment plan for those non-core properties that most directly impact predominantly residential neighborhoods. Properties that could be addressed in that plan; 19 West Street, 112 West Street, 94 and 98 Chadwick, and 227 and 231 Western Promenade.

ii) Hospital vehicle traffic in the Western Prom neighborhood generated from users of the South Parking Lot. One possible solution is to create an exit-only ramp/lane from the South Lot onto Vaughn street (far southeast corner of

lot). This will eliminate a high volume of hospital vehicle traffic on Chadwick and West Streets.

iii) Inclusion of residential uses in any future redevelopment plans for the South Lot. This parcel serves as the natural transition from institutional/commercial uses located to the north and west to residential uses to the south and east. Any future development in this location should further reinforce and compliment this transition. The size of the lot allows for an orderly change in property types from commercial/institutional…to mixed use… to residential. The residential development requirement could be structured to directly complement MMC's operations; housing for residents and staff, extended stay housing for visitors, etc…. One way to regulate a requirement for residential uses for the South Lot is through trigger/performance mechanisms, such as; for every X thousands of SF of non-residential space proposed for this lot, MMC is required to create X units of housing.

Respectfully,

Todd M. Alexander

3 Carroll Street

Sent from Mail for Windows 10

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

CORRECTION - MMC Neighborhood Meeting Held on January 18, 2017

1 message

Karen Snyder <karsny@yahoo.com> Thu, Jan 26, 2017 at 5:01 PM
Reply-To: Karen Snyder <karsny@yahoo.com>
To: "Deborah S. Boroyan" <BOROYD@mmc.org>, Jean Fraser <jf@portlandmaine.gov>
Cc: Saint John Valley Neighborhood Association <sjvna1@gmail.com>

There is a correction in point 2 (two) below. I added a sentence to the end of the point. "These window replacements should be paid for by MMC."

Karen

From: Karen Snyder <karsny@yahoo.com>
To: Deborah S. Boroyan <BOROYD@mmc.org>; Jean Fraser <jf@portlandmaine.gov>
Cc: Saint John Valley Neighborhood Association <sjvna1@gmail.com>
Sent: Thursday, January 26, 2017 3:02 PM
Subject: Re: MMC Neighborhood Meeting Held on January 18, 2017

Hi Deborah and Jean,

During this MMC neighborhood meeting, it was said that the construction would span a 5 year time frame. This is not sustainable for the health of property owners and tenants to live through 5 years of construction on Gilman St and Valley St.

As a property owner on Gilman street, the proposed MMC's development proposal is causing quite a lot of stress and concerns amongst the local residents.

Depending on what the final agreed proposal and what is acceptable to property owners, the below needs to be considered for this development proposal to ease the stress, health concerns, and quality of life impact of any construction around Gilman and Valley St.

1) Construction noise should only allowed from Monday to Friday between 9am and 5pm. There should be NO construction on weekends. Residents need the weekend to decompress and destress. If not, the health and quality of life of residents will be compromised.

2) Prior to construction, all houses on Gilman and Valley street, the windows are to be replaced with soundproof windows. If the parking garage is made up of concrete, this means alot of noise and debris will be generated in the air. The properties around this area must not be comprised by hazardous abatement and noise. These window replacements should be paid for by MMC.

3) Because MMC employees use the Gilman street sidewalk constantly, for safety concerns, MMC needs to provide sidewalk lighting on this street.

4) The construction vehicles should be prohibited from parking on Gilman or Valley Street. Construction workers should be required to park in an off site parking lot and bused in just like MMC employees. The parking of construction vehicles is a nuisance for property owners because I have all ready had to experience this for the last 2 years on the East End.

5) There are concerns as to how are the property owners suppose to advertise for future tenants knowing that MMC is proposing a 5 year construction time frame? How are the property owners suppose to retain tenants if tenants don't want to put up with the constant noise and debris that will be generated? When someone buys or rents a property, there is an expectation to be considered and that is the law of NUISANCE "If a nuisance interferes with another persons quiet or peaceful or pleasant use of his/her property" It maybe the basis for a law suit ordering the person or entity causing the nuisance to desist (stop) or limit the activity. This is a huge concern as a property owner renting to tenants. MMC needs to address these concerns.

As indicated above, no matter what the final decision is on this proposal, the above issues must be addressed by MMC with solutions which have to be agreed upon by the neighborhood residents.

Regards,
K. Snyder
24 Gilman

From: Deborah S. Boroyan <BOROYD@mmc.org>
To: "'karsny@yahoo.com'" <karsny@yahoo.com>
Sent: Wednesday, January 18, 2017 12:18 PM
Subject: MMC Neighborhood Meeting

This e-mail is being sent on behalf of Rich Petersen.

Dear Neighbor,

Thank you for attending the Maine Medical Center Neighborhood Meeting on January 12, 2017. We hope that you found the meeting informative and we are looking forward to continuing our dialogue about this important project.

The input you provided before the Neighborhood Meeting, relating to traffic patterns, pedestrian and bicycle routes, and the amenities you most value in your neighborhoods, is being reviewed by Basak Alkan, the Urban Planner who is assisting with the development of MMC's project and advising on how that project can best interact with our neighborhood.

MMC is committed to transparency and being a thoughtful neighbor while planning for these important enhancements to our facilities and ability to meet the health care needs of our community.

Please go to http://www.mmc.org/modernization for more information and updates about this project, including additional Neighborhood Meetings.

Regards,

Rich Petersen

Deborah S. Boroyan
Executive Assistant to the President
Maine Medical Center
(207) 662-2491
boroyd@mmc.org

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PC14

37 College Street
Portland, ME 04103-2617
January 23, 2017

Nell Donaldson, Senior Planner
City of Portland
Planning Division
389 Congress Street
Portland, ME 04101

Dear Nell Donaldson!

This is my reply to the proposed Text of the Institutional Overlay Zone (IOZ). This was part of a memorandum dated January 6, 2016 (2017).

P.2 Institutional overlay zone text

In the first place, all four institutions concerned, in the spirit of "Total Transparency", should, if not already done so, furnish available as public record all applicable copies of their Charter, articles of incorporation, bylaws, etc., including those still in force from predecessor organizations. In this way the public will know what activities the institutions may or may not do.

P.2 IV 1c purpose – Insert the words "abutting or" before the word "surrounding." In this manner the reading will be – ".... integrates abutting or surrounding neighborhoods ....".

The insert is necessary to protect the integrity of the privately owned parcels of #33-37 College Street. These properties are probably in a unique situation where they surround nothing. For the last two years it is UNE that surrounds these parcels of land. Unaltered, a minor technicality such as this, could lead to those parcels of land not being recognized as a neighborhood at all and shut out of the planning process. Therefore, a neighborhood is one or more privately owned parcels of land to include those abutting or surrounding an institutional overlay zone.

The remainder of my comments are more general in nature for the time being. It is assumed that you are looking for more headings or amplify existing ones in the Proposed Text.

P.3 Permitted use – this must mean consistent with their articles, charter, etc.

P.5 IDP – Is this the same as the term "Master Plan", which has not appeared in the proposed Text?

P.5 IV 5d iii 3a – What is "TDM"?
IV 5d iii 3b – Does this include adding, deleting or altering parking designations on a public Street?
IV 5d iii 4b – Does this also embrace water draining into naturally occurring soil that is present?
IV 5d iii 4f – Assume that this also includes offensive soundwaves along with convergence of soundwaves both as the result of one or more appurtenances such as grates, fans, generators, compressors, circulators emitting

a sound that can be detected only in a narrow area, not always at ground level.

IV 5d iii 5d - What is "CPTED"?

IV 5d iii 5f - Presume any problems to be addressed in Section IV 5e 5 and 9

P. 6 IV 5d iii 6C - Construction Management - Does this include liabilities resulting in damage to private property due to construction, demolition, altering, filling, contour changes - should private property owners pay for institutional damages upon them by the above activities not covered by their insurance? If the expansion of an institution upon a private property owner causes repeated damage claims and the insurance company raises the premium as higher risk, should the institution pay the difference between the rates since it is they who have "thrust" themselves upon the private property owner?

Likewise, where would there be an institutional maintenance clause that would totally protect private property owners against neglect (Institutional owned tree falls upon private property house causing damages)?

IV 5e5 Mitigation - assume this covers changes to appurtenances and appliances already in place such as troublesome lighting, noises, soundwaves.

IV 5e9 - Neighborhood Integration - would this be the heading under which a list of problems would be made item by item to include 5e5 preceeding - all leading to a resolution?

That is all for now. Hope to receive your reply very soon.

Yours in Sensible planning,

Robert P. Fuller

Robert P. Fuller

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Fwd: Maine Med IOZ - South Lot Concerns

1 message

Melissa Knoll <melissa.knoll@gmail.com> Tue, Feb 7, 2017 at 10:24 PM
To: jf@portlandmaine.gov

---------- Forwarded message ----------
From: **Melissa Knoll** <melissa.knoll@gmail.com>
Date: Tue, Feb 7, 2017 at 10:18 PM
Subject: Maine Med IOZ - South Lot Concerns
To: planningboard@portlandmaine.gov, "Ozgur Basak Alkan, AICP, LEED AP" <Basak.Alkan@perkinswill.com>, jf@portandmaine.gov
Cc: Anne Pringle <oldmayor@maine.rr.com>, Scott Knoll <scott.knoll@gmail.com>

Dear Jean & Basak,

Thank you for taking neighborhood comment while planning the next Maine Med expansion. We live at the corner of West and Vaughan Street, so are in very close proximity. The move to make the entrance closer to Congress St sounds like a good one. We would like to see the high volume of Maine Med traffic reduced in the west end neighborhood.

We, as well as our neighbors, have two requests as you consider zoning change:

1. Move the exit of the surface lot on Brackett/Chadwick so traffic is directed away from the West End neighborhood. It is a huge safety and traffic congestion concern. I wrote a detailed e-mail regarding our concerns on Jan. 4th which I'll forward to Jean. There is broad west end neighborhood support for such a change.

2. It appears Maine Med is asking for long term approval to put a large 75 foot tall building on this same South Lot surface parking lot (see page 35 of the Maine Med Institutional Development Plan). The height and setback of a potential building on that lot should be kept the same as the surrounding R4 and R6 neighbors. A 75 foot building with a 5 foot setback as proposed on their plan would be enormous. Please keep the maximum height at the same level as the current R-6 & R-4 zone.

We could put together a neighborhood petition if this helps our case. Let us know if you think this would be valuable.

Thank you,
Melissa & Scott Knoll

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Fwd: Maine Med Traffic Volume & Safety Concerns from Chadwick Parking Lot

1 message

Melissa Knoll <melissa.knoll@gmail.com> Tue, Feb 7, 2017 at 10:23 PM
To: jf@portlandmaine.gov

Here is the e-mail detailing the traffic problems caused by the South Lot exit. Frequent high rates of speed can be added to this list.

Thank you,
Melissa

---------- Forwarded message ----------
From: **Melissa Knoll** <melissa.knoll@gmail.com>
Date: Wed, Jan 4, 2017 at 2:14 PM
Subject: Maine Med Traffic Volume & Safety Concerns from Chadwick Parking Lot
To: Basak.Alkan@perkinswill.com
Cc: Anne Pringle <oldmayor@maine.rr.com>

Hello,

Thank you for taking the neighborhood concerns into consideration in designing Maine Med's next expansion. We have three small children and live on the corner of West & Vaughan Street in Portland, Maine. We and many of our neighbors have expressed concern about the erratic driving and large volume of traffic from the surface lot on Chadwick/Brackett West Street. All of the exiting traffic is directed toward our neighborhood from the one way exit on Chadwick, and 90% turns left down West, and then left on Vaughan.

Major problems include ~

- High traffic volume, especially at busy times of day
- Drivers are unfamiliar with the area, there is no signage back to the highways
- Drivers are distracted - many are on phones, in a hurry, have health problems, or are lost
- Cars frequently drive on West Street as if it is a one way street (like Chadwick) and drive on the left side of the road
- Cars do not come to full stops at Chadwick/West stop sign & West/Vaughan stop sign

- Most drivers have been at the hospital and are not paying full attention to driving safely or the children in the neighborhood
- Both Chadwick & the West Prom are one way streets heading away from the hospital making it difficult to access the hospital entrance, which adds to traffic congestion

Our neighborhood is young and vibrant with 10+ small children that live directly on this block. There have been several close calls already with traffic. It seems like there could be a reasonable solution to direct this unnecessary traffic away from the West Prom neighborhood. I look forward to speaking to you more about this. Please feel free to contact me and I can describe or show you the problem in more detail.

Thank you!

Best,
Melissa & Scott Knoll
83 West St
Portland, ME 04102

Google Groups

Comment on MMC overlay zone

Sara Anne Donnelly <sara@saraannedonnelly.com> Feb 10, 2017 9:18 AM
Posted in group: **Planning Board**

To the Planning Board:

This letter is in regards to the proposed overlay zone that would allow Maine Medical Center to expand. I do not oppose the zone or the expansion, but as an abutting neighbor I do think it's important to call attention to trouble that we have had in convincing Maine Medical Center to be respectful of our space. I do this in hopes that perhaps provisions could be written into the overlay zone that protect the neighborhood from harm caused by the hospital and its expansion.

I live at 19 Ellsworth Street, which I have owned or managed since 2012. My two-unit home is two doors down from the current main entrance to the hospital on Bramhall Street. Soon after I bought the property, MMC banned smoking on its grounds. Since then, the neighborhood has struggled with patient and employee smokers that have effectively been pushed onto our sidewalks. There are dozens of them, particularly on warm days, smoking throughout the day at a near constant.

The hospital has met with neighborhood reps as far as I know (I was only invited to one meeting) and has reluctantly steered smokers away from some parts of the abutting neighborhood. They refuse, however, to re-establish a smoking space on their grounds, ignoring the reality that unlike other no-smoking hospitals their campus is in the middle of a densely populated area. This leaves us with a policy that is like a balloon pushed on one end that juts out on the other. The smokers that are deterred from one part of our neighborhood only migrate to another.

That's where my house comes in. Across the street, at Hill and Ellsworth, is a popular corner for employees of the hospital to smoke. This is no accident. The hospital about a year ago installed "Buttler" cigarette butt collectors at this corner, which it pays to maintain. These Buttlers are in front of private property. They effectively validate and even encourage smokers from the hospital to come to our neighborhood in front of private property and smoke. Which they do, by the dozens daily on warm days. Sitting on stoops and lounging on the sidewalk in their MMC uniforms.

The Buttlers were pitched by MMC to the neighbors (including me) as a way to collect the smokers away from the windows of those with concerns, and to gather the butts that were so many the rumor was they clogged up the sewer underneath the sidewalk. We were told that the Buttlers would be moved if there was a problem. But this is not the case.

I have spoken with six property owners or tenants around these Buttlers who have serious concerns about the effect of the smokers on our health, our quality of life, and our property value. I relaid this concerns to the hospital. To date, the hospital has done nothing to divert its employee smokers away from our sidewalks. I have particular concerns about the smoke as I work from home, my tenant is also home and is undergoing chemotherapy, and my infant daughter is cared for at home. Next door, my neighbors have a one-year old son who is also home most of the day. The smoke from the MMC employees comes into our windows almost constantly during warmer months. Over a year ago, the young mother next door and I joined a neighborhood meeting with MMC to talk about the smokers. We were listened to but nothing of substance was ultimately done. We were even told by MMC counsel to ask the smokers to move ourselves.

Next week, the owner of the property on the corner and I will finally meet with MMC to discuss the employee smokers at the corner of Hill and Ellsworth. But even if we are successful at resolving our issue, other property owners will suffer as the smokers will only migrate. The only effective way to respect the neighborhood would be to alter this flawed no-smoking policy and return a space for smokers to hospital grounds. But the hospital will not consider this. They seem to hope that we will just go away. This meeting alone is a perfect example -- it was first promised to us in October. It is only now happening, after repeated follow-ups from the neighborhood.

I recognize that the overlay zone and the expansion are a separate issue, but I am concerned that the expansion will bring more smokers to our neighborhood and that the hospital will not be held accountable for its promises to respect our health and our quality of life. I have attended a couple of the neighborhood meetings about the expansion held by MMC, and the rhetoric about respect and concern for the neighborhood is heartwarming. But if the ongoing and very real damage to the neighborhood caused by another of MMC's sweeping changes is any indication, the needs of the neighbors may ultimately be ignored.

I write this letter in hopes that perhaps there is some way the zone can be written to better protect us neighbors.

Thank you for reading, and I'm happy to answer any questions you may have.

Best,
Sara

Sara Anne Donnelly
Writer ○ Writing Coach
M 207.632.1042 O 207.274.6848
www.saraannedonnelly.com
@SaraADonnelly

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

Submission of Comment Planning Board re: MMC IOZ

Zack Barowitz <zbarowitz@gmail.com> Sun, Feb 12, 2017 at 2:57 PM
To: Helen Donaldson <hcd@portlandmaine.gov>, Jean Fraser <JF@portlandmaine.gov>
Cc: Tuck O'Brien <tuckobrien@me.com>, Jeff Levine <JLEVINE@portlandmaine.gov>, Brian Batson <bbatson@portlandmaine.gov>

Submission of Comment to IOZ

In reviewing the memo to the Portland Planning Board Nell Donaldson regarding the Draft Institutional Overlay Zone (IOZ), several items came up as matters of concern.

Section 1c clearly and rightly states that the purpose of the IOZ is to
"Ensure that institutional change and growth both complements and, as appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions"

However, several elements of the plan run counter to this condition.

Foremost among them is the amount of surface parking, particularly the proposed 13 story lot slated for the Corner of Gilman and Congress Streets. Aside from the fact that parking structures are not typically built to such heights because they can cause dizziness; the placement of an inordinately tall structure will indubitably have a detrimental effect on adjacent properties.

A simple survey of existing garages on Congress, Crescent, and Forest Streets would show adjacent properties adversely affected. So much so, that were it be the cynical policy to erect garages to devalue adjacent properties; it would allow for more cost effective future expansion. In any case; the proposal is in direct conflict with this portion of the IOZ.

Secondly; part and parcel of IOZ for an institution of the type, size, and location of Maine Medical Center is a Traffic Demand Management program (TDM). The memo states that Meghan Houdlette, PE of the firm VHB has been brought on to assist in the fulfillment of this portion of the IOZ. It is however, of some concern that in a private meeting with Penny St. Louis of MMC and Basak Alkan; Ms. Alkan told me that the hospital have "no position" on the recommendations put forth in the Libbytown Traffic Circulation & Streetscape Study. This is concerning for several reasons:

- The hospital will only benefit from the implementation of the recommendations of the study
- MMC had previously endorsed the findings of the study, why the change of position?
- The adoption of the recommendations represents the bare minimum of what a 21st century TDM of a project of this scope should entail. The team should consider a

regional approach to transportation that encompasses all existing and future modes and systems including intercity park and rides, driverless cars, as well as bicycle and pedestrian infrastructure.

Finally, a graphic taken from the Public Meeting/Open House from January 12, 2017 shows a circular "1/4-mile walk radius" from surrounding areas to the MMC campus. However, the perimeter seems to reference an arbitrary center point within the MMC campus. To wit, the distance from a perimeter point on Grant Street to the nearest edge of the campus is twice that of one taken on Saint John Street. As such, the map is not terribly accurate and not as useful a tool as it could be.

Thank you for your kind attention to these matters.

Zack Barowitz,
Huntress Street

--
207-838-6120
917-696-5649
ZacharyBarowitz.com

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Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Re: Institutional Overlay Zone (IOZ) PB memo for 2.14.2016

1 message

Timothy wells <welmaurya@gmail.com> Mon, Feb 13, 2017 at 9:44 PM
To: Jean Fraser <jf@portlandmaine.gov>

Jean,

A couple of comments about the Institutional Overlay Zone draft.

1. I think the city should be more specific about the planning period. I noticed that several cities, including SF, Oakland, Berkley require hospitals and universities to submit 20 year plans every 5 years. I think Portland should adopt the same policy. 20 years actually isn't that long when you are planning large construction projects and forces some rigor and long term thinking about the smartest, most effective way to grow.

2. I think the city should require the institutions to answer the questions:

a) How will expansion impact economic growth for the city, county and state?
b) What will be the positive and negative effects on the immediate surrounding neighborhoods?How will the plans impact property prices?
c) What is the impact on city property taxes?

Thank you for including these for the meeting on Tuesday.

Best regards,

Tim

Tim Wells
207-807-3876 MOB

On Feb 10, 2017, at 5:35 PM, Jean Fraser wrote:

> Hello all
>
> Please find attached the staff cover Memo for the Planning Board at next Tuesdays meeting, along with the final agenda for the meeting. The Memo contains the "final draft" of the IOZ ordinance text.

My name is Robert P. Fuller, owning and residing at #37 College Street. My sister owns #33-35 College Street. Together our properties comprise a neighborhood, though small in size. For the last two years, save for a public College Street, we are completely surrounded by the UNE campus. This is probably a unique situation, considering the four institutions cited for an overlay zone.

Four generations have lived in the home at #37 College Street, built by my grandfather about 110 years ago. Within our surroundings we are afforded a good view on all four sides, especially out our front window at a historic district. It is relatively safe and peaceful here on a predominately graduate campus. Traffic is usually manageable, except with special events.

Communication between the institutions and the neighborhoods need improvement. Hopefully the overlay zone process will send communications and resultant outcomes to a high level of order that the public should expect and get from an institution.

As part of the total transparency process, it should not be unreasonable to obtain from each institution information about each building and structure as to function, hours of operation, and who uses it. City oversight must insure that any activities of the institution are in keeping with its charter, articles, and by-laws.

In terms of overlay zone and institutional development process, the more details on a plan, the better for the neighborhoods. Without a detail requirement, there is always the temptation for an institution to produce vague plans. Who can say what the impact will be upon a neighborhood with changes in lighting, trees, traffic, impervious surfaces, parking, drainage, surface elevations, air circulators, vents, generators, compressors, construction or maintenance work, kinds of machinery employed, added doorways, trash removal, deliveries, pick-ups, hours of operation, converging soundwaves/noises and so forth?

Setbacks, transitions and buffers are of paramount importance to all neighborhoods, no matter the size. Dimensional figures applied to bordering or abutting neighborhoods cannot be uniformly implemented with a fixed set of standards. One size does not fit all. Instead, each jog of the bounds that abut or adjoin an institution must be treated on a case by case basis.

The outcome of the overlay zone process should leave each neighborhood as good or better in terms of protection. Our neighborhood quality of life is at stake and so are our real property values.

February 19, 2017

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

IOZ

2 messages

Anne Pringle <oldmayor@maine.rr.com> Tue, Mar 7, 2017 at 6:05 PM
To: "Fraser, Jean" <jf@portlandmaine.gov>
Cc: "Watson,Trevor" <trevorewatson@gmail.com>, "O'Brien, Tuck" <sgo@portlandmaine.gov>, "Sanders, Jeff" <Sandej4@mmc.org>, "Peterson, Rich" <peterri@mmc.org>

Jean,

I have been working like a house afire to get ready to go on vacation tomorrow, but have not focused as well on the IOZ text as I had hoped. My energy level is running down to zero with all that is going on just before I leave...

But see attached proposed changes, comments, and questions on the latest draft of the IOZ. As I will be away I guess they should be sent to the PB, unless staff agrees wit everything and incorporates them into a new draft!...

A major concern is that the language seems to focus on accommodating institutional needs. See the language I suggest in the purpose statement to better balance neighborhood impact, **especially encroachment**. As I have noted twice, since I have learned that purpose statements have no legal import, I think this language needs to be pulled into the text. I am not sure what to make of the language in various sections about acquisition and disposition.

Re the process of engagement with the neighbors. I must say I am very impressed with our experience with MMC this time around vs. last time. Maybe it's just because we are dealing with different personalities. Jeff Sanders is very open and I believe he hears us. He is also very clear about the hospital's needs. I feel we are engaged in problem-solving, both theirs and, hopefully, ours. Hiring Basak Alkan was a great commitment on MMC's part. Maybe this kind of hire should be required to bring the institution along on the community planning spectrum...

Anne

2,28.17 IOZ draft AP.docz.docx
46K

2_28_17 revised draft IOZ

INSTITUTIONAL OVERLAY ZONE (IOZ)

I. Purpose of the Institutional Overlay Zone

The Institutional Overlay Zone (IOZ) designation provides a regulatory mechanism available to the city's four major medical and higher education campuses where an improved regulatory structure is needed to facilitate a consistent, predictable, and clear growth management process. The purposes of the Institutional Overlay Zone are to:

a. Acknowledge that the city's major academic and medical institutions play a prominent role in the health and well-being of the local and regional community, and in order to sustain that role, these institutions need flexibility to change and grow;

b. Encourage proactive planning for institutional change and growth which: identifies and addresses likely long-term institutional needs and potential benefit to the surrounding area, city, and regional levels; ~~and cumulative~~ evaluates the impact~~s~~ of any proposed encroachment into residential neighborhoods; and leverages ~~while leveraging~~ potential benefits ~~at~~ to the neighborhood, ~~city, and regional level~~; (**NOTE**: VERY important to address the issue of potential encroachment. What is meant by "leverages")

c. Ensure that institutional change and growth both complements and, as is appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions;

d. Support the formation and continuation of mutually beneficial public-private cooperation;

e. Support an ongoing public engagement process that benefits both the institutions and nearby neighborhoods;

f. Reflect Comprehensive Plan and other policy objectives; and

g. Provide a consistent regulatory approach to all major institutions, which allows unique regulatory requirements that balance the particular needs of institutions with the needs of the surrounding neighborhood and wider community.

II. Location and Applicability

The city's four primary medical and higher education institutions are eligible to apply for designation as Institutional Overlay Zones. The Eligible Institutions are the two major hospital institutions of Maine Medical Center and Mercy Hospital and the two major academic institutions of University of Southern Maine and University of New England, their successors and assigns. Designation as an IOZ is the preferred mechanism where the Eligible Institution's proposed development is inconsistent with the existing zoning.

III. Establishment of an Institutional Overlay Zone

a. *Application for an Institutional Overlay Zone.* Where the Eligible Institution seeks designation as an IOZ, they shall submit a zone change application consisting of two components:

   i. An Institutional Development Plan (IDP) (see Section IV).

   ii. A Regulatory Framework (see Section V) that would, when and if adopted, be the text and map amendment to the City's Land Use Code and Zoning Map.

b. *Required Public Involvement.* Soon after the City becomes aware of any institutional plan to request a zone change, the applicant shall advise any abutting neighborhood association(s) of its plan to request a zone change. (**NOTE**: earlier notices came up at a recent meeting of about 14 NAs.) At least two neighborhood meetings shall be required. The first shall be held prior to the formal submission of a zone change

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application for an Institutional Overlay Zone and the second shall be held during the City's review. Meetings shall identify the concerns, if any, of affected residents and property owners, and inform the development of the Institutional Development Plan (IDP) and Regulatory Framework. Meetings shall be held in a convenient location proximate to the institution. The applicant shall provide written notification to property owners of record within 500 feet of the proposed IOZ boundary at least ten days prior to the meeting dates and maintain written records of the meetings.

c. *Required Scoping Meeting*. The Eligible Institution shall meet with the Planning Authority after the first required neighborhood meeting and prior to submission of the zone change application to confirm the focus of the Institutional Development Plan (IDP) and Regulatory Framework, including **study areas that may be outside of the proposed IOZ boundary** (**NOTE:** What does t his mean?). The IDP and Regulatory Framework will vary in detail and focus depending on the Eligible Institution and its particular context. The content requirements in Sections IV and V and the comments from neighborhood meeting(s) shall provide direction for the content of the IDP. The Planning Authority or Planning Board may require additional information or modify content requirements as is relevant to the Eligible Institution (see Section IV.c).

d. *Reviewing Authority.*

i. The Planning Board shall review the zone change application, including the IDP and Regulatory Framework. ~~A~~ One or more public workshops and a public hearing before the Planning Board are required. (NOTE: Given the size and complexity of these institutions, I think it should be acknowledged up front that it likely than more than one workshop will be required.)

ii. Upon recommendation of the Planning Board, the City Council shall review and consider adoption of the Institutional Overlay Zone and the accompanying Regulatory Framework as an amendment to the city's code of ordinances.

e. *Future Institutional Development*.

i. All new development by the Eligible Institution within the boundary of the IOZ shall be compliant with the IOZ and accompanying Regulatory Framework, consistent with the IDP, consistent with the Comprehensive Plan, and meet applicable site plan standards, unless such standards are superseded by the Regulatory Framework.

ii. Any use/development proposed by the Eligible Institution outside the IOZ boundary that complies with the zoning for permitted uses in that location shall be reviewed under the standards of that zone. Any use/development proposed by an Eligible Institution outside of the IOZ boundary that is a conditional use in the zone in that location shall be addressed by the IDP. NOTE: What about use/development not compliant with underlying zones, e.g the West Street transplant center?)

IV. Institutional Development Plan *(IDP)*

a. *Purpose.* Any use conducted by an Eligible Institution and any construction by an Eligible Institution in an Institutional Overlay Zone shall be consistent with an Institutional Development Plan (IDP) approved by the Planning Board in accordance with this ordinance. The purpose of the IDP is to establish baseline data about institutional land uses, facilities, and services and measure, analyze, and address the anticipated or potential impacts of planned institutional growth and

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change. The IDP shall serve as a background document that supports the proposed Regulatory Framework and frames subsequent site plan review(s).

b. *Planning Horizon.* An IDP shall provide the city and abutting neighborhoods with a clear outline of the anticipated or potential growth and change of the Eligible Institution for the short- to medium-term (e.g. 1-5 and 5-10 years respectively), as well as a conceptual growth plan for the long-term (e.g. 10 years ~~plus~~ or more); however, the specific planning horizons for each institution will be determined as part of the IDP approval process.

c. *Content.* The IDP submission shall address the following elements unless specifically modified by the Planning Authority or Planning Board, with the scope and level of detail to be clarified at the required Scoping Meeting:

i. Context Information

1. The institution's adopted mission, vision, or purpose statement
2. A summary of relevant baseline data on the institution, including:
   a) A neighborhood context plan;
   b) An inventory of current programs and services;
   c) A current census of the number of people using the institution (e.g., employees, enrollment, patients), with an indication of maximums and minimums over time;
   d) An inventory and/or plan of all existing property holdings within the main campus and within the City of Portland, including an indication of functional land use links between off-campus properties and the main campus (e.g. remote parking);
   e) An inventory and/or plan of existing facilities, including data on use, floor area, and any existing functional connections between facilities.
3. A summary of the baseline characteristics of the existing campus and **context of the institution**, based on identified study areas, including:
   a) A summary of existing resources, such as historic, open space, and natural resources; **(Note:** does this mean, for example, the Western Prom in the case of MMC? Is the intent that the IDP demonstrate that it will not negatively affect these existing resources?
   b) A summary of the existing transportation system, including vehicular, pedestrian, transit, bicycle, and parking supply, demand, and utilization;
   c) A summary of existing public infrastructure supporting the institution, including demand, utilization and any capacity issues;
   d) Relevant municipal plans, projects, and studies that may influence the IDP study area and opportunities for integrating institutional growth.
4. A summary of public involvement in the development of the IDP, **including major areas of public concern**. Good!

ii. Assessment of Future Institutional Growth and Change

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2_28_17 revised draft IOZ

1. A description of institutional needs and areas of future institutional growth and change, including:
   a) Projected census of users (e.g., enrollment /employment/patient/visitor figures and anticipated variations over time);
   b) Institutional objectives for property both within and outside the IOZ boundary **(e.g. acquisition and/or disposition)**, including an indication of any functional land use connection for sites outside the IOZ boundary to the main campus; (**NOTE**: I think you are trying to address my suggestion that acquisition not be allowed outside that IOZ, but I am not sure this satisfies that suggestion. Again, this is the issue of encroachment, which should **NOT be allowed** into residential neighborhoods.
   c) A Development Plan addressing anticipated or potential institutional needs and physical improvements, including the proposed boundary of the IOZ and any phasing of the development.

2. Analysis and associated plans that address the following elements in terms of anticipated growth or potential impacts within the identified study area, and support the development parameters as set out in the Regulatory Framework:
   a) Transportation and access
      1) An analysis of the proposed changes in parking demand, supply, and impacts to the off-street and on-street parking capacity, including an explanation of the proposed parking plan;
      2) An analysis of the proposed changes in vehicular, pedestrian, transit, and bicycle access routes and facilities, their capacity, and safety;
      3) A transportation, access, and circulation plan, representing the synthesis of the analysis, and including a program of potential improvements or set of guidelines to address access deficiencies to and within the IOZ. The plan should outline proposed mechanisms and potential strategies to meet transportation objectives, including transportation demand management, phasing, and when a Traffic Movement Permit (TMP) may be required.
   b) Environment
      1) An analysis of potential **cumulative impacts** on natural resources and open spaces; (**NOTE**: impact of individual projects should be analyzed, as well as cumulative impact. Minor individual impacts can build up to a major cumulative impact. This is what happened with Waynflete over the years.
      2) An analysis of projected energy consumption, hazardous materials generation, noise generation, and similar issues as relevant;
      3) An environmental plan, representing the synthesis of the analysis and including a proposed program or set of guidelines for future preservation, enhancement, conservation, and/or mitigation.

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c) Infrastructure

1) An analysis of projected public utility demand and the capacity of associated infrastructure;
2) An analysis of projected public safety needs and projected impacts to the capacity of these services;
3) An infrastructure plan, representing the synthesis of the analysis and including a proposed program or set of guidelines to support sustainable growth.

d) Design

1) An analysis of projected impacts to neighboring properties and public spaces, including potential shadow, wind, and lighting impacts, impacts of height and massing, and impacts to natural and historic resources;
2) An analysis of transition areas between the institution and adjoining neighborhoods, including identification of key character defining components of the surrounding context;
3) An analysis of existing Crime Prevention Through Environmental Design issues and identification of how these principles would be addressed as part of the proposed campus development;
4) A conceptual built environment/public realm plan, representing the synthesis of the analysis and including a set of guidelines for urban design, landscape, open space, and streetscape treatments, **with particular attention to the treatment of edges (both within and abutting the IOZ boundary**) to achieve compatible transitions. Good.

e) Neighborhood Engagement

1) A plan for ongoing community engagement that represents best practices, promotes collaborative problem solving around community concerns, fosters transparency, and identifies mechanisms for neighborhood feedback and institutional accountability; Good!
2) A property management framework that identifies the institution's process for handling operational property issues with neighbors; Good!
3) Strategies for assuring **reasonably transparent** (**NOTE**: MMC was not at all transparent about the sale of the residential properties as required the contract zone. They really kept us in the dark for years on this. Need to be more explicit about what is meant by "reasonably transparent"? communication pertaining to **property acquisition and disposition in surrounding neighborhoods** (**NOTE**: This should not be allowed – encroachment! The whole purpose of the IOZ is predictability **BOTH** for the institution and the neighborhood.;
4) A set of construction management principles, to apply to all institutional construction, that represent best practice, aim to minimize short- and long-term construction impacts on surrounding residents and businesses, and ensure a clear

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communication strategy is in place in advance of construction.

d. *Standards of Review*. The IDP shall:

i. Address all content requirements, unless explicitly modified by the Planning Authority or Planning Board;

ii. Reflect the issues/topics identified in the required public process;

iii. Demonstrate consistency with the city's Comprehensive Plan and the purpose of this ordinance;

iv. Demonstrate how the property ownership, proposed growth, and requested Regulatory Framework relate to the institution's mission;

v. Demonstrate that traffic and parking impacts have been anticipated and that the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands;

vi. Outline an approach to open space, natural, and historic resources that supports preservation and enhancement.

vii. Demonstrate that potential cumulative environmental impacts have been anticipated and can be minimized or satisfactorily mitigated;

viii. Demonstrate that utility impacts have been anticipated and can be minimized or satisfactorily mitigated;

ix. Reflect a comprehensive design approach that ensures appropriate transitions with the existing or future scale and character of the neighboring urban fabric;

x. ~~Promote~~ Demonstrate compatibility with surrounding uses in adjacent neighborhoods, **maintain housing**, and support local amenities;

xi. **Anticipate future off-site improvements that would support the integration of the institution into the community and city-wide infrastructure;** **NOTE**: What does this mean?

xii. Conform with Portland's Historic Preservation Ordinance standards for designated landmarks or for properties within designated historic districts or designated historic landscapes, if applicable. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts, or historic landscapes, the IDP shall be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity; and

xiii. Incorporate strategies to support clear communication and ongoing public engagement between institutions and nearby neighbors.

e. *Approval.* Upon finding that an Eligible Institution's IDP meets the standards of review, the Planning Board shall approve, approve with conditions, or deny an IDP.

f. *Monitoring.* The IDP shall establish a schedule for reporting on IDP implementation at regular intervals of not more than ten years from the date of approval of the initial or amended IDP, and identify thresholds for IDP amendments;

g. *Amendments.* An approved IDP shall guide campus development unless and until amended. If at any time the Eligible Institutions request **minor amendments** (how defined?)to an approved IDP, the Planning Authority may approve such minor amendments, provided that they do not constitute a

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substantial alteration (How defined?)of the IDP and do not affect any condition or requirement of the Planning Board. The applicant shall apply with a written statement of the proposed amendment and proposed amended IDP to the Planning Authority, whose decision as to whether the amendment is minor shall be final. Major amendments shall be reviewed by the Planning Board. When the IDP is amended, the baseline data in the IDP shall be updated as appropriate.

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V. Regulatory Framework

a. *Purpose*. The Regulatory Framework translates the IDP into a set of clear and specific zoning requirements for the IOZ that constitute the text and map amendments to the City's Land Use Code and Zoning Map. The zoning requirements are anticipated to include parameters that guide the growth and change of the institution as well as clarify how potential impacts will be addressed, though some details may be more fully developed under site plan review.

b. *Applicability.* The Regulatory Framework shall apply only to properties that are within the IOZ boundary and to which the Eligible Institution holds right, title, and interest. For these properties, the Institutional Overlay Zone shall supersede the underlying zoning, and all new institutional development shall be conducted in compliance with the Regulatory Framework and the approved Institutional Development Plan. Properties located within the Institutional Overlay Zone not subject to right, title, or interest of the Eligible Institution shall continue to be governed by the regulations of the underlying zoning designation.

c. *Uses*. Institutional uses, including hospitals and higher education facilities, shall be permitted, as shall uses that are functionally integrated with, ancillary to, and/or substantively related to supporting the primary institutional use, consistent with the applicable approved IDP.

d. *Content*. The Regulatory Framework shall reflect the information and analysis of the IDP. The content shall be tailored to address the particular issues associated with the institution and its neighborhoods. The Regulatory Framework should be succinct and use tables and graphics as possible to address the following:

i. *Zoning boundary of the IOZ*: The area to which the regulations apply, as shown on the zoning map, subject to other provisions of this ordinance (i.e. the map amendment to the City's Zoning Map);

ii. *Phasing and schedules:* Requirements that relate to particular proposed phases; a chart showing the schedule or thresholds for submitting an amended IDP (or elements of an IDP, such as a Transportation Demand Management (TDM) Plan);

iii. *Uses:* Clarification, as necessary, on permitted uses.

iv. *Dimensional Requirements*: Graphics, sketches, or standards, including details for transition zones within the IOZ boundary;

v. *Transportation*: Elements such as TDM trip reduction targets or contribution to area-wide TDM measures; broad parameters for ensuring pedestrian, vehicular, bicycle and transit access and safety; parking ratios and management strategies; thresholds for access improvements;

vi. *Environment:* The approach to the inclusion of open space and preservation of environmentally-sensitive areas;

vii. *Mitigation measures*: The approach to identified mitigation measures, which would be addressed in greater detail in the site

plan review process; thresholds for addressing deficiencies; goals for preservation/protection;

viii. *Design*: Graphics and standards to clarify building placement and envelope (height and massing); guidelines for integration of site features; required treatments for transition zones and treatment for all edges (both within and abutting the IOZ boundary); guidelines for establishing campus identity; and

ix. *Neighborhood Integration:* Thresholds and strategies for neighborhood engagement; mitigation of impacts on neighboring properties, including construction impacts; screening and buffering requirements; objectives for pedestrian linkages and safety; other requirements that address community concerns.

x. *Monitoring:* A schedule for regular monitoring reports on IDP implementation in accordance with the IDP.

e. *Standards of Review:* The Regulatory Framework shall:

i. Be consistent with the Comprehensive Plan and the Institutional Development Plan;

ii. Provide a clear zoning framework, using graphics and tables as appropriate, to apply to future site plan reviews;

iii. Provide specific regulatory statements as appropriate that respond to concerns raised during the required public involvement; and

iv. Outline measurable goals and thresholds for improvements or other actions identified in the IDP to be advanced in subsequent site plan applications.

f. *Approval/Adoption.* The Planning Board shall review the proposed Regulatory Framework against the standards of review and make a recommendation on the institution's IOZ designation and Regulatory Framework to the City Council for adoption as part of this zoning ordinance.

g. *Amendments.* A Regulatory Framework and IOZ boundary as adopted by the City Council shall remain in force unless and until amended. Amendments to a Regulatory Framework and/or IOZ boundary not brought forth by the institution as part of an IDP amendment will require a supermajority of the City Council to take effect. Amendments to the IOZ boundary or Regulatory Framework shall be reviewed by the Planning Board and adopted by the City Council subject to the provisions of this ordinance.

VI. Regulatory Frameworks of Eligible Institutions (The regulatory frameworks adopted by the Council for each Eligible Institution will be codified within this section.)

Attachment 3

SUMMARY OF DISCUSSIONS AT THE FOUR IOZ PLANNING BOARD WORKSHOPS

- *November 15, 2016:* The November 15 workshop introduced the concept of an IOZ, with the components of an IDP and Regulatory Framework, outlined in general terms.

- *December 13, 2016:* The December 13 workshop presented a more detailed outline of the IOZ. The Planning Board offered a number of suggestions for the IDP/Regulatory Framework, including the need for:
  - Clear boundaries and the locations of the institution's property;
  - Indication of future phases/potential long term development;
  - Regulations that are less specific and less prescriptive than traditional zoning;
  - Focus on transitions with neighboring areas; and
  - Long-term perspective on traffic and TDM and adaptive reuse of buildings/parking areas.

  Comments on the IOZ zoning text included:
  - Encourage transparency;
  - Address property acquisition;
  - Include requirements for healthy neighborhood engagement; and
  - Allow for flexibility.

- *January 10, 2017:* The January 10 workshop presented detailed text for all sections of the IOZ ordinance, except for the IDP content section, which was under development with reviewers and other departments at the time. Examples of five other IOZ ordinances that illustrated slightly different approaches were attached to the Planning Board memo. Key issues were identified in the memo and discussed by the Board, including which institutions should be eligible for IOZ designation, how and whether the IDP should address properties geographically distinct from the institutions' main campuses, how to manage amendments or changes to the IDP and IOZ, how to address public engagement in the IDP, the planning horizon for the IDP and what level of detail to require in the IDP itself.

  The Board discussion included the following comments:
  - Transition zones should be both within and abutting the institutional property and IOZ boundary and be guided by design standards;
  - All institutional property should be listed in the IDP;
  - Need both shorter-term and longer-term outlook (with some discussion on extent of "longer-term");
  - IDP reviews, including updates should be required (though there was not a consensus on whether these should be on a regular basis or in response to triggers, maybe identified by the institution);
  - Neighborhood engagement should follow best practice (and may need separate guidelines); and
  - Scoping meeting a useful concept.

- *February 14, 2017:* The Planning Board memo workshop focused on a revised draft IOZ text that aimed to address the public's, institution's, and Planning Board's comments raised at the December and January meetings.

  New issues were discussed, including whether designation of an IOZ should be required for institutions and whether the designation would confer some certainty for the institution similar to "pending proceeding status" under the city's ordinance provisions for Master Development Plans. [Note: These were further addressed in the subsequent communication circulated to the Board (and placed on the city's website) on February 28th (*Attachment 4 to the Report*).] The discussion also covered other questions, such as the planning horizon for the IDP and the requirements for IDP reviews/updates.

Memorandum
Planning and Urban Development Department
Planning Division

To: Chair Boepple and Members of the Portland Planning Board

From: Nell Donaldson and Jean Fraser, Planning Division

Date: February 28, 2017

Re: **Communication re Draft Institutional Overlay Zone (IOZ)**

Following the Planning Board's February 14, 2017 workshop on the draft Institutional Overlay Zone, staff has developed a strategy for editing the text to address the Board's, the Eligible Institutions', and the public's comments. While a revised draft is still under internal review and is not presented here in this communication, a synopsis of proposed changes follows. The intent is to make the Board, the public, and the Eligible Institutions aware of the direction staff is proposing with respect to each of the outstanding questions in advance of a planned public hearing on March 14, 2017.

Proposed Approach to Outstanding Questions

1. *Mandatory v. Voluntary IOZ.* At the Planning Board workshop on February 14, the Board engaged in considerable discussion around whether the creation of Institutional Development Plans and designation as Institutional Overlay Zones should be voluntary or mandatory for Eligible Institutions. As written, the Institutional Overlay Zone language presents designation as a voluntary endeavor ("The city's four primary medical and higher education institutions are eligible to apply for designation as Institutional Overlay Zones.") Staff feel that the IDP process provides such significant benefits to the Eligible Institutions, the community, and the city, and that over time adoption will be universal. In addition, the language of the new comprehensive plan strongly encourages the institutions toward the adoption of IDPs as best practice. Staff have provided a chart which demonstrates various approaches taken to encourage/require IDP-like planning for institutions across the country *(Attachment 1)*. Based on this chart, several other ideas to consider are:
    a. Tying IOZ designation to certain development triggers either based on project size (e.g. projects over 50,000 s.f.);
    b. Requiring IOZ designation when and if an institution requires a change to their existing zoning regime; or
    c. Setting a timeframe for IOZ designation by all Eligible Institutions (e.g. by 2020).
2. *Guarantees/Pending Proceeding Status.* At the workshop and in the time since, several Eligible Institutions have raised questions about the degree of certainty in regulation that the IOZ would provide. Institutions have argued that it should provide a guarantee similar to the entitlement provided by the Master Development Plan provisions of Chapter 14. Although staff does not feel

that the pending proceeding designation is applicable since an IDP is not a project entitlement application but a planning and regulatory process, we do strongly agree that some sort of certainty should result from the significant effort needed to properly complete an IDP. Currently we are considering that, for regulatory changes not requested by the institution as part of an IP or IDP amendment, a supermajority of the council be required to change an approved IOZ.

3. *Planning Horizon.* Planning Board members and members of the public advocated that the IOZ text should explicitly address the question of the horizon of the Institutional Development Plan and, in particular, address the need for long-range planning. As written, the language leaves that horizon to each institution, as each has their own planning conventions based on their industry, funding cycles, and other variables. In order to provide more definition around this question, however, staff proposes to add language that requires each Eligible Institution to provide a growth plan not only for the short- to medium-term (1-5 and 5-10 years), but also for the long-term (10+ years), as elements of the IDP. The specific parameters for each institution will be defined for each institution during its IDP approval process.

4. *Required Updates and Amendments.* At the workshop, there was some lack of clarity on when and if an update or amendment to the IDP would be required. In order to simplify, staff proposes first to eliminate references to "updates" in favor of the more general term, "amendments." Second, staff proposes to add language that requires the IDP to include a "schedule for reporting on IDP implementation at regular intervals of not more than ten years from the date of approval of the initial or amended IDP" and "identify thresholds for amendments." Similar language is proposed for the Regulatory Framework.

5. *Standards of IDP Review.* To address concerns raised at the workshop regarding the IDP's treatment of open space and consistency and clarity of review standards, staff proposes to add an IDP review standard that requires that the IDP outline an approach to open space, natural, and historic resources that supports preservation and enhancement.

6. *Relationship to Comprehensive Plan.* At the February 14 workshop, questions were also raised about the relationship of the proposed IOZ ordinance to the city's comprehensive plan, which is currently under final review. The comprehensive plan contemplates institutional development in several capacities. Supporting "sustainable growth in our educational and medical institutions" appears as an explicit economic goal of the plan, and promoting "the orderly expansion of institutional uses, such as educational and hospital campuses, which are central to workforce development, employment, and the health of the local and regional economies" is defined as one of many economic strategies for the future. Last, the main campuses of the four Eligible Institutions are identified on the Priority Nodes and Corridors map as areas for further study and investment.

7. *Housekeeping.* Last, staff proposes several more minor modifications meant to improve consistency and clarity across the entire text. These include:
    a. Eliminating references to the "waiver" of IDP content requirements in favor of language that indicates that content requirements may be "modified."
    b. Adding language that requires the Eligible Institution to provide an inventory of "all existing property holdings within the main campus and within the city of Portland" in

their baseline data, and to clarify that a use/development proposed by an Eligible Institution outside the IOZ boundary that does not comply with the zoning for permitted uses (e.g. requires conditional use approval) must be addressed by the IDP.

c. Adding language to require that the construction management framework provided in the IDP represent best practices, "aim to minimize short- and long-term construction impacts on surrounding residents and businesses, and ensure a clear communication strategy is in place in advance of construction." The language requiring a construction management framework aims to give the community and any potential contractor knowledge of the concerns that need to be addressed during construction. Specific contractor requirements would be deferred to subsequent site plan review.
d. Clarifying the timing on required public meetings, successors and assigns, and the council's role in "considering adoption" of the IOZ and accompanying Regulatory Framework.

Public Comment

At the February 14 workshop over the course of this process, staff and the Planning Board have fielded numerous public comments on the Institutional Overlay Zone language. Common comments and responses have been collated and are included here as *Attachment 2.* Staff have also developed a graphic to illustrate the process of developing the Institutional Overlay Zone language, the subsequent process of developing and reviewing the institution-specific IDPs and Regulatory Frameworks, and ultimately, the process of site plan review for each institution *(Attachment 3).*

Attachments

1. Examples of Institutional Zoning – Comparison of Key Provisions
2. Summary of Public Comments and Responses
3. IOZ Process Graphic

Examples of Institutional Zoning – Comparison of Key Provisions (includes those ordinances that address process as well as regulations)

Provision/ Municipality	Biddeford ME	Providence RI	Pittsburgh, PA	Seattle WA	Yakima WA	Richmond, VA	San Francisco
Planning Horizon	5 years	10 year goals and 5 year objectives/implementation strategies	At least 25 years (different requirements for "10 yr envelope" and "25 yr development sites"	None mentioned	None mentioned	None mentioned	Not less than 10 years
Mandatory vs Voluntary	Mandatory within 2 years for any use conducted by university and for any site plan approval, except pending applications to be processed	Mandatory and no building permit will be issued if master plan is older than 5 years	Mandatory prior to any development in district, (required within 3 years of the date of the ordinance becoming effective) although minor projects may be approved if meet criteria listed	Determined by Director; "Any major institution may elect to prepare a master plan" but required to do so if new, if expanding (several definitions), does not meet existing zoning, impacts residential structure, ex MP over 10 yrs old and want to expand. IOZ specifies some developments that may be approved prior to MP adoption.	Required only where in or abutting a residential district; either City or institution may sponsor establishment	IDP required for particular uses	All institutions must file an Institutional Master Plan; to be updated every 2 years
Minimum Area of IOZ/district and applicable institutions	None mentioned; college or university	None mentioned; health care institutions and university/college educational facilities	Refers to "large" (no definition); applies to educational and medical institutions such as hospitals, colleges and universities	"Major" institutions require overlay zone (defined by floorspace); applies to medical and educational institutions	5 acres; includes hospitals and higher educational facilities.	Applies to a range of institutional uses that may be included	Floorspace determines content required in IMP; applies to medical and post-secondary educational institution.
Regular reviews/factual updates	Up to the institution-no review period	Must be updated every 5 years	IDP expires after 10 years	Requires annual status report (re progress).	Not mentioned	Not mentioned	Updates required every 2 years
Amendments	Institution may request an amendment at any time.	Updates must show amendments; identified dev. actions are not considered amendments	Same as for new plan; minor revisions exempted.	Institutions may request amendments; includes detailed definitions and criteria for exempt; minor and major.	Institutions may request amendments; mentions three general levels of review.	Not mentioned	New (amended) IMP required based on triggers and at least every 10 years
Public engagement in IOZ process	None re IOZ designation	Minimum of one neighborhood meeting	None in addition to formal PB hearings	Institution establishes Citizens Advisory Committee to participate directly in formulation of IDP (more detail provided).	Two public meetings required prior to formal filing of IOZ application (hel by applicant).	None in addition to Planning commission meetings (review is based mostly on the Directors' Report)	None in addition to formal hearings, but 10 paper copies of IMP's required.

Summary of Public Comments and Responses (December 2016-February, 2017)

Issue/Concern (in frequency order, highest to lowest)	How IOZ revised to address
Justification for the proposed parking provision and importance of TDM	The IOZ language has been strengthened to specifically include (in the IDP standards of review, IVdv) "*Demonstrate that ….the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands*". The Regulatory Framework contents refers to trip reduction targets and TDM measures.
Height and design of new buildings and associated impacts eg shadows, edge massing and transitions **Construction impacts eg noise, vibration, nuisance, construction parking** **Traffic impacts eg in neighborhood and on surrounding highways, including re pedestrian access** **Environmental impacts eg re drainage, loss of pervious surfaces, and noise**	The IOZ language has introduced more detailed requirements for the IDP, including extensive information and analysis of the proposals, their impacts, and a proposed outline of measures /improvements/plans to address these. The IDP/Regulatory Framework review standards and Regulatory Framework contents include specific review criteria. The IOZ provides an overall framework, and these issues (as well as other impacts noted below) would be considered in greater detail when specific development proposals are considered during the site plan review.
Local impacts such as employee smoking, lighting, and loss of open spaces	Clearer references to "open space" have been added to the IOZ text re submission content and standards of review. A standard of review for the Regulatory Framework is to "*Provide specific regulatory statements as appropriate that respond to concerns raised during the required pubic involvement"*- and this would address local issues as raised.
Need for constructive public engagement	The IDP content requirements includes a detailed section on "neighborhood engagement" that highlights the need for ongoing engagement that reflects "best practices" for communication and dialogue, and ensures that construction impacts and ongoing property management issues are anticipated and addressed.
Encroachment into residential areas/divestment of properties in residential areas	The IDP content requires an inventory of all of the institution's property within the City of Portland, an indication of the functional land use links between off-campus properties and the main campus, and a statement of objectives for the properties as related to the mission of the institution. Where the use/proposal would be a conditional use under current residential zoning, it would need to be addressed in the IDP.
Need for long range planning and clearer timeframes	The IOZ text clarifies that the time horizon for the IDP would focus on the anticipated or potential growth and changes for the short to medium term, and include a conceptual growth plan for the long term (10+ years). The precise timeframes would be identified by the institution to reflect their mission and business plan.
Economic impacts	An institutional expansion or zoning change could have potential broad economic impacts such as on property values and tax revenues, but such impacts are very difficult to anticipate, quantify and evaluate as part of the IOZ process. More specific identifiable impacts would be addressed by the IDP and Regulatory Framework (and Site Plan re details).
Inclusion of other institutions	The focus for the initial IOZ is on the larger institutions that may require special zoning if their future development is not consistent with existing zoning. It is anticipated that the IOZ process would be extended once it has been fine-tuned.

Institutional Overlay Zone (IOZ) Enabling Legislation Review

Draft IOZ ordinance

Planning Board review

City Council review

Adoption as part of land use code

Final IOZ ordinance

Eligible Institution's IOZ Review

Required public meeting

Scoping meeting

Draft IDP

Draft Regulatory Framework

Required public meeting

Planning Board review

Planning Board approval

Final IDP

Final Draft Regulatory Framework

Planning Board recommendation

City Council review

Final Regulatory Framework

Adoption of Regulatory Framework as part of land use code

Site Plan Review

Preliminary Project

Required public meeting

Planning Board review

Project approval

Final Project

Denotes opportunity for public involvement

Memorandum
Planning and Urban Development Department
Planning Division

To: Chair Boepple and Members of the Portland Planning Board

From: Nell Donaldson and Jean Fraser, Planning Division

Date: March 24, 2017

Re: **Addendum to Planning Board Report – Institutional Overlay Zone**

I. INTRODUCTION

Earlier this month, the city's Planning Division cancelled the March 14 Planning Board meeting due to a winter storm. The public hearing on the Institutional Overlay Zone, which was planned for the March 14 meeting, was rescheduled to March 28. In the intervening time, staff has met with Maine Medical Center to discuss the development of their Institutional Overlay Zone application. During these discussions, staff and MMC identified several small edits to the proposed IOZ text amendment language to clarify the requirements around the content of the Regulatory Framework and future IOZ and IDP amendments. The final, revised language is presented below (with edits underlined), as is a motion for the board to consider.

II. REVISED PROPOSED INSTITUTIONAL OVERLAY ZONE TEXT AMENDMENT

I. Purpose of the Institutional Overlay Zone

The Institutional Overlay Zone (IOZ) designation provides a regulatory mechanism available to the city's four major medical and higher education campuses where an improved regulatory structure is needed to facilitate a consistent, predictable, and clear growth management process. The purposes of the Institutional Overlay Zone are to:

a. Acknowledge that the city's major academic and medical institutions play a prominent role in the health and well-being of the local and regional community, and in order to sustain that role, these institutions need flexibility to change and grow;

b. Encourage proactive planning for institutional change and growth which identifies and addresses likely long-term institutional needs and cumulative impacts while leveraging potential benefits at the neighborhood, city, and regional level;

c. Ensure that institutional change and growth both complements and, as appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions;

d. Support the formation and continuation of mutually beneficial public-private cooperation;

e. Support an ongoing public engagement process that benefits both the institutions and nearby neighborhoods;

f. Reflect Comprehensive Plan and other policy objectives; and

g. Provide a consistent regulatory approach to all major institutions which allows unique regulatory requirements that

balance the particular needs of institutions with the needs of the surrounding neighborhood and wider community.

II. Location and Applicability

The city's four primary medical and higher education institutions are eligible to apply for designation as Institutional Overlay Zones. The Eligible Institutions are the two major hospital institutions of Maine Medical Center and Mercy Hospital and the two major academic institutions of University of Southern Maine and University of New England, their successors and assigns. Designation as an IOZ is the preferred mechanism where the Eligible Institution's proposed development is inconsistent with the existing zoning.

III. Establishment of an Institutional Overlay Zone

a. *Application for an Institutional Overlay Zone.* Where the Eligible Institution seeks designation as an IOZ, they shall submit a zone change application consisting of two components:

   i. An Institutional Development Plan (IDP) (see Section IV).

   ii. A Regulatory Framework (see Section V) that would, when and if adopted, be the text and map amendment to the City's Land Use Code and Zoning Map.

b. *Required Public Involvement.* At least two neighborhood meetings shall be required. The first shall be held prior to the formal submission of a zone change application for an Institutional Overlay Zone and the second shall be held during the City's review. Meetings shall identify the concerns, if any, of affected residents and property owners, and inform the development of the Institutional Development Plan (IDP) and Regulatory Framework. Meetings shall be held in a convenient location proximate to the institution. The applicant shall provide written notification to property owners of record within 500 feet of the proposed IOZ boundary at least ten days prior to the meeting dates and maintain written records of the meetings.

c. *Required Scoping Meeting*. The Eligible Institution shall meet with the Planning Authority after the first required neighborhood meeting and prior to submission of the zone change application to confirm the focus of the Institutional Development Plan (IDP) and Regulatory Framework, including associated study areas that may be outside of the proposed IOZ boundary. The IDP and Regulatory Framework will vary in detail and focus depending on the Eligible Institution and its particular context. The content requirements in Sections IV and V and the comments from neighborhood meeting(s) shall provide direction for the content of the IDP. The Planning Authority or Planning Board may require additional information or modify content requirements as is relevant to the Eligible Institution (see Section IV.c).

d. *Reviewing Authority.*

   i. The Planning Board shall review the zone change application, including the IDP and Regulatory Framework. At least one public workshop and a public hearing before the Planning Board are required.

   ii. Upon recommendation of the Planning Board, the City Council shall review and consider adoption of the

Institutional Overlay Zone and the accompanying Regulatory Framework as an amendment to the city's code of ordinances.

e. *Future Institutional Development*.

i. All new development by the Eligible Institution within the boundary of the IOZ shall be compliant with the IOZ and accompanying Regulatory Framework, consistent with the IDP, consistent with the Comprehensive Plan, and meet applicable site plan standards, unless such standards are superseded by the Regulatory Framework.

ii. Any use/development proposed by the Eligible Institution outside the IOZ boundary that complies with the zoning for permitted uses in that location shall be reviewed under the standards of that zone. Any use/development proposed by an Eligible Institution outside of the IOZ boundary that is proposed in a residential zone and is functionally related to the operations within the IOZ shall be addressed by the IDP.

IV. Institutional Development Plan *(IDP)*

a. *Purpose.* Any use conducted by an Eligible Institution and any construction by an Eligible Institution in an Institutional Overlay Zone shall be consistent with an Institutional Development Plan (IDP) approved by the Planning Board in accordance with this ordinance. The purpose of the IDP is to establish baseline data about institutional land uses, facilities, and services and measure, analyze, and address the anticipated or potential impacts of planned institutional growth and change. The IDP shall serve as a background document that supports the proposed Regulatory Framework and frames subsequent site plan review(s).

b. *Planning Horizon.* An IDP shall provide the city and abutting neighborhoods with a clear outline of the anticipated or potential growth and change of the Eligible Institution for the short- to medium-term (e.g. 1-5 and 5-10 years respectively), as well as a conceptual growth plan for the long-term (e.g. 10 years or more); however, the specific planning horizons for each institution will be determined as part of the IDP approval process.

c. *Content.* The IDP submission shall address the following elements unless specifically modified by the Planning Authority or Planning Board, with the scope and level of detail to be clarified at the required Scoping Meeting:

i. Context Information

1. The institution's adopted mission, vision, or purpose statement
2. A summary of relevant baseline data on the institution, including:
   a) A neighborhood context plan;
   b) An inventory of current programs and services;
   c) A current census of the number of people using the institution (e.g., employees, enrollment,

patients), with an indication of maximums and minimums over time;

d) An inventory and/or plan of all existing property holdings within the main campus and within the City of Portland, including an indication of functional land use links between off-campus properties and the main campus (e.g. remote parking);

e) An inventory and/or plan of existing facilities, including data on use, floor area, and any existing functional connections between facilities.

3. A summary of the baseline characteristics of the existing campus and context of the institution, based on identified study areas, including:

a) A summary of existing resources, such as historic, open space, and natural resources;

b) A summary of the existing transportation system, including vehicular, pedestrian, transit, bicycle, and parking supply, demand, and utilization;

c) A summary of existing public infrastructure supporting the institution, including demand, utilization and any capacity issues;

d) Relevant municipal plans, projects, and studies that may influence the IDP study area and opportunities for integrating institutional growth.

4. A summary of public involvement in the development of the IDP, including major areas of public concern.

ii. Assessment of Future Institutional Growth and Change

1. A description of institutional needs and areas of future institutional growth and change, including:

a) Projected census of users (e.g., enrollment /employment/patient/visitor figures and anticipated variations over time);

b) Institutional objectives for property both within and outside the IOZ boundary (e.g. acquisition and/or disposition), including an indication of any functional land use connection for sites outside the IOZ boundary to the main campus;

c) A Development Plan addressing anticipated or potential institutional needs and physical improvements, including the proposed boundary of the IOZ and any phasing of the development.

2. Analysis and associated plans that address the following elements in terms of anticipated growth or potential impacts within the identified study area, and support the development parameters as set out in the Regulatory Framework:

a) Transportation and access

1) An analysis of the projected changes in parking demand, supply, and impacts to the off-street and on-street parking capacity, including an explanation of the proposed parking plan;

2) An analysis of the projected changes in vehicular, pedestrian, transit, and bicycle access routes and facilities, their capacity, and safety;

3) A transportation, access, and circulation plan, representing the synthesis of the analysis, and including a program of potential improvements or set of guidelines to address access deficiencies to and within the IOZ. The plan should outline proposed mechanisms and potential strategies to meet transportation objectives, including transportation demand management, phasing, and when a Traffic Movement Permit (TMP) may be required.

b) Environment

1) An analysis of potential cumulative impacts on natural resources and open spaces;

2) An analysis of projected energy consumption, hazardous materials generation, noise generation, and similar issues as relevant;

3) An environmental plan, representing the synthesis of the analysis and including a proposed program or set of guidelines for future preservation, enhancement, conservation, and/or mitigation.

c) Infrastructure

1) An analysis of projected public utility demand and the capacity of associated infrastructure;

2) An analysis of projected public safety needs and projected impacts to the capacity of these services;

3) An infrastructure plan, representing the synthesis of the analysis and including a proposed program or set of guidelines to support sustainable growth.

d) Design

1) An analysis of projected impacts to neighboring properties and public spaces, including potential shadow, wind, and lighting impacts, impacts of height and massing, and impacts to historic resources;

2) An analysis of transition areas between the institution and adjoining neighborhoods, including identification of key character defining components of the surrounding context;

3) An analysis of existing Crime Prevention Through Environmental Design issues and identification of how these principles would be addressed as part of the proposed campus development;

4) A conceptual built environment/public realm plan, representing the synthesis of the analysis and including a set of guidelines for urban design, landscape, open space, and streetscape treatments, with particular attention to the treatment of edges (both within and abutting the IOZ boundary) to achieve compatible transitions.

e) Neighborhood Engagement

1) A plan for ongoing community engagement that represents best practices, promotes collaborative problem solving around community concerns, fosters transparency, and identifies mechanisms for neighborhood feedback and institutional accountability;

2) A property management framework that identifies the institution's process for handling operational property issues with neighbors;

3) Strategies for assuring communication pertaining to property acquisition and disposition in surrounding neighborhoods;

4) A set of construction management principles, to apply to all institutional construction, that represent best practice, aim to minimize short- and long-term construction impacts on surrounding residents and businesses, and ensure a clear communication strategy is in place in advance of construction.

d. *Standards of Review*. The IDP shall:

i. Address all content requirements, unless explicitly modified by the Planning Authority or Planning Board;

ii. Reflect the issues/topics identified in the required public process;

iii. Demonstrate consistency with the city's Comprehensive Plan and the purpose of this ordinance;

iv. Demonstrate how the property ownership, proposed growth, and requested Regulatory Framework relate to the institution's mission;

v. Demonstrate that traffic and parking impacts have been anticipated and that the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands;

vi. Outline an approach to open space, natural, and historic resources that supports preservation and enhancement.

vii. Demonstrate that potential cumulative environmental impacts have been anticipated and can be minimized or satisfactorily mitigated;

viii. Demonstrate that utility impacts have been anticipated and can be minimized or satisfactorily mitigated;

ix. Reflect a comprehensive design approach that ensures appropriate transitions with the existing or future scale and character of the neighboring urban fabric;

x. Promote compatibility with existing or future uses in adjacent neighborhoods, maintain housing, and support local amenities;

xi. Anticipate future off-site improvements that would support the integration of the institution into the community and city-wide infrastructure;

xii. Conform with Portland's Historic Preservation Ordinance standards for designated landmarks or for properties within designated historic districts or designated historic landscapes, if applicable. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts, or historic landscapes, the IDP shall be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity; and

xiii. Incorporate strategies to support clear communication and ongoing public engagement between institutions and nearby neighbors.

e. *Approval.* Upon finding that an Eligible Institution's IDP meets the standards of review, the Planning Board shall approve, approve with conditions, or deny an IDP.

f. *Monitoring.* The IDP shall establish a schedule for reporting on IDP implementation at regular intervals of not more than ten years from the date of approval of the initial or amended IDP, and identify thresholds for IDP amendments;

g. *Amendments.* An approved IDP shall guide campus development unless and until amended. If at any time the Eligible Institutions request minor amendments to an approved IDP, the Planning Authority may approve such minor amendments, provided that they do not constitute a substantial alteration of the IDP and do not affect any condition or requirement of the Planning Board. The applicant shall apply with a written statement of the proposed amendment and proposed amended IDP to the Planning Authority, whose decision as to whether the amendment is minor shall be final. Major amendments shall be reviewed by the Planning Board. When the IDP is amended, the baseline data in the IDP shall be updated as appropriate.

V. Regulatory Framework

a. *Purpose*. The Regulatory Framework translates the IDP into a set of clear and specific zoning requirements for the IOZ that constitute the text and map amendments to the City's Land Use Code and Zoning Map. The zoning requirements are anticipated to include parameters that guide the growth and change of the institution as well as broad strategies to address potential

impacts, with plans and details to bedeveloped under site plan review.

b. *Applicability.* The Regulatory Framework shall apply only to properties that are within the IOZ boundary and to which the Eligible Institution holds right, title, or interest. For these properties, the Institutional Overlay Zone shall supersede the underlying zoning, and all new institutional development shall be conducted in compliance with the Regulatory Framework and the approved Institutional Development Plan. Properties located within the Institutional Overlay Zone not subject to right, title, or interest of the Eligible Institution shall continue to be governed by the regulations of the underlying zoning designation.

c. *Uses.* Institutional uses, including hospitals and higher education facilities, shall be permitted, as shall uses that are functionally integrated with, ancillary to, and/or substantively related to supporting the primary institutional use, consistent with the applicable approved IDP.

d. *Content*. The Regulatory Framework shall reflect the information and analysis of the IDP. The content shall be tailored to address the particular issues associated with the institution and its neighborhoods. The Regulatory Framework should be succinct and use tables and graphics as possible to address the following, if applicable:

   i. *Zoning boundary of the IOZ*: The area to which the regulations apply, as shown on the zoning map, subject to other provisions of this ordinance (i.e. the map amendment to the City's Zoning Map);

   ii. *Phasing and schedules:* Requirements that relate to particular proposed phases; a chart showing the schedule or thresholds for submitting an amended IDP (or elements of an IDP, such as a Transportation Demand Management (TDM) Plan);

   iii. *Uses:* Clarification, as necessary, on permitted uses.

   iv. *Dimensional Requirements*: Graphics, sketches, or standards, including details for transition zones within the IOZ boundary;

   v. *Transportation*: Elements such as TDM trip reduction targets or contribution to area-wide TDM measures; broad parameters for ensuring pedestrian, vehicular, bicycle and transit access and safety; parking ratios and management strategies; thresholds for access improvements;

   vi. *Environment:* The approach to the inclusion of open space and preservation of environmentally-sensitive areas;

   vii. *Mitigation measures*: The broad approach to identified mitigation measures, which would be addressed in greater detail in the site plan review process; thresholds for addressing deficiencies; goals for preservation/protection;

   viii. *Design*: Graphics and standards to clarify building placement and envelope (height and massing); guidelines for integration of site features; required treatments for transition zones and treatment for all edges (both within and abutting the IOZ boundary); guidelines for establishing campus identity; and

ix. *Neighborhood Integration:* Thresholds and strategies for neighborhood engagement; mitigation of impacts on neighboring properties, including construction impacts; buffering requirements; objectives for pedestrian linkages and safety; other requirements that address community concerns.

x. *Monitoring:* A schedule for regular monitoring reports on IDP implementation in accordance with the IDP.

e. *Standards of Review:* The Regulatory Framework shall:

i. Be consistent with the Comprehensive Plan and the Institutional Development Plan;

ii. Provide a clear zoning framework, using graphics and tables as appropriate, to apply to future site plan reviews;

iii. Provide specific regulatory statements as appropriate that respond to concerns raised during the required public involvement; and

iv. Outline measurable goals and thresholds for improvements or other actions identified in the IDP to be advanced in subsequent site plan applications.

f. *Approval/Adoption.* The Planning Board shall review the proposed Regulatory Framework against the standards of review and make a recommendation on the institution's IOZ designation and Regulatory Framework to the City Council for adoption as part of this zoning ordinance.

g. *Amendments.* A Regulatory Framework and IOZ boundary as adopted by the City Council shall remain in force unless and until amended. Amendments to a Regulatory Framework and/or IOZ boundary may be brought forth by the city or Eligible Institution. Amendments brought forth by the city will require a supermajority of the City Council to take effect. Proposed amendments to the IOZ boundary or Regulatory Framework shall be reviewed by the Planning Board and adopted by the City Council subject to the provisions of this ordinance.

VI. Regulatory Frameworks of Eligible Institutions (The regulatory frameworks adopted by the Council for each Eligible Institution will be codified within this section.)

III. MOTION FOR THE BOARD TO CONSIDER

On the basis of the application, plans, reports, and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on March 28, 2017, and on the basis of the testimony presented at the public hearing, the Planning Board finds that the proposed Institutional Overlay Zone text amendment **[is or is not]** consistent with Portland's Comprehensive Plan and therefore **[recommends or does not recommend]** adoption of the amendments to the City Council.

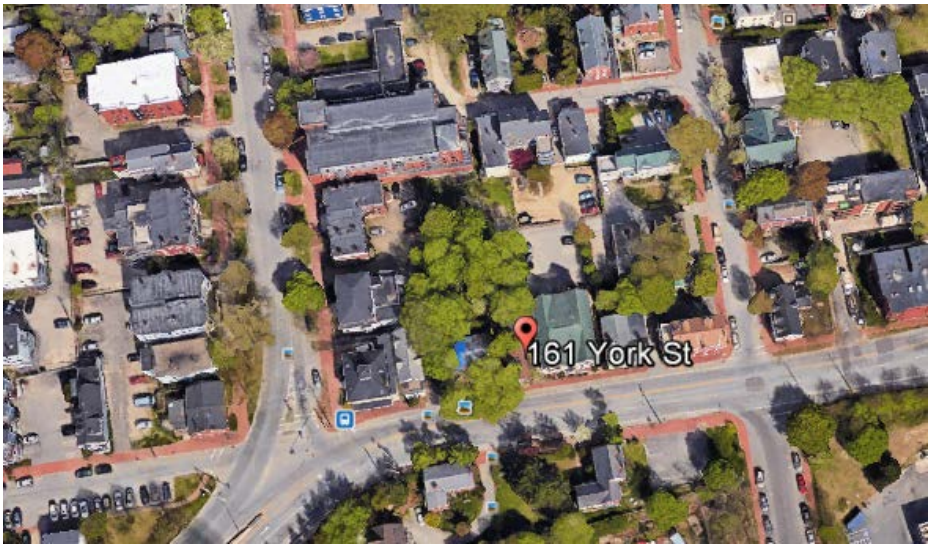
PLANNING BOARD REPORT
Amended for March 28th Hearing
PORTLAND, MAINE

Eleven-Unit Condominium Building
161 York Street
Subdivision and Level III Site Plan
2016-261
York Street Development LLC, Applicant

Submitted to: Portland Planning Board Public Hearing Date: Tabled to March 28, 2017	Prepared by: Shukria Wiar, Planner Date: March 24, 2017

I. INTRODUCTION

York Street Development LLC has requested a preliminary Level III site plan and subdivision review of an eleven-unit urban infill development at 161 York Street near the Casco Bay Bridge and State Street. The proposed 11,046 SF development includes a five-story multifamily building with parking at two different levels, as well as surface parking spaces. The site will be accessed from York Street and Guilford Court. The vacant lot was previously occupied by two 2-story residential buildings that have recently been demolished. The site is within the R-6 zone and within 100 feet of the West End Historic District.



The applicant requested a review and the Planning Board considered the preliminary submission at a Workshop on January 17, 2017. The Board held a public hearing on this item on February 28, 2017 and tabled it to a date certain to address their concerns. The project is subject to review for conformance with the Subdivision and Site Plan ordinances of the Land Use Code. Since the project is over ten units, it will have to meet the standards of Inclusionary Zoning. The developer intends to meet the inclusionary requirements by paying the required workforce contribution to the City.

A total of 193 notices were sent to property owners within 500 feet of the site and a legal ad ran on February 20th and 21st, 2017. There were four public comments that have been received by the Planning Office, see Attachment 5.

Applicant: Michael Cianchette of York Street Development LLC
Consultants: Will Savage, Acorn Engineering; Mark Mueller, Mark Mueller Architects; James Mullen, Spurwink Surveying LLC

II. REQUIRED REVIEWS

Waiver Requests	***Applicable Standards***
Drive Aisle width – To allow a 23.39' foot aisle in the parking area. Staff Comments: The review staff recommends waiving this standard.	Technical Manual, *Section 1.14*, requiring that aisle width for right-angle parking be 24 feet per Figure I-27
Location and spacing of driveways- To allow driveway spacing of 54 feet. Staff Comments: Staff supports a waiver for driveway separation between the proposed driveway and the driveway to the west, given site parking characteristics and that backing maneuvers are not required.	Technical Manual Section 1.7.2.7 Location and spacing of driveways *shall be determined as follows*: *Along arterial, collector and local streets, minimum acceptable spacing between double or multiple driveways for driveways on adjacent lots or on the same parcel shall meet the criteria of 100 feet for 25 mph*

Review	***Applicable Standards***
Site Plan	*Section 14-526*
Subdivision	*Section 14-497*
Workforce Housing Inclusionary Zoning	*14-484 (Applicant is required to have one unit; applicant will make a contribution)*

III. PROJECT DATA

Existing Zoning	Residential R-6
Existing Use	Residential
Proposed Use	Residential
Proposed Development Program	11 residential units
- Bedroom Mix	9 two-bedroom units, 2 three-bedroom units
Parcel Size	11,064 SF
Proposed Parking	22 spaces

	Existing	*Proposed*	*Net Change*
Building Footprint	2,039 SF	4,104 SF	3,050 SF
Building Floor Area	4,038 SF	12,312 SF	11,258 SF
Impervious Surface Area	3,271 SF	7,370 SF	-2,994 SF
Parking Spaces (on site)	3	20 (eight required)	19
Bicycle Parking Spaces	0	4 internal	4
Estimated Cost of Project	$4,900,000		

IV. BACKGROUND & EXISTING CONDITIONS

The proposed project site is located on York Street in proximity to State Street and the Casco Bay Bridge. The site was occupied by two structures, a single family and two-family house, which were demolished in early 2016.

The uses surrounding the site are mostly residential, including large three to four-story multifamily housing. To the north of the site is Harborside Apartments, which is a twenty-seven unit residential development; to the south, across York Street, is the historic landmark

Figure 2: 161 York Street Site

Nathaniel Dyer House. To the west of the property is a three-story multifamily structure, which is where the West End historical district starts. This site is not in the Historic District, but it is within 100 feet, therefore the Historic Preservation staff provides an advisory review of the project. The site is separated by two properties from State Street on the west. To the east of the property is an eight unit multifamily development that is accessed at the rear of the property through Guilford Court.

The Planning Board members at the February public hearing supported the proposed location of the new building but noted there were a number of concerns listed below and staff has worked with the applicant to address these concerns:

- Condominium Documents: The Board wanted the condominium documents to be revised to clarify the responsibility for maintenance of Guilford Court, snow removal, trash removal, and maintenance of stormwater management plan. The Board also wanted the applicant to prepare a neighborhood maintenance agreement for Guilford Court, possibly working with the adjoining neighbors on a mutual agreement;

  Staff Comments: The applicant has revised the condominium declaration to reflect and clarify the responsibility for maintenance of Guilford Court, snow removal, trash removal, and maintenance of the stormwater management facilities. In regard to a neighborhood maintenance agreement for Guilford Court, the applicant has brought to the City's attention that a new Maine road association statute was passed in October 2016. The applicant wants to utilize this law to establish a road association for the private street. In order to create the association, three or more owners of parcels that access the street are needed to participate in the association. According to the applicant, he has been working with the parcel owners who access the private way. Victoria Morales, Corporation Counsel, has recommended a condition of approval:

  > *The applicant shall participate in any Road Association formed pursuant to 23 MRS § 3101 to establish a statutory all season maintenance plan for Guilford Court and prior to the Certificate of Occupancy shall confirm with the Planning Division the status of the Road Association.*

- Exterior Design: The Board recommended that the applicant revise the design details i.e. changing material of the pergola to metal and the balcony reveal to be 12" of the proposed building;

  Staff Comments: The applicant has now proposed a 12" recess at the middle of the front façade. According the applicant's architecture, the reveal with the balconies need to stay at 4" given the structural components to support the deck. The pergola material at the main building entrance has changes to metal. Caitlin Cameron, Urban Designer, reviewed the changes and finds them acceptable, Attachment 4.

- Curb Cut on York Street: The Planning Board and traffic engineer sought eliminate all potential backing maneuvers from York Street due to safety concerns. The Board sought to have the applicant close the existing curb cut on York Street to the east of the site and to reduce the parking spaces on the lower level garage by at least by two spaces to enable vehicles to turn and go forward from the garage;

  Staff Comments: Two of the parking spaces in the lower level garage have been eliminated, so vehicles can now maneuver within the garage and do not have to back onto York Street. The site plan now shows the curb cut on the east side closed and replaced with brick sidewalk and granite curbing. Tom Errico, Consultant Traffic Engineer has reviewed the revised plans and finds them acceptable.

  Victoria Morales, Corporation Counsel, has recommended a condition of approval pertaining to the curb cut:

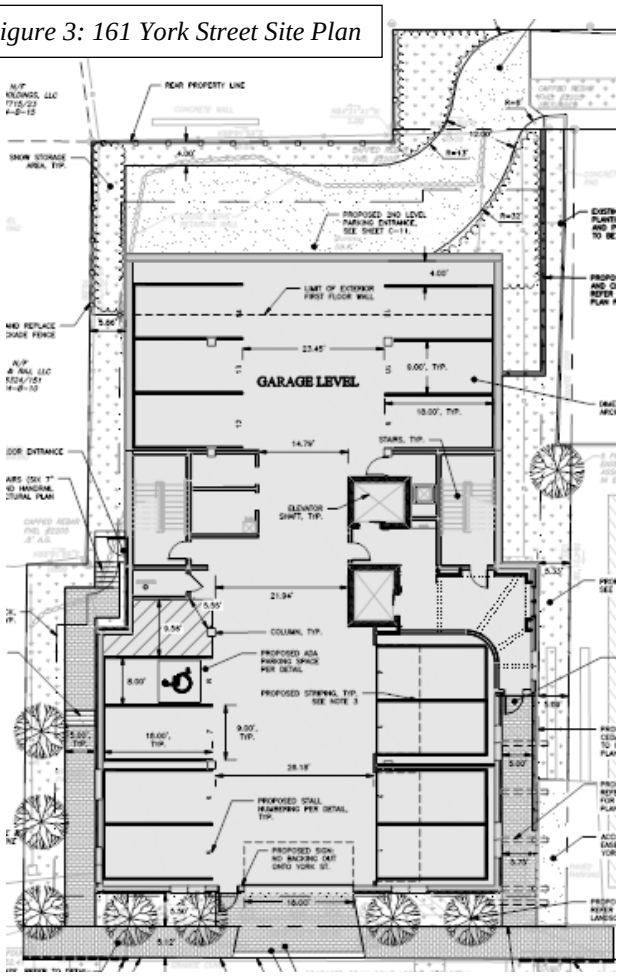
  > *The applicant will close the curb cut at the easterly end of the property on York Street and reconstruct the sidewalk, pursuant to Technical Manual, extending to the existing sidewalk along 161 York Street. The City will provide the applicant with a license to perform the work in the City's right-of-way that extends beyond the easterly property line.*

- Re-adjust the fence location on the site plan.

  Staff Comments: The revised site plan shows a fence at the rear property that wraps around the westerly corner of the property and up to the building.

V. PROPOSED DEVELOPMENT

Figure 3: 161 York Street Site Plan



The development is proposed as a residential project with frontage on York Street. The lot abuts Guilford Court at the rear of the site. The project will consist of a five-story multifamily building. The new eleven units will be orientated to York Street, with vehicular accesses from York Street and Guilford Court. Nine of the units will be two-bedroom and two will be three-bedroom.

Parking for twenty (20) vehicles is to be proposed on-site with a total of two driveway accesses from York Street and Guildford Street, which is a private street. The five-story building will feature a two-level parking garage: sixteen spaces on the lower level (basement, which will have access via a new curb cut off of York Street; and four spaces on the first-floor garage, which will have access from Guilford Street. Two surface parking spaces are proposed off Guilford Court. The existing curb cut off York Street, on the westerly side of the parcel, will be eliminated. The applicant is proposing landscaping and a brick walkway to the secondary access to the building at this area.

Pedestrian access to the site will be provided off York Street with two internal walkways to a main and side entrance. The main entrance to the building is now set back approximately 35 feet (in the preliminary plan, it was 45') from the front property line and the second entrance is about 55 feet. New brick sidewalks and street trees are proposed on York Street.

VI. PUBLIC COMMENT

As of the writing of this report, one additional written public comments have submitted since the workshop. The main concern of these comments was building height, snow removal and the utilization of the private way, Guilford Court.

A Neighborhood Meeting is required for this project and the applicant has confirmed that the neighborhood meeting was held on December 12, 2016, see Attachment S.

VII. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

a. The owner of the property is York Street Redevelopment LLC. The applicant has provided a copy of a warranty deed, recorded at the Cumberland County Registry of Deeds (Book 32580 Page 187), which demonstrates their right, title and interest in the property.

The applicant is proposing to utilize a private way, Guilford Court, as a second means of access to the site. Guilford Court is considered by the City of Portland DPW Engineering Archives to be private way; thus, it is not an accepted city street. The applicant is required to submit right, title, and interest in the street and has submitted a warrants deed as evidence. These documents have been reviewed by the City's Corporation Counsel and the shows that the applicant has right, title, and interest in the street. The Planning Board asked the applicant to prepare agreements

and/or revisions to the condominium documents that address the long-term maintenance of the private alley. The applicant has proposed creating a road association under new legislation. A condition of approval is proposed to address the agreement.

b. The estimated cost of the development is $4.9 Million. The applicant has submitted a letter from Bangor Savings Bank, dated October 26, 2016, as demonstration of their financial and technical capacity to complete the proposed development.

VIII. ZONING ANALYSIS

The proposed residential eleven-unit building is a permitted use in the Residential R-6 which allows multifamily dwellings. Under the R-6 zone all of the dimensional requirements are being met.

IX. ENSURE WORKFORCE HOUSING CONDITIONAL USE- Tyler Norod, Housing Planner

Housing Planner Tyler Norod reviewed the Conditional Use for Affordable Housing application at 161 York Street as required by Division 30, Section 14-487, Ensuring Workforce Housing. The ordinance requires a minimum of 10% of a project with 10 or more units to be restricted for Workforce Households and that the number of bedrooms required under Section 14-487(e)3 be at least 10% of the total number of bedrooms made available as part of the project. The project located at 161 York Street proposes the creation of eleven residential rental units. Rather than providing an on-site unit, the applicant will pay a workforce contribution to the City. The required contribution is $110,0000 as confirmed by Tyler Norod is Attachment 5

X. DEVELOPMENT REVIEW

A. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527) and SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (Section 14-496)

The applicant has submitted draft Subdivision Plat (Attachment Plan 29) which has been reviewed by the Department of Public Works and found to be missing a few key items of information and greater clarity on the plat in the vicinity of the new building.

The applicant has also submitted draft Condominium Association documents and the Stormwater Maintenance Agreement and the Stormwater Maintenance and Inspection Plan (Attachment Y and Z). The condominium declaration, clarifies responsibilities for trash removal, snow removal, maintenance of Guilford Court and maintenance of the stormwater drainage infrastructure. The staff is also recommending a condition of approval related to the existing York Street curb cut. Three potential conditions of approval are suggested:

1) *Requiring that the draft Condominium Association documents address staff comments and be finalized to the satisfaction of the Associate Corporation Counsel;*
2) *The applicant shall participate in any Road Association formed pursuant to 23 MRS § 3101 to establish a statutory all season maintenance plan for Guilford Court and prior to the Certificate of Occupancy shall confirm with the Planning Division the status of the Road Association; and*
3) *The applicant will close the curb cut at the easterly end of the property on York Street and reconstruct the sidewalk, pursuant to Technical Manual, extending to the existing sidewalk along 161 York Street. The City will provide the applicant with a license to perform the work in the City's right-of-way that extends beyond the easterly property line.*

B. SUBDIVISION (Section 14-497)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's Subdivision Ordinance and applicable regulations. Staff comments are listed below.

1. *Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) 1), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)*

   The project is not anticipated to result in any water or air pollution. A final Sedimentation and Erosion Plan has been submitted and has been found to be acceptable by the consulting civil engineer Lauren Swett, P.E. with Woodard and Curran Engineering (Attachment 2).

2. *Sufficient Water Available (Section 14-497 (a) 2 and 3)*
The project will be served by a new water service located in York Street. Confirmation of ability to serve letter from Portland Water District has been submitted.

3. *Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)*
The applicant is proposing access to the site from a new curb cut on York Street, as well as from Guilford Court, for a total of two access points to the site. The two surface parking spaces at the existing curb cut on York has been removed and replaced with a brick walkway and landscaping.

Tom Errico, P.E. Ty Lin reviewed the proposal's details including the access, parking, and vehicle circulation (Attachment 1) and states the following regarding the shared driveway on the westerly side of the parcel:

The site plan has been revised and I find conditions to be acceptable. I have no further comment.

Existing Curb Cut between 159 and 161 York Street
There is a third curb cut on the easterly side of the property shared by 159 and 161 York Street, which the applicant is now proposing to close. This is the curb cut that Planning Board and traffic engineer sought to close in order to eliminate vehicles backing into York Street, which is considered an unsafe maneuver. In addition, the City's driveway separation standards are not met between the existing and proposed curb cut.

A. Background Information

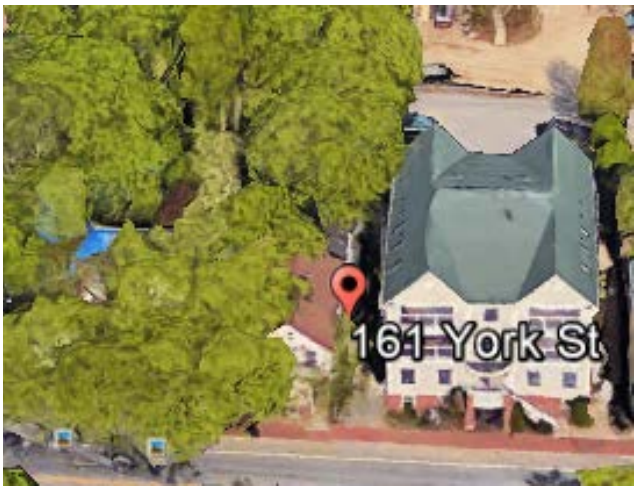
There is shared driveway between 161 York Street and 159 York Street. The subdivision and site plan for the adjoining property at 159 York Street was approved July 27, 2004. There was a condition of approval that stated that allowed a driveway for a depth of 20 feet at this location, see the condition language below:

> *That the site plan be revised for Planning Staff review and approval reflecting a paved surface for the York Street driveway to a depth of 20 feet, and a surface treatment of loam and seed for the balance of the driveway easement.*

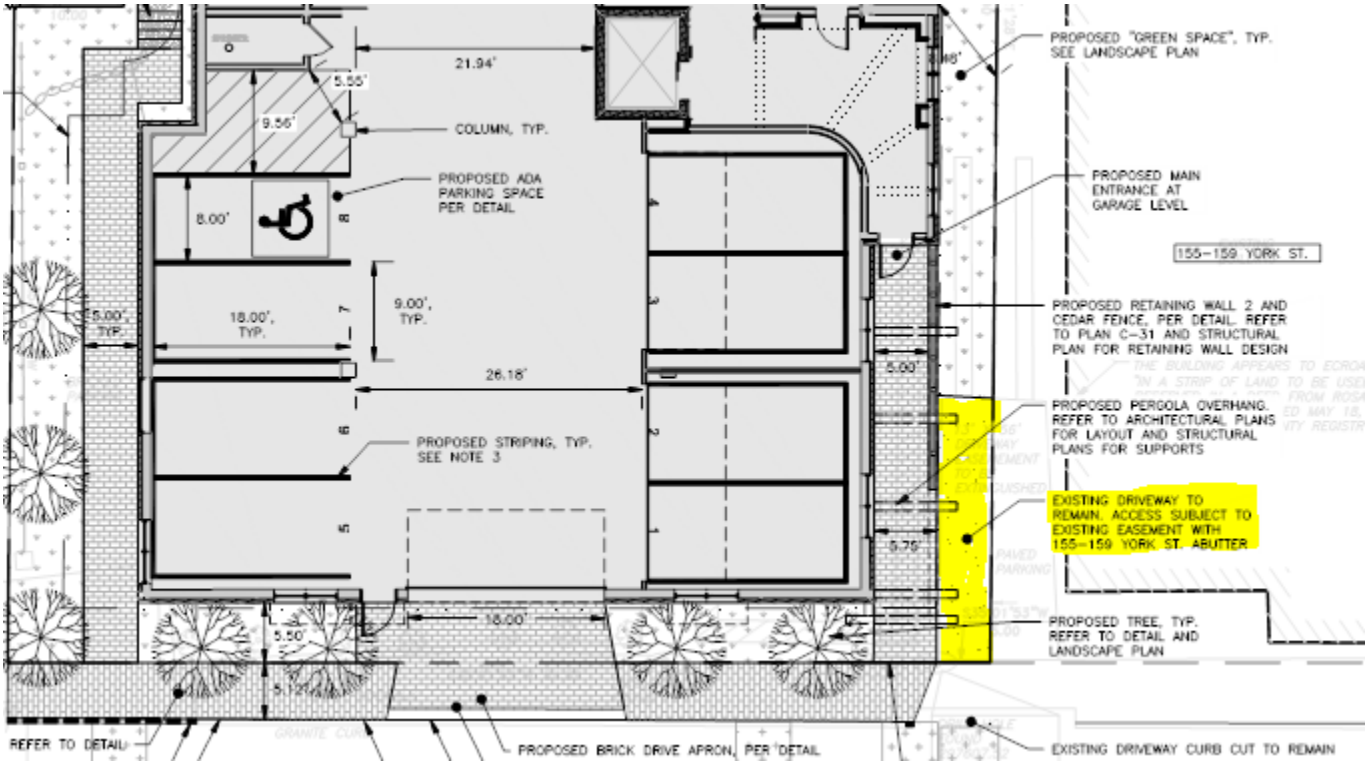
The recorded subdivision plat goes on to state that the intention of this driveway was for existing house on 161 York Street:

9. THE EASEMENT SHOWN AS 13' X 57' AND MENTIONED IN THE SUBJECT PARCELS DEEDS IS INTENDED AS A DRIVEWAY EASEMENT ONLY, FOR THE ABUTTING LOT. THE PLANNED PORCHES DO NOT PROJECT INTO THE EASEMENT.

Below is except from the recorded subdivision plat showing the above intention:



Since the purchase of the property at 161 York Street, the property line between the two properties have been realigned to give five feet by one hundred and thirty-two (132) strip of land to 161 York Street and in return the applicant gave 159 York Street an easement to utilize the strip of the driveway on their property, see below:



The proposed easement language is as written below:

> RESERVING to Grantor an Easement to use the Land for utility, vehicular, and pedestrian access to land of the Grantor, inclusive of parking as may be permitted by the City of Portland or other competent authority from time-to-time, and storage of household refuse and recycling, provided any such storage shall be in covered containers designed for such purposes and maintained in good order and repair.

B. Driveway Separation Requirement

The applicant is proposing a new curb cut on York Street. Mr. Errico had requested more information on the driveways separation and states that "the applicant shall document that City driveway spacing standards along York Street are met". Technical Manual Section 1.7.2.7 Location and spacing of driveways *shall be determined as follows*:

- *Along arterial, collector and local streets, minimum acceptable spacing between double or multiple driveways for driveways on adjacent lots or on the same parcel shall meet the criteria below:*

Speed Limit (mph)	Minimum Separation* (feet)
25 or less	100
30	125
35	150
40	185
45	230
Spacing of driveways shall be measured from center of driveway to center of driveway **and shall include driveways on both sides of the street.*	

Mr. Errico reviewed the proposal's details including the access, parking, and vehicle circulation (Attachment 1) and states:

- *A driveway is provided along the easterly property boundary and I find conditions to be undesirable. This driveway should be eliminated (It is my understanding that this was a condition of approval for the abutting property).*

  Final Status: The subject driveway does not meet City of Portland driveway separation standards. City Technical standards require driveway separation of 100 feet given the regulatory speed limit. The proposed driveway and the subject driveway to the east do not comply with this standard. Accordingly, the plans shall be revised to eliminate the easterly driveway. I would further note that I support a waiver for driveway separation between the proposed driveway and the driveway to the west, given site parking characteristics and that backing maneuvers are not required.

  Revised Final Status: It is my understanding that the applicant has agreed to close the driveway to the east and thus I find conditions to be acceptable. See above for driveway separation waiver approval.

The Planning Staff and Tom Errico discussed closing the curb cut with the applicant's representative on Feb. 24, 2017. According to Mr. Savage, the applicant is willing to close the curb cut and do the required work in the right-of-way. Victoria Morales, Associate Corporation Counsel, has recommended the following condition of approval to address the closing of this curb cut:

The applicant will close the curb cut at the easterly end of the property on York Street and reconstruct the sidewalk, pursuant to Technical Manual, extending to the existing sidewalk along 161 York Street. The City will provide the applicant with a license to perform the work in the City's right-of-way that extends beyond the easterly property line.

4. *Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)*
The project will be served by new sewer line located in York Street. The Department of Public Works has submitted a Wastewater Capacity Authorization letter that determined that the downstream sewers from the project address have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development.

   The unit owners, or their property management company, will be responsible for relocating the solid waste and recyclable material to the space allocated for solid waste storage as necessary, noted on the First-Floor Site Plan (C-11). There will be no burden on the municipal solid waste.

5. *Scenic Beauty, Natural, Historic, Habitat and other Resources (Section 14-497 (a) 8)*
The site is not within an historic district, but it is within 100 feet. Thus, an advisory review of the building was conducted by the Historic Preservation staff. It is in an urban neighborhood surrounded by a variety of residential building types. The proposed building does not impact the natural beauty of the area or adversely affect any significant wildlife habitat, rare or irreplaceable natural areas, or any public access to the shoreline. The staff finds the proposal in conformance with this standard, see Attachment 7.

6. *Comprehensive Plan (Section 14-497 (a) 9)*
The staff has identified the following goals and policies which are relevant to the proposed housing development and finds the proposal in conformance with the Comprehensive Plan:

   Portland Housing Goal: Ensure that an adequate supply of housing is available to meet the needs, preferences, and financial capabilities of all Portland households, now and in the future.
   Policies

- Ensure the construction of a diverse mix of housing types that offers a continuum of options across all income levels, which are both renter and owner-occupied, including but not limited to the following:
  ii. Housing units for decreasing household size, such as young professionals, empty nesters, single-parent households, and senior citizens.
- Encourage higher density housing for both rental and home ownership opportunities, particularly located near services, such as schools, businesses, institutions, employers, and public transportation.
- Increase Portland's rental housing stock to maintain a reasonable balance between supply and demand yielding consumer choice, affordable rents, and reasonable return to landlords.
- Identify vacant land and redevelopment opportunities throughout the City to facilitate the construction of new housing.

7. Financial Capability (Section 14-497 (a) 10)

The estimated cost of the development is $4.9 Million. The applicant has submitted a letter from Bangor Savings Bank, dated October 26, 2016, as demonstration of their financial and technical capacity to complete the proposed development.

C. SITE PLAN STANDARDS (Section 14-526)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. Transportation Standards

a. Impact on Surrounding Street Systems and Access and Circulation- see Subdivision, Paragraph VIII (B) (3), above.

b. Construction Management Plan

A construction management plan has been submitted by the applicant for review. All the construction is proposed within the limits of the property lines. Tom Errico has reviewed the plan and requests the following:

- *The existing sidewalk or a temporary sidewalk shall be provided along the property frontage during construction.*
- *The applicant should provide details on construction activity that would impact traffic on York Street and how traffic will be managed.*

Final Status: The applicant has provided a plan the notes a sidewalk to remain if feasible. Approval of the construction management is contingent on maintaining a safe and ADA compliant pedestrian sidewalk along the property frontage. The applicant shall coordinate with DPW on construction activity in York Street that would impact traffic mobility. No construction activity is to occur without approval of an approved traffic control plan.

c. Sidewalks

The applicant is proposing to install new brick sidewalk along their frontage, as well as internal brick walkway from the street to front door that is located to the east side of the building. Mr. Errico has reviewed the plans and recommends the following:

- *Curbing and sidewalk along York Street shall be extended to the limits of the westerly property boundary. Backing maneuvers onto York Street will not be permitted.*

Final Status: The site plan has been revised and I find conditions to be acceptable. I have no further comment.

d. Public Transit Access

The public transit requirements do not apply to this project.

e. Parking

Section 14-332.1 (k) – For residential development on the peninsula, including new construction, the parking requirement is one space per dwelling unit. In the R-6 zone, parking spaces are not required from the first three units, thus, a total of eight spaces are required for the development. The applicant is now proposing a total of twenty (20) parking spaces, which still exceeds zoning requirements. Section 14-526 (a) 4 (iii) states

> *Developments proposing to exceed minimum parking requirements by 10% or more must demonstrate through a parking analysis that the amount of parking is appropriate for the proposed use of the site.*

The proposed amount of spaces exceeds the zoning requirement by 12 spaces now rather than 14. Three of the units will be three-bedrooms which would mean families will occupy these units. The parking demand for these units will require two parking spaces per unit. The Applicant states that "*based upon the applicant's research there is a demand for market rate condominiums that include two parking spaces per unit that is presently not being met. As documented within the neighborhood meeting minutes' attendees voiced support of the number of onsite parking spaces given the limited availability off on street parking and current demand*".

Mr. Errico reviewed the information submitted and states:

> *The parking supply proposed by the applicant exceeds City of Portland requirements and thus requires the applicant to provide documentation that supports the number of parking spaces. The applicant has provided details on the type and size of the residential units and the tenant characteristics of the units. Based upon the information provided, I find the parking supply to be reasonable.*

Six of these spaces are accessed from the rear of the property on Guildford Court. The right, title and interest to use Guilford Court has been reviewed by Corporation Counsel and the applicant has demonstrated that they have the right to utilize the private way. The parking within the building will have a little over twenty-three feet (23.39') aisle width that does not meet standard of twenty-four feet (24'), therefore, the applicant has requested a waiver. Mr. Errico states "*I support a waiver for parking aisle width given that it is less than a foot narrower than City standards, vehicle turnover is expected to be minimal, and vehicle circulation appears to be accommodated on-site*".

The proposed parking has decreased from twenty-two (22) to twenty (20) spaces. According to the applicant:

> *The subsurface wall has been relocated closer to York Street, reducing the overall size of the structure while allowing the two end spaces to maneuver more easily. Ninety percent of the parking is covered and resides within the structure as opposed to surface parking. The revisions eliminated the need for the four compact parking spaces while providing a four feet driveway end space for vehicles to back into thereby improving the overall circulation of the parking garage. The plans also require signage within the garage directing users not to back into York St.*

Mr. Errico reviewed the revised plans states:

> *Plans have been revised and I find the layout to be acceptable. I would note that parking aisle widths are slight less than City standards. I support waivers given low parking turnover and that the plans nearly complies with City standards.*

f. Bicycle Parking

The proposals include four bicycle parking spaces inside the building, which does meet the ordinance standard of two bicycle parking spaces for every five dwelling units.

2. *Environmental Quality Standards*

a. Preservation of Significant Natural Features

There are no known significant natural features on the site.

b. Landscaping and Landscape Preservation

A landscaping plan was submitted as part of the application. Overall the revised landscape treatment for the 161 York Street project is improved. The plan shows seven red maple street trees. The applicant is now proposing landscaping along the frontage, as well as on the westerly side of the property. The plans also show landscaping at the rear entrance of the property; six junipers and eighteen ornamental grasses.

Jeff Tarling, the City Arborist, has reviewed the landscaping plan and recommends the following, refer to Attachment 4 for his complete analysis:

> ***Street trees -*** *the project proposes to plant 5 'Armstrong' Red Maple trees along or near the York Street frontage. This selection is consistent with the same species planted nearby and has an upright shape to fit into the tight vertical space. Alternative tree types would include: "Bowhall" Red Maple, 'Regal Prince" Upright Oak, The placement of two center trees could impact the balconies that slightly project out from the building just above the tree location. The project may consider a lower growing upright tree like European Hornbeam or Magnolia in these two locations to perhaps reduce future tree topping of the taller 'Armstrong" Red Maple. There are two additional "Armstrong" Red Maple located on the left side of the York Street frontage.*
>
> ***Condition recommendation -*** *a raised boarder should be installed to protect the four trees and landscape area along York Street, this could be granite, concrete - something that can protect the planting space from winter snowplowing and deicing materials along with discouraging foot traffic.*
>
> ***Landscape Areas -*** *the project site boarder on the Northwest side corner includes a 6' stockade fence which will help define the property edge and provide screening and privacy for the site. Within the sidelines landscape ornamental switch grass is proposed which will add seasonal interest and low maintenance approach. The back parking area is screened also with a fence and 6 Red Cedar trees, these are shown as 5 gallon size but should be up-sized to 4-5' height size to be effective screening in the near future. The landscape plan shows an additional five Red Cedar trees closer to the building near the parking area, while this could work as additional screening, there are other varieties of plants like Dogwood, Stewartia, Magnolia, 'Little King' River Birch that would provide greater ornamental characteristics. It might be nice for future residents to enjoy something that might have flowers or interesting bark to add interest to the site. 'Cape Cod' type bituminous curbing, or similar, is recommended to provide definition between the paved surface and landscape area. Tree sizes on the "Armstrong" Red Maple are shown at 3" caliper, in tight conditions like this project a slightly smaller 2", or 2 - 2.5" tree with a smaller root ball might work to an advantage with adapting to the site and fitting the rootball into the planting space.*
>
> ***Existing Veg -*** *The project shows "6" unknown plantings to remain. These plants should be protected by construction fencing and if lost during site work, replaced with similar plant mass. Existing Norway Maple trees at the Northwest or back edge are shown to be removed. Due to the species type (invasive) and location this is a recommended treatment.*

c. Water Quality, Storm Water Management and Erosion Control

Prior to the demolition of structures, about a quarter of the property was covered by impervious surfaces including a bituminous driveway and two, two-story dwellings. Currently the site slopes at approximately 10% towards York Street. The rest of the site was mature tree growth, vegetation, and exposed soil. The project will result in a net increase of impervious area above 1,000 sf, as such, is required to include stormwater management features for stormwater quality & quantity control.

The applicant will provide water quality treatment to the stormwater through underdrained subsurface sand filter to be installed beneath the upper driveway entrance from Guilford Court. These treatments will provide water quality treatment for no less than 95% of the new impervious area and 80% of the developed area. Stormwater runoff generated by the roof and driveway is to be redirected into the system and then outlet into the existing municipal system within York Street. The remainder of the stormwater generated from the driveway and sidewalks will flow into York Street.

Under Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. Lauren Swett, P.E. with Woodard and Curran Engineering, has reviewed the drainage plan and stormwater report and all comments has been met.

Refer to Attachment 2 for a Ms. Swett's complete analysis of the stormwater standards.

3. Public Infrastructure and Community Safety Standards

a. Consistency with Master Plans

See Subdivision, Paragraph VIII (B)6 above.

b. Public Safety and Fire Prevention

The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance address the principles of natural surveillance, access control and territorial reinforcement so that the design of developments enhance the security of public and private spaces and reduce the potential for crime. Two entrances are being proposed at part the development. The main entrance is now set back approximately 35 feet from the front property line and the second entrance is about 55 feet.

The applicant is proposing lighting at the entrances as well as at the walkways. The applicant has not submitted a photometric plan; this will be a condition of approval.

c. Availability and Adequate Capacity of Public Utilities

The project will be served by the Portland Water District, City Department of Public Works, and underground/power/cable/communications. Confirmation letters have been submitted as part of the final review.

4. Site Design Standards

a. Snow and Ice Loading

Given the limited parking the driveway entrance was reduced from 18 feet to 12 feet at the end of Guilford Court to provide more snow storage both on the subject property and at the end of Guilford Court. The site and grading plans have been revised to reflect this. The Condominium Association documents has addressed and clarify the details of responsibilities for trash removal, snow removal, and maintenance of Guilford Court.

b. View Corridors

This site is not within a Protected View Corridor as per the "View Corridor Protection Plan" approved by the Portland City Council in 2001.

c. Historic Resources

The site is not in an historic district, but is within 100 feet of the West End Historic District. The project was reviewed by Historic Preservation staff and Deb Andrew's review is included as Attachment 7.

d. Exterior Lighting

The applicant is proposing lighting at the entrances as well as at the walkways. The applicant has not submitted a photometric plan; this will be a condition of approval. All exterior site lighting including lighting of building entrances will be cutoff with no light emitted above the horizontal plane or spilled onto adjacent properties or streets. Illumination levels will be adequate but not excessive for the safety, comfort and convenience of occupants and user of the site and will conform to all applicable standards of Section 12 of the Technical Manual. The lowest wattage possible will need to be used for the LED lighting fixtures.

e. Noise and Vibration

All heating, ventilation and air conditioning equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment will have to be shown on the plans and meet state and federal emissions requirements. These should be located to the interior of the site, away from abutting residential properties and be screened from view from any public street and from adjacent sites by structure walls, evergreen landscaping, fencing, masonry wall or a combination thereof. This information will have to be submitted for final review.

f. Signage and Wayfinding

This standard does not apply to the proposal.

g. Zoning Related Design Standards

A design review according to the *City of Portland Design Manual* Standards was performed for the proposed new construction of a multi-family dwelling at 161 York Street. The review was performed by Caitlin Cameron, Urban Designer, Deb Andrews, Historic Preservation Program Manager, and myself. The project was reviewed against the *R-6 Small Infill Development Design Principles & Standards* (Appendix 7 of the Design Manual) and is within 100' of a historic district.

Findings of the Design Review:

The Planning Authority under an Alternative Design Review may approve a design not meeting one or more of the individual standards provided that all of the conditions listed below are met:

A. The proposed design is consistent with all of the Principle Statements.
B. The majority of the Standards within each Principle are met.
C. The guiding principle for new construction under the alternative design review is to be compatible with the surrounding buildings in a two-block radius in terms of size, scale, materials, and siting, as well as the general character of the established neighborhood, thus Standards A-1 through A-3 shall be met.
D. The design plan is prepared by an architect registered in the State of Maine.

The proposed design passes all of the criteria. Ms. Cameron has found the proposal to be in general compliance, however, there are recommended improvements under a few of the standards have not been met. Excerpt from Ms. Cameron memo is below:

Principle B Massing – Met – *Buildings in the neighborhood with similar massing and proportion that are wider at the street use changes in massing, like the roof form and bays, to mitigate the scale and provide a pedestrian-friendly, visually interesting street presence.*

- *B-5 Façade Articulation*
  Staff Comments- The project employs only one of the articulation elements required – covered entry. The balconies are too small to meet the required square footage.

Principle C Orientation to the Street – Met – *The mass of the building is oriented to the street.*

- *C-1 Entrances*
  Staff Comments- The entry is set too far back to be adequately emphasized from the street. The standard calls for a side entry to be accessed by a covered entry in the form of an arcade, porch, portico. Revision is needed to meet the standard. The entrance lobby could also be extended towards the street like an enclosed porch.

Principle D Proportion and Scale – The façade elements are proportionate and scaled to the overall building.

- *D-3 Porches*
  Staff Comments- The balconies included in this project are less than 48 sf and do not meet this standard. The project uses a pergola rather than a porch.

Principle F Articulation – Met – *The front façade added 4" reveals to create some façade plane changes as an articulation method.*

- *F-2 Window Types*
  Staff Comments- Three window types at street façade. The ground floor windows imply living spaces – revise to reflect garage (smaller, higher windows, or use of grates).

- *F-6 Main Entries*
  Staff Comments- The main entry was moved closer to the street, uses building address, lighting, and pergola to provide emphasis and legibility. To better integrate the design, pergola material should use metal to be consistent with other building details.

- *F-7 Articulation Elements*
  Staff Comments- A cornice is provided at the fourth floor, is pronounced, and appear to be at least 6"; recesses are provided on the street façade but are less than the 12" required by the standard (4" reveals).

  Final Staff Comments – the building reveal in the center of the front facade is at least 12" deep. The balcony reveals remain 4". Caitlin Cameron has review the change and finds them acceptable.

Principle G Materials – The material choices are placed according to their nature.

- *G-2 Material and Façade Design*
  Staff Comments- The materials are appropriately placed according to their nature. The pergola at the entry introduces wood – metal would be more appropriate given the material palette for the rest of the building.

  Final Staff Comments – the trellis material at the main building entrance has been changed to metal, making the material selection consistent with the material palette of the rest of the project. Caitlin Cameron has review the change and finds them acceptable.

- *G-4 Window Types*
  Staff Comments- Three window types on street façade.

XI. PROPOSED MOTIONS

A. CONDITIONAL USE

On the basis of the application, plans, reports and other information submitted by the applicant, findings to the Ensure Workforce Housing and recommendations contained in the Planning Board Report, relevant to Portland's Conditional Use Standards and other regulations, and the testimony presented at the Planning Board hearing:

The Planning Board finds the proposed conditional use for workforce housing [**does** or **does not**] meet the standards of Section 14-484 with the following conditions:

1. That the Applicant and the City shall pay a contribution of $110,000 into the City's Housing Trust Fund prior to the issuance of a certificate of occupancy.

B. WAIVERS

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board report for the public hearing on March 28, 2017 for application 2016-261 relevant to Portland's technical and design standards and other regulations; and the testimony presented at the Planning Board hearing:

1. The Planning Board [**finds/does not find]**, based upon the consulting transportation engineer's review *(Attachment 1)*, that extraordinary conditions exist or undue hardship may result from strict compliance with the *Technical Manual* standard *(Section 1.14)* which requires that aisle width for right-angle parking be 24 feet per *Figure I-27*. The Planning Board [**waives/does not waive]** the *Technical Manual* standard *(Section 1.14)* to allow a 23.39-foot-wide aisle in the lower-level parking garage;

2. The Planning Board [**finds/does not find]**, based upon the consulting transportation engineer's review *(Attachment 1)*, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual Section 1.7.2.7 Location and spacing of driveways *shall be determined as follows*: *Along arterial, collector and local streets, minimum acceptable spacing between double or multiple driveways for driveways on adjacent lots or on the same parcel shall meet the criteria of 100 feet for 25 mph.* The Planning Board [**waives/does not waive]** the *Technical Manual* standard (Technical Manual Section 1.7.2.7) to allow a separation of 54 feet between the new driveway and the existing driveway on the westerly side of the parcel.

B. SUBDIVSION

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board report for the public hearing on March 28, 2017 for application 2016-261 relevant to the subdivision regulations; and the testimony presented at the planning board hearing, the Planning Board finds that the plan [**is/is not]** in conformance with the subdivision standards of the land use code, subject to the following conditions of approval, which must be met prior to the signing of the plat:

1. Requiring that the draft Condominium Association documents address staff comments and be finalized to the satisfaction of the Associate Corporation Counsel; and

2. The applicant shall participate in any Road Association formed pursuant to 23 MRS § 3101 to establish a statutory all season maintenance plan for Guilford Court and prior to the Certificate of Occupancy shall confirm with the Planning Division the status of the Road Association.

3. The applicant will close the curb cut at the easterly end of the property on York Street and reconstruct the sidewalk, pursuant to Technical Manual, extending to the existing sidewalk along 161 York Street. The City will provide the applicant with a license to perform the work in the City's right-of-way that extends beyond the easterly property line.

C. DEVELOPMENT REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on March 28, 2017 for application 2016-261 relevant to the site plan regulations; and the testimony presented at the planning board hearing, the Planning Board finds that the plan **[is/is not]** in conformance with the

site plan standards of the land use code, subject to the following conditions of approval that must be met prior to the issuance of a building permit, unless otherwise stated:

1. The applicant shall provide a revised construction management plan, including the details regarding safe pedestrian detours and ADA compliance sidewalk as requested by the city's consulting traffic engineer;

2. That the applicant shall provide a stormwater maintenance agreement for the stormwater drainage system, shall be submitted, signed, and recorded prior to the issuance of a building permit with a copy to the Department of Public Services.

3. The applicant shall close the curb cut at the easterly end of the property on York Street and reconstruct the sidewalk, pursuant to Technical Manual, extending to the existing sidewalk along 161 York Street. The City will provide the applicant with a license to perform the work in the City's right-of-way that extends beyond the easterly property line.

4. The applicant shall participate in any Road Association formed pursuant to 23 MRS § 3101 to establish a statutory all season maintenance plan for Guilford Court and prior to the Certificate of Occupancy shall confirm with the Planning Division the status of the Road Association.

5. The applicant shall work with the City Arborist to address the comments in his memo dated 2.24.2017.

6. A photometric plan shall be reviewed and approved by the Planning Authority.

7. The applicant has demonstrated that site constraints prevent the planting of all required one street tree per unit for multi-family development in the right-of-way, therefore the applicant shall contribute $800 for four street trees to Portland's tree fund.

XIII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Traffic Engineer review (memo from Thomas Errico, 03.23.2017)
2. Civil Engineer and Department of Public Services review (memo from Lauren Swett, 02.24.2017)
3. City Arborist review (memo from Jeff Tarling, 02.24.2017)
4. Design review (email from Caitlin Cameron, 03.17.2017)
5. Planning Board Conditional Use Memo- Tyler Norod
6. Wastewater Capacity Authorization Letter
7. Deb Andrews, Historic Preservation Program Manager 02.24.2017
8. Public Comments
   PC1 Katherine Searles
   PC 2 Margaret M Busby
   PC 3 Lynn Miller

APPLICANT'S SUBMITTALS

A. Cover Letter (from Will Savage of Acorn Engineering, Inc., 11.08.2016)
B. Preliminary Site Plan Application
C. Evidence of Right, Title, and Interest
D. Conformity with Applicable Zoning Standards
E. Summary of Written Easements
F. Request for Waivers
G. Technical and Financial Capacity
H. Stormwater Management Report
I. Erosion and Sedimentation Control Report
J. Fire Department Letter

K. Solid Waste
L. Utility Cover
M. Construction Management Plan
N. Architectural Design Narrative
O. Workforce Cover Letter
P. Conditional Use Application
Q. Right, Title, and Interest
R. Conformity with Conditional Use Standards
S. Neighborhood Meeting and Minutes
T. Final Application Cover
U. Comment Response Letter
V. Lighting Cut Sheets
W. Geotechnical Report
X. Geotechnical Report
Y. Condominium Declaration Draft
Z. Stormwater Maintenance Agreement
AA. Parking Demand_2-24-17
BB. Revisions Letter
CC. Title 23 Chap 305 Construction, Maintenance, Repairs

PLANS

Plan 1. Cover Sheet & Legend
Plan 2. General Notes
Plan 3. Existing Conditions Plan
Plan 4. Construction Management Plan
Plan 5. Site Plan – Garage Level
Plan 6. Site Plan – First Level
Plan 7. Landscaping Plan
Plan 8. Utility Plan
Plan 9. Internal Grading Plan - Garage & First Floor
Plan 10. Perimeter Grading & Drainage Plan
Plan 11. Site Details - 1
Plan 12. Site Details - 2
Plan 13. Utility Details – 1
Plan 14. Utility Details - 2
Plan 15. Drainage Details
Plan 16. Underdrained Subsurface Sand Filter Details
Plan 17. Erosion & Sedimentation Control Details
Plan 18. Lower Level Detail
Plan 19. First Floor Plan
Plan 20. Second Floor Plan
Plan 21. Third Floor Plan
Plan 22. Fourth Floor Plan
Plan 23. Roof Plan
Plan 24. Building Elevation - Front Elevation
Plan 25. Building Elevation - Left Elevation
Plan 26. Building Elevation - Right Elevation
Plan 27. Building Elevation - Rear Elevation
Plan 28. Building Section
Plan 29. Subplat
Plan 30. Building Section – 2
Plan 31. Main Entrance Section
Plan 32. Building Renderings

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

161 York Street - Revised Final Traffic Comments

Tom Errico <thomas.errico@tylin.com> Thu, Mar 23, 2017 at 12:08 PM
To: Shukria Wiar <shukriaw@portlandmaine.gov>

Hi Shukria -- The following is a update of my previous traffic comments and represents my revised final traffic comments.

- Curbing and sidewalk along York Street shall be extended to the limits of the westerly property boundary. Backing maneuvers onto York Street will not be permitted.

  Status Update: This comment is related to the shared driveway west of the project site. The driveway shall be narrowed such that backing maneuvers cannot be easily performed. Information on how vehicles will enter and exit the two project parking spaces without backing out into York Street shall be provided.

  Final Status: The site plan has been revised and I find conditions to be acceptable. I have no further comment.

- A driveway is provided along the easterly property boundary and I find conditions to be undesirable. This driveway should be eliminated (It is my understanding that this was a condition of approval for the abutting property).

  Final Status: The subject driveway does not meet City of Portland driveway separation standards. City Technical standards require driveway separation of 100 feet given the regulatory speed limit. The proposed driveway and the subject driveway to the east do not comply with this standard. Accordingly, the plans shall be revised to eliminate the easterly driveway. I would further note that I support a waiver for driveway separation between the proposed driveway and the driveway to the west, given site parking characteristics and that backing maneuvers are not required.

  Revised Final Status: It is my understanding that the applicant has agreed to close the driveway to the east and thus I find conditions to be acceptable. See above for driveway separation waiver approval.

- I support a waiver for parking aisle width given that it is less than a foot narrower than City standards, vehicle turnover is expected to be minimal, and vehicle circulation appears to be accommodated on-site.

  Final Status: I have no further comment.

- The driveway apron should be designed to provide a maximum cross slope of 2% along the walking route of pedestrians (pedestrian zone).

Final Status: The plans include a driveway construction detail that requires provision of a 4-foot wide assessable route that will have a maximum cross slope of 2%. I find this to be acceptable and I have no further comment.

- The two end parking spaces within the garage will have difficulty in egress maneuvers. The applicant should provide information that acceptable vehicle circulation can be accommodated.

Final Status: The applicant has provided the requested turning templates and indicates that while difficult, will allow for vehicles to access and egress the subject parking spaces. I want to emphasize that these spaces will be very difficult to enter and exit and the size of the vehicle as well as the positioning and size of the abutting parked vehicle will play a role. Both abutting parking spaces require maneuvering around a building column that will likely shift the vehicle to the left side of the parking space. Backing maneuvers onto York Street are unsafe and not acceptable. Given the analysis provided, the applicant/engineer take full responsibility for this condition and ensuring that the access operates safely. I do recommend a condition of approval that includes monitoring of on-site vehicle circulation following occupancy. The applicant shall conduct the monitoring study in consultation with City Staff. If the outcome of that study indicates unsafe conditions, elimination of parking spaces will be required.

Revised Final Status: Plans have been revised and I find the layout to be acceptable. I would note that parking aisle widths are slight less than City standards. I support waivers given low parking turnover and that the plans nearly complies with City standards (e.g. less than one foot narrower)

- The applicant shall document that City driveway spacing standards along York Street are met.

Final Status: Refer to previous comments.

- The existing sidewalk or a temporary sidewalk shall be provided along the property frontage during construction. The applicant should provide details on construction activity that would impact traffic on York Street and how traffic will be managed.

Final Status: The applicant has provided a plan the notes a sidewalk to remain if feasible. Approval of the construction management is contingent on maintaining a safe and ADA compliant pedestrian sidewalk along the property frontage. The applicant shall coordinate with DPW on construction activity in York Street that would impact traffic mobility. No construction activity is to occur without approval of an approved traffic control plan.

- Based upon the low trip generation expected from the project a Traffic Study is not required.

Final Status: I have no further comment.

<u>New Comment</u>

- **The parking supply proposed by the applicant exceeds City of Portland requirements and thus requires the applicant to provide documentation that supports the number of parking spaces. The applicant has provided**

details on the type and size of the residential units and the tenant characteristics of the units. Based upon the information provided, I find the parking supply to be reasonable.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY LIN INTERNATIONAL

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"One Vision, One Company"

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41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

MEMORANDUM

TO: Shukria Wiar, Planner
FROM: Lauren Swett, PE
DATE: February 24, 2017
RE: 161 York Street, Preliminary Level III Site Plan Application

---

Woodard & Curran has reviewed the Preliminary Level III Site Plan Response to Comments for the proposed redevelopment project located at 161 York Street in Portland, Maine. The project involves the construction of a five-story condominium building.

Documents Reviewed by Woodard & Curran

- Preliminary Level III Site Plan Response to Comments, dated February 9, 2017, prepared by Acorn Engineering, Inc., on behalf of York Street Redevelopment, LLC.
- Updated engineering plans, dated February 9, 2017, prepared by Acorn Engineering, Inc., on behalf of York Street Redevelopment, LLC.

Comments *(Comments in italics are repeated from previous memos.)*

1) In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards.
   a) Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
   b) General Standard: The project will result in a net increase in impervious area of approximately 5,410 square feet. As such, the project is required to include stormwater management features for stormwater quality control. The Applicant has proposed an Underdrained Subsurface Sand Filter that will provide treatment of the on-site stormwater in conformance with the standards.
   c) Flooding Standard: The project will result in a net increase in impervious area of approximately 5,410 square feet. As such, the project is required to control the rate or quantity of stormwater runoff from the site. The project's stormwater management systems will provide adequate flood control such that flows from the site will be reduced in the post-development condition.
2) *The Applicant is proposing a retaining wall over four feet in height. The Landscape Plan refers to the Structural Plan, which has not been received at this time, for the retaining wall design. A geotechnical evaluation of the proposed project was not submitted with the application. Has a geotechnical evaluation been performed, or are the subsurface soil types and soil bearing capacities assumed in the design of the slope stabilization / wall system? If assumed, we recommend noting those assumptions on the plans and we recommend requiring verification of those assumptions and associated calculations by the contractor and design engineer during construction.* The Applicant has acknowledged, and has noted that the retaining wall design will be submitted as part of the Building Permit submission.
3) *The Applicant has noted that exterior lighting will be proposed, but cut sheets and a photometric plan have not been provided at this time. Appropriate cut sheets and a photometric plan should be provided as part of the final application in accordance with the City of Portland Technical Manual.* The Applicant has provided cut sheets, but a photometric plan has not been provided at this time.
4) All other comments have been addressed at this time.

Att. 3

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

161 York Street

Jeff Tarling <jst@portlandmaine.gov> Fri, Feb 24, 2017 at 12:54 PM
To: Shukria Wiar <shukriaw@portlandmaine.gov>

Hi Shukria -

161 York Street Landscape Review -

The revised landscape plan for this project has been improved from the original concept plan.

Street trees - the project proposes to plant 5 'Armstrong' Red Maple trees along or near the York Street frontage. This selection is consistent with the same species planted nearby and has an upright shape to fit into the tight vertical space. Alternative tree types would include: "Bowhall" Red Maple, 'Regal Prince" Upright Oak, The placement of two center trees could impact the balconies that slightly project out from the building just above the tree location. The project may consider a lower growing upright tree like European Hornbeam or Magnolia in these two locations to perhaps reduce future tree topping of the taller 'Armstrong" Red Maple. There are two additional "Armstrong" Red Maple located on the left side of the York Street frontage.
Condition recommendation - a raised boarder should be installed to protect the four trees and landscape area along York Street, this could be granite, concrete - something that can protect the planting space from winter snowplowing and deicing materials along with discouraging foot traffic.

Landscape Areas - the project site boarder on the Northwest side corner includes a 6' stockade fence which will help define the property edge and provide screening and privacy for the site. Within the sidelines landscape ornamental switch grass is proposed which will add seasonal interest and low maintenance approach. The back parking area is screened also with a fence and 6 Red Cedar trees, these are shown as 5 gallon size but should be up-sized to 4-5' height size to be effective screening in the near future. The landscape plan shows an additional five Red Cedar trees closer to the building near the parking area, while this could work as additional screening, there are other varieties of plants like Dogwood, Stewartia, Magnolia, 'Little King' River Birch that would provide greater ornamental characteristics. It might be nice for future residents to enjoy something that might have flowers or interesting bark to add interest to the site. 'Cape Cod' type bituminous curbing, or similar, is recommended to provide definition between the paved surface and landscape area. Tree sizes on the "Armstrong" Red Maple are shown at 3" caliper, in tight conditions like this project a slightly smaller 2", or 2 - 2.5" tree with a smaller root ball might work to an advantage with adapting to the site and fitting the rootball into the planting space.

Existing Veg - The project shows "6" unknown plantings to remain. These plants should be protected by construction fencing and if lost during site work, replaced with similar plant mass. Existing Norway Maple trees at the Northwest or back edge are shown to be removed. Due to the species type (invasive) and location this is a recommended treatment.

Overall the revised landscape treatment for the 161 York Street project is improved, a few tree types adjustments or improvements could add greater interest.

Jeff Tarling

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Dept
212 Canco Road
Portland, ME. 04103
(207) 808-5446
jst@portlandmaine.gov

[Quoted text hidden]

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

161 York Street

Caitlin Cameron <ccameron@portlandmaine.gov> Fri, Mar 17, 2017 at 2:05 PM
To: Shukria Wiar <shukriaw@portlandmaine.gov>
Cc: Deb Andrews <dga@portlandmaine.gov>

It appears the revised submittal addresses the two design concerns raised:
- the building reveal in the center of the front facade is at least 12" deep. The balcony reveals remain 4"
- the trellis material at the main building entrance has been changed to metal, making the material selection consistent with the material palette of the rest of the project

[Quoted text hidden]

--

Caitlin Cameron, AICP, Associate AIA, LEED AP
Urban Designer
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101
phone: (207) 874-8901
email: ccameron@portlandmaine.gov

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

To: Shukria Wiar, Planner, Planning & Urban Development Department

From: Tyler Norod, Housing Planner, Housing & Community Development Division

Date: February 24, 2017

Subject: 161 York Street – Inclusionary Zoning Conditional Use

---

Conditional Use is authorized by Division 30, Section 14-487, Ensuring Workforce Housing, to secure the creation of Workforce Housing Units as part of new residential projects that propose 10 or more units. The ordinance requires a minimum of 10% of the project to be restricted for Workforce Households and that the number of bedrooms required under Section 14-487(e)3 be at least 10% of the total number of bedrooms made available as part of the project. The project located at 161 York Street proposes the creation of 11 units of for-sale housing. The Applicant has chosen to fulfill the inclusionary zoning requirements by paying a fee-in lieu equivalent to today's rate of $100,000 per owed workforce unit. The proposed project would thus be required to pay a total fee of $110,000 into the City's Housing Trust Fund in lieu of the creation of actual housing units for workforce households. Should at a later date any change in total unit count be considered, a revised proportional fee-in lieu payment will also be required. As such, the project has met the minimum requirements set forth in Section 14-487.

Staff recommends the Board Approve this Conditional Use provided the Applicant and the Applicant agrees to pay a fee in full of $110,000 into the City's Housing Trust Fund based on the 11 units being created as part of the project before a Certificate of Occupancy may be issued. The Applicant and the City may enter into a written agreement to codify this requirement and a Certificate of Compliance may be issued by the Planning Authority at the Applicant's request once the full payment has been received by the City.

Sincerely,

Tyler Norod
Housing Planner

Portland, Maine — Yes. Life's good here.

November 29, 2016

Re: Wastewater Capacity Authorization

Address: **161 York Street**
Applicant: Michael Cianchette, York Street Development

Planner: Shukria Wiar

Anticipated Wastewater Flows:

Estimate of Anticipated Design Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing flow to be removed				
Residential Units	3-Bedroom	2	270	540
Proposed flow				
Residential Units	2-Bedroom	4	180	720
Residential Units	3-Bedroom	7	270	1,890
			Net Change	**+ 2,070**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Comments:
The Department of Public Works, which includes the Water Resource Division, have reviewed and determined that the downstream sewers from the project address have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development.

You are reminded that the sewers you are proposing to connect into convey both sanitary and stormwater (Combined Sewer) and therefore a backflow preventer is suggested. Any addition of stormwater flows in this drainage area will have an impact on CSO discharge volumes therefore no roof, sump pump or site drainage may be discharged to the sanitary sewer. It is noted in your preliminary plan dated 2016-11-02 of the intent to remove all roof drains from entering the sewer system.

If the City can be of further assistance, please contact me at all 874-8840 or brad@portlandmaine.gov

Sincerely,
CITY OF PORTLAND

Bradley A. Roland, P.E.
Senior Project Engineer

CC:
Jeffrey Levine, Director, Department of Planning and Urban Development, City of Portland
Stuart O'Brien, Planning Director, Department of Planning and Urban Development, City of Portland
Barbara Barhydt, Development Review Services Mgr., Dep't. of Planning and Urban Development, City of Portland

Kathi Earley, City Engineer/Engineering Manager, Portland Department of Public Works

Nancy Gallinaro, Water Resources Manager, Portland Department of Public Works
Rachel Smith, Industrial Pretreatment Coordinator, Portland Department of Public Works
John Emerson, Wastewater Coordinator, Portland Department of Public Works

Lauren Swett, Woodard & Curran, DPW Development Review
Scott Firmin, Director of Wastewater, Portland Water District

Memorandum

Department of Planning and Development
Historic Preservation Office

To: **Chair Boepple and Members of the Planning Board**

From: **Deborah Andrews, Historic Preservation Program Manager**

Cc: **Shukria Wiar, Planner**

Date: **February 24, 2017**

Re: **Proposed residential development at 161 York Street**

This is to confirm that I have participated in the design review sessions on the residential structure proposed for 161 York Street. Because the development is located within 100 feet of the State Street boundary of the West End Historic District, my role has been to review the proposal for its general compatibility with the major character-defining elements of the portion of the West End district in the immediate vicinity. Based on the revised design proposal now before the Planning Board, I am satisfied that the proposed development is reasonably compatible with the character of existing development on lower State Street. That said, I offer the following comments for the Board's consideration:

- No computer-generated views have been provided illustrating the proposed development in the context of surrounding structures. This makes assessment of its compatibility more difficult than it has to be. A perspective view of the project from lower State Street would be particularly helpful in this regard.
- Given the fact that the building will be visible from State Street and that there is a marked change in grade as one travels south on State, it is likely that the building's rooftop mechanicals will be visible. Staff strongly encourages that the mechanicals be consolidated and screened.
- The proposed wood pergola over the entrance walkway appears inconsistent with the material palette of the building. Staff would encourage consideration of a pergola made up of metal posts and rafters.
- Although the 4" reveals that have been added to provide some three-dimensional relief to the building façade are an improvement, staff recommends that the reveals or step-backs at the balconies be deeper to provide more significant architectural relief and interest. The 4" reveal at the center of the façade is acceptable as shown.

ACORN ENGINEERING, INC.

Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

November 8, 2016

Subject: Preliminary Site Plan and Subdivision Application
Redevelopment of 161 York Street - Portland, Maine

To Whom It May Concern,

York Street Redevelopment, LLC is pleased to submit the accompanying package of submission materials related to the proposed 11-unit condominium urban infill redevelopment of 161 York Street.

This submission package is intended to meet the City's Preliminary Submission Requirements as outlined in the Level III Application procedures. The proposed project site is located at 161 York Street near the Casco Bay Bridge and State Street. The lot was previously occupied by two 2-story dwellings that have recently been demolished; the lot is currently vacant. The property is proposed to be redeveloped into a five-story subdivision of condominiums classified as a "multi-family" residences. The development site is located within the City's R-6 Zoning District, and complies with the permitted uses within the zone. The developer intends to meet the inclusionary requirements by paying the required workforce contribution to the City.

The following documents and drawings are to be uploaded onto the City's electronic submission site per the procedure outlined in the application:

Documents:

- A. Cover Letter
- B. Level III Site Plan Application
- C. Evidence of Right, Title, and Interest
- D. Conformity with Conditional Use
- E. Summary of Easements
- F. Written Request for Waivers
- G. Evidence of Financial Capacity
- H. Stormwater Report
- I. Erosion and Sedimentation Control Report
- J. Fire Department Letter
- K. Solid Waste
- L. Utility Cover
- M. Construction Management Plan
- N. Architectural Design Narrative

Drawings:

- Preliminary Civil Site Plan Set, Dated 11/8/16
- Preliminary Architectural Plan Set, Dated 11/8/16

York Street Redevelopment, LLC and the design team look forward to your review of this project and are requesting to be placed on the next available workshop meeting with the Planning Board. If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,

William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

AA. Parking Analysis

The proposed development at 161 York St includes an eleven (11) unit condominium building with twenty-two parking spaces (22) or two spaces per unit. Twenty of the twenty-two parking spaces would be enclosed within the building with only two surface parking spaces. The unit sizes are relatively large and vary in size between 1,500 sf to 1,800 sf. The unit mix includes eight two-bedroom units and three three-bedrooms units. The majority of the two-bedroom units will include a small bonus room with closet that may serve as an office, den, guest or children's bedroom. The units will be marketed to young families, empty nesters and urban professionals.

Based upon the applicant's research there is a demand for market rate condominiums that include two parking spaces per unit that is presently not being met. As documented within the neighborhood meeting minutes' attendees voiced support of the number of onsite parking spaces given the limited availability off on street parking and current demand. Additionally, the two parking spaces per unit provides flexibility to the unit owners for guest parking, kayak storage, bicycle, scooter parking and so forth.

Given the type of proposed unit owners, bedroom count, unit size, lack of available on street parking, neighbors' concerns, and desire for flexibility the applicant respectively request the Planning Board allow the applicant to exceed the minimum parking standard.

Please let me know if you have any additional questions or comments.

Sincerely,

William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
p.m. (207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30

PROJECT NAME:

Riverside Self-Storage Containers

PROPOSED DEVELOPMENT ADDRESS:

547 Riverside Street, Portland, ME 04103

PROJECT DESCRIPTION:

Development of self-storage facility utilizing recycled shipping containers. The units will be accessed through drive aisles comprised of porous pavement.

CHART/BLOCK/LOT: 312/B/008-012

PRELIMINARY PLAN 2/2/2017
FINAL PLAN

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Bob LeBlanc Business Name: 547 Riverside LLC Address: 59 Moody St. City/State : Portland, Maine Zip Code: 04101	**Applicant Contact Information** Work #: (207) 879 - 2222 Home #: Cell #: Fax#: e-mail: robertleblanc1@me.com
Owner – (if different from Applicant) Name: N/A Address: City/State : Zip Code:	**Owner Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Agent/ Representative Name: Acorn Engineering, Inc. Will Savage, P.E. Address: 158 Danforth Street City/State : Portland, Maine Zip Code: 04102	**Agent/Representative Contact information** Work #: (207) 775-2655 Home #: Cell #: (207) 317-1884 e-mail: wsavage@acorn-engineering.com
Billing Information Name: See applicant information Address: City/State : Zip Code:	**Billing Contact Information** Work #: Home #: Cell #: Fax#: e-mail:

/ƛØƛf Engineer Name: See agent information Address: City/State : Zip Code:	**Engineer Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Surveyor Name: Owen Haskell, Inc. Address: 390 Route 1 Falmouth, Maine City/State : Falmouth, Maine Zip Code: 04105	**Surveyor Contact Information** Home #: Work #: (207) 774-0424 Cell #: Fax#: e-mail: ebrewer@owenhaskell.com
{tNJdzŎǘdzNJI·f 9yƎƛyŜŜNJ Name: Structural Integrity Consulting Engineers, Inc. Address: 77 Oak Street City/State : Portland, Maine Zip Code: 04101	**Architect Contact Information** Work #: (207) 774-4614 Home #: Cell #: Fax#: e-mail: aaron@structuralinteg.com
Attorney Name: Tom Jewell Address: 477 Congress Street City/State : Portland, Maine Zip Code: 04101	**Attorney Contact Information** Work #: (207) 774 - 6665 Home #: Cell #: Fax#: e-mail: tjewell@jewellbulder.com

Designated person/person(s) for uploading to e-Plan:

Name: Sam Lebel, E.I. (Acorn Engineering, Inc.)
e-mail: slebel@acorn-engineering.com

Name: Olivia Dawson, E.I. (Acorn Engineering, Inc.)
e-mail: odawson@acorn-engineering.com

Name: Will Savage, P.E. (Acorn Engineering, Inc.)
e-mail: wsavage@acorn-engineering.com

APPLICATION FEES:

Level III Development (check applicable reviews)	**Other Reviews (check applicable reviews)**
___Less than 50,000 sq. ft. ($750.00) ___50,000 - 100,000 sq. ft. ($1,000) _X_ 100,000 – 200,000 sq. ft. ($2,000) ___200,000 – 300,000 sq. ft. ($3,000) ___over 300,00 sq. ft. ($5,000) ___Parking lots over 11 spaces ($1,000) ___After-the-fact Review ($1,000.00 plus applicable application fee) **Plan Amendments (check applicable reviews)** ___Planning Staff Review ($250) ___Planning Board Review ($500) _____ The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($50.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	___Traffic Movement ($1,500) _X_ Stormwater Quality ($250) ___ Subdivisions ($500 + $25/lot) # of Lots_x_ $25/lot = _____ _X_ Site Location ($3,500, except for residential projects which shall be $200/lot) # of Lots___x $200/lot = _____ ___Other _____ ___Change of Use ___Flood Plain ___Shoreland ___Design Review ___Housing Replacement ___Historic Preservation

INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov (Please be sure to designate a person who will be responsible for uploading documents and drawings.) This step will generate the project ID number for your project.

2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at Pay Your Invoice , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.

3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
   Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
   Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
   Tab 3 - Preparing and uploading revised drawings and documents

   Applying Online Instructions

5. When ready, upload your files and documents into the following folders:
   "Application Submittal – Drawings"
   "Application Submittal – Documents"

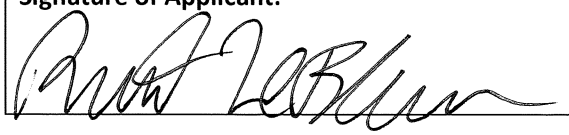
6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

APPLICANT SIGNATURE:

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	**Date:**
	2/2/17

PROJECT DATA

The following information is required where applicable, in order to complete the application.

Total Area of Site	290,448 sq. ft.
Proposed Total Disturbed Area of the Site	172,220 sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.	
Impervious Surface Area	
Impervious Area (Total Existing)	11,460 sq. ft.
Impervious Area (Total Proposed)	156,865 sq. ft.
Building Ground Floor Area and Total Floor Area	
Building Footprint (Total Existing)	0 sq. ft.
Building Footprint (Total Proposed)	80,960 sq. ft.
Building Floor Area (Total Existing)	0 sq. ft.
Building Floor Area (Total Proposed)	80,960 sq. ft
Zoning	
Existing	I-M
Proposed, if applicable	
Land Use	
Existing	Vacant
Proposed	Commercial - Self-Storage
Residential, If applicable	
# of Residential Units (Total Existing)	
# of Residential Units (Total Proposed)	
# of Lots (Total Proposed)	
# of Affordable Housing Units (Total Proposed)	
Proposed Bedroom Mix	
# of Efficiency Units (Total Proposed)	
# of One-Bedroom Units (Total Proposed)	
# of Two-Bedroom Units (Total Proposed)	
# of Three-Bedroom Units (Total Proposed)	
Parking Spaces	
# of Parking Spaces (Total Existing)	0
# of Parking Spaces (Total Proposed)	10
# of Handicapped Spaces (Total Proposed)	0
Bicycle Parking Spaces	
# of Bicycle Spaces (Total Existing)	0
# of Bicycle Spaces (Total Proposed)	0
Estimated Cost of Project	**$1 million**

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
X		1	Completed Application form
X		1	Application fees
X		1	Written description of project
X		1	Evidence of right, title and interest
N/A		1	Evidence of state and/or federal approvals, if applicable
X		1	Written assessment of proposed project's compliance with applicable zoning requirements
X		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
X		1	Written requests for waivers from site plan or technical standards, if applicable.
X		1	Evidence of financial and technical capacity
N/A		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
X		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
X		Proposed grading and contours;	
X		Existing structures with distances from property line;	
X		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
X		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
X		Preliminary infrastructure improvements;	
X		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
N/A		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
X		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
X		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
X		Exterior building elevations.	

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: 2/2/2017

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 547 Riverside St

Chart Block Lot Number: 044-B-007

Proposed Use: Industrial - Self storage
Previous Use: Vacant
Existing Sanitary Flows: 0 GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
Proposed connection to the existing sewer system in Riverside St.

Site Category		
	Commercial *(see part 4 below)*	X
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	
	Other *(specify)*	

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: TBD Phone: TBD
Owner/Developer Name: 547 Riverside, LLC
Owner/Developer Address: 59 Moody Street Portland, Maine 04101
Phone: (207) 879 - 2222 E-mail: robertleblanc1@me.com
Engineering Consultant Name: Will Savage, P.E. - Acorn Engineering, Inc.
Engineering Consultant Address: 158 Danforth Street, Portland Maine 04102
Phone: (207) 775-2655 Fax: E-mail: wsavage@acorn-engineering.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 24 GPD
Peaking Factor/ Peak Times: Diurnal flow pattern
Specify the source of design guidelines: *(i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify)* State of Maine Subsurface Wastewater Disposal Rules, Effective 8/3/15

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A

Do you currently hold Federal or State discharge permits? Yes_____No ____

Is the process wastewater termed categorical under CFR 40? Yes_____No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

Wastewater Flow Calculations
Source: State of Maine Subsurface Wastewater Disposal Rules

Existing Flow:

0 GPD

Proposed Flow:

Employees at place of employment with no showers

Equation: Q = 12 GPD X Employees
*It is assumed there will be at most two employees working
Q = 12 X 2
Q = 24 GPD

ACORN ENGINEERING, INC.

Shukria Wiar – City Planner
Planning Division, City of Portland
389 Congress Street
Portland, ME 04101

March 14, 2017

Subject: Response to Planning Board Comments Letter
Redevelopment of 161 York Street – Portland, Maine

Shukria Wiar:

On behalf of York Street Redevelopment, LLC we are pleased to submit this package of revised plans and documents that has been modified based upon the Planning Board hearing on February 28, 2017. The major items that this submission package addresses is the amount of parking, the snow storage and utilization of Guilford Court, and the northerly curb cut along York Street.

The result of the modifications to the project are as follows:

- The proposed parking has decreased from twenty-two to twenty spaces. The subsurface wall has been relocated closer to York Street, reducing the overall size of the structure while allowing the two end spaces to maneuver more easily. Ninety percent of the parking is covered and resides within the structure as opposed to surface parking. The revisions eliminated the need for the four compact parking spaces while providing a four ft driveway end space for vehicles to back into thereby improving the overall circulation of the parking garage. The plans also require signage within the garage directing users not to back into York St.

- The site and grading plans have been revised to provide more snow storage both on the subject property and at the end of Guilford Court. Given the limited parking the driveway entrance was reduced from 18 ft to 12 ft at the end of Guilford Court. A fence was also added to provide a delineation between the Guilford Court right-of-way and adjacent parcel. The fence will act as a backstop to prevent snow from spilling onto the adjacent parcel while allowing the snow pile to be stacked higher and more efficiently. The grades were also lowered at the end of Guilford Court to provide more opportunities for storage. Finally, the language and details in the condominium documents will be revised to provide a more descriptive course of action for Guilford Court's maintenance once a meeting is held with the City's Corporation Counsel.

- The northerly curb cut will be a condition of approval pending the final language and conclusions of the above-mentioned future meeting.

- Modifications to the pergola posts and the location of the fence.

The following documents and drawings will be uploaded into the City's electronic submission site to supplement those already submitted for the Preliminary Application:

Documents:

- Section D: *Updated* Conformity with Applicable Zoning Requirements
- Section X: *Updated* Final Site Plan Application
- Section AB: Revisions Letter

Drawings:

- *Updated* Civil Plan Set, Dated March 14, 2017
- *Updated* Architectural Plan Set, Dated March 28, 2017
- Plan 31. Main Entrance Section
- Plan 32. Building Renderings

The revised condominium documents will be submitted under separate cover following the meeting between Michael Cianchette and the City's Corporation Counsel. If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,

William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

Att. C

Doc#: 47868 Bk:32580 Pg: 186

MAINE REAL ESTATE TAX PAID

WARRANTY DEED
Maine Statutory Short Form

Know all Persons by these Presents,

That we, Rebecca A. Lake and Roxanne A. Larochelle, of Portland, Maine, for consideration paid, grant to:

York Street Redevelopment, LLC

a limited liability company organized and existing under the laws of the State of Maine, and having a mailing address of: 42 Market Street, Portland, Maine 04101, with **warranty covenants**, the land in Portland, County of Cumberland, and State of Maine, described as follows:

> A certain lot or parcel of land, together with any buildings and improvements thereon, situated in the City of Portland, County of Cumberland, and State of Maine being more particularly described in Exhibit A attached hereto and made a part hereof.

Witness our hands and seals this 9th day of September, 2015.

Signed, Sealed and Delivered
in the presence of

.....

.....

.....
Rebecca A. Lake

.....
Roxanne A. Larochelle

State of Maine
County of Cumberland ss September 9, 2015

Then personally appeared before me the above named Rebecca A. Lake and Roxanne A. Larochelle and acknowledged the foregoing instrument to be their free act and deed.

.....
Attorney at Law ~~/Notary Public~~

Printed Name: DONNELLY S. DOUGLAS
Maine Attorney at Law
Maine Bar No. 147

EXHIBIT A
161 YORK STREET, PORTLAND, MAINE

A certain lot or parcel of land with the buildings thereon situated in the city of Portland, Cumberland County, Maine and bounded and described as follows:

Beginning at a stake on the northerly side of York Street in the corner of a lot of land formerly occupied by Joseph Deering, thence running southerly by said street one and a half rods or less to land formerly occupied by Eleazar Holmes; thence northwesterly by said Holmes lot to the corner of said Holmes lot; thence northeasterly at right angles with the line of the Holmes land to the Deering lot aforesaid; thence by the said Deering lot to said York Street at the point of beginning, reserving a passageway four and one-half feet in width upon the side of said lot next to the said Holmes lot to be used in common by the owners of the lot hereby conveyed and the owners of said Holmes lot.

Also including an easement over a strip of land adjacent to the within described premises as reserved in a deed from Rosary M. Larochelle to Tacha Vosburgh dated May 18, 1989 and recorded in said Registry at Book 8762 Page 284 and described therein as follows:

An easement in a strip of land to be used as a driveway solely and exclusively, for the use of the dominant estate and their invitees and such vehicles as needed for maintenance and improvements of both the dominant estate and the easement itself. Said strip of land is to begin at the southeasterly corner of the Rosary M. Larochelle's contiguous estate, also known as 161 York Street, and extend thirteen (13) feet east along York Street to a point and thence in a northwesterly direction fifty-six (56) feet parallel to the eastern boundary of the Rosary M. Larochelle 's contiguous estate to a point and thence 90° westerly for thirteen (13) feet to a point and thence southerly along the easterly boundary of the Rosary M. Larochelle 's said contiguous estate for fifty-six (56) feet to the point of beginning.

Being the same premises conveyed to the Grantors herein by Corrective Deed from Rosary M. Larochelle dated October 31, 2014 and recorded in Cumberland County Registry of Deeds in Book 31885 Page 225.

Received
Recorded Register of Deeds
Sep 10,2015 01:38:19P
Cumberland County
Nancy A. Lane

Doc#: 47867 Bk:32580 Pg: 183

MAINE REAL ESTATE TAX PAID

WARRANTY DEED
Maine Statutory Short Form

KNOW ALL BY THESE PRESENTS, that I, **Rosary M. Larochelle,** of Portland, Maine, for consideration paid, grant to:

York Street Redevelopment, LLC

a limited liability company organized and existing under the laws of the State of Maine, whose mailing address is: 42 Market Street, Portland, Maine 04101, with **warranty covenants**, the real estate situated in Portland, County of Cumberland, and State of Maine, described as follows:

> A certain lot or parcel of land, together with any buildings and improvements thereon, situated in the City of Portland, County of Cumberland, and State of Maine being more particularly described in Exhibit A attached hereto and made a part hereof.

Witness my hand and seal this 9th day of September, 2015.

Signed, Sealed and Delivered
in the presence of

Rosary M. Larochelle

Rosary M. Larochelle

State of Maine
County of Cumberland

September 9, 2015

Then personally appeared before me the above-named Rosary M. Larochelle and acknowledged the foregoing instrument to be her free act and deed.

Before me,

Attorney at Law/~~Notary Public~~
Printed Name:

DONNELLY S. DOUGLAS
Maine Attorney at Law
Maine Bar No. 147

EXHIBIT A
163 YORK STREET, PORTLAND, MAINE

Certain lots or parcels of land with the buildings thereon situated in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

FIRST: A certain lot or parcel of land, situated on the northwesterly side of York Street in said Portland and more particularly bounded and described as follows:

Beginning at the northwesterly side of York Street at the southerly corner of land conveyed by Alpheus Boothby to Josephine Sachelie et al. by deed dated July 7, 1924, and recorded in the Cumberland County Registry of Deeds in Book 1173, Page 185; thence southwesterly by the northwesterly sideline of York Street seventy-four and twenty-five one hundredths (74.25) feet to the easterly corner of land conveyed by Nathan Dyer et al. to Stephen K. Dyer by deed dated May 26, 1862, and recorded in said Registry of Deeds in Book 313, Page 204; thence northwesterly by said Dyer land sixty (60) feet to the southeasterly sideline of the land conveyed by George W. Verrill, Assignee, to Ansel G. Dewey by deed dated June 8, 1877, and recorded in said Registry in Book 439, Page 183; thence northeasterly by said Dewey land and by land conveyed by Francis 0. Sawyer to Charles Dyer by deed dated November 11, 1872, and recorded in said Registry in Book 395, Page 492, seventy-four and twenty-five one hundredths (74.25) feet to the westerly corner of said Sachelie land; thence southeasterly by said Sachelie land sixty (60) feet to the point of beginning.

SECOND: Also, a certain lot or parcel of land situated on the southeasterly side of Guilford Court in said Portland and more particularly bounded and described as follows:

Beginning on the southeasterly sideline of land conveyed by Brown Company to Carmelo S. Sachelie by deed dated April 6, 1942, and recorded in said Registry in Book 1676, Page 128, at the northerly corner of land conveyed by George W. Verrill, Assignee, to Ansel G. Dewey by deed dated June 8, 1877, and recorded in said Registry in Book 439, Page 183; thence northeasterly by said Sachelie land and by the southeasterly sideline of Guilford Court seventy-five (75) feet to the westerly corner of land conveyed by Cynthia Rhodes to Adeline N. Skelton by deed dated March 21, 1872, and recorded in said Registry in Book 393, Page 176; thence southeasterly by said Skelton land seventy (70) feet to the northerly corner of land conveyed by Alpheus Boothby to Josephine Sachelie by deed dated July 7, 1924, and recorded in said Registry in Book 1173, Page 185; thence southwesterly by said Sachelie land and by the first parcel herein described seventy-five (75) feet to the easterly corner of said Dewey land; thence northwesterly by said Dewey land seventy (70) feet to the point of beginning.

Also conveying all the right, title and interest in and to Guilford Court and in the passageway four and one-half (4 ½) feet wide leading to York Street of which this Grantor may be possessed.

EXCEPTING AND RESERVING from the above-described premises a certain lot or parcel of land being more particularly described as follows: Beginning at a point on the northwesterly side of York Street fifty-three (53) feet from the intersection of York Street and State Street; thence northeasterly along said York Street twenty-one (21) feet to a point; thence northwesterly sixty (60) feet, more or less, along the land now or formerly of Charles Dyer to a court or passageway now or formerly of F.O. Sawyer; thence northeasterly along said court or passageway fifteen (15) feet to a point; thence southeasterly sixty (60) feet, more or less, along a line parallel to said prior sixty (60) feet course along the land of Dyer to the northwesterly side of York Street; and thence southwesterly along said York Street fifteen (15) feet to the point of beginning.

Being a portion of the premises conveyed by warranty deed October 11, 1973 from Josephine B. Martorana to Rosary M. Larochelle and Ralph A. Larochelle as joint tenants recorded in Cumberland County Registry of Deeds in Book 3471 Page 143. The said Ralph A. Larochelle deceased January 2, 2010 and the said Rosary M. Larochelle acquired full title as surviving joint tenant.

Further reference is made to Affidavit of Rosary M. Larochelle dated September 9, 2015 to be recorded herewith.

Received
Recorded Register of Deeds
Sep 10,2015 01:37:11P
Cumberland County
Nancy A. Lane

WARRANTY DEED
(MAINE STAUTORY SHORT FORM)

KNOW ALL PERSONS BY THESE PRESENTS, that the Guilford Court Condominium Association, under Declaration dated April 29, 2005 and recorded with the Cumberland County Registry of Deeds in Book 22586, Page 99, acting by and through its President, Charles R. Gustafson ("Grantor") by agreement of all the Unit Owners, attached hereto as **Exhibit A**

for valuable consideration paid, the receipt of which is hereby acknowledged, RELEASES from said Declaration and GRANTS with WARRANTY COVENANTS to

YORK STREET REDEVELOPMENT, LLC, a Maine Limited Liability Company with a mailing address of 42 Market Street, Portland, ME, 04101 ("Grantee"),

the land, together with the rights and burdens of record thereon and appurtenant thereto, in the City of Portland, County of Cumberland, State of Maine, ("Land"), described as follows:

BEGINNING at a point marked by a drill hole on the westerly sideline of York Street at the southeasterly corner of land now or formerly of the Guilford Court Condominium Association as described in a Declaration recorded with the Cumberland County Registry of Deeds in Book 22586, Page 99. Said point being further described as the northeasterly corner of land now or formerly of York Street Redevelopment, LLC, as described in a Deed recorded in said Registry in Book 32580, Page 186;

THENCE North 54° 21' 28" West by and along the northerly line of said land of York Street Redevelopment, LLC and other land of York Street Redevelopment, LLC as described in a Deed recorded in said Registry in Book 32580, Page 183, a distance of 132.00 feet to a point on the easterly sideline of Guilford Court;

THENCE North 35° 01' 53" East by and along the easterly sideline of said Guilford Court a distance of 5.00 feet to a point;

THENCE South 54° 21' 28" East over and across land of Grantor a distance of 132.00 to a point on the westerly sideline of York Street;

THENCE South 35°01'53" West by and along the westerly sideline of York Street a distance of 5.00 feet to the Point of Beginning.

Said Land containing 660 square feet or .015 acres, more or less.

MAINE REAL ESTATE TAX PAID

MEANING and intending to convey a portion of the same premises described in the Declaration recorded in said Registry in Book 22586, Page 99, being a portion of the same premises described in a Deed from Tacha Vosburgh, recorded in said Registry in Book 13221, Page 193.

RESERVING to Grantor an Easement to use the Land for utility, vehicular, and pedestrian access to land of the Grantor, inclusive of parking as may be permitted by the City of Portland or other competent authority from time-to-time, and storage of household refuse and recycling, provided any such storage shall be in covered containers designed for such purposes and maintained in good order and repair.

Notwithstanding the Easement, Grantor and Grantee acknowledge Grantee, its heirs, successors, and assigns, may utilize said Land for ingress and egress from York Street, Guilford Court, and other public and private rights-of-way as may exist from time-to-time, provided any such use by Grantee shall not unreasonably interfere with Grantor's Easement.

IN WITNESS WHEREOF, I, Charles R. Gustafson, President of the Guilford Court Condominium Association, have hereunto set my hand this 5 day of APRIL, 2016.

Witness

Charles R. Gustafson

STATE OF FLORIDA

COUNTY OF COLLIER, ss.

On this 5 day of APRIL, 2016, before me personally appeared the above named CHARLES R. GUSTAFSON and acknowledged the foregoing instrument to be his free act and deed.

INGRID CHAVEZ
Notary Public - State of Florida
Commission # FF 190178
My Comm. Expires Mar 12, 2019
Bonded through National Notary Assn.

Notary Public / Attorney-at-law

Exhibit A

GUILFORD COURT CONDOMINIUM ASSOCIATION

ACTION TAKEN BY UNANIMOUS WRITTEN
CONSENT OF ALL UNIT OWNERS WITHOUT MEETING

The undersigned, being all of the unit owners of the Guilford Court Condominium Association (the "Association") hereby consent to the taking of, and hereby take, the following Action, without holding a meeting, such Action being stated in the form of, and to be as fully effective as if taken by, a unanimous resolution or resolutions of the Unit Owners of the Association at a meeting thereof duly called and held on the date hereof at which all of the undersigned Unit Owners were present and action throughout:

RESOLVED: that the President, Charles R. Gustafson, be authorized to execute a Deed on behalf of the Association conveying a certain parcel of Land described in **Schedule A** attached hereto to York Street Redevelopment, LLC, subject to certain rights retained by the Association; and be it further

RESOLVED: that said Deed shall be executed and delivered on or before June 1, 2016, or it shall be of no force or effect; and be it further

RESOLVED: that York Street Redevelopment, LLC may correspond with holders of security interests as may be required under Maine law to effectuate said conveyance; and be it further

RESOLVED: that the Association shall receive a release from a certain easement presently held by York Street Redevelopment, LLC burdening the land of the Association as consideration; and be it

CERTIFIED: that Charles R. Gustafson is duly serving as President.

This document shall be filed with the minutes of the Association and recorded in the Cumberland County Registry of Deeds.

[SIGNATURE PAGES FOLLOW]

I, Eric A. Fortin, owner of Unit #1A by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 26314, Page 229, hereunto set my hand this 1 day of April, 2016.

Witness

Eric A. Fortin

STATE OF ME

COUNTY OF Cumberland, ss.

On this 1st day of April, 2016, before me personally appeared the above named _____ and acknowledged the foregoing to be his/her free act and deed.

Michele Murphy
Notary Public / Attorney-at-law

MICHELE M. MURPHY
Notary Public, Maine
My Commission Expires July 17, 2016

SEAL

I, Jeremy J. Daros, owner of Unit #1B by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 27212, Page 204, hereunto set my hand this 17th day of March, 2016.

Witness Debra Rancourt

Jeremy J. Daros

STATE OF Maine

COUNTY OF Cumberland, ss.

On this 17 day of March, 2016, before me personally appeared the above named Jeremy Daros and acknowledged the foregoing to be his/her free act and deed.

Notary Public / Attorney-at-law

CHERYL D. DEGEORGE
NOTARY PUBLIC
State of Maine
My Commission Expires
October 15, 2021

SEAL

I, Townsend S. Crum, owner of Unit #1C by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 26231, Page 251, hereunto set my hand this 19 day of February, 2016.

Witness

Townsend S. Crum

STATE OF ME

COUNTY OF Cumberland, ss.

On this 19th day of February, 2016, before me personally appeared the above named Townsend S. Crum and acknowledged the foregoing to be his/her free act and deed.

Notary Public / Attorney-at-law

SEAL

AMY E. BURROW
Notary Public, Maine
My Commission Expires June 12, 2021

I, Jensine Fraser, owner of Unit #1D by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 30001, Page 289, hereunto set my hand this 29 day of March, 2016.

Katherine Knight
Witness

Jensine Fraser

STATE OF Maine

COUNTY OF Cumberland, ss.

On this 29 day of March, 2016, before me personally appeared the above named Jensine Fraser and acknowledged the foregoing to be his/her free act and deed.

Alexandra Nichols
Notary Public / Attorney-at-law

SEAL

ALEXANDRA NICHOLS
Notary Public-Maine
My Commission Expires
January 22, 2022

We, Charles R. Gustafson and Mickey H. Gustafson, owners of Unit #2A by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 23348, Page 003, hereunto set our hands this 5 day of APRIL, 2016.

Witness

Charles R. Gustafson

Witness

Mickey H. Gustafson

STATE OF FLORIDA

COUNTY OF COLLIER, ss.

On this 5 day of APRIL, 2016, before me personally appeared the above named CHARLES R. GUSTAFSON and acknowledged the foregoing to be his/her free act and deed.

INGRID CHAVEZ
Notary Public - State of Florida
Commission # FF 190178
My Comm. Expires Mar 12, 2019
Bonded through National Notary Assn.

Notary Public / Attorney-at-law

STATE OF FLORIDA

COUNTY OF COLLIER, ss.

On this 5 day of APRIL, 2016, before me personally appeared the above named MICKEY H. GUSTAFSON and acknowledged the foregoing to be his/her free act and deed.

INGRID CHAVEZ
Notary Public - State of Florida
Commission # FF 190178
My Comm. Expires Mar 12, 2019
Bonded through National Notary Assn.

Notary Public / Attorney-at-law

We, Joann M. Wallace and Barry D. Pfouts, owners of Unit #2B by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 32436, Page 082, hereunto set our hands this _____ day of _____, 2016.

_____
Witness

_____
Joann M. Wallace

_____
Witness Calvin Maina

_____
Barry D. Pfouts

STATE OF _____

COUNTY OF _____, ss.

On this _____ day of _____, 2016, before me personally appeared the above named _____ and acknowledged the foregoing to be his/her free act and deed.

_____
Notary Public / Attorney-at-law

STATE OF FL

COUNTY OF Manatee, ss.

On this 1st day of April, 2016, before me personally appeared the above named Barry D Pfouts and acknowledged the foregoing to be his/her free act and deed.

CALVIN MAINA NOTARY My Comm. Expires October 9, 2018 No. FF 167362 PUBLIC STATE OF FLORIDA

_____
Notary Public / Attorney-at-law

We, Joann M. Wallace and Barry D. Pfouts, owners of Unit #2B by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 32436, Page 082, hereunto set our hands this 1st day of April, 2016.

Witness — Joann M. Wallace

Witness — Barry P. Pfouts

STATE OF Maine

COUNTY OF Cumberland, ss.

On this 1st day of April, 2016, before me personally appeared the above named Joann M Wallace and acknowledged the foregoing to be ~~his~~/her free act and deed.

~~Notary Public~~ / Attorney-at-law
Susan E Hunter.

STATE OF _____

COUNTY OF _____, ss.

On this _____ day of _____, 2016, before me personally appeared the above named _____ and acknowledged the foregoing to be his/her free act and deed.

Notary Public / Attorney-at-law

We, Jason Ouellette and Megan Ouellette, owners of Unit #3A by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 32442, Page 123, hereunto set our hands this 1st day of March, 2016.

Witness

Jason Ouellette

Tamara P. O'Donnell
Witness

Megan Ouellette

STATE OF MA

COUNTY OF Norfolk, ss.

On this 1st day of March, 2016, before me personally appeared the above named Jason Ouellette and acknowledged the foregoing to be his/her free act and deed.

THOMAS E. MERRIGAN, JR.
Notary Public
Massachusetts
Commission Expires Mar 25, 2022

Notary Public / Attorney-at-law

STATE OF Maine

COUNTY OF Cumberland, ss.

On this 2nd day of March, 2016, before me personally appeared the above named Megan J. Ouellette and acknowledged the foregoing to be his/her free act and deed.

Deborah Flanagan
Notary Public / Attorney-at-law
My Commission Expires: 09.12.20

SEAL

I, Lynn Miller, Trustee of the Lynn Szuchan Miller Trust, owner of Unit #3B by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 31148, Page 223, hereunto set our hands this 3 day of March, 2016. I further certify the Trust remains in full force and effect and that I am empowered to take this action on its behalf.

Cynthia McBrady
Witness

Lynn Miller, Trustee

STATE OF Maine

COUNTY OF Cumberland, ss.

Subscribed and sworn before me this 3 day of March, 2016, by Lynn Miller, proved to me on the basis of satisfactory evidence to the be person who appeared before me.

Deborah M Hubbard
Notary Public / Attorney-at-law

SEAL

DEBORAH HUBBARD
Notary Public, Maine
My Commission Expires January 23, 2017

SCHEDULE A

A certain parcel of land, together with the rights and burdens of record thereon and appurtenant thereto, in the City of Portland, County of Cumberland, State of Maine, ("Land"), described as follows:

BEGINNING at a point marked by a drill hole on the westerly sideline of York Street at the southeasterly corner of land now or formerly of the Guilford Court Condominium Association as described in a Declaration recorded with the Cumberland County Registry of Deeds in Book 22586, Page 99. Said point being further described as the northeasterly corner of land now or formerly of York Street Redevelopment, LLC, as described in a Deed recorded in said Registry in Book 32580, Page 186;

THENCE North 54° 21' 28" West by and along the northerly line of said land of York Street Redevelopment, LLC and other land of York Street Redevelopment, LLC as described in a Deed recorded in said Registry in Book 32580, Page 183, a distance of 132.00 feet to a point on the easterly sideline of Guilford Court;

THENCE North 35° 01' 53" East by and along the easterly sideline of said Guilford Court a distance of 5.00 feet to a point;

THENCE South 54° 21' 28" East over and across land of Grantor a distance of 132.00 to a point on the westerly sideline of York Street;

THENCE South 35□01'53" West by and along the westerly sideline of York Street a distance of 5.00 feet to the Point of Beginning.

Said Land containing 660 square feet or .015 acres, more or less.

Received
Recorded Register of Deeds
Apr 25,2016 09:22:08A
Cumberland County
Nancy A. Lane

Maine Revised Statutes

Title 23: TRANSPORTATION

Chapter 305: CONSTRUCTION, MAINTENANCE AND REPAIR

§3101. CALL OF MEETINGS; MAINTENANCE; REPAIRS

1. Definitions. As used in this subchapter, unless the context otherwise indicates, the following terms have the following meanings.

A. "Private way" means a public easement as defined in section 3021, subsection 2. [2007, c. 625, §1 (NEW).]

B. "Repairs and maintenance" does not include paving, except in locations where limited paving is demonstrated to be a cost-effective approach for fixing an erosion problem or to repair and maintain pavement existing as of July 1, 2007. "Maintenance" includes, but is not limited to, snowplowing, snow removal, sanding and ice control; grading and adding gravel and surface material; installing, cleaning and replacing culverts; creating and maintaining ditches, drains and other storm water management infrastructure; creating and maintaining sight distances on curves and at intersections; and cutting brush, trees and vegetation in the right-of-way. [2013, c. 198, §1 (AMD).]

[2013, c. 198, §1 (AMD) .]

2. Call of meeting. When 4 or more parcels of land are benefited by a private road, private way or bridge as an easement or by fee ownership of the private road, private way or bridge, the owners of any 3 or more of the parcels, as long as at least 3 of the parcels are owned by different persons, may make written application to a notary public to call a meeting. The notary may issue a warrant or similar written notice setting forth the time, place and purpose of the meeting. Copies of the warrant or similar written notice must be mailed by means of the United States Postal Service to the owners of all the parcels benefited by the private road, private way or bridge at the addresses set forth in the municipal tax records at least 30 days before the date of the meeting. The notice must inform the owners of the planned meeting's agenda and specify all items to be voted on, including, but not limited to, all proposed budget items or amendments that will determine the amount of money to be paid by each owner pursuant to subsection 5. Subsequent meetings may be called in the same manner or by a commissioner or board appointed at a previous meeting pursuant to subsection 5.

[2013, c. 198, §2 (AMD) .]

3. E-mail. E-mail may be used as an alternative to United States mail for sending notices and other materials under this section with the agreement of the receiving party as long as the communication includes the current address and telephone number of the sender for purposes of verification.

[2007, c. 625, §1 (NEW) .]

4. Voting. Each parcel of land benefited by a private road, private way or bridge represents one vote under this section; except that, if the bylaws of the association authorize more than one vote, then each parcel may represent no more than 2 votes under this subsection. The call to a meeting may state that an owner may elect in writing to appoint another owner to vote in the owner's stead. Owners voting by absentee ballot must be polled on all voting items that were not included in the agenda and the final tally must be reported to the owners.

[2013, c. 198, §3 (AMD) .]

4-A. Road associations. A road association under this subchapter through its commissioner or board may address present and future repair and maintenance of a private road, private way or bridge as authorized by the owners at meetings called and conducted pursuant to this section until the association is dissolved by a majority vote of its members.

[2013, c. 198, §4 (AMD) .]

5. Commissioner or board; assessment for repair, maintenance and other costs. The owners of parcels of land benefited by a private road, private way or bridge at a meeting called pursuant to subsection 2 may choose a commissioner or board, to be sworn. By a majority vote of the owners present and voting in person or by written proxy or absentee ballot, the owners may determine what repairs and maintenance are necessary and the materials to be furnished or amount of money to be paid by each owner for repairs and maintenance and may determine the amount of money to be paid by each owner for other costs, including, but not limited to, the cost of liability insurance for the officers, directors and owners and costs of administration. The determination of each owner's share of the total cost must be fair and equitable and based upon a formula provided for in the road association's bylaws or adopted by the owners at a meeting called and conducted pursuant to this section. The commissioner or board shall report the outcome of all votes to all the owners by United States mail within 30 days. Special assessments for emergency repairs and maintenance may be made at a duly held meeting called for that purpose. Emergency repairs and maintenance are those actions necessary to maintain or restore the functionality of the private road, private way or bridge.

[2013, c. 198, §5 (AMD) .]

5-A. Easements. A road association under this subchapter may negotiate an easement for the installation of a ditch, drain, culvert or other storm water management infrastructure to benefit the private road, private way or bridge. The easement must specify when a ditch, drain, culvert or other storm water management infrastructure must be maintained and include reasonable performance standards to guide the timing and extent of its upkeep and repair. The easement must also be recorded at the registry of deeds in the county in which the property subject to the easement is located. A ditch, drain, culvert or other storm water management infrastructure subject to an easement under this subsection must be under the control of and maintained by the road association.

[2013, c. 198, §6 (AMD) .]

6. Commercial or forest management purposes. This section does not apply to a private road, private way or bridge constructed or primarily used for commercial or forest management purposes.

[2007, c. 625, §1 (NEW) .]

7. Immunity from suit. A commissioner, board or owner of a parcel of land who undertakes activities of a road association under this subchapter is immune from civil liability in all actions by owners or lessees of other lots for the following activities:

A. The determination of repairs and maintenance to be undertaken; [2009, c. 238, §1 (NEW).]

B. The determination of materials to be furnished or amount of money to be paid by each owner for repairs and maintenance; [2009, c. 238, §1 (NEW).]

C. The collection of the money from each owner; and [2009, c. 238, §1 (NEW).]

D. The awarding of a contract authorized under section 3103. [2009, c. 238, §1 (NEW).]

[2009, c. 238, §1 (NEW) .]

8. Environmental violations. Notwithstanding subsection 7, a commissioner, board or owner of a parcel of land is not immune from an enforcement action for a violation of law under the jurisdiction of the Department of Environmental Protection or a municipality.

[2009, c. 238, §2 (NEW) .]

9. Insurance. A road association under this subchapter may purchase liability insurance to defend and indemnify the road association's officers, directors and owner members for any and all claims of liability or violation of law concerning the private road, private way or bridge and may include the costs of such insurance in the determination of each owner's share of the total cost under subsection 5.

[2013, c. 198, §7 (NEW) .]

SECTION HISTORY
1995, c. 227, §1 (AMD). 1997, c. 682, §1 (AMD). 1999, c. 552, §1 (AMD). 2007, c. 162, §1 (AMD). 2007, c. 625, §1 (RPR). 2009, c. 238, §§1, 2 (AMD). 2009, c. 239, §§1-3 (AMD). 2013, c. 198, §§1-7 (AMD).

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Characteristics of the 3 Types of Road Associations

Characteristic	Informal or Ad hoc Road Association	Statutory Road Association	Nonprofit Corporation Road Association
Legal Framework	None, or legal contract theory	Private Way Law: Title 23 §3101-3106	Maine Nonprofit Corporation Act: Title 13-B
Formation time, complexity, and cost	Short, simple, inexpensive	Approx. 2 months, relatively simple, inexpensive	Long, complex, moderately expensive
Landowner participation	Voluntary	Not voluntary	Voluntary until agreement is signed
Needs agreement signed by all owners	No	No	Yes
Power to collect from all owners whether sign on or not	No	Yes	No
Assessment fee holds when property changes hands	No	Yes	Yes
Association duration	Can be cancelled at any time	Until dissolved by a majority vote	Indefinite
Liability coverage	Individuals liable; difficult to buy insurance	Board members, owners or commissioners may have civil liability immunity for association decisions; association able to buy insurance for officers and members	Individuals can be indemnified by corporation; association able to buy insurance for officers and members
Association has ownership interest in road	No	No	Yes
Need to file tax forms/pay taxes	No	Not usually	Yes
How banks regard	Mixed	Positively	Positively
Municipality may use public funds to assist maintenance	No	If work contributes to the protection or restoration of a great pond	If work contributes to the protection or restoration of a great pond
Must have annual meeting to adopt annual budget and hold election	No	Yes	Yes Check bylaws
Operates with bylaws	No	Optional	Yes

ACORN ENGINEERING, INC.

D. Conformity with Applicable Design Standards

The following statement is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Article V Section 14-526.

OVERVIEW

This project conforms with all the applicable design standards of Section 14-526 as demonstrated in the following narrative.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

   The site is located on 161 York Street which is a principal arterial and supports a high traffic volume. The first level of parking will be accessed from York Street and the second level from Guilford Court. It is predicted that the incremental increase in traffic volume will not create or aggravate any hazards and thus not impact overall safety.

2. Access and Circulation:

   a. Site Access and Circulation.

      The project proposes one curb cut to access the parking garage while decreasing the two existing curb cuts located on either side of the proposed building on York Street. Over seventeen (17) feet of granite curb will be installed along the front property line to the southerly extent of the property line. Nearly a foot of granite curb will be installed along the front property line extending to the easterly corner of the existing driveway easement. A portion of the curb cut will remain due to an existing easement on the applicant's property with the abutter. Residents of 161 York Street will not utilize this existing driveway.

      (i) The development will provide safe access and internal circulation for both pedestrians and vehicles.

      (ii) It is expected that the proposed 2-story parking garage will serve at full capacity eighteen (18) vehicles on two levels – 14 on the garage level with access from York Street and 4 on the first floor with access from Guilford Court. The points of access and egress are such that new traffic will not create a conflict with existing turning movements or traffic flows. Vehicles exiting the property will not have to back out onto either York Street or Guilford Court. The overall width of the parking garage exit on York Street is 18 feet which will provide adequate site distance and access. Additionally, the building is set back five and a half (5.5) feet from the York Street sidewalk. The overall width of the parking garage exit to Guilford Court is increased to 20 feet to facilitate access and circulation.

(iii) The site does not feature drive up services as mentioned in this requirement.

b. Loading and Servicing:

(i) Not required. There will be adequate area along adjacent streets and within the proposed drive aisle for infrequent periods of tenants moving in/out of the building.

c. Sidewalks:

(i) The existing sidewalk along York Street is comprised of brick with granite curb and will be reconstructed to City Standards as part of the project. There is no existing or proposed sidewalk on the private Guilford Court.

(ii) Due to the substandard condition of the existing sidewalks and likelihood that the proposed construction will impact the sidewalk integrity, the sidewalks will be replaced with curb added in or reclaimed to areas as noted on the Civil Site Plan, C-10.

(iii) Internal brick sidewalks on both sides of the building will be provided to facilitate the movement of pedestrians to the City ROW and to and from parking spaces.

3. Public Transit Access:

a. The development does not exceed twenty (20) or more residential dwelling units.

b. A new transit stop is not proposed as part of the project.

c. A new transit stop is not proposed as part of the project.

4. Parking:

a. Location and Required Number of Vehicle Parking Spaces:

(i) With the proposed eleven (11) units, twenty (20) proposed parking spaces surpasses the minimum requirement.

(ii) A parking study is not required.

(iii) The amount of parking exceeds the requirements by more than 10%. A parking analysis performed with Auto Turn confirms that the twenty (20) spaces are appropriate for the eleven (11) multi-bedroom condominiums.

(iv) The parking dimensions are such that the plans are in conformance with the City of Portland Technical Manual except for the lower parking garage drive aisle features a width of 23.45'

(v) The internal parking lot will be constructed with a permanent and durable concrete surface, and the external parking lot a bituminous surface, neither of which is subject to ponding or erosion.

b. Location and Required Number of Bicycle Parking Spaces:

(i) Wall-mounted bicycle storage will be provided internally within the second level of the parking garage. A minimum of 5 bicycle mounts will be provided.

c. Motorcycles and Scooter Parking:

(i) The project does not provide designated motorcycle/scooter parking, but off-street opportunities exist within the parking garage.

d. Snow Storage:

(i) Snow storage space will be provided in the landscaped areas surrounding the building. Snow storage is shown on plans C-10 and C-11.

(ii) Snow storage shall not be located where it will adversely impact the functionality of the stormwater management system.

5. Transportation Demand Management (TDM):

a. A TDM plan is not required for this project.
b. A TDM plan is not required for this project.
c. A TDM plan is not required for this project.

(b) Environmental Quality Standards

1. Preservation of Significant Natural Features:

a. The existing site contains no prominent significant natural features therefore no issue related to the preservation of these features applies.

b. Not applicable.

2. Landscaping and Landscaping Preservation:

a. Landscape Preservation.

(i) There are ten (10) existing, mature trees on site as identified in the Existing Conditions Plan; it is proposed that these trees be removed to clear space for the development. Landscaping in the form of trees, shrubs, perennials, and grasses around the building will replace these trees.

(ii) There are three (3) existing trees within the property setback on Guilford Court. These trees will need to be removed to facilitate the redevelopment. On February 8, 2017 a site visit was conducted with Rene Noel, Jr., President of Southern Maine Forestry Services. It was confirmed that the three (3) trees within the rear property setback are an invasive species, Norway Maple. Furthermore, the trees are in poor health. A letter outlining the investigation will be uploaded to the Project's E-Plan submissions upon receipt.

(iii) Due to the existing, sparse landscaping on site, no protection during construction will be necessary.

(iv) The applicant does not require a waiver.

(v) Not applicable.

b. Site Landscaping.

(i) Landscaped Buffers:

(a) The solid waste storage located within the garage level will be enclosed and not visible from the public sidewalks, street, or adjacent properties.
(b) The project has eighty-nine (89) linear feet of frontage along York Street; per requirement, it is proposed that a minimum of six (6) shrubs or shrub alternatives per forty-five (45) feet of frontage are planted within this setback as noted in greater detail in the Landscape Plan, L-1. This ratio equates to twelve (12) shrubs.

(c) Not applicable.

(d) Not applicable.

(ii) Parking Lot Landscaping:

a) Not applicable.

b) Not applicable.

c) Not applicable.

d) Not applicable.

e) Not applicable.

f) Not applicable.

(iii) Street Trees:

(a) There are a total of seven (7) street trees proposed on the site on seen on the Site and Landscape plans.

(b) The remaining four (4) required trees will be met by contributing to the City Tree fund.

3. Water Quality, Stormwater Management and Erosion Control:

a. Stormwater:

(i) The site is proposed to be graded as such to direct the majority of runoff into an underdrained subsurface chamber sand filter (USSF) that is considered a Best Management Practice (BMP); all remaining stormwater will be directed offsite into the existing municipal system within York Street. There is no anticipated ponding or flooding using this design.

(ii) The majority of stormwater runoff from the site is proposed to be treated using filtration via a USSF BMP. All remaining runoff will be redirected into the stormwater line within York Street. The redirected runoff is less than what was produced from the two dwellings that previously existed on site. Therefore, the project will not increase the net rate of runoff nor adversely impact adjacent lots or the City street system.

(iii) The project will not increase the stormwater flows directly within the York Street separated stormwater system nor the overall flows within the property. Additionally, the

project will not create adverse impacts to the neighborhood or the wastewater treatment plant when compared to existing conditions.

(iv) The City's separated storm sewer system is anticipated to accommodate the stormwater flow; the post-development flow will not exceed the capacity of the existing system within York Street.

b. A site specific Stormwater Management Plan has been developed for the project to show compliance with Section 5 of the Technical Manual, including the basic, general, and flooding standards of MEDEP Chapter 500. Please refer to the Stormwater Management Plan for more information.

c. The project is not located in a watershed of an urban impaired stream as listed by the MEDEP.

d. Not applicable.

e. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The project is serviced by a public wastewater system.

f. The development will provide for adequate and sanitary disposal of sewage in accordance with Section 2 of the Technical Manual.

(c) Public Infrastructure and Community Safety Standards.

1. Consistency with City Master Plans:

   a. The project has been designed to be consistent with the City's Zoning Ordinance and off-site infrastructure.

   b. Not applicable.

2. Public Safety and Fire Prevention:

   a. The site has been designed to promote safe and inviting public and residential access.

   b. No changes to emergency access conditions within the surrounding streets are proposed.

   c. Fire hydrants are located within the adjacent street system. The new building will have fire suppression.

3. Availability and Adequate Capacity of Public Utilities:

   a. Public utilities within the vicinity of the site have the capacity to serve the proposed project. More information on utilities is included within the ability to serve letters to the respective utility companies.

   b. All electrical service lines will be underground.

   c. All new utility infrastructures will meet the provisions of the Technical Manual.

   d. The project will be served by connection to the public sewer system within York Street.

e. The sanitary sewer collection system meets all applicable sections of the Technical Manual. The stormwater management system is designed to meet the standards of Chapter 500.

f. The proposed building includes provisions for on-site storage of trash and recyclables temporarily until waste is removed from the site via a private hauler.

(d) Site Design Standards.

1. Massing, Ventilation and Wind Impact:

   a. The bulk, location and height of the existing building does not result in adverse impacts to abutting properties.

   b. The proposed building is designed to minimize bulk and height and is positioned as such to affect abutting buildings as little as possible.

   c. The proposed HVAC is designed to direct exhaust away from public spaces and adjacent residential properties.

2. Shadows:

   a. Not applicable.

3. Snow and Ice Loading:

   a. The proposed building features a flat roof. Should a standing seam metal roof be utilized, snow bars will be installed on each rooftop to prevent snow and ice accumulation and prevent it from falling onto adjacent properties or public ways. There are no proposed overhangs encroaching upon the right of way.

4. View Corridors:

   a. The project site is located outside the Downtown Vision View Corridor Protection Plan.

5. Historic Resources:

   a. The development is not located in a historic district, historic landscape district, or City designated landmark.

   b. The development is not located adjacent to designated landmarks or the historic landscape district. The development is within 100 feet of the historic district and is subject to review from the historic preservation

   c. There are no known archaeological resources on the site.

6. Exterior Lighting:

   a. Site Lighting.

      (i) Exterior lighting will be designed to meet the requirements of Section 12 of the Technical Manual. Cut sheets have been provided for the lighting typical of residential lights. A photometric plan is not anticipated to be necessary as lighting is minimal and

building-mounted. The lighting will be cutoff with no light emitted above the horizontal plane. In addition, the six-foot tall fence will further prevent light from spilling over onto adjacent properties. The lights will be energy efficient LED's that are dark sky friendly.

(ii) All proposed exterior lighting will employ house-side shielding per requirement.

b. Architectural and Specialty Lighting.

(i) No architectural or specialty lighting is proposed.

(ii) No up-lighting is proposed.

c. Street Lighting.

(i) No new street lights are proposed.

7. Noise and Vibration:

All HVAC and Mechanical equipment shall be accordance with the applicable zoning requirements.

8. Signage and Wayfinding:

a. All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

(i) The project is not located in a historic district or subject to Article IX.

(ii) Not applicable.

(iii) All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

9. Zoning Related Design Standards:

a. The project will be designed to meet the design standards within the R-6 Zone.

E. Summary of Written Easements

- **Existing Easements** – The Existing Conditions Plan developed by Spurwink Surveying, LLC identified an existing easement regarding the existing bituminous driveway on the northern side of the property; details outlining the rights to the driveway are recorded within Book 8761, Page 284.

- **Proposed Easements** – There are no proposed easements at this time.

F. Written Request for Waivers

Due to the tree investigation and the determination that the three trees within the property setback are all Norway Maple, an invasive species, and in poor health – there are no waivers requested at this time. Please refer to the document titled, "Conformity with Applicable Design Standards" for additional information.

Bangor Savings Bank
You matter more.

October 26, 2016

Planning Board
City of Portland

RE: York Street Redevelopment LLC – condominium project

To Whom It May Concern:

On behalf of Bangor Savings Bank I am pleased to provide this letter of support for York Street Redevelopment LLC for the above referenced project. Based on our prior experience with the project sponsor, we believe that the applicant has the financial capacity and developer expertise to complete the project.

While this letter of support is not a commitment to lend, Bangor Savings Bank would welcome the opportunity to be a resource to York Street Redevelopment for financing necessary in connection with this project. The project sponsor is a highly valued client of Bangor Savings Bank.

Please feel free to call me (541-2704) if I can be of assistance in any way.

Yours truly,

Diane Donaldson

Diane H. Donaldson
Senior Vice President

ACORN ENGINEERING, INC.

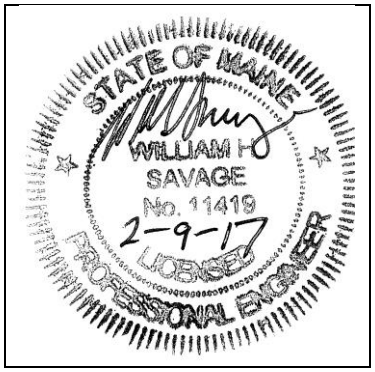
STORMWATER MANAGEMENT REPORT

Prepared For:

York Street Redevelopment, LLC
42 Market St
Portland, Maine 04101

Prepared By:

Acorn Engineering, Inc.
158 Danforth Street
Portland, Maine 04102



November 2016
Rev. February 2017

ACORN ENGINEERING, INC.

INTRODUCTION

Acorn Engineering, Inc. has been retained by York Street Redevelopment, LLC to provide civil engineering services for the proposed redevelopment of 161 York Street. The proposed project is to develop two, two-story dwellings into a five-story, eleven-unit condominium subdivision. The site has recently been demolished to facilitate the redevelopment and is currently a vacant lot.

A stormwater analysis will be prepared to demonstrate that the project will meet the following requirements of the City of Portland (the City):

- City of Portland Land Use Ordinance Chapter 14, Article V. Site Plan Section 14-523. Required Approvals and Applicability (F) Level III Site Plan Review.
- City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management.

The proposed project will include the redevelopment of existing, impervious area including rooftops, and paved asphalt and concrete driveways prior to demolition. The project will result in a net increase of impervious area above 1,000 sf, and, as such, is required to include stormwater management features for stormwater quality & quantity control. The stormwater analysis is documented with supporting calculations and reports attached to this narrative.

The current course of action is to provide primary water quality treatment to the stormwater through filtration utilizing a Best Management Practice (BMP) through a subsurface chamber sand filter that will detain and treat the majority of the site's stormwater. The implemented BMP is to provide water quality treatment for no less than 95% of the new impervious area and 80% of the developed area.

EXISTING CONDITIONS

The proposed project site is located at 161 York Street near the corner of York Street and State Street. A boundary plan has been prepared by Spurwink Surveying, LLC of Scarborough, Maine dated September 29, 2015.

Abutting Uses:

➢ North	R-6 Zone	Residential Condominiums
➢ West	R-6 Zone	Vacant Land
➢ South	R-6 Zone	Residential Condominiums
➢ East	R-6 Zone	Multi-Family Residential

The property is also near the Casco Bay Bridge and Harbor View Memorial Park, both west of the property.

Before the demolition, approximately a quarter of the property was covered by impervious surfaces including a bituminous driveway and two, two-story dwellings. The remaining surface was mature tree growth, vegetation, and exposed soil. The site slopes at approximately 10% toward York Street. Based on existing conditions, the stormwater runoff is directed towards York Street where it then enters the municipal stormwater system.

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting, and existing free-draining soils, a field inventory of significant natural feature was not undertaken. The project is not located within a watershed classified as an Urban Impaired Stream.

PROPOSED DEVELOPMENT

The proposed project is an eleven-unit redevelopment of two previously existing dwellings. Site stormwater treatment will be provided by an Underdrained Subsurface Sand Filter (USSF) to be installed beneath the upper driveway entrance from Guilford Court. Stormwater runoff generated by the roof and driveway is to be redirected into the system and then outlet into the existing municipal system within York Street. The remainder of the runoff generated by the front driveway and sidewalks will flow into York Street. Areas not covered by the building and impervious surfaces will be landscaped per L-1 Landscape Plan attached to the plan set.

Tenant parking is to be provided on-site with access from both York Street and Guilford Court. The five-story building will feature a parking garage with sixteen spaces on the first level parking garage, four spaces on the second-floor garage, and two, uncovered parking spaces off Guilford Court for a total of twenty-two parking spaces on two levels. Pedestrian access to the site shall be provided off York Street with two internal walkways to a main and side entrance.

The development will be served by the Portland Water District, underground power/cable/communications, natural gas, and the municipal stormwater and sewer systems. The project anticipates incorporating Maine DEP approved stormwater Best Management Practices to meet the General and Flooding Standards.

GENERAL STANDARDS - WATER QUALITY

The underdrained subsurface sand filter was sized to meet or exceed the requirements set forth within the MDEP Volume III BMPs Technical Design Manual, Chapter 7.3. Filter BMP systems have shown to be effective at filtering out and removing a wide range of pollutants from stormwater runoff.

Impervious Treatment Area

The stormwater runoff shall first flow into a central catch basin and then into the StormTech Isolator Row which shall provide initial treatment. The stormwater shall be detained within the chambers and surrounding aggregate for a minimum of 24 hours and a maximum of 48 hours before flowing vertically through the sand filter layer. The treated stormwater shall then be collected within the perforated underdrain pipe and released slowly by the outlet control structure at an attenuated rate. When stormwater flows exceed the storage and treatment volume capacity of the isolator row, the stormwater will flow into the second StormTech chamber row and outlet into the control structure. This structure will serve to attenuate flows into the existing municipal stormwater system within

York Street and prevent flooding.

The treatment of the impervious surface by the BMPs are as follows:

Table 1 - Impervious Treatment Area Table					
	Existing Impervious Area (SF)	Proposed Total Impervious Area (SF)	Net change in Impervious Area (SF)	Proposed Impervious Area with Treatment (SF)	% Overall New Imp. Area Treated
Subsurface Sand Filter	3,271	8,536	5,265	7,611	145%

As shown above, the project anticipates meeting the required treatment for new impervious surfaces with the filter BMP.

Filter Area Sizing

Per the requirements for an underdrained subsurface sand filter as defined in Volume III BMPs Technical Design Manual, Chapter 7.3, the surface area of the filter shall be no less than the sum of 5% of the tributary impervious area and 2% of the tributary landscaped area. The filter area is calculated by the following formula:

$$[(\text{Imp. SF} \times 0.05) + (\text{Veg. SF} \times 0.02)] = \text{Filter Area (SF)}$$

Please refer to Table 2 below.

Table 2 – Total Filter Surface Area, displays the proposed Subsurface Sand Filter sizing requirements, actual size and the percentage of required area.

Table 2 –Total Filter Surface Area			
	Required Filter Area (SF)	Actual Filter Area (SF)	Percentage of Required Area (%)
Subsurface Sand Filter	402	489	122%

The outflow from the sand filter structure is then tributary to the outlet control structure before entering the municipal stormwater system. As shown, the size of the soil filter area will meet and exceed the surface area requirements. Values from the HydroCAD calculations are attached to this report.

Isolator Row Sizing

The isolator row was sized based upon a letter from Mark Bergeron, Director of the MDEP Bureau of Land Resources, to StormTech dated July 29, 2016. The calculation that Mr. Bergeron references to determine the minimum number of stormwater chambers needed for the isolator row is defined as the one-year peak flow rate divided by the specific flow rate of the chamber. To be conservative, the two-year peak flow rate was used from the HydroCAD model and divided by the flow rate of the MC–3500 chamber (0.3 cfs). This value was determined to be 1.33 units. The design incorporates 3

units to function as the isolator row, exceeding the requirement and providing additional sediment removal.

Water Quality Volume

In accordance with the Volume III: BMPs Technical Design Manual, a water quality volume of 1.0 inch times the tributary impervious area plus 0.4 inch times the tributary landscaped developed area is required to be treated by the Subsurface Sand Filter. The water quality volume is calculated by the following formula:

$$\left(\frac{\text{Imp. [SF] x 1.0"}}{\text{12"/1'}}\right) + \left(\frac{\text{Dist. [SF] x 0.4"}}{\text{12"/1'}}\right) = \text{Treatment Volume [CF]}$$

The proposed water quality volume is as follows:

Table 3 - Water Quality Volume Table

	Tributary Landscaped Area (SF)	Tributary Impervious Area (SF)	Treatment Volume Required (CF)	Treatment Volume Provided (CF)
Subsurface Sand Filter	1072	7611	**670**	**980**

As shown, the size of the combined water quality volume will meet and exceed the treatment volume requirements. Values from the HydroCAD calculations are attached to this report.

The treatment volume was calculated by using StormTech's derived value for storage per chamber which was sourced from the MC–3500 Design Manual. The storage from the units was then added to the available stone storage at a porosity of 40%. This calculation is as follows:

(6 Units x 109.9 CF / Unit) + (4 Endcaps x 14.9 CF / Endcap) + (1.33 ft x 58.1 ft x 8.4 ft x 0.4)

This calculation yields 980 cubic feet of storage within the detention system.

HydroCAD Adjustments

Provided that the water quality volumetric infiltration rates through the soil filter vary, a water quality outlet is modeled to provide the required minimum 24-hour release time. This is completed by adjusting the rainfall amount in HydroCAD until the inflow volume is equal to or greater than the calculated treatment volume. The storm events are modeled as type III, 24-hour storm events in HydroCAD.

A vertical orifice is modeled in HydroCAD at the outlet structures of the USSF BMP. The orifice diameter is sized to detain the stormwater for an approximate period of 24 hours. The orifice shall be placed at the end of the outfall pipe on the outlet control structure baffle to be inspected or replaced if necessary. The orifice is intended to be a PVC cap placed on the outfall pipe (no glue) with the orifice drilled into the cap eccentrically. The PVC cap can be easily inspected, removed or

replaced if necessary. The orifice for the water quantity volume is then set above the peak elevation determined for the water quality volume.

FLOODING STANDARD – WATER QUANTITY

The proposed project was modeled using HydroCAD to verify that the post-development conditions do not exceed the pre-development conditions. A 24-hour SCS Type III storm distribution for the 2, 10, and 25-year storm events were used. The corresponding rainfall amounts for these storms are 3.10", 4.60", and 5.80" respectively. Rainfall amounts are from the Northeast Regional Climate Center website (http://precip.eas.cornell.edu), Extreme Precipitation Tables.

The existing stormwater runoff flows into the York Street municipal system. Therefore, both the pre and post-development conditions model the runoff into York Street.

Due to the numerous variables, and inherent inaccuracies with the modeling program used to calculate stormwater runoff it is custom at Acorn Engineering, Inc. to round to the nearest whole number or to the nearest tenth for urban infill project. Due to the small size of the project the stormwater runoff shall be rounded to the nearest tenth of a cubic foot per second (cfs).

Time of Concentration (T_c)

Time of concentration values were derived by calculating a combined Tc from the flow segments within each subcatchment in the pre condition. Associated with these flow segments is the classification of stormwater flow and the corresponding surface. Refer to the attached HydroCAD calculations for a break-down of the Tc calculations.

Given the urban environment and the short flow paths in the post condition, a Tc of 5 minutes was used for the subcatchments.

Curve Number

Conservative curve number (CN) runoff values were used within the subcatchment for the remaining area surrounding the building footprint. The stormwater calculations used the following CN values in the post development condition for all such areas, as follows:

- Paved Parking Lots, Driveways, Sidewalks
- Wood/Grass Combo – Good

It was assumed that the proposed retaining walls, concrete pad, and internal brick sidewalks have the same curve number as paved parking lots.

Pre-development Calculations

The pre-development condition was modeled as one subcatchment to determine the net impact of the development.

- Subcatchment 1 – Rear property line to York Street.

A Pre-Development Watershed Map developed for this project can be viewed in Attachment A, and

a copy of the HydroCAD calculations is included within Attachment D, or this report.

Peak flow rates for the storm events are as follows:

Table 4 – Pre-Development Peak Stormwater Flows			
Drainage Area	**2 – Year Storm Event (cfs)**	**10 – Year Storm Event (cfs)**	**25 – Year Storm Event (cfs)**
York Street	0.1	0.3	0.5

Post-development Calculations:

The one predevelopment subcatchment was divided into three separate subcatchments for the post-development condition.

- Subcatchment 1 – Rooftop of the proposed building
- Subcatchment 2 – Rear driveway and landscaped areas
- Subcatchment 3 – Front sidewalks and landscaped areas

The post development calculations include changes to the land use and compensation provided by the subsurface BMP system. The following table represents comparison of predevelopment and post-development condition peak runoff rates for the proposed development and tributary area.

Table 5 – Comparison of Peak Flows						
Drainage Area	**2 – Year Storm Event (cfs)**		**10 – Year Storm Event (cfs)**		**25 – Year Storm Event (cfs)**	
York Street	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
	0.1	0.1	0.3	0.3	0.5	0.4

As shown in Table 5, the net impact of the post development peak flows shall remain at or below the predevelopment levels for the two, ten, and twenty-five-year storms.

A Post-Development Watershed Map created for this project can be viewed in Attachment B, and a copy of the HydroCAD calculations is included within Attachment D of this report.

SOILS

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County

The existing soils are exclusively Hinckley throughout the site. The Hinckley soil series consists of very deep, excessively drained soils formed in glaciofluvial materials. The permeability of the Hinckley soil is rapid in the surface layer and subsoil and very rapid in the substratum, typically with a low groundwater table. Given the soils information as listed above, no onsite wastewater is proposed and the applicant does not intend to perform a more intense hydric soil boundary delineation or permeability test due to the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 have been met.

The area within and surrounding the project includes soils types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 6 - "K" Value		
Soils Type	**Subsurface**	**Substratum**
Hinckley	0.17	0.17

The soil "K" values for the soils, listed above, show a low susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will still be of considerable importance.

Conclusion

The proposed development was designed to meet the requirements implemented by the MDEP under the Stormwater Management Statute (38 M.R.S.A. § 420-D) as well as the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards. As a result, the design of the proposed development and stormwater system does not anticipate to create erosion, drainage or runoff problems either in the development or with respect to adjoining properties.

Attachments

Attachment A: Pre-Development Watershed Map
Attachment B: Post-Development Watershed Map
Attachment C: Soils Map
Attachment D: HydroCAD Calculations

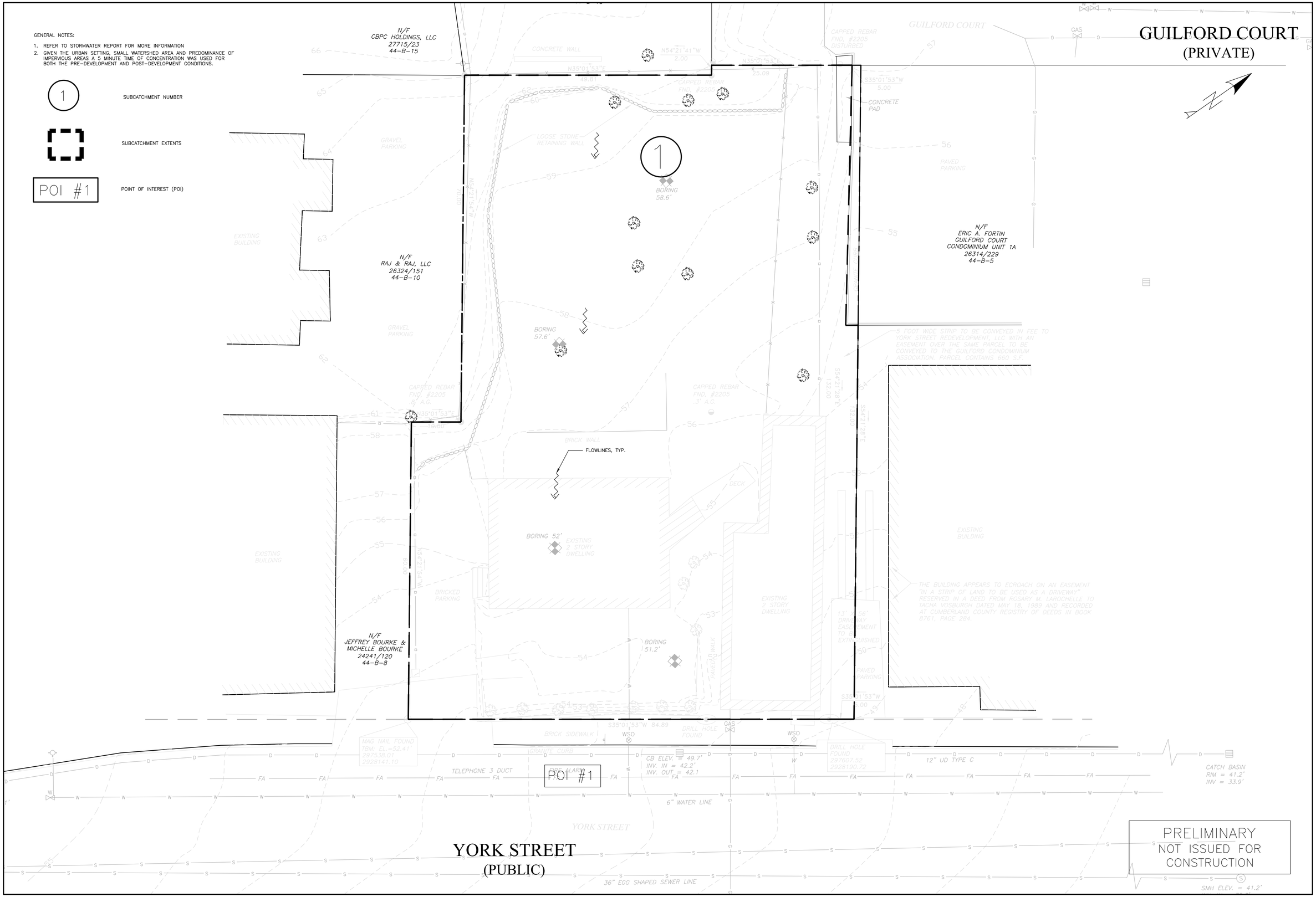
GENERAL NOTES:

1. REFER TO STORMWATER REPORT FOR MORE INFORMATION
2. GIVEN THE URBAN SETTING, SMALL WATERSHED AREA AND PREDOMINANCE OF IMPERVIOUS AREAS A 5 MINUTE TIME OF CONCENTRATION WAS USED FOR BOTH THE PRE-DEVELOPMENT AND POST-DEVELOPMENT CONDITIONS.

1 SUBCATCHMENT NUMBER

SUBCATCHMENT EXTENTS

POI #1 POINT OF INTEREST (POI)



PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY / DATE
PRELIM. APP.	WHS 11/8/16

DRAWING NAME: PRE – DEVELOPMENT PLAN

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH ST, PORTLAND MAINE 04102
(207) 775-2655

FILE:	1074_CIVIL
JN:	1074
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11416
11-8-16
LICENSED
PROFESSIONAL ENGINEER

DRAWING NO.
PRE

GENERAL NOTES:

1. REFER TO STORMWATER REPORT FOR MORE INFORMATION
2. GIVEN THE URBAN SETTING, SMALL WATERSHED AREA AND PREDOMINANCE OF IMPERVIOUS AREAS, A 5-MINUTE TIME OF CONCENTRATION WAS USED FOR BOTH THE PRE-DEVELOPMENT AND POST-DEVELOPMENT CONDITIONS.

1 — SUBCATCHMENT NUMBER

SUBCATCHMENT EXTENTS

UNDERDRAIN

MARGARET M. BUSBY
26375/142
44-B-13

N/F
CBPC HOLDINGS, LLC
27715/23
44-B-15

GUILFORD COURT
(PRIVATE)

POND 1: USSF BMP

FLOW

GARAGE LEVEL

BORING
58.6'

BORING 52'

BORING
51.2'

N/F
RAJ & RAJ, LLC
26324/151
44-B-10

N/F
ERIC A. FORTIN
GUILFORD COURT
CONDOMINIUM UNIT 1A
26314/229
44-B-5

N/F
JEFFREY BOURKE &
MICHELLE BOURKE
24241/120
44-B-8

CONCRETE WALL

CONCRETE PAD

CAPPED REBAR
FND. #2205
DISTURBED

CAPPED REBAR
FND. #2205
S.A.A.

GRAVEL PARKING

PAVED PARKING

EXISTING BUILDING

5 FOOT WIDE STRIP TO BE CONVEYED IN FEE TO YORK STREET REDEVELOPMENT, LLC WITH AN EASEMENT OVER THE SAME PARCEL TO BE THE GUILFORD CONDOMINIUM PARCEL CONTAINS 680 S.F.

FLOWLINES, TYP.

THE BUILDING APPEARS TO ECROACH ON AN EASEMENT "IN A STRIP OF LAND TO BE USED AS A DRIVEWAY" RESERVED IN A DEED FROM ROSARY M. LAROCHELLE TO TACHA VOSBURGH DATED MAY 18, 1989 AND RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 8761, PAGE 284.

MAG NAIL FOUND
TBM: EL=52.4
297538.01
2928141.10

DRILL HOLE
FOUND
297607.52
2928190.72

CB ELEV. = 49.7'
INV. IN = 42.2'
INV. OUT = 42.1

CATCH BASIN
RIM = 41.2'
INV = 33.9'

12" UD TYPE C

6" WATER LINE

TELEPHONE 3 DUCT

FIRE ALARM

YORK STREET
(PUBLIC)

PRELIMINARY
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17

DRAWING NAME: POST - DEVELOPMENT PLAN

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
ENGINEERING
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

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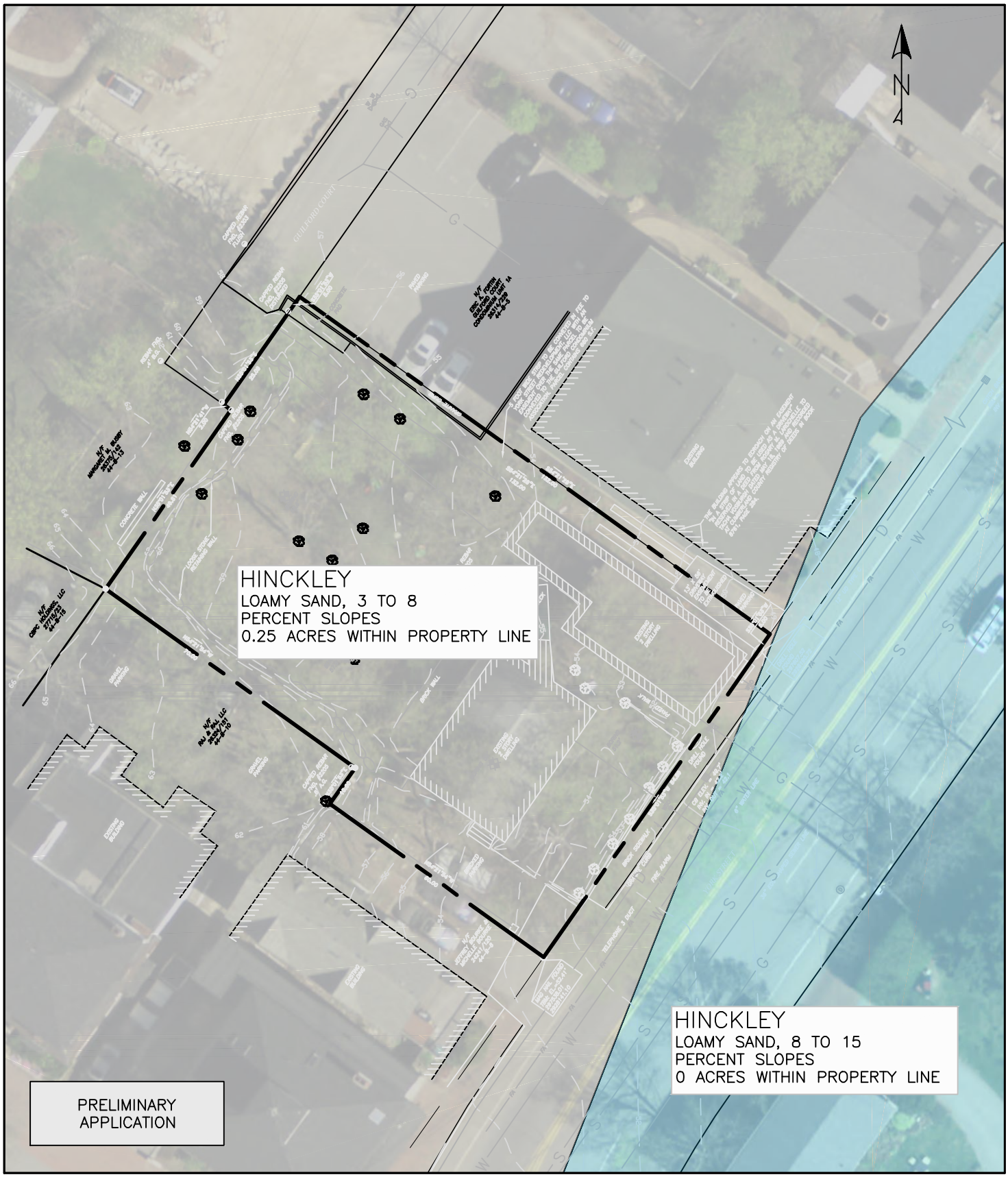
FILE:	1074_CIVIL
JN:	1074
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 10419
2-9-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
POST



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DRAWING NO.
SOILS

FILE:	1074_CIVIL
DATE:	11/8/2016
JN:	1074
SCALE:	1"=30'
DESIGN BY:	OJD
DRAWN BY:	SJL
CHECKED BY:	WHS

ACORN ENGINEERING, INC
ACORN ENGINEERING, INC. P.O. BOX 3372
PORTLAND, MAINE 04104 (207) 775-2655

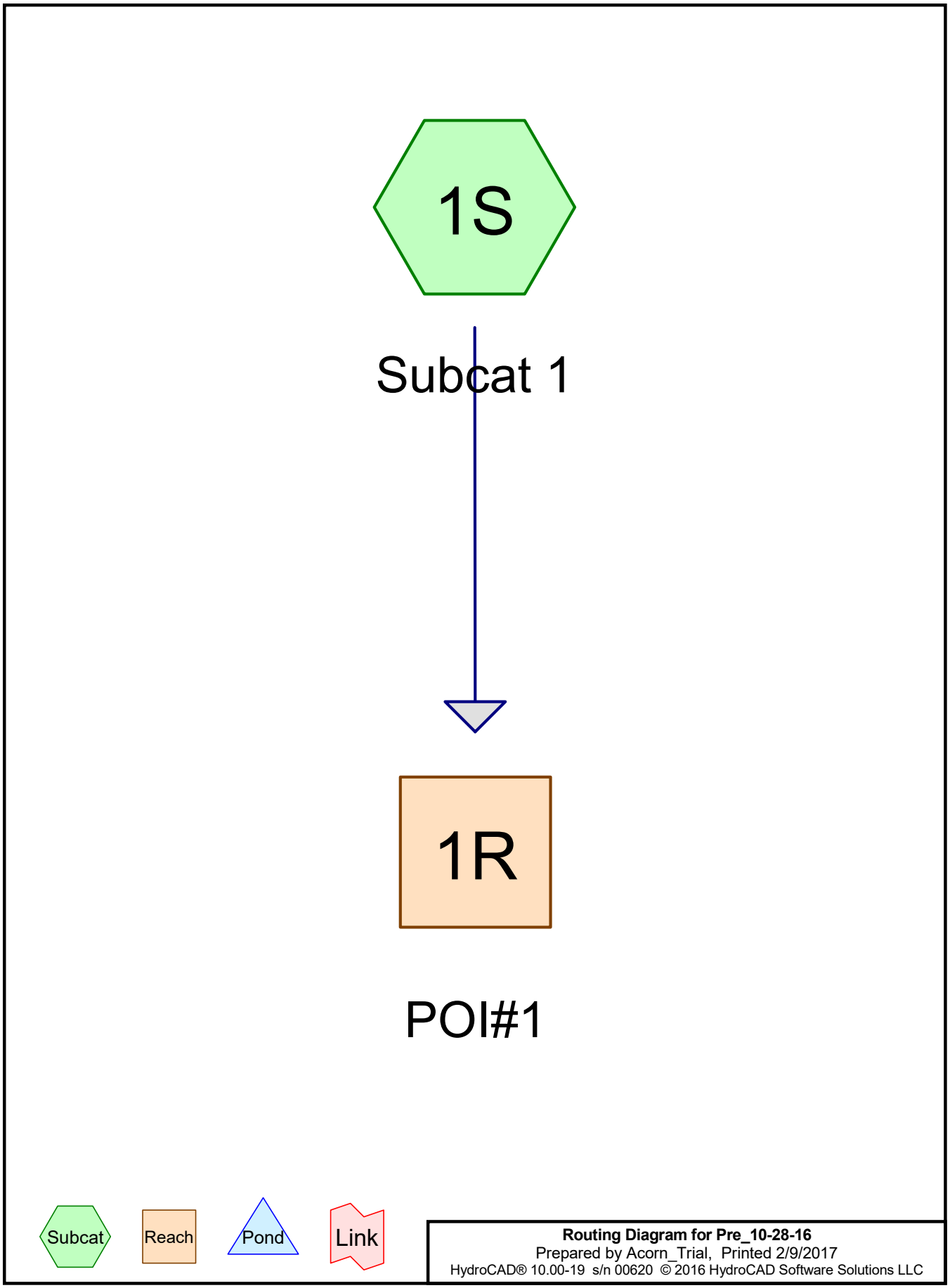
DRAWING NAME:
SOILS MAP

PROJECT NAME:
161 YORK STREET REDEVELOPMENT

CLIENT:
YORK STREET REDEVELOPMENT, LLC

ISSUED FOR	BY	DATE
PRELIM. APP.	WHS	11/8/16

REV. DATE



Routing Diagram for Pre_10-28-16
Prepared by Acorn_Trial, Printed 2/9/2017
HydroCAD® 10.00-19 s/n 00620 © 2016 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.047	98	Roofs (1S)
0.176	43	Woods/grass comb., Fair, HSG A (1S)
0.026	98	sidewalk/pavement (1S)
0.002	98	walls concrete pad (1S)
0.251	**59**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.176	HSG A	1S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.075	Other	1S
0.251		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.047	0.047	Roofs	1S
0.176	0.000	0.000	0.000	0.000	0.176	Woods/grass comb., Fair	1S
0.000	0.000	0.000	0.000	0.026	0.026	sidewalk/pavement	1S
0.000	0.000	0.000	0.000	0.002	0.002	walls concrete pad	1S
0.176	**0.000**	**0.000**	**0.000**	**0.075**	**0.251**	**TOTAL AREA**	

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcat 1 Runoff Area=10,935 sf 29.78% Impervious Runoff Depth=0.34"
Flow Length=132' Tc=5.1 min CN=59 Runoff=0.05 cfs 0.007 af

Reach 1R: POI#1 Inflow=0.05 cfs 0.007 af
Outflow=0.05 cfs 0.007 af

Total Runoff Area = 0.251 ac Runoff Volume = 0.007 af Average Runoff Depth = 0.34"
70.22% Pervious = 0.176 ac 29.78% Impervious = 0.075 ac

Summary for Subcatchment 1S: Subcat 1

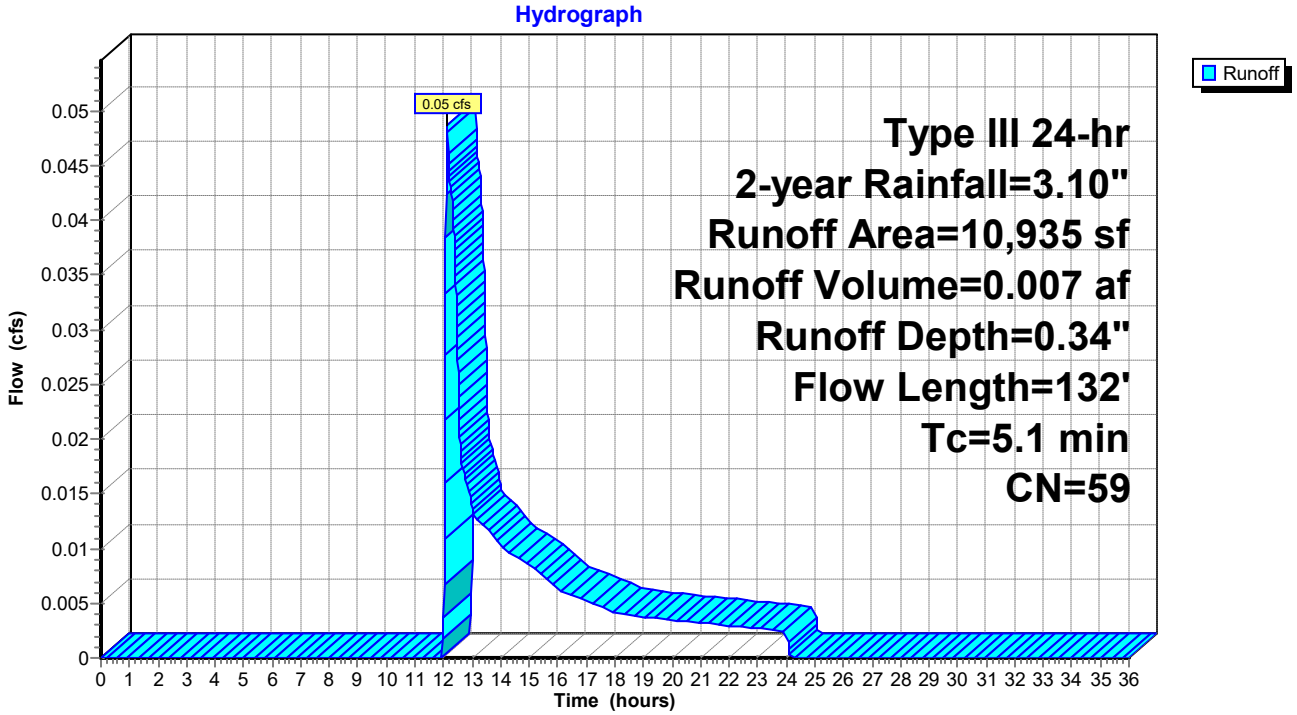
Runoff = 0.05 cfs @ 12.13 hrs, Volume= 0.007 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	2,039	98	Roofs
*	1,135	98	sidewalk/pavement
*	82	98	walls concrete pad
	7,679	43	Woods/grass comb., Fair, HSG A
	10,935	59	Weighted Average
	7,679		70.22% Pervious Area
	3,256		29.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	83	0.0843	0.29		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 3.27"
0.4	49	0.1000	2.30		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.27"
5.1	132	Total			

Subcatchment 1S: Subcat 1

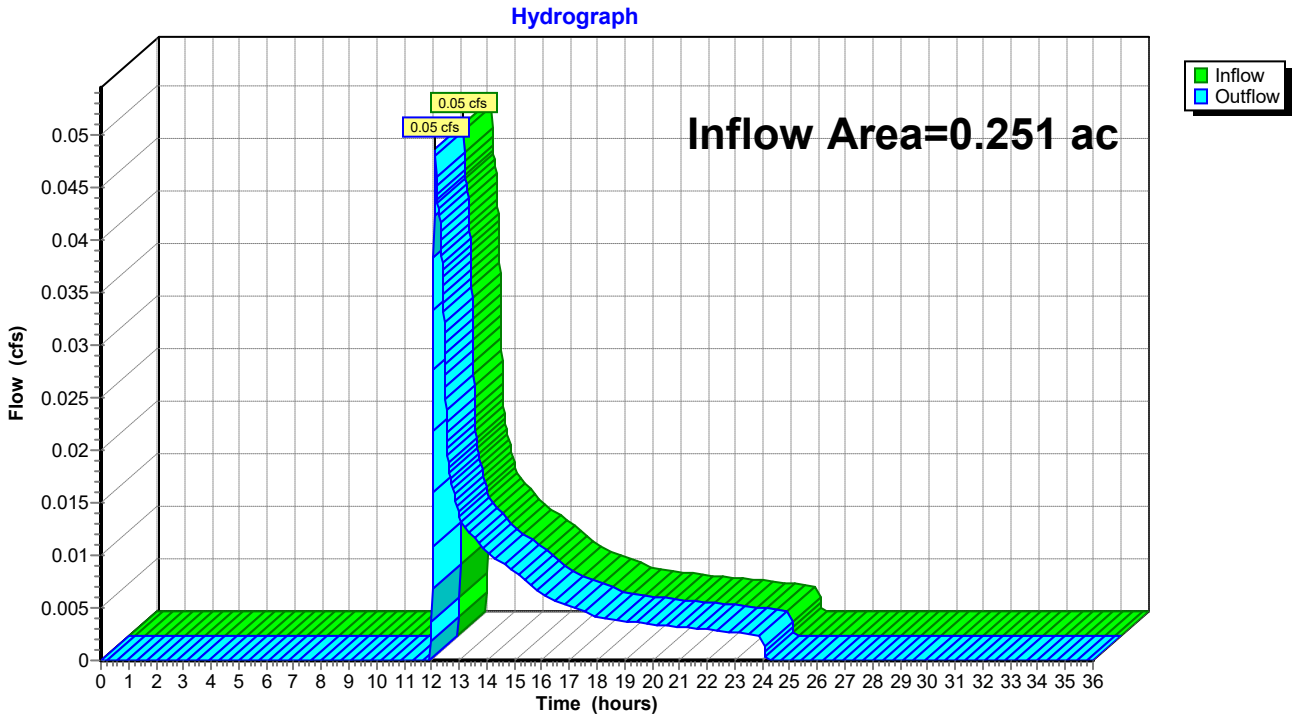


Summary for Reach 1R: POI#1

Inflow Area = 0.251 ac, 29.78% Impervious, Inflow Depth = 0.34" for 2-year event
Inflow = 0.05 cfs @ 12.13 hrs, Volume= 0.007 af
Outflow = 0.05 cfs @ 12.13 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI#1



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcat 1 Runoff Area=10,935 sf 29.78% Impervious Runoff Depth=1.01"
Flow Length=132' Tc=5.1 min CN=59 Runoff=0.26 cfs 0.021 af

Reach 1R: POI#1 Inflow=0.26 cfs 0.021 af
Outflow=0.26 cfs 0.021 af

Total Runoff Area = 0.251 ac Runoff Volume = 0.021 af Average Runoff Depth = 1.01"
70.22% Pervious = 0.176 ac 29.78% Impervious = 0.075 ac

Summary for Subcatchment 1S: Subcat 1

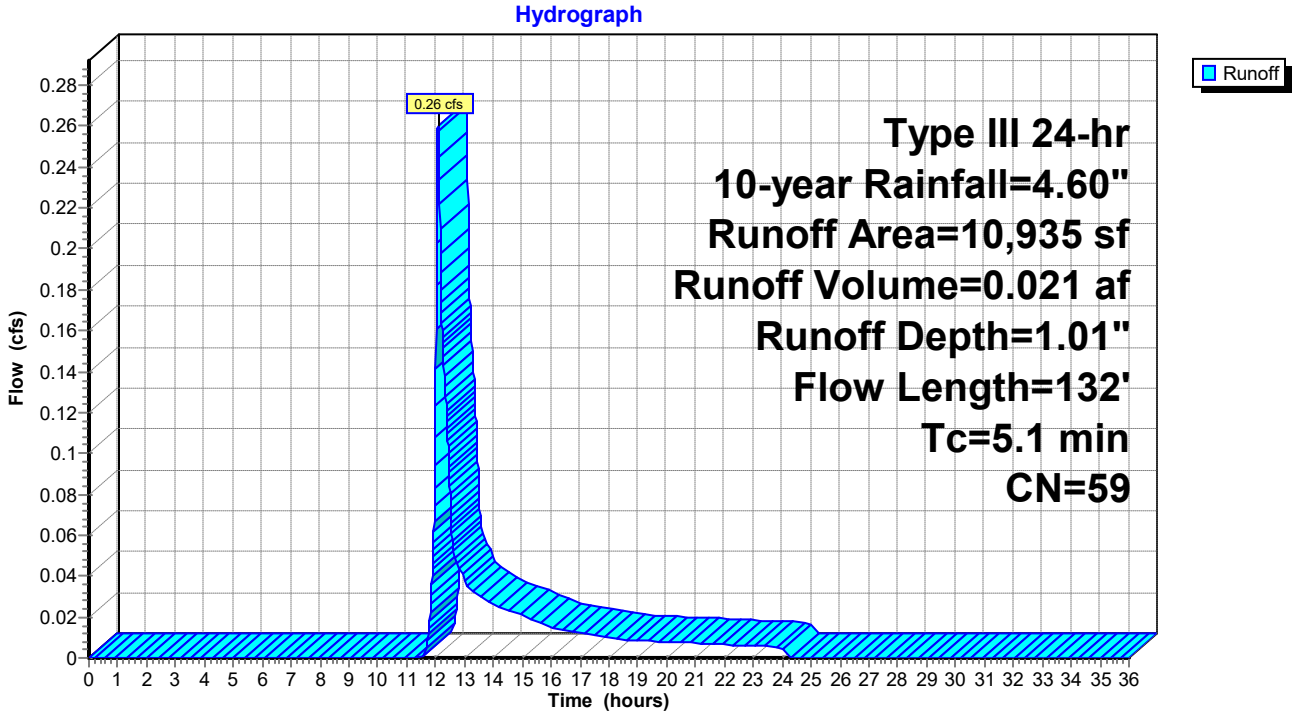
Runoff = 0.26 cfs @ 12.09 hrs, Volume= 0.021 af, Depth= 1.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	2,039	98	Roofs
*	1,135	98	sidewalk/pavement
*	82	98	walls concrete pad
	7,679	43	Woods/grass comb., Fair, HSG A
	10,935	59	Weighted Average
	7,679		70.22% Pervious Area
	3,256		29.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	83	0.0843	0.29		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 3.27"
0.4	49	0.1000	2.30		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.27"
5.1	132	Total			

Subcatchment 1S: Subcat 1

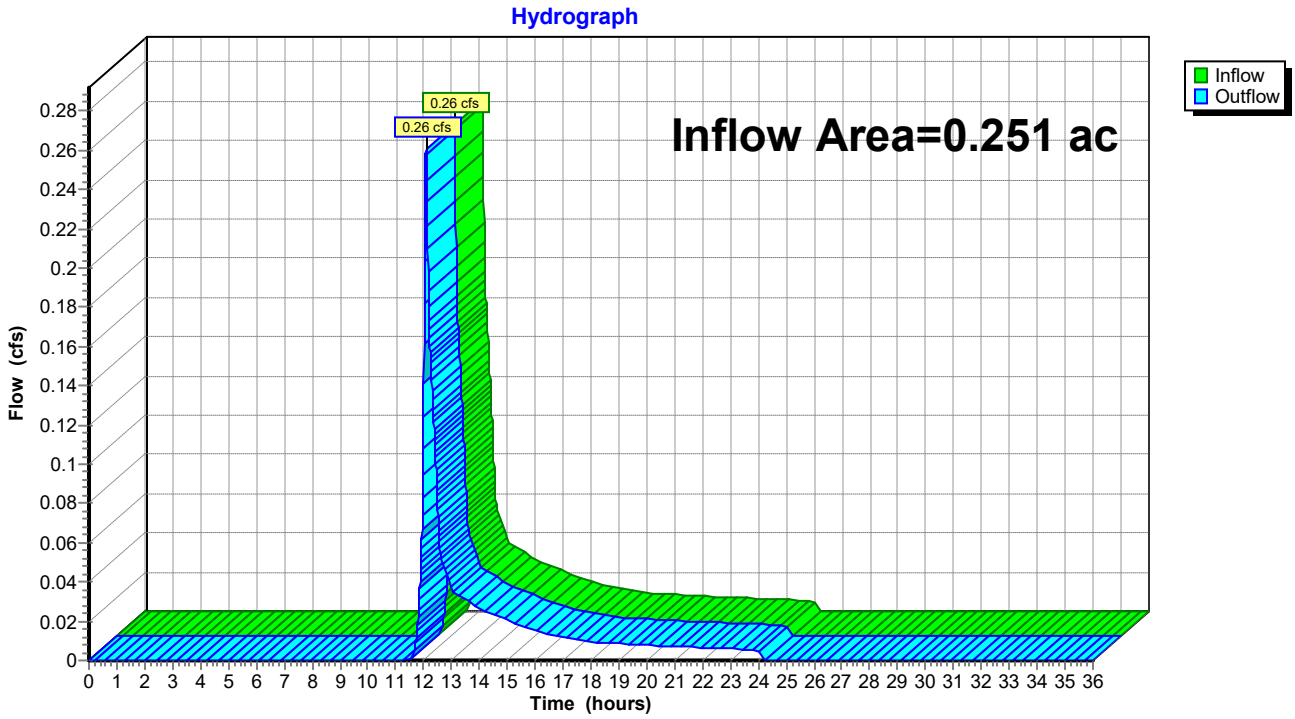


Summary for Reach 1R: POI#1

Inflow Area = 0.251 ac, 29.78% Impervious, Inflow Depth = 1.01" for 10-year event
Inflow = 0.26 cfs @ 12.09 hrs, Volume= 0.021 af
Outflow = 0.26 cfs @ 12.09 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI#1



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Subcat 1 Runoff Area=10,935 sf 29.78% Impervious Runoff Depth=1.71"
Flow Length=132' Tc=5.1 min CN=59 Runoff=0.48 cfs 0.036 af

Reach 1R: POI#1 Inflow=0.48 cfs 0.036 af
Outflow=0.48 cfs 0.036 af

Total Runoff Area = 0.251 ac Runoff Volume = 0.036 af Average Runoff Depth = 1.71"
70.22% Pervious = 0.176 ac 29.78% Impervious = 0.075 ac

Summary for Subcatchment 1S: Subcat 1

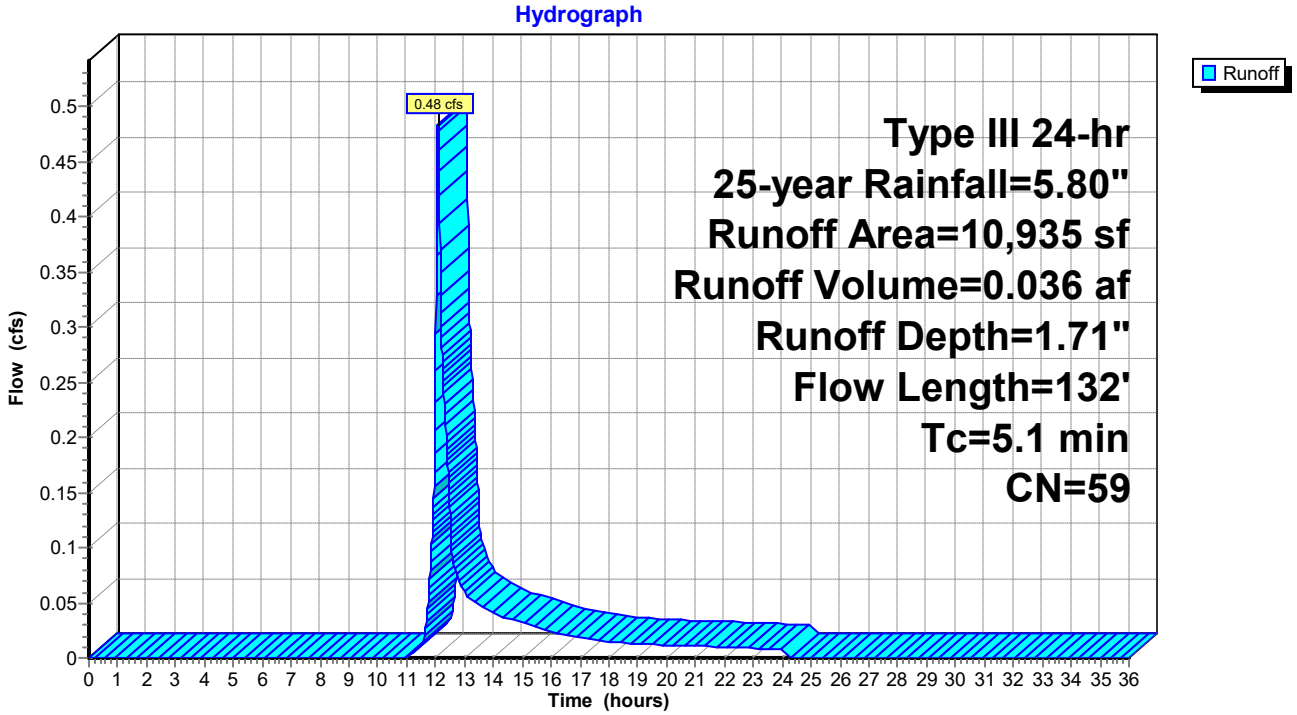
Runoff = 0.48 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,039	98	Roofs
*	1,135	98	sidewalk/pavement
*	82	98	walls concrete pad
	7,679	43	Woods/grass comb., Fair, HSG A
	10,935	59	Weighted Average
	7,679		70.22% Pervious Area
	3,256		29.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	83	0.0843	0.29		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 3.27"
0.4	49	0.1000	2.30		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.27"
5.1	132	Total			

Subcatchment 1S: Subcat 1

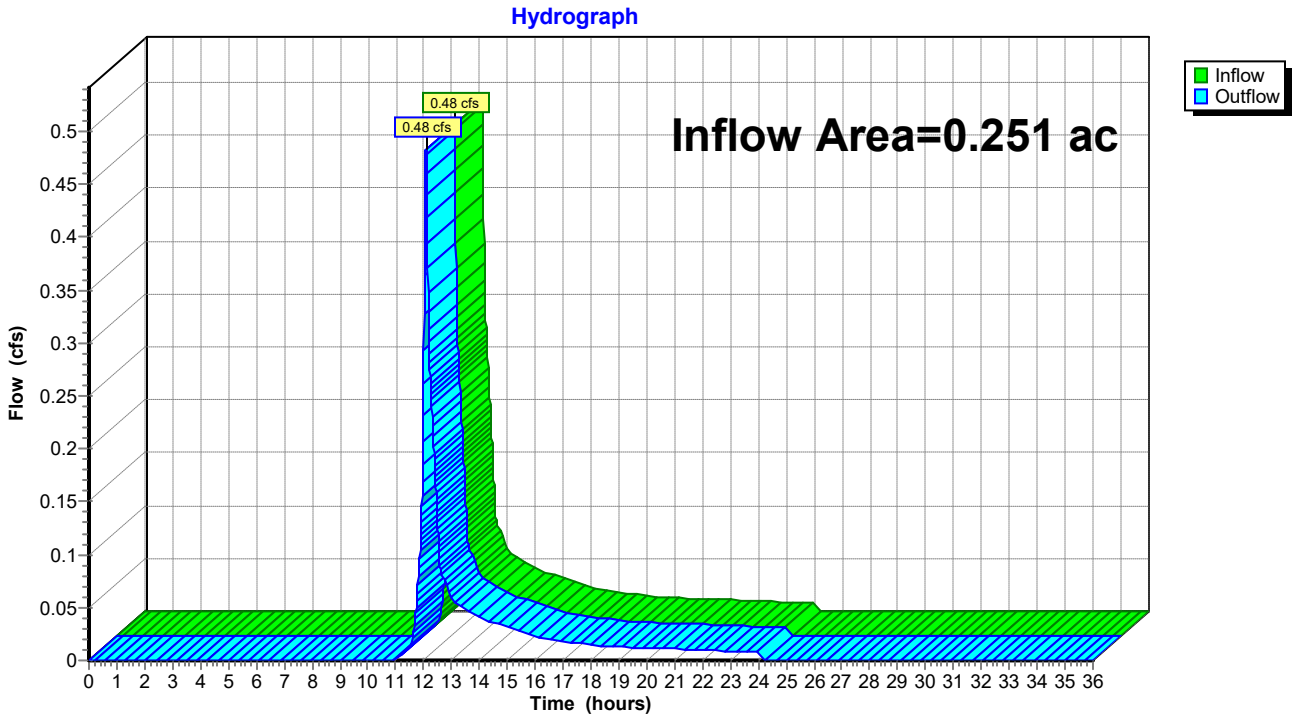


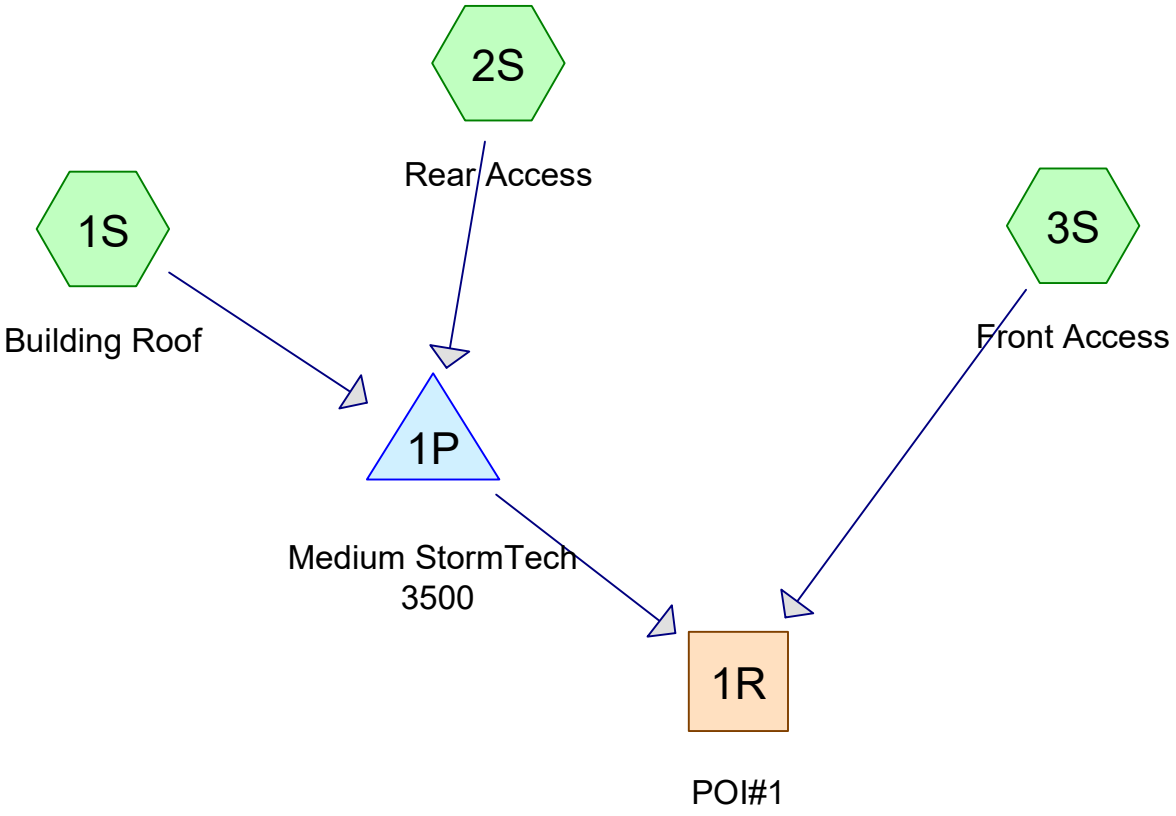
Summary for Reach 1R: POI#1

Inflow Area = 0.251 ac, 29.78% Impervious, Inflow Depth = 1.71" for 25-year event
Inflow = 0.48 cfs @ 12.08 hrs, Volume= 0.036 af
Outflow = 0.48 cfs @ 12.08 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI#1





Subcat Reach Pond Link

Routing Diagram for Post_2-8-17
Prepared by Acorn_Trial, Printed 2/9/2017
HydroCAD® 10.00-19 s/n 00620 © 2016 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.001	98	Brick (2S)
0.030	98	Driveway (2S)
0.019	98	Driveway, Sidewalks, Walls, etc (3S)
0.144	98	Roofs, HSG A (1S)
0.001	98	Wall (2S)
0.057	32	Woods/grass comb., Good, HSG A (2S, 3S)
0.251	**83**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.201	HSG A	1S, 2S, 3S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.050	Other	2S, 3S
0.251		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.001	0.001	Brick	2S
0.000	0.000	0.000	0.000	0.030	0.030	Driveway	2S
0.000	0.000	0.000	0.000	0.019	0.019	Driveway, Sidewalks, Walls, etc	3S
0.144	0.000	0.000	0.000	0.000	0.144	Roofs	1S
0.000	0.000	0.000	0.000	0.001	0.001	Wall	2S
0.057	0.000	0.000	0.000	0.000	0.057	Woods/grass comb., Good	2S, 3S
0.201	**0.000**	**0.000**	**0.000**	**0.050**	**0.251**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	50.60	40.00	125.0	0.0848	0.010	8.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.001 hrs, 48001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Building Roof Runoff Area=6,264 sf 100.00% Impervious Runoff Depth=2.87"
Tc=5.0 min CN=98 Runoff=0.45 cfs 0.034 af

Subcatchment 2S: Rear Access Runoff Area=2,419 sf 55.68% Impervious Runoff Depth=0.72"
Tc=5.0 min CN=69 Runoff=0.04 cfs 0.003 af

Subcatchment 3S: Front Access Runoff Area=2,252 sf 36.50% Impervious Runoff Depth=0.25"
Tc=5.0 min CN=56 Runoff=0.01 cfs 0.001 af

Reach 1R: POI#1 Inflow=0.14 cfs 0.039 af
Outflow=0.14 cfs 0.039 af

Pond 1P: Medium StormTech 3500 Peak Elev=54.97' Storage=0.018 af Inflow=0.49 cfs 0.038 af
Outflow=0.13 cfs 0.038 af

Total Runoff Area = 0.251 ac Runoff Volume = 0.039 af Average Runoff Depth = 1.85"
22.88% Pervious = 0.057 ac 77.12% Impervious = 0.194 ac

Summary for Subcatchment 1S: Building Roof

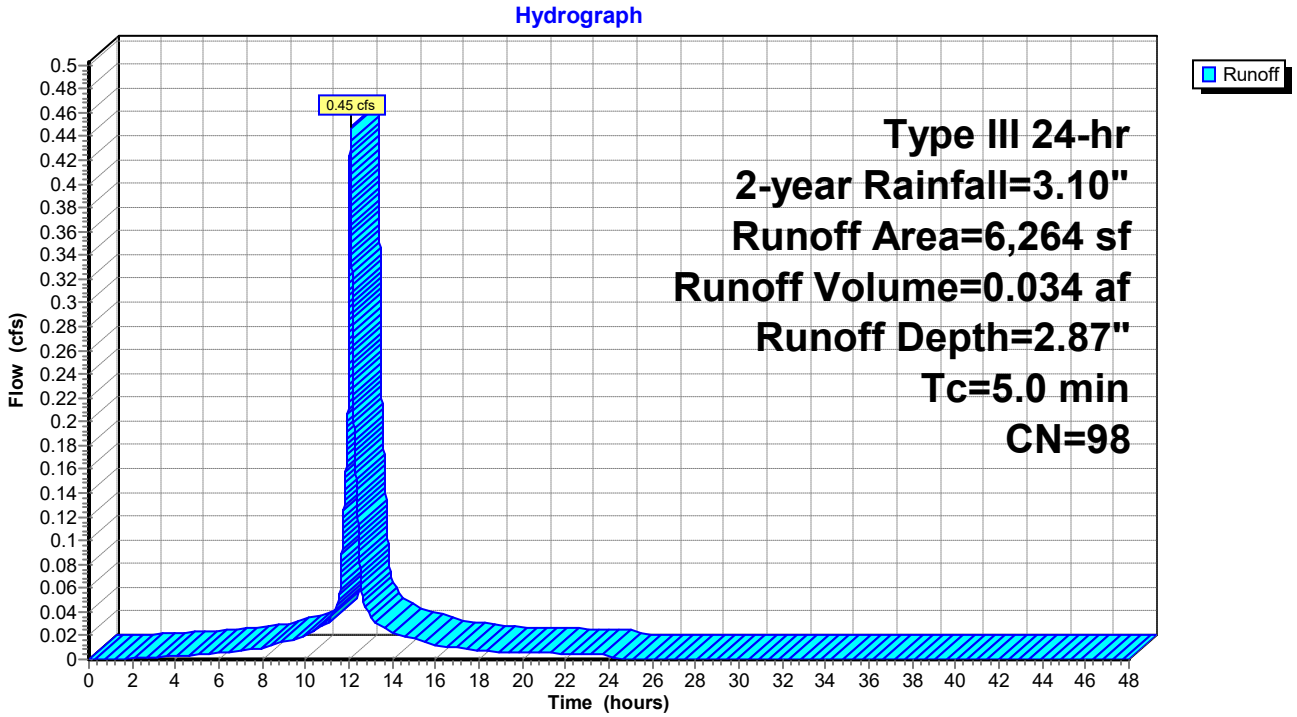
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 0.034 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
6,264	98	Roofs, HSG A
6,264		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1S: Building Roof



Summary for Subcatchment 2S: Rear Access

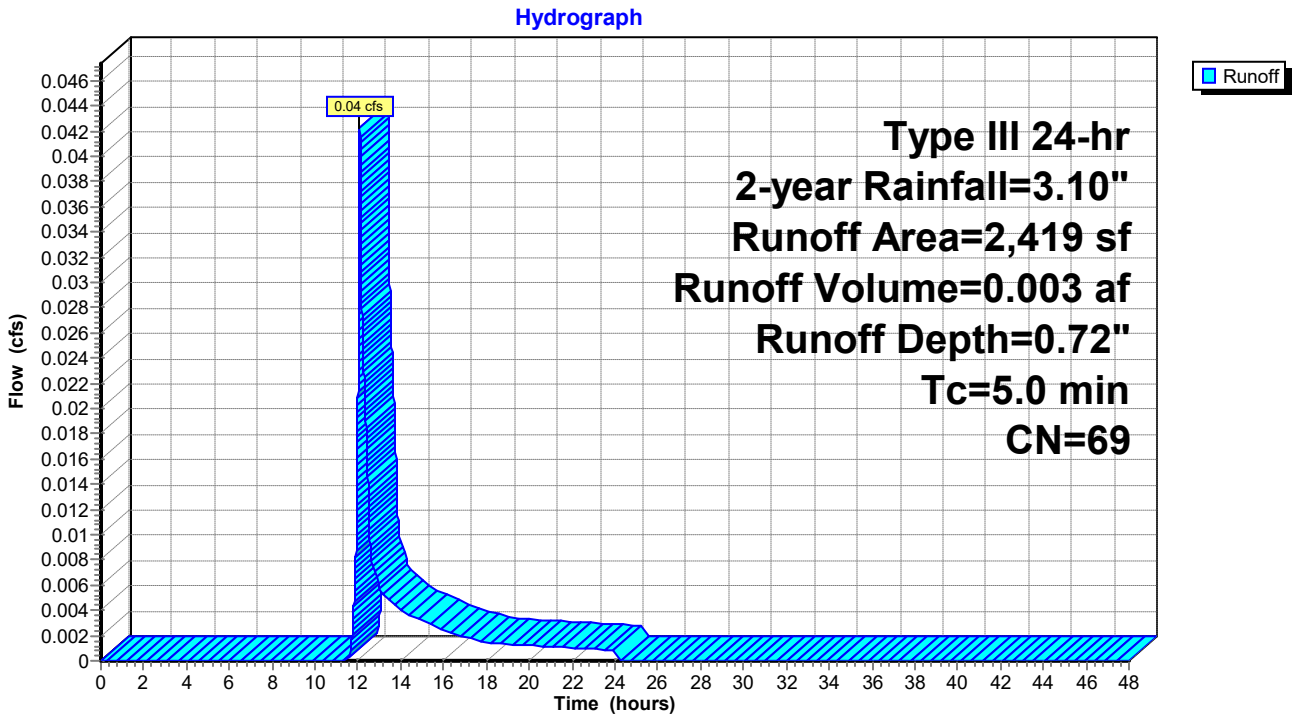
Runoff = 0.04 cfs @ 12.08 hrs, Volume= 0.003 af, Depth= 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	1,295	98	Driveway
*	28	98	Wall
*	24	98	Brick
	1,072	32	Woods/grass comb., Good, HSG A
	2,419	69	Weighted Average
	1,072		44.32% Pervious Area
	1,347		55.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Rear Access



Summary for Subcatchment 3S: Front Access

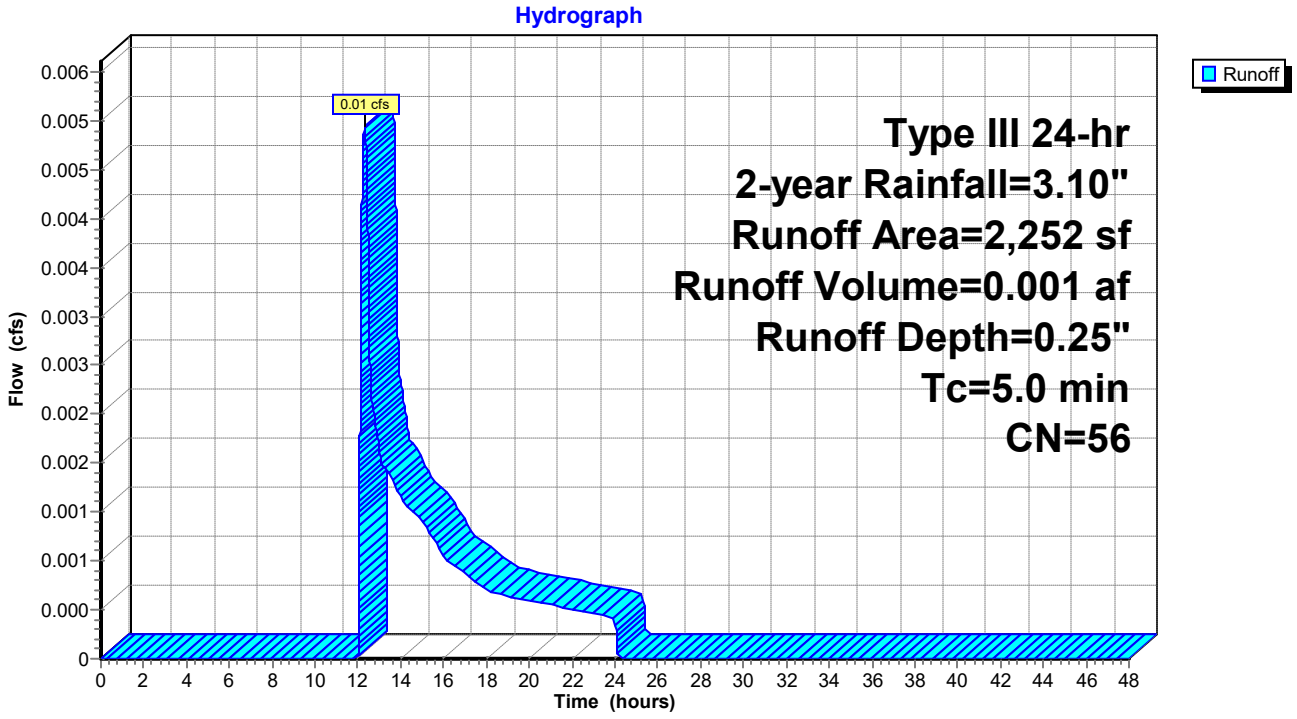
Runoff = 0.01 cfs @ 12.31 hrs, Volume= 0.001 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	822	98	Driveway, Sidewalks, Walls, etc
	1,430	32	Woods/grass comb., Good, HSG A
	2,252	56	Weighted Average
	1,430		63.50% Pervious Area
	822		36.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3S: Front Access

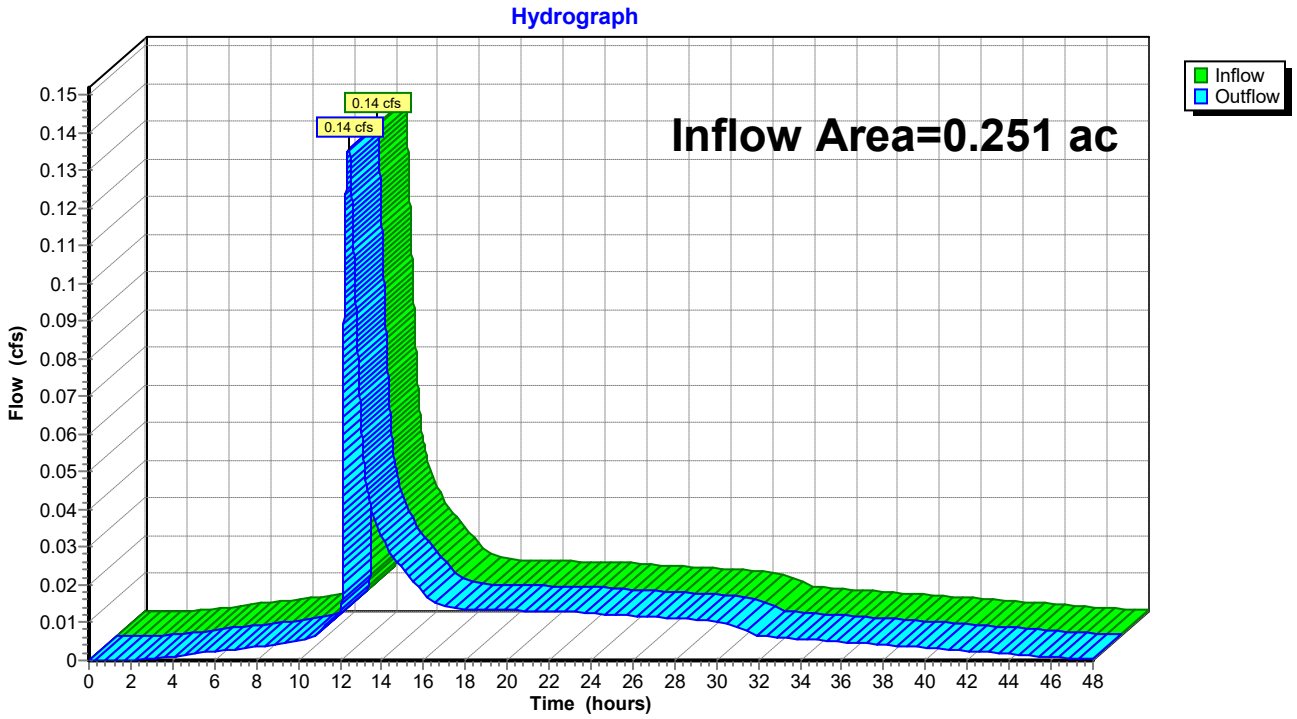


Summary for Reach 1R: POI#1

Inflow Area = 0.251 ac, 77.12% Impervious, Inflow Depth > 1.85" for 2-year event
Inflow = 0.14 cfs @ 12.41 hrs, Volume= 0.039 af
Outflow = 0.14 cfs @ 12.41 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs

Reach 1R: POI#1



Summary for Pond 1P: Medium StormTech 3500

Inflow Area = 0.199 ac, 87.65% Impervious, Inflow Depth = 2.27" for 2-year event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 0.038 af
Outflow = 0.13 cfs @ 12.42 hrs, Volume= 0.038 af, Atten= 73%, Lag= 21.0 min
Primary = 0.13 cfs @ 12.42 hrs, Volume= 0.038 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Peak Elev= 54.97' @ 12.42 hrs Surf.Area= 0.034 ac Storage= 0.018 af

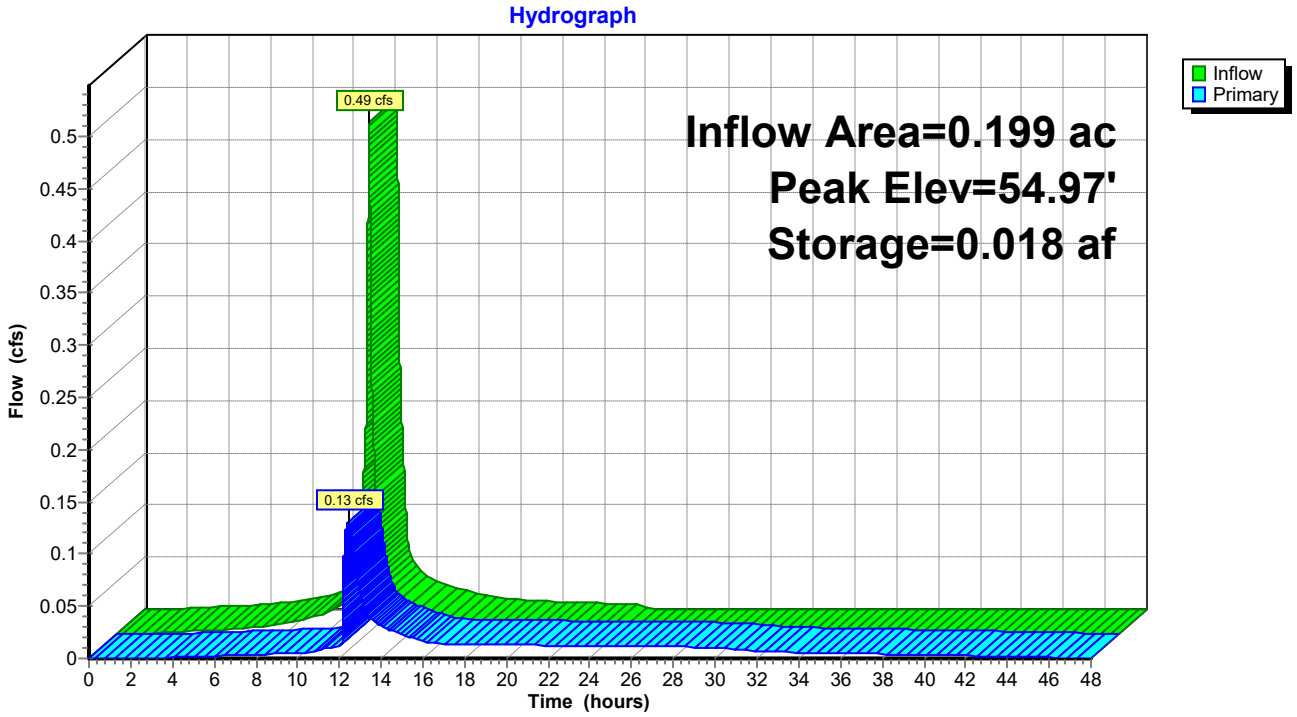
Plug-Flow detention time= 438.6 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 437.0 min (1,204.2 - 767.2)

Volume	Invert	Avail.Storage	Storage Description
#1	53.21'	0.016 af	**8.42'W x 58.14'L x 5.00'H Stone** 0.056 af Overall - 0.017 af Embedded = 0.040 af x 40.0% Voids
#2	53.96'	0.017 af	**ADS_StormTech MC-3500 d +Cap** x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 2 Rows of 3 Chambers Cap Storage= +14.9 cf x 2 x 2 rows = 59.6 cf
#3	51.71'	0.001 af	**8.42'W x 58.14'L x 1.50'H Sand** 0.017 af Overall x 5.0% Voids
#4	50.71'	0.004 af	**8.42'W x 58.14'L x 1.00'H Crushed Stone** 0.011 af Overall - 0.000 af Embedded = 0.011 af x 40.0% Voids
#5	51.04'	0.000 af	**4.0" Round Underdrain Storage** Inside #4 L= 58.0'
#6	52.13'	0.002 af	**4.00'D x 8.12'H Catch Basin**
		0.040 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.60'	**8.0" Round Culvert** L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.60' / 40.00' S= 0.0848 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Device 1	50.70'	**0.5" Vert. Vert Water Quality** C= 0.600
#3	Device 1	54.60'	**3.0" Vert. Vert Quantity** C= 0.600
#4	Device 1	58.00'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.13 cfs @ 12.42 hrs HW=54.97' (Free Discharge)
└**1=Culvert** (Passes 0.13 cfs of 2.67 cfs potential flow)
  ├**2=Vert Water Quality** (Orifice Controls 0.01 cfs @ 9.93 fps)
  ├**3=Vert Quantity** (Orifice Controls 0.12 cfs @ 2.39 fps)
  └**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Medium StormTech 3500



Time span=0.00-48.00 hrs, dt=0.001 hrs, 48001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Building Roof Runoff Area=6,264 sf 100.00% Impervious Runoff Depth=4.36"
Tc=5.0 min CN=98 Runoff=0.67 cfs 0.052 af

Subcatchment 2S: Rear Access Runoff Area=2,419 sf 55.68% Impervious Runoff Depth=1.67"
Tc=5.0 min CN=69 Runoff=0.11 cfs 0.008 af

Subcatchment 3S: Front Access Runoff Area=2,252 sf 36.50% Impervious Runoff Depth=0.84"
Tc=5.0 min CN=56 Runoff=0.04 cfs 0.004 af

Reach 1R: POI#1 Inflow=0.29 cfs 0.063 af
Outflow=0.29 cfs 0.063 af

Pond 1P: Medium StormTech 3500 Peak Elev=55.85' Storage=0.025 af Inflow=0.78 cfs 0.060 af
Outflow=0.27 cfs 0.060 af

Total Runoff Area = 0.251 ac Runoff Volume = 0.064 af Average Runoff Depth = 3.04"
22.88% Pervious = 0.057 ac 77.12% Impervious = 0.194 ac

Summary for Subcatchment 1S: Building Roof

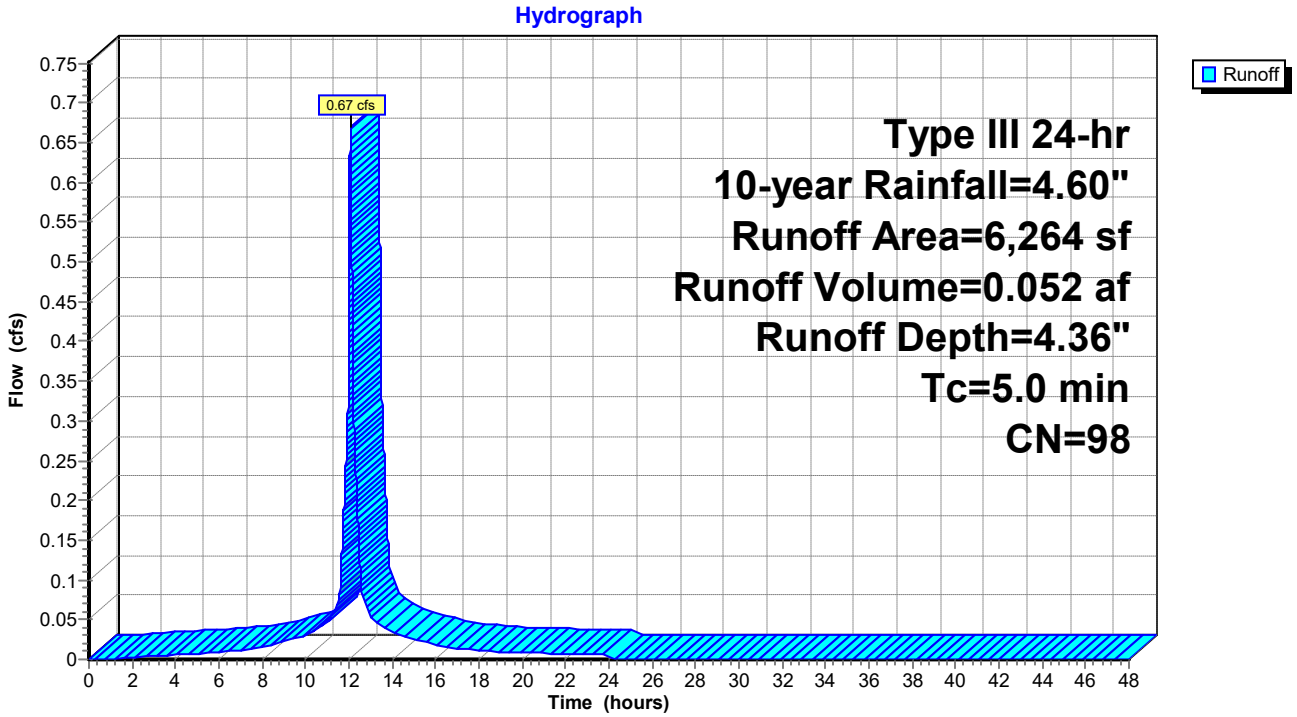
Runoff = 0.67 cfs @ 12.07 hrs, Volume= 0.052 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
6,264	98	Roofs, HSG A
6,264		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1S: Building Roof



Summary for Subcatchment 2S: Rear Access

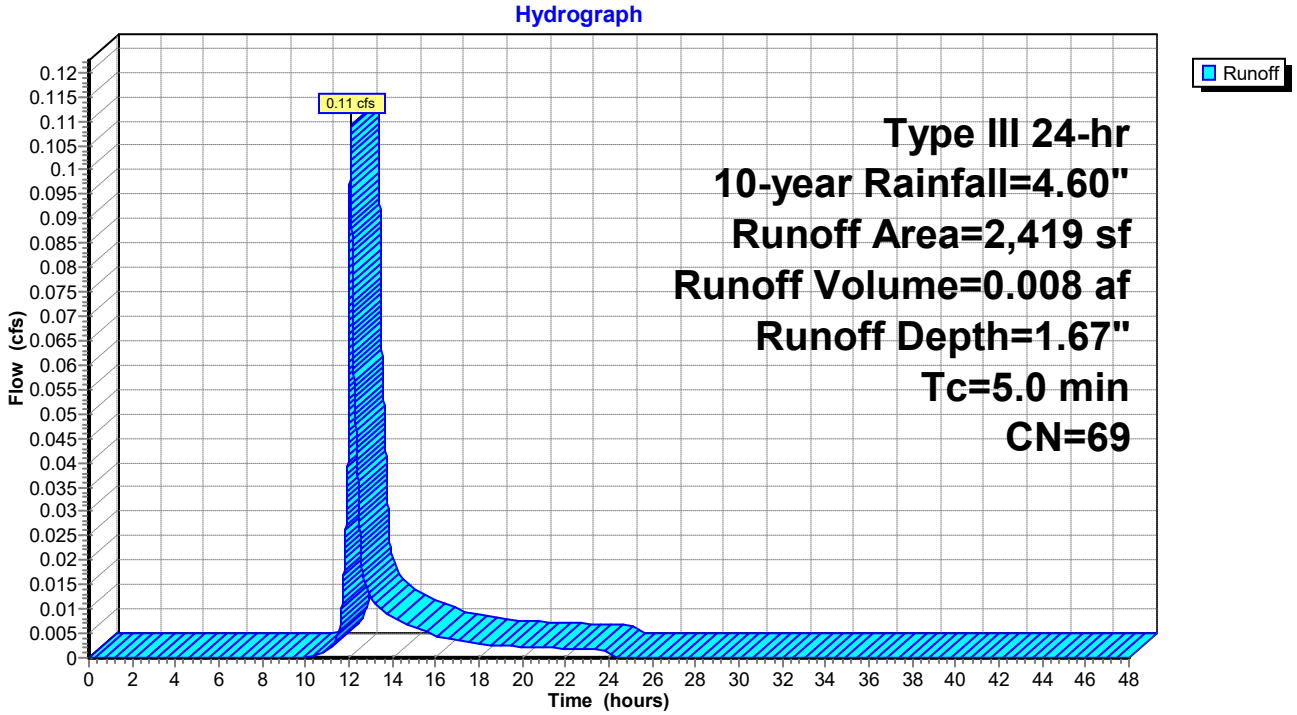
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.008 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	1,295	98	Driveway
*	28	98	Wall
*	24	98	Brick
	1,072	32	Woods/grass comb., Good, HSG A
	2,419	69	Weighted Average
	1,072		44.32% Pervious Area
	1,347		55.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Rear Access



Summary for Subcatchment 3S: Front Access

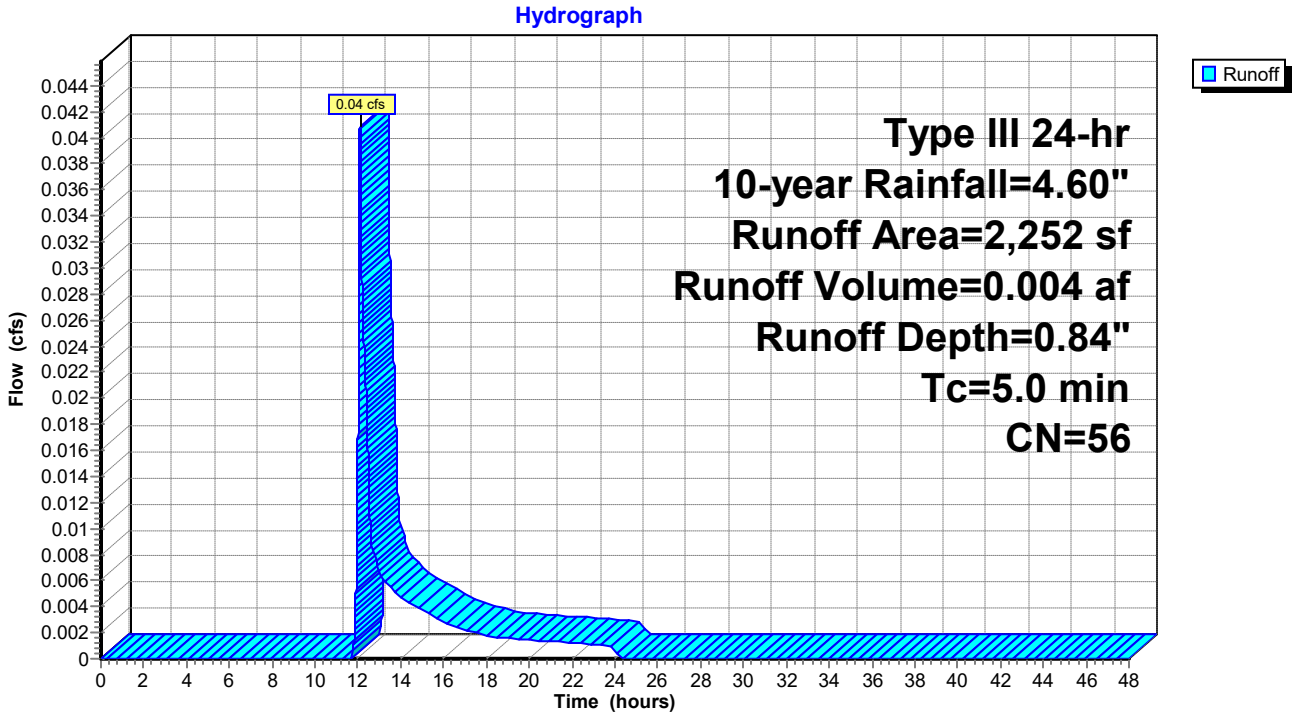
Runoff = 0.04 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	822	98	Driveway, Sidewalks, Walls, etc
	1,430	32	Woods/grass comb., Good, HSG A
	2,252	56	Weighted Average
	1,430		63.50% Pervious Area
	822		36.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3S: Front Access

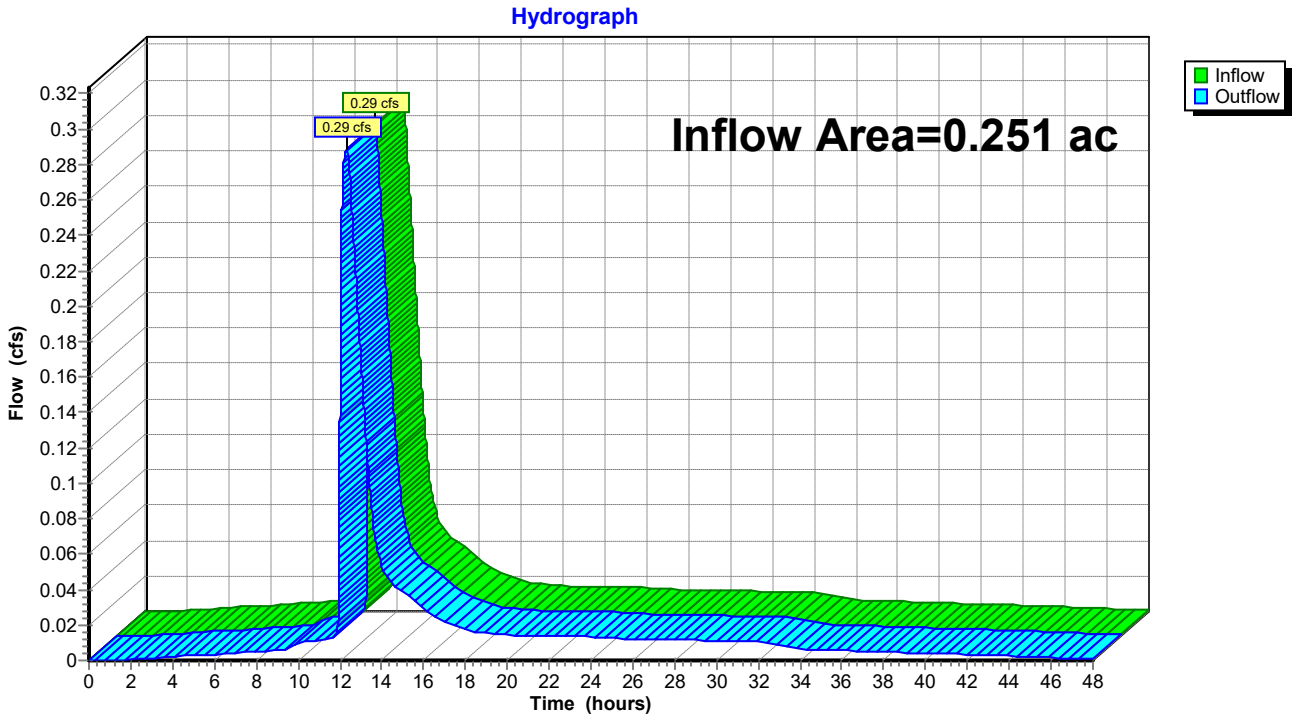


Summary for Reach 1R: POI#1

Inflow Area = 0.251 ac, 77.12% Impervious, Inflow Depth > 3.03" for 10-year event
Inflow = 0.29 cfs @ 12.29 hrs, Volume= 0.063 af
Outflow = 0.29 cfs @ 12.29 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs

Reach 1R: POI#1



Summary for Pond 1P: Medium StormTech 3500

Inflow Area = 0.199 ac, 87.65% Impervious, Inflow Depth = 3.61" for 10-year event
Inflow = 0.78 cfs @ 12.07 hrs, Volume= 0.060 af
Outflow = 0.27 cfs @ 12.34 hrs, Volume= 0.060 af, Atten= 66%, Lag= 15.8 min
Primary = 0.27 cfs @ 12.34 hrs, Volume= 0.060 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Peak Elev= 55.85' @ 12.34 hrs Surf.Area= 0.034 ac Storage= 0.025 af

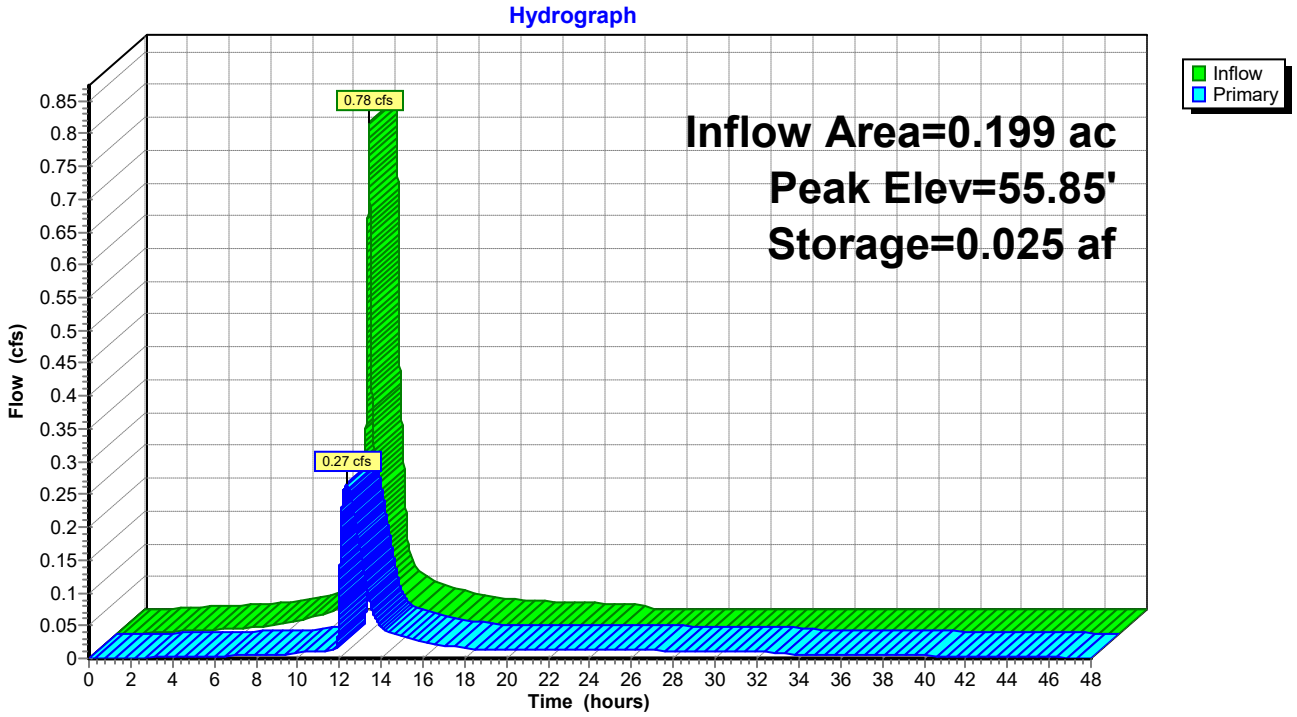
Plug-Flow detention time= 326.2 min calculated for 0.060 af (100% of inflow)
Center-of-Mass det. time= 324.2 min (1,086.3 - 762.1)

Volume	Invert	Avail.Storage	Storage Description
#1	53.21'	0.016 af	**8.42'W x 58.14'L x 5.00'H Stone** 0.056 af Overall - 0.017 af Embedded = 0.040 af x 40.0% Voids
#2	53.96'	0.017 af	**ADS_StormTech MC-3500 d +Cap** x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 2 Rows of 3 Chambers Cap Storage= +14.9 cf x 2 x 2 rows = 59.6 cf
#3	51.71'	0.001 af	**8.42'W x 58.14'L x 1.50'H Sand** 0.017 af Overall x 5.0% Voids
#4	50.71'	0.004 af	**8.42'W x 58.14'L x 1.00'H Crushed Stone** 0.011 af Overall - 0.000 af Embedded = 0.011 af x 40.0% Voids
#5	51.04'	0.000 af	**4.0" Round Underdrain Storage** Inside #4 L= 58.0'
#6	52.13'	0.002 af	**4.00'D x 8.12'H Catch Basin**
		0.040 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.60'	**8.0" Round Culvert** L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.60' / 40.00' S= 0.0848 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Device 1	50.70'	**0.5" Vert. Vert Water Quality** C= 0.600
#3	Device 1	54.60'	**3.0" Vert. Vert Quantity** C= 0.600
#4	Device 1	58.00'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.27 cfs @ 12.34 hrs HW=55.85' (Free Discharge)
└**1=Culvert** (Passes 0.27 cfs of 2.94 cfs potential flow)
  ├**2=Vert Water Quality** (Orifice Controls 0.01 cfs @ 10.91 fps)
  ├**3=Vert Quantity** (Orifice Controls 0.25 cfs @ 5.11 fps)
  └**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Medium StormTech 3500



Time span=0.00-48.00 hrs, dt=0.001 hrs, 48001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Building Roof Runoff Area=6,264 sf 100.00% Impervious Runoff Depth=5.56"
Tc=5.0 min CN=98 Runoff=0.85 cfs 0.067 af

Subcatchment 2S: Rear Access Runoff Area=2,419 sf 55.68% Impervious Runoff Depth=2.56"
Tc=5.0 min CN=69 Runoff=0.17 cfs 0.012 af

Subcatchment 3S: Front Access Runoff Area=2,252 sf 36.50% Impervious Runoff Depth=1.48"
Tc=5.0 min CN=56 Runoff=0.08 cfs 0.006 af

Reach 1R: POI#1 Inflow=0.39 cfs 0.085 af
Outflow=0.39 cfs 0.085 af

Pond 1P: Medium StormTech 3500 Peak Elev=56.65' Storage=0.031 af Inflow=1.02 cfs 0.078 af
Outflow=0.34 cfs 0.078 af

Total Runoff Area = 0.251 ac Runoff Volume = 0.085 af Average Runoff Depth = 4.06"
22.88% Pervious = 0.057 ac 77.12% Impervious = 0.194 ac

Summary for Subcatchment 1S: Building Roof

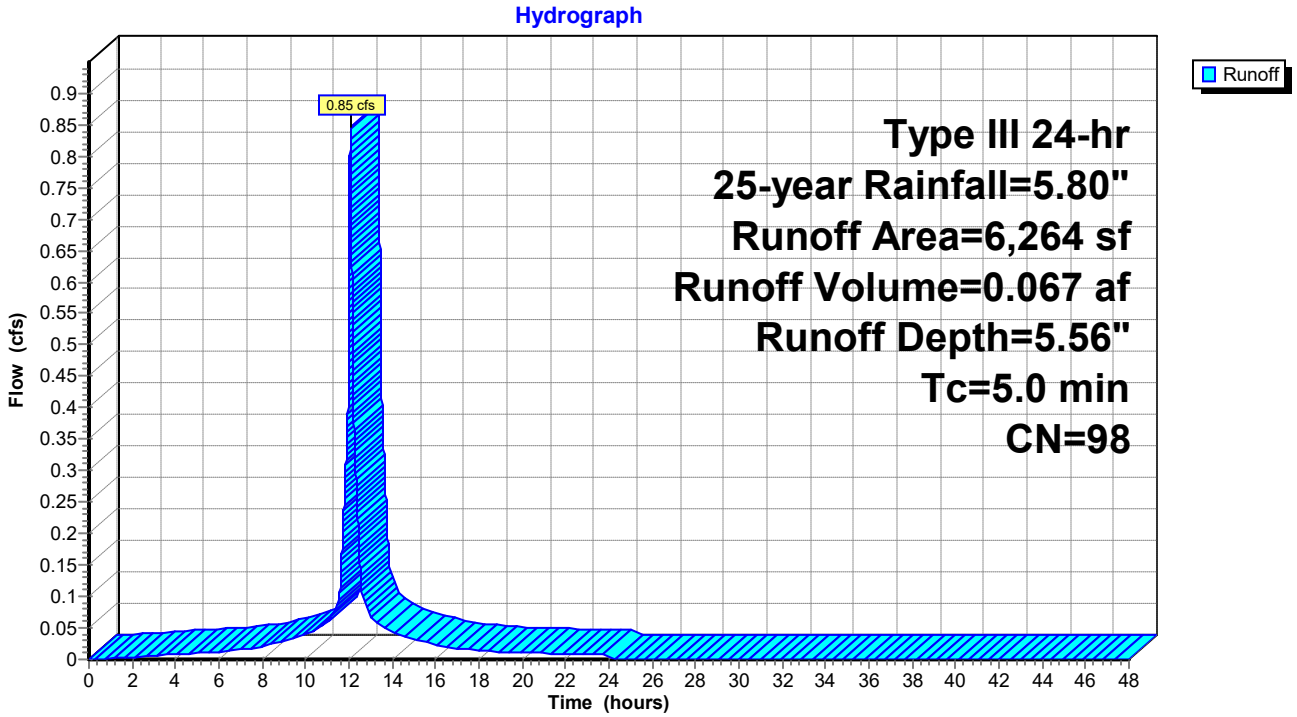
Runoff = 0.85 cfs @ 12.07 hrs, Volume= 0.067 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
6,264	98	Roofs, HSG A
6,264		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1S: Building Roof



Summary for Subcatchment 2S: Rear Access

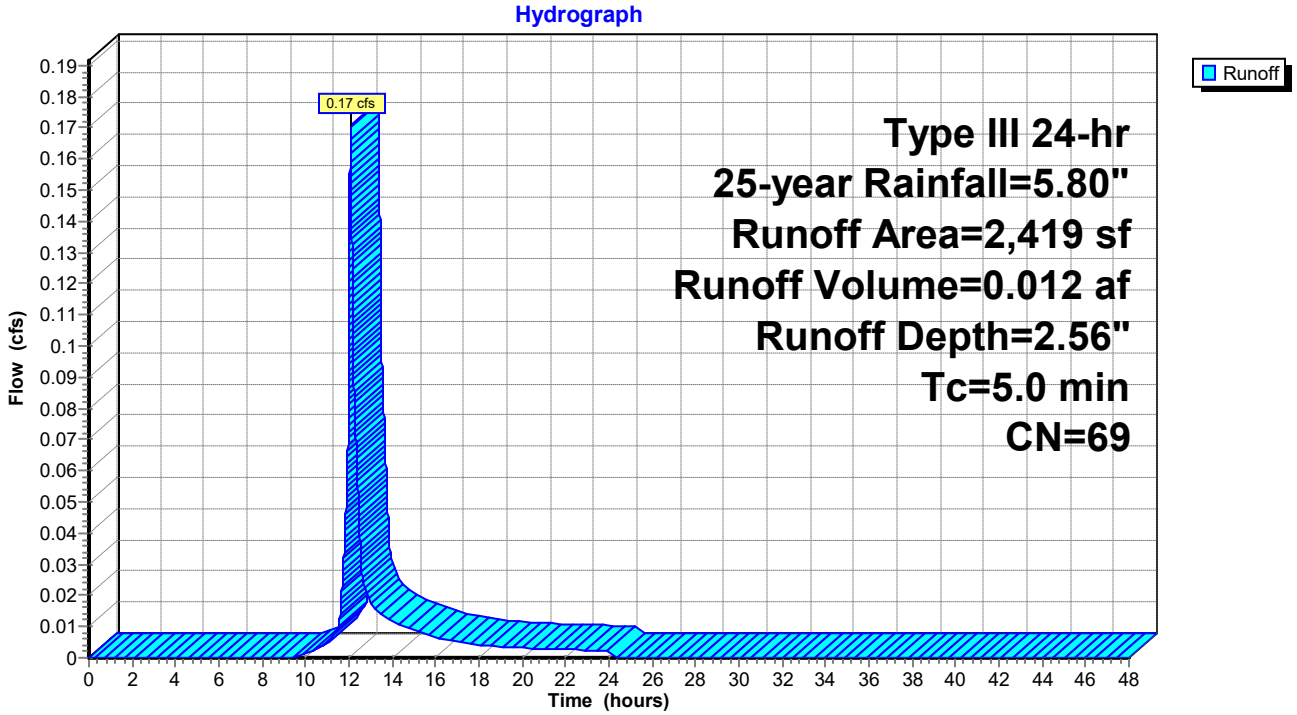
Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.012 af, Depth= 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,295	98	Driveway
*	28	98	Wall
*	24	98	Brick
	1,072	32	Woods/grass comb., Good, HSG A
	2,419	69	Weighted Average
	1,072		44.32% Pervious Area
	1,347		55.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Rear Access



Summary for Subcatchment 3S: Front Access

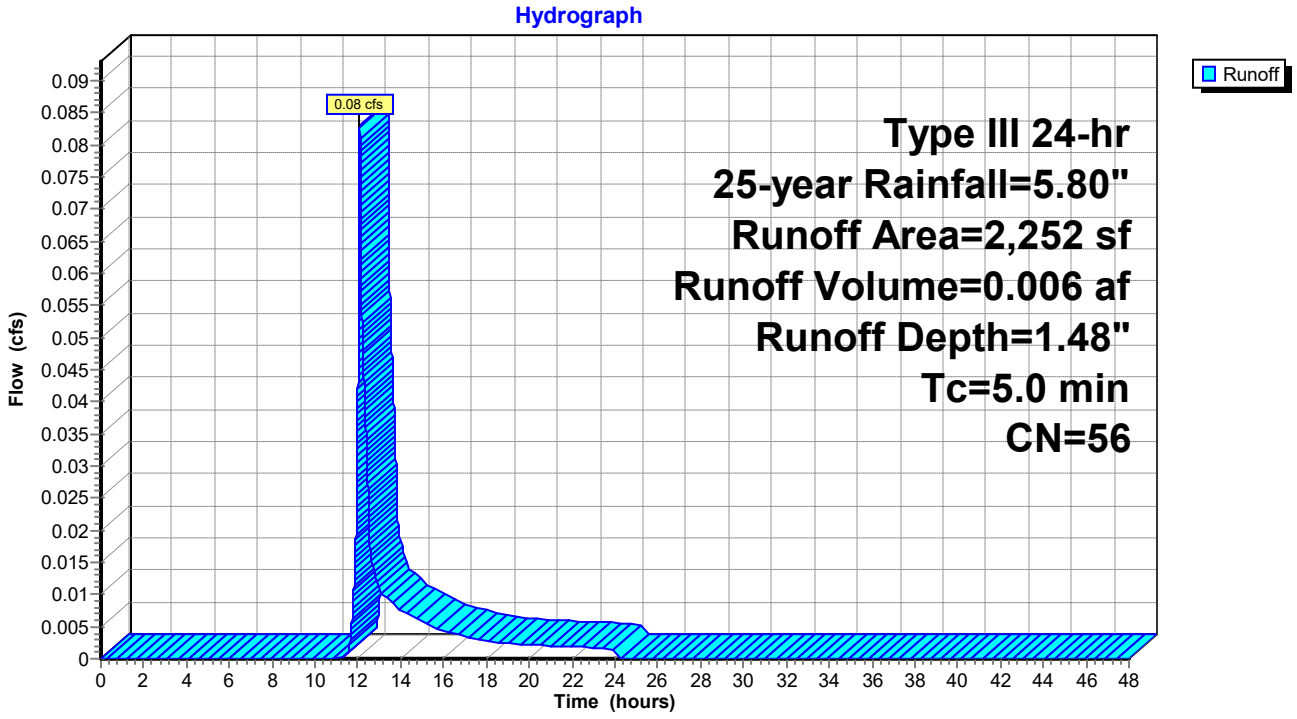
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.006 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	822	98	Driveway, Sidewalks, Walls, etc
	1,430	32	Woods/grass comb., Good, HSG A
	2,252	56	Weighted Average
	1,430		63.50% Pervious Area
	822		36.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3S: Front Access

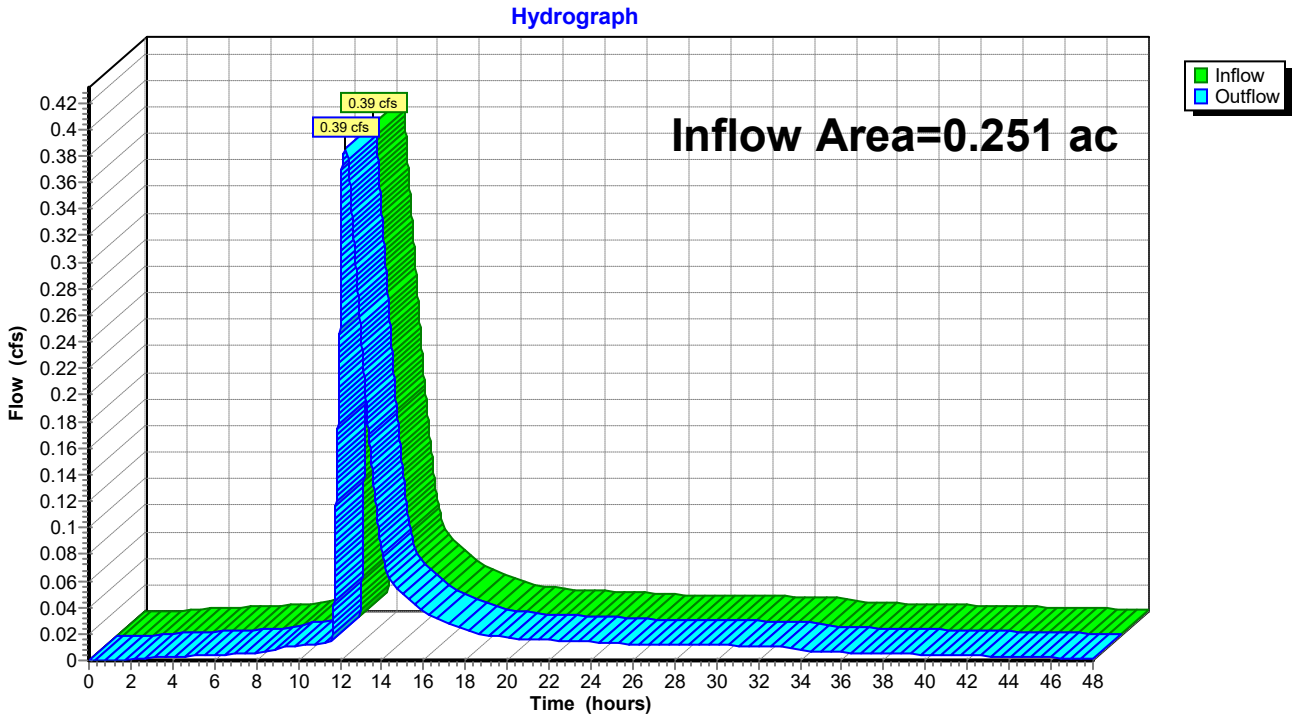


Summary for Reach 1R: POI#1

Inflow Area = 0.251 ac, 77.12% Impervious, Inflow Depth > 4.04" for 25-year event
Inflow = 0.39 cfs @ 12.26 hrs, Volume= 0.085 af
Outflow = 0.39 cfs @ 12.26 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs

Reach 1R: POI#1



Summary for Pond 1P: Medium StormTech 3500

Inflow Area = 0.199 ac, 87.65% Impervious, Inflow Depth = 4.72" for 25-year event
Inflow = 1.02 cfs @ 12.07 hrs, Volume= 0.078 af
Outflow = 0.34 cfs @ 12.34 hrs, Volume= 0.078 af, Atten= 66%, Lag= 16.0 min
Primary = 0.34 cfs @ 12.34 hrs, Volume= 0.078 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.001 hrs
Peak Elev= 56.65' @ 12.34 hrs Surf.Area= 0.034 ac Storage= 0.031 af

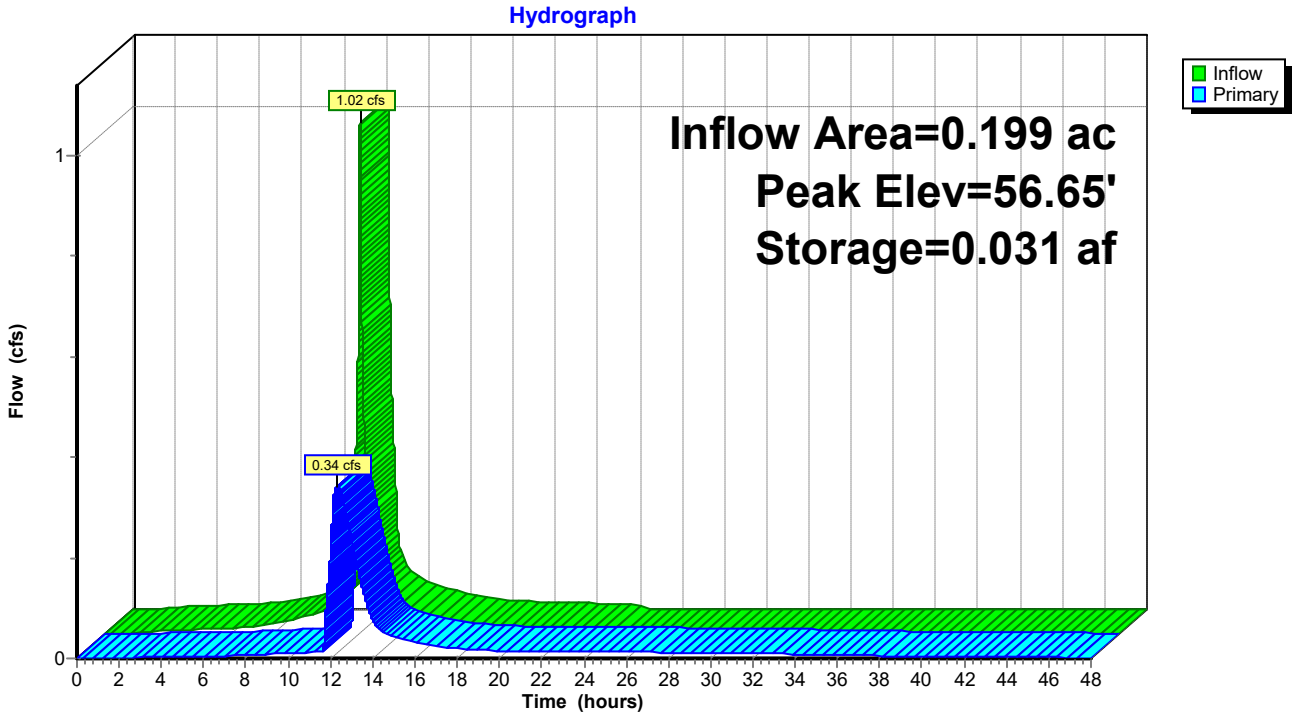
Plug-Flow detention time= 274.3 min calculated for 0.078 af (100% of inflow)
Center-of-Mass det. time= 272.2 min (1,031.5 - 759.3)

Volume	Invert	Avail.Storage	Storage Description
#1	53.21'	0.016 af	**8.42'W x 58.14'L x 5.00'H Stone** 0.056 af Overall - 0.017 af Embedded = 0.040 af x 40.0% Voids
#2	53.96'	0.017 af	**ADS_StormTech MC-3500 d +Cap** x 6 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 2 Rows of 3 Chambers Cap Storage= +14.9 cf x 2 x 2 rows = 59.6 cf
#3	51.71'	0.001 af	**8.42'W x 58.14'L x 1.50'H Sand** 0.017 af Overall x 5.0% Voids
#4	50.71'	0.004 af	**8.42'W x 58.14'L x 1.00'H Crushed Stone** 0.011 af Overall - 0.000 af Embedded = 0.011 af x 40.0% Voids
#5	51.04'	0.000 af	**4.0" Round Underdrain Storage** Inside #4 L= 58.0'
#6	52.13'	0.002 af	**4.00'D x 8.12'H Catch Basin**
		0.040 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	50.60'	**8.0" Round Culvert** L= 125.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.60' / 40.00' S= 0.0848 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Device 1	50.70'	**0.5" Vert. Vert Water Quality** C= 0.600
#3	Device 1	54.60'	**3.0" Vert. Vert Quantity** C= 0.600
#4	Device 1	58.00'	**6.0' long x 0.7' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.34 cfs @ 12.34 hrs HW=56.65' (Free Discharge)
└**1=Culvert** (Passes 0.34 cfs of 3.17 cfs potential flow)
  ├**2=Vert Water Quality** (Orifice Controls 0.02 cfs @ 11.72 fps)
  ├**3=Vert Quantity** (Orifice Controls 0.33 cfs @ 6.67 fps)
  └**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Medium StormTech 3500



ACORN ENGINEERING, INC.

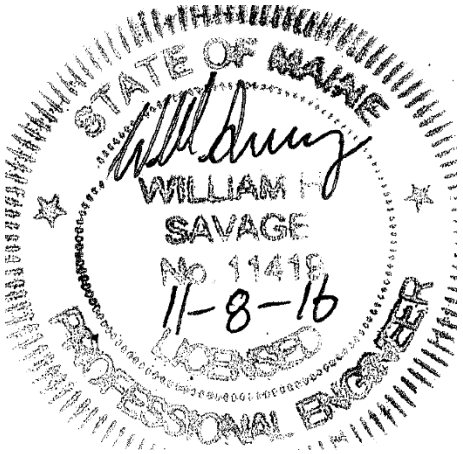
EROSION & SEDIMENTATION CONTROL REPORT

Prepared For:

York Street Redevelopment, LLC
161 York Street Redevelopment
161-163 York Street
Portland, Maine 04101

Prepared By:

Acorn Engineering, Inc.
158 Danforth Street
Portland, Maine 04102



November 2016

INTRODUCTION

Acorn Engineering, Inc. has been retained by York Street Redevelopment, LLC to provide civil engineering services for the proposed redevelopment of 161 York Street. The proposed project includes the development of a five-story building with eleven condominiums and two levels of parking. The site, which previously contained two single-family dwellings, has recently been demolished.

The following Erosion and Sedimentation Control Report was developed in accordance with the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and the Maine DEP Chapter 500 Stormwater Management Appendix A and B (1), Amended January 11, 2015. This narrative also meets the standards required in the Maine DEP's Erosion & Sediment Control BMP's Manual, revised in 2014.

1.0 EXISTING CONDITIONS

The proposed project site is located on York Street in proximity to State Street and the Casco Bay Bridge. A boundary plan has been prepared by Spurwink Surveying LLC of Scarborough, Maine dated September 29th, 2015.

Abutting Uses:

- North R-6 Zone Residential Condominiums
- West R-6 Zone Vacant Land
- South R-6 Zone Residential Condominiums
- East R-6 Zone Multi-Family Residential

Because of the recent demolition, the property is now primarily comprised of soil and vegetation. The site slopes down towards York Street with an average grade of approximately 10%. Stormwater flows west to east where it then enters the municipal stormwater system within York Street.

1.1 Existing Soils

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey

Given the soils information, listed above, no onsite wastewater is proposed,; the applicant does not intend to perform a more intense hydric soil boundary delineation because the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

The area within and surrounding the project includes soils types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 1 - "K" Value		
Soils Type	**Subsurface**	**Substratum**
Hinckley	0.17	0.17

The soil "K" values for the soils, listed above, show a low susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

1.2 Existing Erosion Problems

There is evidence of limited erosion on the southernmost face of the property in the form of mild rutting and rilling. This is most likely due to the recent demolition activities and inadequate bare soil stabilization post-demolition.

1.3 Critical Areas

Critical areas that would require special attention during construction are the areas adjacent to the municipal stormwater system. This includes, but is not limited to, the catch basin located in front of the property on York Street.

1.4 Protected Natural Resource

The client is not aware of the presence of any existing significant natural features located on the site as listed in Section 14-526 (b) 1. of the Land Use Code. The project is not located within a watershed classified as an Urban Impaired Stream by the Maine DEP.

1.5 Previous Construction Activity (5 years)

Apart from the recent demolition, Acorn Engineering, Inc. is not aware of any construction related activities within the project limits within the past 5 years.

1.6 Timber Harvesting

Acorn Engineering, Inc. is not aware of any timber harvesting within the past five years.

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

As part of the site development, the following temporary and permanent erosion and sedimentation control devices shall be implemented. Devices shall be installed as described in this report or within the plan set. See the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices for further reference.

2.1 Temporary Erosion Control Measures

The following temporary erosion and sedimentation control measures are planned for the project's construction period:

2.1.1 Crushed stone stabilized construction entrances shall be placed at all access points to the project site where there are disturbed areas. The following specifications shall be followed at a minimum:

- Stone size shall be 2-3 inches, or reclaimed or recycled concrete equivalent.
- The thickness of the entrance stone layer shall be no less than 6 inches.
- The entrance shall not be less than 20 feet wide, however not less than the full width of points where ingress or egress occurs. The length shall not be less than 50 feet in length.
- Geotextile fabric (woven or non-woven) shall be placed over the entire entrance area.
- The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public road ways.

2.1.2 Siltation fence or erosion control berm shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.

2.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

2.1.5 York Street shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to

minimize the tracking of material off the site and onto the surrounding roadways.

2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.

2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14 gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be "toed" into the ground.

2.1.8 Stormdrain inlet protection shall be provided to stormdrains through the use of any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached ½ the design height.

2.1.9 Dust control shall be accomplished by the use of any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.

2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.

2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.

2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.

2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.

2.2 Permanent Erosion Control Measures

The following permanent erosion control measures are intended for post disturbance areas of the project.

2.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4" of loam, limed, and mulched. Erosion control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

2.2.2 All stormwater devices shall be installed and tributary areas stabilized prior to receiving stormwater.

2.2.3 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Erosion and Sedimentation Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion Control Details and Specifications are included in the plan set.

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

The contractor shall limit the work area to areas that work will occur in during the subsequent 15 days and so that it can be mulched one day prior to a snow event. The contractor shall stabilize work areas prior to opening additional work areas to minimize areas without erosion control measures.

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

5.2 Mulching

All areas shall be denuded until seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Erosion control mix must be applied with a minimum 4-inch thickness. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched or adequately anchored so that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

5.3 Soil Stockpiling

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or with a four-inch layer of erosion control mix. This

shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall.

5.4 Seeding

Between the dates of October 15th and April 1st, loam or seed shall not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until the final treatment can be applied. If the date is after November 1st and if the exposed area has not been loamed, final grading with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs/1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

5.5 Over winter stabilization of disturbed soils

By September 15th, all disturbed soils on areas having a slope less than 15% shall be seeded and mulched. If the disturbed areas are not stabilized by this date, then one of the following actions shall be taken to stabilize the soil for late fall and winter:

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.

- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

All stone-covered slopes shall be constructed and stabilized by November 15th. All slopes to be vegetated shall be seeded and mulched by September 1st. A slope is

considered a grade greater than 15%. If a slope to be vegetated is not stabilized by September 1st, then one of the following action shall be taken to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.

- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct periodic visual inspections of installed erosion control measures. The frequency of inspection shall occur at least once every two weeks, as well as after a "storm event". A "storm event" shall consist 0.5 inches of rain within a 24 hour period. The following Erosion and Sediment Control - Best Management Practices (BMP's) shall inspected in the manner as described.

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should

be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone shall be removed along with the collected soil material and redistributed on site in a stable manner. The entrance should then be reconstructed. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

6.3 Mulched Areas

All mulches must be inspected periodically, especially after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied. Nets must be inspected after rain events for dislocation or failure. If washouts or breakage occur, re-install the nets as necessary after repairing damage to the slope. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface. Repair as needed.

6.4 Dust Control

When temporary dust control measures are used, repetitive treatment shall be applied as needed to accomplish control.

6.5 Stormwater Appurtenances

All underdrains, storm drains, and catch basins need to be operating effectively and free of debris.

6.6 Erosion and Sedimentation Control Inspections:

Acorn Engineering has personnel qualified to conduct Erosion and Sedimentation Control Inspections. For further information contact:

Contact: Will Savage, PE
Telephone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert. #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert. #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards.

7.0 IMPLEMENTATION SCHEDULE

The following implementation sequence is intended to maximize the effectiveness of the above described erosion control measures. Contractors should avoid overexposing disturbed areas and limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter silt fence or erosion control berm.
3. Install all other erosion control devices as necessary throughout the remainder of this schedule.
4. Commence installation of drainage infrastructure connection within York Street.
5. Prioritize the downhill foundation walls to contain runoff within the site while providing an engineered outlet with siltation barrier to the municipal stormwater system within York Street.
6. Commence earthwork operations, wall and foundation installation.
7. Commence installation of utilities.
8. Continue earthwork and grading to subgrade as necessary for construction.
9. Complete installation of drainage infrastructure, as well as other utility work.
10. Complete remaining earthwork operations.
11. Install sub-base and base gravels in paved areas.
12. Install paving, curbing and brickwork.
13. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
14. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete remove all temporary erosion control measures.
15. Touch up areas without a vigorous catch of grass with loam and seed.
16. Complete site signage and striping.
17. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

The above implementation sequence should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. The contractor shall submit to the owner a schedule of the completion of the work. If the contractor is to commence the construction of more than one item above, they shall limit the amount of exposed areas to those areas in which work is expected to be undertaken during the following 30 days.

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

8.0 CONCLUSION

The above erosion control narrative is intended to minimize the development impact by implementing temporary and permanent erosion control measures. The contractor shall also refer to the Maine Erosion and Sediment Control BMP manual for additional information.

9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan

TEMPORARY SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of temporary seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.57	Aug-15 to Oct-1
Oats	1.84	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.92	Apr-1 to Jul-1
Sudangrass	0.92	May-15 to Aug-15
Perennial	0.92	Aug-15 to Sep-15

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to temporary seeding and mulching.

PERMANENT SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of permanent seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.
Kentucky Bluegrass	0.46
Creeping Red Fescue	0.46
Perennial Ryegrass	0.11
Total	1.03

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Recommendations

Permanent seeding is recommended to be completed in the spring. Later summer seeding is allowed if completed prior to September 1st. If seeding cannot be accomplished during the periods recommended for permanent seeding, then the contractor shall perform temporary seeding per the temporary seeding plan.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to permanent seeding and mulching.

ACORN ENGINEERING, INC.

Assistant Chief Keith Gautreau
City of Portland Fire Department
380 Congress St.
Portland, ME 04101

February 9, 2017

Subject: 161 York Street – Fire Department Checklist
Section J of Application

On behalf of York Street Redevelopment, LLC, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant:

   York Street Redevelopment, LLC
   42 Market Street
   Portland, Maine 04101
   (207) 774-1000

2. Name address, telephone number of architect:

   Mark Mueller Architects
   100 Commercial Street, Suite 205
   Portland, Maine 04101
   (207) 774-9057

   Mechanical, Electrical, Plumbing Engineer:

   Bennett Engineering
   PO Box 297
   Freeport, Maine 04032
   (207) 865-9475

   Proposed uses of any structures [NFPA and IBC classification]

   The Code Analysis was prepared by Mark Mueller Architects and is attached.

3. Square footage of all structures, including decks [total and per story]

Garage Level	7,089	sf
1st Floor	6,194	sf
2nd Floor	6,145	sf
3rd Floor	6,145	sf
4th Floor	5,889	sf
Roof Deck	745	sf
Total	32,207	**sf**

4. Elevation of all structures

   The average building height is less than 45 feet at five stories tall. See the attached elevations provide by the Architect for additional information.

5. Proposed fire protection of all structures

   The building will have a sprinkler system with additional protection per code. Fire flows and requirements for system storage or booster pumping are subject to the fire professional design which will be performed prior the request for a building permit.

6. Hydrant locations

   An existing hydrant is located 70 feet south of the property on York Street. The hydrant is located approximately 85 feet from the nearest proposed building edge. Hydrant flow data from the Portland Water District once received may be made available to the Fire Department upon request.

7. Water main size and location

   The development will be serviced by the existing water main within York Street. A 6" fire service line will extend from the existing water main to the building fire suppression system. The building is expected to have internal sprinkler risers and a Fire Department pump connection on the street side of the building.

8. Access to all structures [min. 2 sides]

   Access to the structure is provided primarily on York Street as well as Guilford Court which will provide access to the rear of the property.

9. The Architect has provided a code summary (attached) which references NFPA 1 and all fire department technical standards.

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The project site is located in a densely developed area and is fronted by a public street. The following pavement street width is currently available:

- York Street: 47.5 feet
- Guilford Court: 16.5 feet

Per NFPA 1 – Chapter 18.2.3.3.1, there will be public street access within 50 feet of at least one exterior door. Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 feet from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety

3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).

Response: Not applicable

3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.

Response: As depicted on the site plan, the proposed building layout provides a minimum of two paved access points to the structure: one from York Street directly and one from the rear via Guilford Court.

3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:

- *Building Height.*
- *Building Occupancy.*
- *Construction Type.*
- *Impediments to the Structures.*
- *Safety Features Provided.*

Response: The proposed development layout has contemplated emergency access conditions and provides for safe and efficient access along the public street for emergency vehicles.

3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.

Response: The building will be provided with exterior doors that will be within 50' of a Fire Department access route, namely York Street.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Response: The proposed site maintains the required clearance height of nine feet.

3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.

Response: The elevators will be sized to accommodate an 80 x 24 stretcher, per Architect designs.

3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

Response: The applicant will work with the Owner and the City's Public Services Division to assign street addresses and numbering to meet City Standards.

Please let me know if you have any additional questions or comments.

Sincerely,

William H. Savage, P.E.
Principal
Acorn Engineering, Inc.

Attachments

Architect's Code Summary

Portland Water District Ability to Serve Letter

161 YORK STREET

November 08, 2016

NFPA 1, 101 & 220 2009: CODE DATA

USE GROUP CLASSIFICATION	MIXED USE (APARTMENT OVER STORAGE/ MERCANTILE) LOWER LEVEL = ENCLOSED PARKING GARAGE 1ST FLOOR = ENCLOSED PARKING GARAGE & RESIDENTIAL UNITS 2ND FLOOR - 4TH FLOOR = RESIDENTIAL UNITS			
TYPE OF CONSTRUCTION	V (1,1,1)			
NET USEABLE AREA	49,901	SF	(EXCLUDES DECKS)	
PROPOSED BUILDING AREA	32,744	SF	(INCLUDES DECKS & ENCLOSED PARKING)	
LOT AREA	11,046	SF		
PROPOSED BUILDING HEIGHT (STORIES/ FEET)	4 STORIES / 45'-0" MAX. HEIGHT			
BUILDING AREA LIMITATION - SQ FT	NONE			
BUILDING HEIGHT LIMITATION - STORIES	NONE			
TRAVEL: COMMON PATH LIMIT (ALLOWABLE/ ACTUAL)	RESIDENTIAL 50' & STORAGE 100' (ACTUAL = LESS THAN ALLOWABLE)			
TRAVEL: DEAD-END LIMIT (ALLOWABLE/ ACTUAL)	RESIDENTIAL 50' & STORAGE 100' (ACTUAL = LESS THAN ALLOWABLE)			
TRAVEL: EXIT ACCESS TRAVEL DISTANCE LIMIT (ALLOWABLE/ ACTUAL)	RESIDENTIAL 325' & STORAGE 400' (ACTUAL = LESS THAN ALLOWABLE)			
FIRE SUPPRESSION SYSTEM	NFPA 13			
NUMBER OF REQUIRED EXITS	TWO			
EXIT ACCESS FIRE RATINGS				
FIRE WALLS/ BARRIERS	2 HOUR AT PARKING GARAGE TO ADJACENT UNITS			
OCCUPANCY SEPARATION	30 MIN. (30.3.7.2)			
TENANT SEPARATION	1 HOUR			
PARTY WALLS	NONE			
STAIR ENCLOSURES	2 HOUR			
SHAFTS	2 HOUR			
EXIT ACCESS CORRIDORS	30 MIN. (30.3.6.1.2)			
TRASH ROOMS	1 HOUR (TABLE 30.3.2.1.1)			
FIRE PROTECTION OF STRUCTURE				
COLUMNS	1 HOUR			
BEAMS, GIRDERS, TRUSSES & ARCHES	1 HOUR			
LOAD BEARING WALLS - EXTERIOR	1 HOUR			
LOAD BEARING WALLS - INTERIOR	1 HOUR			
NON-LOAD BEARING WALLS - EXTERIOR	0 HOUR			
NON-LOAD BEARING WALLS - INTERIOR	0 HOUR			
FLOOR CONSTRUCTION	1 HOUR			
ROOF CONSTRUCTION	1 HOUR			

OCCUPANT LOAD

LOWER LEVEL				
PARKING GARAGE	7,089	SF	200 SF/ PERSON =	35
	TOTAL 7,089	**SF**		
1ST FLOOR				
RESIDENTIAL	4,509	SF	200 SF/ PERSON =	23
UNIT DECKS	1,685	SF	200 SF/ PERSON =	8
	TOTAL 6,194	**SF**		
2ND FLOOR				
RESIDENTIAL	6,145	SF	200 SF/ PERSON =	31
UNIT DECKS	106	SF	200 SF/ PERSON =	1
	TOTAL 6,251	**SF**		
3RD FLOOR				
RESIDENTIAL	6,145	SF	200 SF/ PERSON =	31
UNIT DECKS	106	SF	200 SF/ PERSON =	1
	TOTAL 6,251	**SF**		
4TH FLOOR				
RESIDENTIAL	5,889	SF	200 SF/ PERSON =	29
UNIT DECKS	335	SF	200 SF/ PERSON =	2
	TOTAL 6,224	**SF**		
ROOF				
COMMON DECKS	735	SF	15 SF/ PERSON =	49
OCCUPANT LOAD - TOTAL	**32,744**	**SF**	**People**	**209**

161 YORK STREET

November 08, 2016

IBC 2009: CODE DATA

USE GROUP CLASSIFICATION	MIXED USE (R-2 OVER S-2/M) LOWER LEVEL = ENCLOSED PARKING GARAGE 1ST FLOOR = ENCLOSED PARKING GARAGE & RESIDENTIAL UNITS 2ND FLOOR - 4TH FLOOR = RESIDENTIAL UNITS
TYPE OF CONSTRUCTION	5A (WOOD - PROTECTED)
NET USEABLE AREA	31,462 SF (EXCLUDES DECKS)
PROPOSED BUILDING AREA	32,744 SF (INCLUDES DECKS & ENCLOSED PARKING)
LOT AREA	11,046 SF
PROPOSED BUILDING HEIGHT (STORIES/ FEET)	4 STORIES / 45'-0" MAX. HEIGHT
ALLOWABLE BUILDING AREA LIMITATION - SQ FT (TABLE 503)	12,000 SF PER FLOOR
ALLOWABLE BUILDING HEIGHT LIMITATION - STORIES (TABLE 503)	3 STORIES (50' MAX.)
INCREASE: STREET FRONTAGE (150% AREA) - SQ FT	N/A
INCREASE: AUTOMATIC SPRINKLER SYSTEM AREA (200% AREA) - SQ FT	24,000 SF INCREASE (36,000 SF TOTAL PER FLOOR)
INCREASE: AUTOMATIC SPRINKLER SYSTEM HEIGHT (1 STORY)	1 STORY (4 STORIES TOTAL)
TRAVEL: COMMON PATH LIMIT (ALLOWABLE/ ACTUAL)	RESIDENTIAL 50' & STORAGE 100' (ACTUAL = LESS THAN ALLOWABLE)
TRAVEL: DEAD-END LIMIT (ALLOWABLE/ ACTUAL)	RESIDENTIAL 50' & STORAGE 100' (ACTUAL = LESS THAN ALLOWABLE)
TRAVEL: EXIT ACCESS TRAVEL DISTANCE LIMIT (ALLOWABLE/ ACTUAL)	RESIDENTIAL 325' & STORAGE 400' (ACTUAL = LESS THAN ALLOWABLE)
FIRE SUPPRESSION SYSTEM	NFPA 13
NUMBER OF REQUIRED EXITS	TWO
EXIT ACCESS FIRE RATINGS	
FIRE WALLS/ BARRIERS	2 HOUR AT PARKING GARAGE TO ADJACENT UNITS
OCCUPANCY SEPARATION	2 HOUR (S-2/ R-2)
TENANT SEPARATION	1 HOUR
PARTY WALLS	1 HOUR
STAIR ENCLOSURES	2 HOUR
SHAFTS	2 HOUR
EXIT ACCESS CORRIDORS	30 MIN. (TABLE 1018.1)
FIRE PROTECTION OF STRUCTURE	
PRIMARY STRUCTURAL FRAME	1 HOUR
SECONDARY STRUCTURAL FRAME	1 HOUR
LOAD BEARING WALLS - EXTERIOR	1 HOUR
LOAD BEARING WALLS - INTERIOR	1 HOUR
NON-LOAD BEARING WALLS - EXTERIOR	1 HOUR (TABLE 602)
NON-LOAD BEARING WALLS - INTERIOR	1 HOUR
FLOOR CONSTRUCTION	1 HOUR
ROOF CONSTRUCTION	1 HOUR
FIRE SEPARATION DISTANCE	
5' TO LESS THAN 10' (22% ACTUAL)	25% MAX. UNPROTECTED, SPRINKLERED (UP,S)
10' TO LESS THAN 15' (26% ACTUAL)	45% MAX. UNPROTECTED, SPRINKLERED (UP,S)
5' MAX. DECK/ BALCONY DEPTH @ BUILDING PROJECTION	(SECTION 705.2)
FIRE HYDRANT LOCATED 70' FROM LOT	

OCCUPANT LOAD

LOWER LEVEL				
PARKING GARAGE (ENCLOSED)	7,089	SF	200 SF/ PERSON =	35
	TOTAL 7,089	**SF**		
1ST FLOOR				
RESIDENTIAL	4,509	SF	200 SF/ PERSON =	23
PARKING GARAGE (ENCLOSED)	1,685	SF	200 SF/ PERSON =	8
	TOTAL 6,194	**SF**		
2ND FLOOR				
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UNIT DECKS	106	SF	200 SF/ PERSON =	1
	TOTAL 6,251	**SF**		
3RD FLOOR				
RESIDENTIAL	6,145	SF	200 SF/ PERSON =	31
UNIT DECKS	106	SF	200 SF/ PERSON =	1
	TOTAL 6,251	**SF**		
4TH FLOOR				
RESIDENTIAL	5,889	SF	200 SF/ PERSON =	29
UNIT DECKS	335	SF	200 SF/ PERSON =	2
	TOTAL 6,224	**SF**		
ROOF				
COMMON DECKS	735	SF	15 SF/ PERSON =	49
OCCUPANT LOAD - TOTAL	**32,744**	**SF**	**People**	**209**

Portland Water District
FROM SEBAGO LAKE TO CASCO BAY

August 31, 2016

Ms. Olivia Dawson
Acorn Engineering
P.O. Box 3372
Portland, ME 04104

Re: 161 York Street
Ability to Serve with PWD Water

Dear Ms. Dawson:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on August 3, 2016. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter does not constitute approval of this project from the District. Review and approval of final plans is required.**

Conditions of Service

The following conditions of service apply:

- A new 4-inch fire service and 2-inch domestic service may be installed as shown on the "Utility Plan, 161 York Street Redevelopment Sheet C-20 dated August 3, 2016 and returned to you with marked up comments.
- Two existing ¾" services SV271826 and SV273689 need to be terminated by shutting the corporation, cutting the copper and removing the curb box and rod.
- Once the final plans are approved and the project is ready for construction, the owner or contractor will need to make an appointment to come in and complete a service application form and pay the necessary fees.

Existing Site Service

According to District records, the project site does currently have existing water service. Two 3/4-inch diameter copper water service lines, located as shown on the attached water service cards, provide water service to this site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of these services.

Water System Characteristics

According to District records, there is an 12-inch diameter ductile iron water main on the northwest side of York Street and a public fire hydrant located 120 feet from the site. Recent flow data is not available in this area. The most recent static pressure reading was 90 psi on October 9, 2015.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

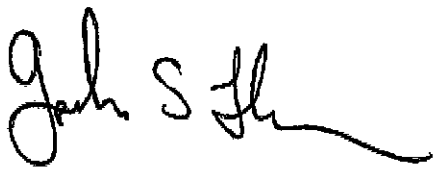
Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Gordon S. Johnson
Engineering Services Manager

TO BE RETIRED

SERVICE RECORD

NO. 165 YORK St. DIVISION PORT. 027

REG. NO. 1826 Code No.

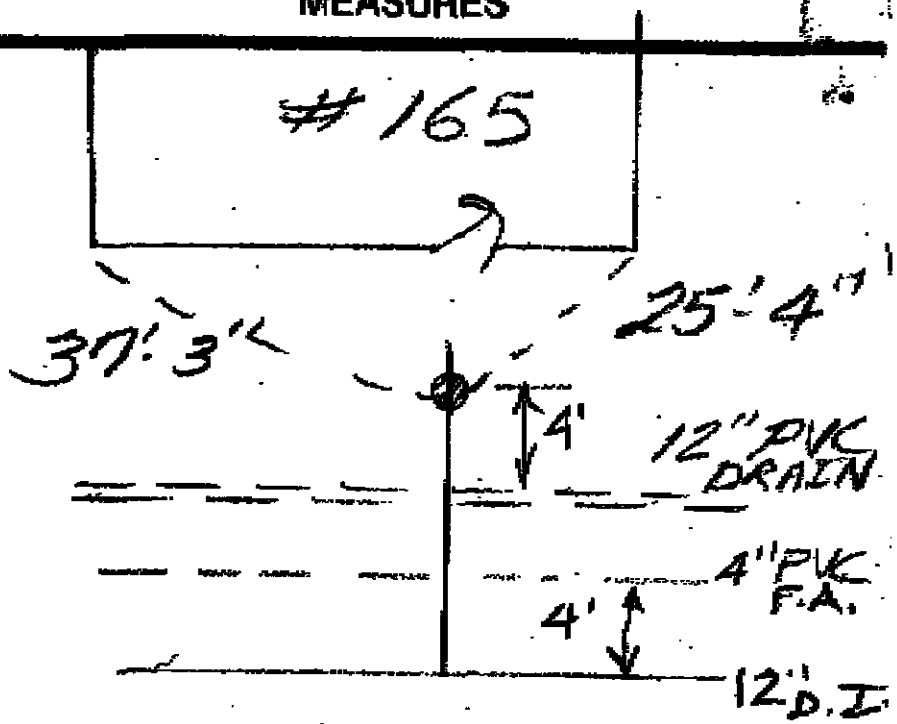
Name LAROCHELLE Name

Name Name

Name MEASURES

SERVICE DATA

Size of Pipe	3/4 COPPER
Kind of Pipe	COPPER
Main to Stop	18'
Stop to St. Line	ON
Date	8/10/96
Mat. on Private	3/4 COPPER
Depth/Main	5'
Depth/Private	5'
Shut at Corp.	



TO BE RETIRED

SERVICE RECORD

NO. #161 YORK ST. St. DIVISION PORT. 027

REG. NO. 3689 Code No.

Name Name

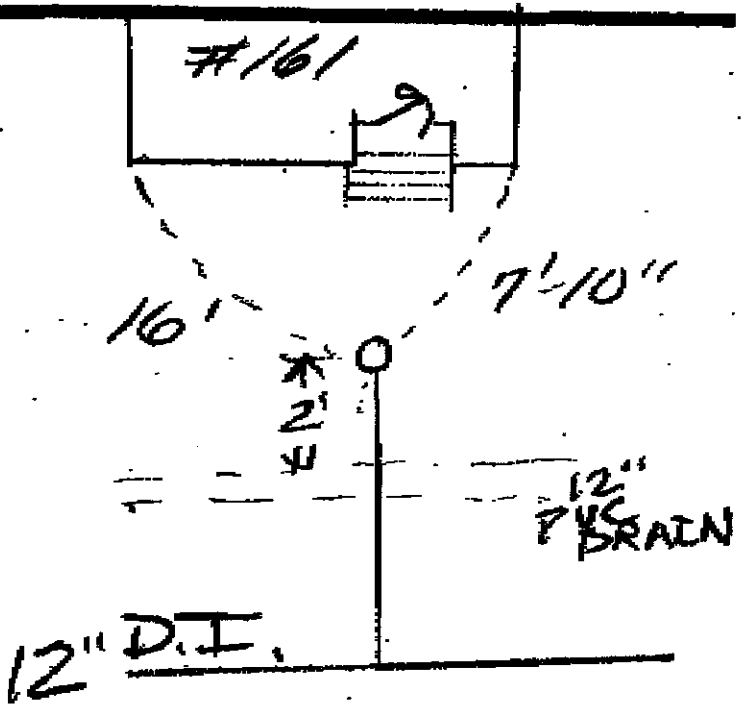
Name Name

Name

SERVICE DATA

Size of Pipe	3/4 COPPER
Kind of Pipe	COPPER
Main to Stop	16'
Stop to St. Line	ON
Date	8/10/96
Mat. on Private	3/4 COPPER
Depth/Main	4 1/2'
Depth/Private	5'
Shut at Corp.	

MEASURES



K. Solid Waste Disposal

The eleven unit owners, or their property management company, shall be responsible for relocating the solid waste and recyclable material to the space allocated for solid waste storage as necessary and noted on the First Floor Site Plan (C-11).

The solid waste containers will be fully enclosed and screened from the public view.

L. Utilities

The proposed project will include installation of new utility services to the building and individual units.

Water:

As identified in the Existing Conditions Plan, the site has two existing water service lines. The service lines are to be removed and replaced in accordance with the Portland Water District. The proposed services feature a parent-child connection on the south side of the proposed building. Permission has been granted from Portland Water District to install the services 7.40 feet off the property line instead of the required 10 feet (attached).

Sewer:

An existing sewer service was not identified on the property. We contacted the Department of Public Works with an Ability to Serve Letter and have not received a response. We then reached out to a City Surveyor who provided us with archived maps which do not depict an existing sewer service for 161-163 York Street. A proposed service line will connect to the 36" brick sewer main in York Street. A line from the covered parking garage floor drains will flow through an oil-water separator and then wye into the sewer service, connecting to the sewer main.

Storm:

An existing storm line was not identified on the property. One proposed storm drain will connect the stormwater detention system to the separated Type C 12" underdrain in York Street as seen on C-20 and C-31.

Electric / Telephone / Cable:

Overhead electric, telephone, and cable lines have recently been removed during demolition of the site. All proposed service lines will be routed underground from an existing utility pole across York Street. If required by Central Maine Power, three proposed pole-mounted transformers will be installed.

Gas:

A retired gas valve exists in the York Street Right-of-Way. A new service is proposed to service the building from an existing gas main on Guilford Court.

Ability to serve letters have been sent out to the respective utility companies on August 3rd, 2016 in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7). Revised Utility Plans and letters were then sent out on November 2nd, 2016. Please refer to the attached letters and responses. Pending responses will be forwarded to the planner once received.

A C O R N
ENGINEERING, INC.

Portland Water District
Attn: Gordon S. Johnson
225 Douglas Street
Portland, Maine 04104

November 2, 2016

Subject: 161 York Street Redevelopment
Re: Ability to Serve – Utility Plan Update

Dear Mr. Johnson,

Since our last correspondence, there has been continued design and development of the proposed 161 York Street redevelopment project.

The proposed domestic and fire services are to still be tapped from the existing 12" ductile iron water main within York Street but are to be a parent-child connection with only the 4" fire service tapping into the main; the 2" domestic service is then to split from the 4" pipe before passing the property line and outfitted with a 2" curb stop. The domestic and fire are to maintain a minimum of 18" face-to-face separation until connecting to the building.

Due to space constraints and the City Ordinance required street tree placement, the services will be 10' from the center of the nearest tree but only 7.5' from the side property line after dividing into two services. After many design iterations and alternatives, this proposed plan best suits the site and building from a separation standpoint except for the 10' service line separation requirement from the property line as set by PWD.

Please note that the design flows have not changed since the last ability to serve submission.

I have attached the latest utility plan for your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Olivia Dawson, E.I.
Design Engineer
Acorn Engineering, Inc.

Cc: Norman Twaddel – Portland Water District
William Savage – Acorn Engineering, Inc.
Sam Lebel – Acorn Engineering, Inc.

Portland Water District
FROM SEBAGO LAKE TO CASCO BAY

August 31, 2016

Ms. Olivia Dawson
Acorn Engineering
P.O. Box 3372
Portland, ME 04104

Re: 161 York Street
Ability to Serve with PWD Water

Dear Ms. Dawson:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on August 3, 2016. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter does not constitute approval of this project from the District. Review and approval of final plans is required.**

Conditions of Service

The following conditions of service apply:

- A new 4-inch fire service and 2-inch domestic service may be installed as shown on the "Utility Plan, 161 York Street Redevelopment Sheet C-20 dated August 3, 2016 and returned to you with marked up comments.
- Two existing ¾" services SV271826 and SV273689 need to be terminated by shutting the corporation, cutting the copper and removing the curb box and rod.
- Once the final plans are approved and the project is ready for construction, the owner or contractor will need to make an appointment to come in and complete a service application form and pay the necessary fees.

Existing Site Service

According to District records, the project site does currently have existing water service. Two 3/4-inch diameter copper water service lines, located as shown on the attached water service cards, provide water service to this site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of these services.

Water System Characteristics

According to District records, there is an 12-inch diameter ductile iron water main on the northwest side of York Street and a public fire hydrant located 120 feet from the site. Recent flow data is not available in this area. The most recent static pressure reading was 90 psi on October 9, 2015.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

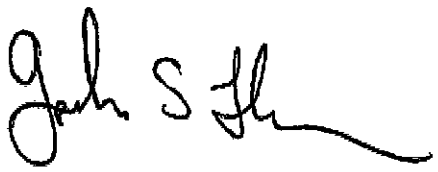
Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Gordon S. Johnson
Engineering Services Manager

Olivia Dawson

From: Robert Bartels P.E. <rbartels@pwd.org> on behalf of AMaP MEANS <means@pwd.org>
Sent: Thursday, November 03, 2016 9:10 AM
To: Olivia Dawson
Cc: William Savage; Sam Lebel
Subject: 373105-161 York St, Portland
Attachments: 373105_MarkupsRAB.pdf

Olivia,

Please see attached markups. PWD accepts the 7.5' separation from property line.

Please let me know if you have questions.

Respectfully,

Robert Bartels P.E.
Senior Project Engineer
Portland Water District
Phone:
E-mail: rbartels@pwd.org
http://www.pwd.org

Sam Lebel

From: Robert Bartels <rbartels@pwd.org> on behalf of AMaP MEANS <means@pwd.org>
Sent: Wednesday, February 08, 2017 3:35 PM
To: Sam Lebel
Subject: RE: 373105-161 York St, Portland
Attachments: 373105-MarkupsFinalRAB.pdf

Sam,

Please see attached markup. I added "at main" to the service retirement note(s).

The 10-foot separation is required where water lines are installed adjacent to street trees in the *public right-of-way*. If the trees are going to be on private property, they can be closer than 10'. Please remember that any damage caused by the roots of the trees to the water line on private property is the responsibility of the property owner, not the water district. The District recommends that you maintain 10' regardless.

Drawings approved as per my markup, please send a full set of plans (PDF) when they are available.

Thanks,

Robert Bartels
Senior Project Engineer
Portland Water District
Phone:
E-mail: rbartels@pwd.org
http://www.pwd.org

From: Sam Lebel [mailto:slebel@acorn-engineering.com]
Sent: Tuesday, February 07, 2017 4:06 PM
To: Robert Bartels <rbartels@pwd.org>
Cc: AMaP MEANS <means@pwd.org>; William Savage <wsavage@acorn-engineering.com>; Olivia Dawson <odawson@acorn-engineering.com>
Subject: RE: 373105-161 York St, Portland

Robert,

Attached is the revised utility plan for the 161 York Street redevelopment in which we are now proposing a 6" fire line.

It is desired to plant trees along the property line to the left of the proposed water lines; however, there is not enough room to accommodate the required 10-foot separation. Are there measures such as encasing the water lines that would allow the project to have trees planted with 5 feet of separation?

Please send back a letter of approval if this plan is accepted by PWD.

Thank you,

Sam Lebel, EI
Design Engineer

Licensed in Maine

TO BE RETIRED

SERVICE RECORD

NO. 165 YORK St. DIVISION PORT. 027

REG. NO. 1826 Code No.

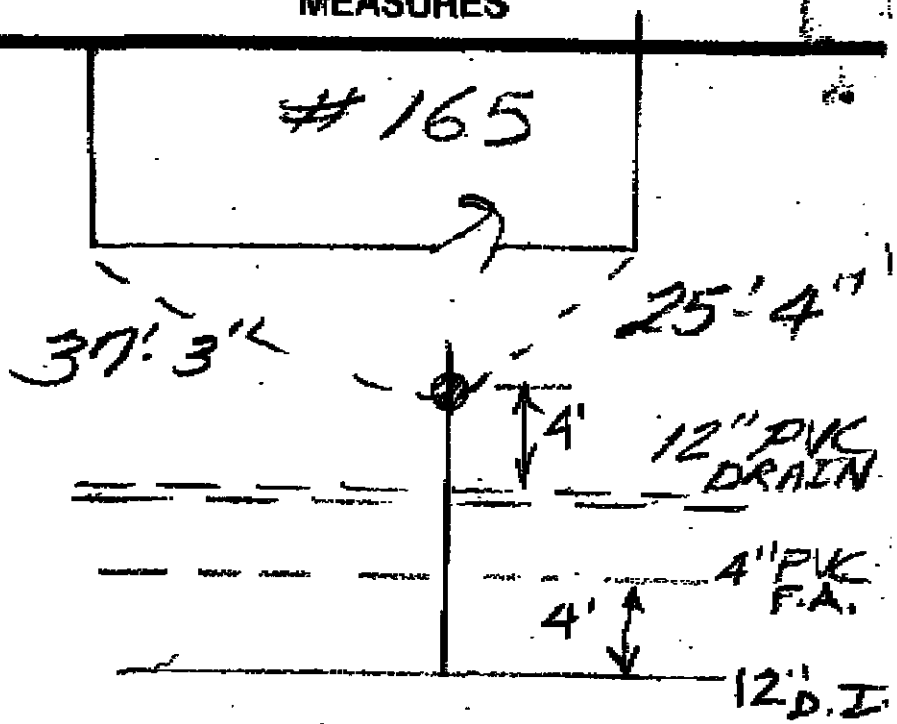
Name LAROCHELLE Name

Name Name

Name MEASURES

SERVICE DATA

Size of Pipe	3/4 COPPER
Kind of Pipe	COPPER
Main to Stop	18'
Stop to St. Line	ON
Date	8/10/96
Mat. on Private	3/4 COPPER
Depth/Main	5'
Depth/Private	5'
Shut at Corp.	



TO BE RETIRED

SERVICE RECORD

NO. #161 YORK ST. St. DIVISION PORT. 027

REG. NO. 3689 Code No.

Name Name

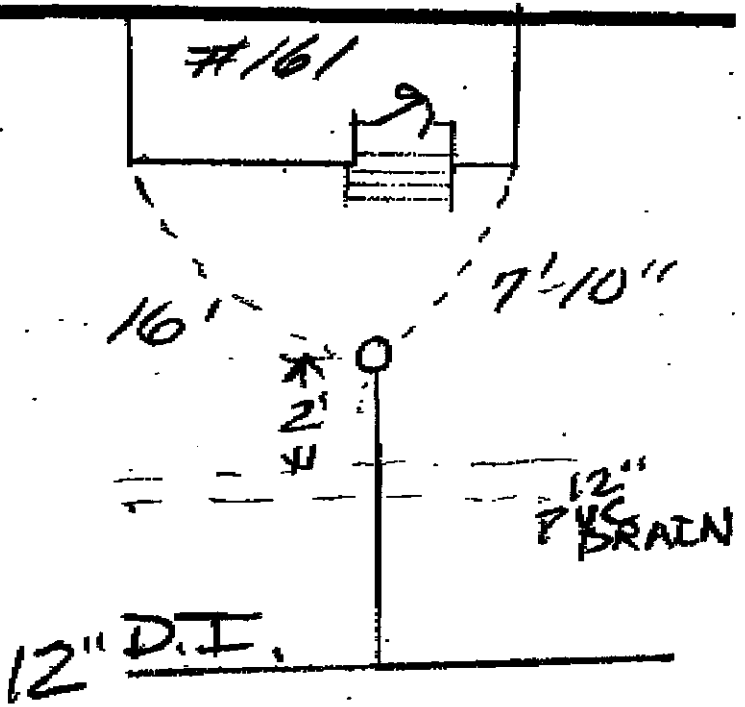
Name Name

Name

SERVICE DATA

Size of Pipe	3/4 COPPER
Kind of Pipe	COPPER
Main to Stop	16'
Stop to St. Line	ON
Date	8/10/96
Mat. on Private	3/4 COPPER
Depth/Main	4 1/2'
Depth/Private	5'
Shut at Corp.	

MEASURES



A C O R N
ENGINEERING, INC.

Department of Public Works
Attn: Mr. Brad Roland, P.E.
55 Portland Street
Portland, Maine 04101

November 2, 2016

Subject: 161 York Street Redevelopment
Re: Ability to Serve – Utility Plan Update

Dear Mr. Roland:

Since our last correspondence, there has been continued design and development of the proposed 161 York Street redevelopment project.

The proposed sewer service will continue to outlet into the existing 36" sanitary sewer line within York Street. The gravity sewer line will consist of domestic waste from the residential units as well as meltwater and liquid runoff from the internal parking garage after being treated by a water-oil separator. Per City requirement, a backflow valve is to be installed within the property lines before the service enters the City system.

Per a Department of Public Works archive research request, no existing sewer services or cards were identified for the households (2) that were previously demolished in anticipation of redevelopment of the lot.

I have attached the latest utility plan for your review as well as two documents that were provided by the Archives Department that outline the known, documented services within York Street. The wastewater application has not changed since our last correspondence as well. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Olivia Dawson, E.I.
Design Engineer
Acorn Engineering, Inc.

Cc: William Savage – Acorn Engineering, Inc.
Sam Lebel – Acorn Engineering, Inc.

Portland, Maine | Yes. Life's good here.

November 29, 2016

Re: Wastewater Capacity Authorization

Address: **161 York Street**
Applicant: Michael Cianchette, York Street Development

Planner: Shukria Wiar

Anticipated Wastewater Flows:

Estimate of Anticipated Design Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing flow to be removed				
Residential Units	3-Bedroom	2	270	540
Proposed flow				
Residential Units	2-Bedroom	4	180	720
Residential Units	3-Bedroom	7	270	1,890
			Net Change	**+ 2,070**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Comments:
The Department of Public Works, which includes the Water Resource Division, have reviewed and determined that the downstream sewers from the project address have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development.

You are reminded that the sewers you are proposing to connect into convey both sanitary and stormwater (Combined Sewer) and therefore a backflow preventer is suggested. Any addition of stormwater flows in this drainage area will have an impact on CSO discharge volumes therefore no roof, sump pump or site drainage may be discharged to the sanitary sewer. It is noted in your preliminary plan dated 2016-11-02 of the intent to remove all roof drains from entering the sewer system.

If the City can be of further assistance, please contact me at all 874-8840 or brad@portlandmaine.gov

Sincerely,
CITY OF PORTLAND

Bradley A. Roland, P.E.
Senior Project Engineer

CC:
Jeffrey Levine, Director, Department of Planning and Urban Development, City of Portland
Stuart O'Brien, Planning Director, Department of Planning and Urban Development, City of Portland
Barbara Barhydt, Development Review Services Mgr., Dep't. of Planning and Urban Development, City of Portland

Kathi Earley, City Engineer/Engineering Manager, Portland Department of Public Works

Nancy Gallinaro, Water Resources Manager, Portland Department of Public Works
Rachel Smith, Industrial Pretreatment Coordinator, Portland Department of Public Works
John Emerson, Wastewater Coordinator, Portland Department of Public Works

Lauren Swett, Woodard & Curran, DPW Development Review
Scott Firmin, Director of Wastewater, Portland Water District

A C O R N
ENGINEERING, INC.

Central Maine Power Company
Attn: Mr. Paul DuPerre
162 Canco Road
Portland, Maine 04103

November 2, 2016

Subject: 161 York Street Redevelopment
Re: Ability to Serve – Utility Plan Update

Dear Mr. DuPerre:

Since our last correspondence, there has been continued design and development of the proposed 161 York Street redevelopment project.

After careful consideration of the space restrictions of the site, the proposed electrical/telephone/cable service is to supply the building via two pole-mounted transformers located to the rear property on a new utility pole. The new pole will reroute the existing overhead lines on Guilford Court from which the underground service will start. The service is to maintain and will exceed a 12" radial clearance from the stormwater line that runs parallel to it before entering the building.

I have attached the latest utility plan for your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Olivia Dawson, E.I.
Design Engineer
Acorn Engineering, Inc.

Cc: William Savage – Acorn Engineering, Inc.
Sam Lebel – Acorn Engineering, Inc.

CENTRAL MAINE POWER

August 18, 2016

Acorn Engineering Inc.
C/O Ms. Olivia Dawson
PO Box 3372
Portland, Maine 04104

RE: Electric Service, 161 York Street, Portland, Maine

Dear Ms. Dawson,

This letter is to advise you Central Maine Power has sufficient single phase electrical capacity in the area to serve the subject project.

Once the project is accepted by the City of Portland, the owner will need to call our Customer Service Center at 1-800-565-3181 to sign up for a New Account and a SAP Work Request Order so we may start a cost estimate.

Please provide to CMP what size service the Customer will be requiring in order to get the needed information for costs and an easement will be required for this project.

If you have any questions please feel free to call me at 828-2882.

Sincerely,

Paul DuPerre

Paul DuPerre
Energy Service Specialist

Printed on recycled paper

162 Canco Road, Portland, ME 04103
Telephone 800.750.4000, Fax 207.791.1026
cmpco.com

IBERDROLA USA

An equal opportunity employer

Sam Lebel

From: Sam Lebel
Sent: Friday, December 16, 2016 11:37 AM
To: 'Duperre, Paul'
Cc: Will Savage (wsavage@acorn-engineering.com); Olivia Dawson (odawson@acorn-engineering.com)
Subject: RE: 161 York Street

Got it, thanks Paul.

From: Duperre, Paul [mailto:Paul.Duperre@cmpco.com]
Sent: Friday, December 16, 2016 9:41 AM
To: Sam Lebel <slebel@acorn-engineering.com>
Subject: RE: 161 York Street

On Pole 19 York Street, the existing 120/240 single phase transformer will be relocated to Pole 20 to feed the existing customers.

Then (3) 120/208 transformers will be placed on Pole 19 to feed your new facility at three phase.

"dup"

From: Sam Lebel [mailto:slebel@acorn-engineering.com]
Sent: Thursday, December 15, 2016 2:45 PM
To: Duperre, Paul
Subject: 161 York Street

Paul,

It was good to meet you this morning – thanks for coming out.

I wanted to confirm/document the plan for underground electric regarding the 161 York St redevelopment – run the conduits from the proposed building underground through York St and hook up to the existing utility pole on the southeast side of York. It is my understanding that this will require 2 additional transformers on the pole to supply 3-phase electricity. Thank you for your time.

Regards,

Sam Lebel, EI
Design Engineer

Licensed in Maine

Acorn Engineering, Inc
PO Box 3372
Portland, Maine 04104
www.acorn-engineering.com

B. 207.775.2655
C. 207.478.4327

A C O R N
ENGINEERING, INC.

Fairpoint Communications
Attn: Mr. Scott Derrig
5 Davis Farm Road
Portland, Maine 04103

November 2, 2016

Subject: 161 York Street Redevelopment
Re: Ability to Serve – Utility Plan Update

Dear Mr. Derrig:

Since our last correspondence, there has been continued design and development of the proposed 161 York Street redevelopment project.

After careful consideration of the space restrictions of the site, the proposed electrical/telephone/cable service is to supply the building from a new utility pole located to the rear property. The new pole will reroute the existing overhead lines on Guilford Court from which the underground service will start; per prior requests, the telephone and cable services will bypass the two pole-mounted transformers. The service is to maintain 12" radial clearance from the stormwater line that runs parallel to it before entering the building.

I have attached the latest utility plan for your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Olivia Dawson, E.I.
Design Engineer
Acorn Engineering, Inc.

Cc: William Savage – Acorn Engineering, Inc.
Sam Lebel – Acorn Engineering, Inc.

A C O R N
ENGINEERING, INC.

Charter Communications
Attn: Mr. Mark Pelletier
118 Johnson Road
Portland, Maine 04102

November 2, 2016

Subject: 161 York Street Redevelopment
Re: Ability to Serve – Utility Plan Update

Dear Mr. Pelletier:

Since our last correspondence, there has been continued design and development of the proposed 161 York Street redevelopment project.

After careful consideration of the space restrictions of the site, the proposed electrical/telephone/cable service is to supply the building from a proposed utility pole located to the rear property. The new pole will reroute the existing overhead lines on Guilford Court from which the underground service will start; per prior requests, the telephone and cable services will bypass the two pole-mounted transformers. The service is to maintain 12" radial clearance from the stormwater line that runs parallel to it before entering the building.

I have attached the latest utility plan for your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Olivia Dawson, E.I.
Design Engineer
Acorn Engineering, Inc.

cc: William Savage – Acorn Engineering, Inc.
Sam Lebel – Acorn Engineering, Inc.

Sam Lebel

From: Olivia Dawson
Sent: Tuesday, February 07, 2017 11:21 AM
To: Sam Lebel
Subject: FW: 161 York Street - Ability to Serve

From: Pelletier, Mark [mailto:Mark.Pelletier@charter.com]
Sent: Friday, November 04, 2016 7:48 AM
To: Olivia Dawson <odawson@acorn-engineering.com>
Subject: RE: 161 York Street - Ability to Serve

Olivia,

Ok so apparently I had a "DUH" moment yesterday. We already have a main cable plant going down Guilford Ct. I looked on my system maps at wrong st and wrong ally way…

Charter communications can provide coax services to the new riser pole to this new bldg.

Sorry about my Duh moment yesterday..

Mark

From: Olivia Dawson [mailto:odawson@acorn-engineering.com]
Sent: Thursday, November 03, 2016 9:51 AM
To: Pelletier, Mark <Mark.Pelletier@charter.com>
Cc: William Savage <wsavage@acorn-engineering.com>; Sam Lebel <slebel@acorn-engineering.com>
Subject: RE: 161 York Street - Ability to Serve

Mark – It was just brought to my attention that we will need to have confirmation from you that the existing poles on Guilford can support the cable extension and that Charter will be responsible for the construction.

If you could coordinate or perform a site visit to confirm the existing utility poles are acceptable, I would appreciate it.

Thanks in advance for your help,

- **Olivia**

***C:** (585) 797-8780*

From: Olivia Dawson
Sent: Thursday, November 03, 2016 9:17 AM
To: 'Pelletier, Mark' <Mark.Pelletier@charter.com>
Cc: William Savage <wsavage@acorn-engineering.com>; Sam Lebel <slebel@acorn-engineering.com>
Subject: RE: 161 York Street - Ability to Serve

Okay, so Charter would be able and willing to extend the main cable to service the building from Guilford Court.

We will have the contractor coordinate with and update you on scheduling so that the extension construction can be planned accordingly.

Thanks,

- **Olivia**

***C:** (585) 797-8780*

From: Pelletier, Mark [mailto:Mark.Pelletier@charter.com]
Sent: Thursday, November 03, 2016 8:43 AM
To: Olivia Dawson <odawson@acorn-engineering.com>
Subject: RE: 161 York Street - Ability to Serve

Well, actually not at this time. We have no main cable plant on that road, Just a service drop to one of the bldgs/home. So we Would also need to extend our main cable plant from Park St to new riser pole…

Mark

From: Olivia Dawson [mailto:odawson@acorn-engineering.com]
Sent: Thursday, November 03, 2016 8:33 AM
To: Pelletier, Mark <Mark.Pelletier@charter.com>
Cc: William Savage <wsavage@acorn-engineering.com>; Sam Lebel <slebel@acorn-engineering.com>
Subject: RE: 161 York Street - Ability to Serve

Morning Mark,

I appreciate your quick reply.

To elaborate on your statement, is it safe to state or assume that Charter Communications has adequate infrastructure on Guilford Court to service the proposed building?

Thanks in advance for the confirmation,

- **Olivia**

***C:** (585) 797-8780*

From: Pelletier, Mark [mailto:Mark.Pelletier@charter.com]
Sent: Thursday, November 03, 2016 7:47 AM
To: Olivia Dawson <odawson@acorn-engineering.com>
Subject: RE: 161 York Street - Ability to Serve

Olivia, thank you, we'll make the change….

Mark

From: Olivia Dawson [mailto:odawson@acorn-engineering.com]
Sent: Wednesday, November 02, 2016 1:55 PM
To: Pelletier, Mark <Mark.Pelletier@charter.com>
Cc: William Savage <wsavage@acorn-engineering.com>; Sam Lebel <slebel@acorn-engineering.com>
Subject: RE: 161 York Street - Ability to Serve

Mark,

Acorn Engineering has continued preparing the 161 York Street project design for preliminary submission to the City and, in that design process, the Preliminary Utility Plan has been revised since our last correspondence.

I have attached the revised Utility Plan and a formal cover letter outlining the changes.

Thanks in advance for your review,

Olivia Dawson
Engineer
Licensed E.I. in Maine
Licensed E.I.T in New York

Acorn Engineering, Inc
PO Box 3372
Portland, Maine 04104
www.acorn-engineering.com

C: 585.797.8780
B. 207.775.2655

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From: Olivia Dawson
Sent: Wednesday, August 03, 2016 3:20 PM
To: 'Pelletier, Mark' <Mark.Pelletier@charter.com>
Subject: 161 York Street - Ability to Serve

Good Afternoon Mark,

Acorn Engineering, Inc., on behalf of York Street Redevelopment, LLC, is sending a formal Ability to Serve letter to your office for the proposed development of 161 York Street in Portland, Maine.

Attached is the Ability to Serve Letter, Preliminary Utility Plan, and an existing conditions survey as completed by Spurwink Surveying, LLC.

Please do not hesitate to contact me or our office with any additional questions or clarifications as well. I will be out of the office on vacation next week but will respond to any emails as soon as I return.

Thanks!

Olivia Dawson
Engineer
Licensed E.I. in Maine
Licensed E.I.T in New York

Acorn Engineering, Inc
PO Box 3372
Portland, Maine 04104
www.acorn-engineering.com

C: 585.797.8780
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A C O R N
ENGINEERING, INC.

Unitil Service Corp.
Attn: Bridget Harmon
376 Riverside Industrial Parkway
Portland, Maine 04103

November 2nd, 2016

Subject: 161 York Street Redevelopment
Re: Ability to Serve

Dear Mrs. Harmon:

Since our last correspondence, there has been continued design and development of the proposed 161 York Street redevelopment project.

The current plan proposes to service the building via the existing gas line within Guilford Court; the service is to extend from the existing gas stub at the main line and enter the building from the southernmost side wall. The proposed service will avoid contact with the subsurface stormwater detention system

I have attached the latest utility plan for your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Olivia Dawson, E.I.
Design Engineer
Acorn Engineering, Inc.

Cc: William Savage – Acorn Engineering, Inc.
Sam Lebel – Acorn Engineering, Inc.

August 4, 2016

Acorn Engineering Corp.
Attention: Olivia Dawson
PO Box 372
Portland Maine 04104

Re: 161 York Street Redevelopment, Portland Maine

Dear Ms. Dawson:

Thank you for your interest in using natural gas for the above referenced project.

This is to confirm that natural gas can be made available from our distribution system to serve your proposed redevelopment project.

Any improvements to the existing distribution system necessary to provide this service, as well as the design of the gas system in the project itself will be established as the overall design and scope of your project progresses.

All work necessary to provide service will be performed in accordance with the Maine Public Utilities Commission requirements.

If you have any further questions or require additional information, please contact me directly at (207) 541-2536 or at Harmon@Unitil.com.

Sincerely,
Bridget L. Harmon
Business Development Representative
Unitil Corporation
(O) 207-541-2536 (F) 207-541-2586

ME GAS CUSTOMER ENERGY SOLUTIONS
376 Riverside Industrial Parkway
Portland, ME 04103
T 207-541-2536 www.unitil.com
Harmon@Unitil.com

ACORN ENGINEERING, INC.

M. Construction Management Plan

Project Address: 161 York Street

Project Description:

The proposed project is an urban infill residential 11-unit redevelopment of two single-family dwellings. The site has recently been demolished to facilitate the redevelopment of the property. The proposed site is to be accessed via York Street and Guilford Court.

Project Team Summary:

Owner:	York Street Redevelopment, LLC
General Contractor:	Landry/French
Civil Engineer:	Acorn Engineering, Inc.
Architect:	Mark Mueller Architects
Structural Engineer:	Structural Integrity Consulting Engineers, Inc.

Timeline and Schedule:

Projected Start Date:	Spring 2017
Project Duration:	Approximately One Year
Projected Completion:	Spring 2018
Street Interruption:	During the installation of utilities within York Street. It is the sole responsibility of the contractor to manage traffic during the street interruption.
Sidewalk Interruption:	During the installation of utilities and foundation wall construction. The contractor shall maintain pedestrian access along York Street either through the existing sidewalk or through a temporary path.

Emergency Contact:

- Michael Cianchette
- (207) 774-1000

Estimated Work Hours:	7:00 am to 5:00 pm
Delivery Truck Access:	Contact Michael Cianchette or the owner's representative to coordinate.
Worker Parking:	On the street.

York Street Redevelopment, LLC and their contractor will work with the City of Portland, and adjacent landowners to minimize any project impacts.

The General Contractor will remain solely and completely responsible for enforcement of and compliance with 1) all contract plans and specifications and 2) all site working conditions and safety requirements, day and night, for both persons and property, in each case both by the contractor and its subcontractors. These include all OSHA, NIOSH, U.S. EPA, local ordinance and any other applicable governmental regulations. The General Contractor will remain responsible for safeguarding the general public.

The General Contractor is advised to visit the site to confirm the site conditions. The site was demolished in the Spring of 2016 which cleared the two dwellings, walkways, and other developed areas. However, some construction debris remains on site as well as multiple trees, stone walls, and a fence line. It is the sole responsibility of the contractor to demolish the rest of the site in full compliance with City and State regulations. Refer to the Civil/Site Plan Set, Sheet C-31 for location of the proposed sedimentation barrier. Refer to the Existing Conditions Plan for a visual representation of the site before it was demolished and what may still exist on site.

M A R K
MUELLER
ARCHITECTS

February 14, 2017

Final Application

RE: 161 York Street
Portland, Maine

As the architects from the 161 York Street project, the enclosed narrative addresses our response to the design critique provided to us by the Portland city planners.

A quick review of the project, on behalf of Portland Properties we are proposing a 11 unit condominium project of residential living. The project includes two levels of parking, bicycle storage on the first floor and a roof deck overlooking the Fore River and beyond.

The design intent of the project can be referenced in our submission for the preliminary application phase of approvals.

Response to Design Review comments:

A-1 Scale and Form: our design from the comments by Caitlin have mostly focused on this one issue. The remainder of her comments have natural resolved themselves.

The building design as part of this submission has included additional relief in the building façade. These reliefs are most centrally focused about the overlook balconies on the York Street elevation, however additional articulation can be seen on the rear elevations of the building. There are created by the transition from a full bed brick veneer to a thin-brick application of the same brick color and flashing.

B-2 Roof Forms: screening the roof top equipment has now been shown on the plans and elevations.

100 Commercial St
Suite 205
Portland, Maine 04101
Phone: 207.774.9057
Fax: 207.773.3851
E-Mail:
rfi@muellerarchitects.com
Member AIA

MARK MUELLER ARCHITECTS

B-5 Façade Articulation/ D-3 Porches: has been added to the building and is addressed above. For clarification, the overlook balconies were never intended to be decks. Their inclusion in the design is to create a large wall opening for ventilation, similar to a garage door in a truly modern residential living project or a large exterior bi-fold door.

C-1 Entrances: this item represents the largest revisions to the built aspect of the project. We have moved the entrance closer to the York Street. It was our intention to make the portico element read as a side porch, however given to critique, we have increased it's the entrance's presence by extending it further to York Street.
A residential door has been added to the front façade to increase the pedestrian component and circulation about the building.

F-1 Articulation: at this time the dentils are a part of the design and shall remain.

F-2 Window Types: the front façade does include three window types; picture, casement and awnings. All three types are a metal clad window and will have similar head, jamb and sill details and be selected from the same window series.
The windows will be rear-set and shall not contain a jamb return, therefore they set back approximately 3". The windows in profile shall be minimal and not contain a brick mold. The window head treatment shall be a 3-course high 'header' brick treatment, the sills shall be a rock face granite with honed sloped sill of a mid-range grey color.

F-6 Main Entries: our resign now entails a stronger presence from York Street and is addressed earlier in the narrative.

G-4: Window Types: are also been addressed in a previous paragraph.

100 Commercial St
Suite 205
Portland, Maine 04101
Phone: 207.774.9057
Fax: 207.773.3851
E-Mail:
rfi@muellerarchitects.com
Member AIA

ACORN ENGINEERING, INC.

Division of Housing and Community Development
Attn: Tyler Norod
City of Portland, Maine
389 Congress Street, Room 312
Portland, ME 04101

November 18, 2016

Subject: Conditional Use for Ensuring Workforce Housing Inclusionary Zoning
Planning Board Review
Redevelopment of 161 York Street - Portland, Maine

Dear Tyler Norod,

York Street Redevelopment, LLC is pleased to submit the accompanying package of submission materials related to the proposed 11-unit urban infill redevelopment of 161 York Street and its compliance with the standards set by the Workforce Housing Inclusionary Zoning. This letter and attachments are a follow-up to the preliminary application package submitted on November 8, 2016. The developer will pay the fee-in-lieu of $110,000 to the City Housing Trust Fund in place of a workforce unit.

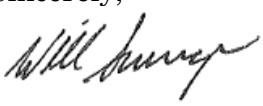
This submission package is intended to meet the City's Inclusionary Zoning Submission Requirements as outlined in the Planning Board Review Application. The proposed project site is located near the corner of York Street and State Street. The lot previously contained two single-family dwellings before recently being demolished to facilitate the redevelopment. The site is proposed to be redeveloped into energy efficient condominiums classified as "multi-family" residences. The development site is located within the City's R-6 Zoning District, and complies with the permitted uses within the zone.

Accompanying this cover letter are the following materials:

- Section P: Site Plan Application
- Section Q: Title, Right and Interest
- Section R: Conformity with Conditional Use Standards

York Street Redevelopment, LLC and the design team look forward to your review of this project. If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,



William H. Savage, P.E.
Principal - Project Manager

Acorn Engineering, Inc.

Conditional Use for Ensuring Workforce Housing
Inclusionary Zoning
Planning Board Review
Application
Portland, Maine

Planning and Urban Development Department
Planning Division and Housing and Community Development

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Conditional Use review of applications to ensure workforce housing in development projects that create ten or more new dwelling units. The units may be for rent or for sale and created through new construction, substantial rehabilitation of existing structures, adaptive reuse or conversion of a non-residential use to residential use, or any combination of these elements. At least ten percent (10%) of the units in the project shall meet the definition of workforce housing unit for sale or rent. All developments of ten units or more a conditional uses subject to Planning Board review on the condition that they comply with the requirements of section 14-487.

A. Ensuring Workforce Housing: Standards -Section 14-484

(d) Workforce Housing Minimum At least ten percent (10%) of the units in the project shall meet the definition of workforce housing unit for sale or for rent. The number of units required is rounded down to a whole number if providing units on- or off-site, or shall include a fractional value in cases where a project prefers to pay a fee-in-lieu as per (e)3. below.

(e) Standards

1. Projects shall not be segmented or phased to avoid compliance with these provisions. In cases where projects are completed in phases, affordable units shall be provided in proportion to the development of market rate units unless otherwise permitted through regulations.

2. Workforce units are encouraged to be integrated with the rest of the development, should use a common entrance and should provide no indications from common areas that these units are workforce housing units.

3. Workforce units need not be the same size as other units in the development but the number of bedrooms in such units, either on- or off-site, shall be 10 percent of the total number of bedrooms in the development. For the purposes of this section, for every 400 square feet in a market rate unit will count as a bedroom if the actual number of bedrooms in the unit is lower.

4. As an alternative to providing workforce housing units, projects may pay a fee in lieu of some or all of the units. In-lieu fees shall be paid into the Housing Trust Fund as defined in Sec. 14-489. The fee for affordable units not provided shall be $100,000 per unit, adjusted annually in the same way as the fee under Division 29 for Housing Replacement.

5. Workforce housing units for sale, if converted to workforce housing units for rent, shall become subject to the income limits and other requirements of such units.

6. If at least 33 percent of the units in a development are workforce units, the development is eligible for subsidy through an Affordable Housing TIF, subject to City Council approval.

7. The term of affordability for the required 10 percent workforce units provided shall be defined as follows:

Percentage of Workforce Units Provided	Minimum Term of Affordability for Required Workforce Units
10%	Longest term permitted under federal, state and local laws and ordinances
25%	30 years
50%	20 years
100%	10 years

(f) Implementing Regulations. Regulations to further specify the details of this section shall be developed, including, but not limited to:

1. Specific methodology for income verification;
2. Situations where less than permanent affordability might be considered; and
3. Guidelines for meeting the requirement that off-site units be "in the same neighborhood".

B. Site Plan Application: Please submit the Conditional Use Application in addition to the applicable Site Plan Application.

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207)874-8719

Housing and Community Development
Room 313, Third Floor, City Hall
389 Congress Street
(207)482-5028

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

PROJECT NAME:
161 York Street Redevelopment

PROPOSED DEVELOPMENT ADDRESS:
161 York Street

CHART/BLOCK/LOT (s): 044-B-007 **Applicable Zone**: R-6

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Michael J. Cianchette Business Name, if applicable: York Street Redevelopment, LLC Address: 42 Market St City/State : Portland, Maine Zip Code: 04101	**Applicant Contact Information** Work # (207) 774-1000 Home# Cell # Fax# e-mail: mcianchette@theregency.com
Owner – (if different from Applicant) Name: N/A Address: City/State : Zip Code:	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Billing Information Name: See applicant information Address: City/State : Zip Code:	**Billing Information** Work # Cell # Fax# e-mail:

Designated person/person(s) for uploading to e-Plan:

Name: Olivia Dawson, E.I. (Acorn Engineering, Inc.)
e-mail: odawson@acorn-engineering.com

Name: Sam Lebel, E.I. (Acorn Engineering, Inc.)
e-mail: slebel@acorn-engineering.com

Name: Will Savage, P.E. (Acorn Engineering, Inc.)
e-mail: wsavage@acorn-engineering.com

RIGHT, TITLE OR INTEREST:

Deed

(Please identify the status provide documentary evidence, attached to this application, of the applicant's right, title, or interest in the subject property (ex: deed, option or contract to purchase or lease the property.)

EXISTING USE: Describe the existing use of the subject property.

The land use included single-family housing until the site was recently demolished to facilitate the redevelopment.

PROJECT DESCRIPTION:

11-unit urban infill project utilizing an energy efficient building design with implementation of the latest green infrastructure.

INCLUSIONARY ZONING:	
# IZ Units	0
On-Site IZ Units	0
Off-Site IZ Units	0
# IZ Homeownership Units	0
# IZ Rental Units	0
# IZ Efficiencies	0
# IZ 1-Beds	0
# IZ 2-Beds	0
# IZ 3-Beds	0
IZ Fee In-Lieu	$110,000

APPLICATION FEES:

_X_ Conditional Use Review to Ensure Workforce Housing ($100.00) (Please submit a separate application for the applicable site plan review. Fees and charges are listed within the application)	The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($50.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.

INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov (Please be sure to designate a person who will be responsible for uploading documents and drawings.) This step will generate the project ID number for your project.

2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at Pay Your Invoice , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.

3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
   Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
   Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
   Tab 3 - Preparing and uploading revised drawings and documents

   Applying Online Instructions

5. When ready, upload your files and documents into the following folders:
   "Application Submittal – Drawings"
   "Application Submittal – Documents"

6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
X		1	Completed Application Form
X		1	Cover letter stating the nature of the project.
X		1	Evidence of right, title and interest.
X		1	Written Submittals that address the conditional use standards of Sec. 14-484, including unit size and bedroom count
N/A		1	Draft Workforce Housing Agreement
N/A		1	Proposed Marketing Strategy
X		1	Written Proposal for providing workforce units on-site, off-site, or payment of fee-in-lieu.
N/A		1	If the project is to be phased, provide written description of project phasing and accommodation of workforce units.
			Plans and Construction Details Submission Checklist
X		1	An accompanying site plan application, as applicable.
N/A		1	Floor Plans of all units and identifying proposed designated workforce housing units
N/A		1	Interior Standards for Units for market rate and workforce housing units, including kitchen, bathroom, flooring and closet amenities
N/A		1	If workforce units are proposed off-site, provide vicinity map with project location and workforce unit locations within the applicable census block group map or within 1500 feet of the project.

APPLICANT SIGNATURE:

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Conditional Use IZ Review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	Date:
	11-18-16

Doc#: 47868 Bk:32580 Pg: 186

MAINE REAL ESTATE TAX PAID

WARRANTY DEED
Maine Statutory Short Form

Know all Persons by these Presents,

That we, Rebecca A. Lake and Roxanne A. Larochelle, of Portland, Maine, for consideration paid, grant to:

York Street Redevelopment, LLC

a limited liability company organized and existing under the laws of the State of Maine, and having a mailing address of: 42 Market Street, Portland, Maine 04101, with **warranty covenants**, the land in Portland, County of Cumberland, and State of Maine, described as follows:

> A certain lot or parcel of land, together with any buildings and improvements thereon, situated in the City of Portland, County of Cumberland, and State of Maine being more particularly described in Exhibit A attached hereto and made a part hereof.

Witness our hands and seals this 9th day of September, 2015.

Signed, Sealed and Delivered
in the presence of

.....

.....

.....
Rebecca A. Lake

.....
Roxanne A. Larochelle

State of Maine
County of Cumberland ss September 9, 2015

Then personally appeared before me the above named Rebecca A. Lake and Roxanne A. Larochelle and acknowledged the foregoing instrument to be their free act and deed.

.....
Attorney at Law~~/Notary Public~~

Printed Name: DONNELLY S. DOUGLAS
Maine Attorney at Law
Maine Bar No. 147

EXHIBIT A
161 YORK STREET, PORTLAND, MAINE

A certain lot or parcel of land with the buildings thereon situated in the city of Portland, Cumberland County, Maine and bounded and described as follows:

Beginning at a stake on the northerly side of York Street in the corner of a lot of land formerly occupied by Joseph Deering, thence running southerly by said street one and a half rods or less to land formerly occupied by Eleazar Holmes; thence northwesterly by said Holmes lot to the corner of said Holmes lot; thence northeasterly at right angles with the line of the Holmes land to the Deering lot aforesaid; thence by the said Deering lot to said York Street at the point of beginning, reserving a passageway four and one-half feet in width upon the side of said lot next to the said Holmes lot to be used in common by the owners of the lot hereby conveyed and the owners of said Holmes lot.

Also including an easement over a strip of land adjacent to the within described premises as reserved in a deed from Rosary M. Larochelle to Tacha Vosburgh dated May 18, 1989 and recorded in said Registry at Book 8762 Page 284 and described therein as follows:

An easement in a strip of land to be used as a driveway solely and exclusively, for the use of the dominant estate and their invitees and such vehicles as needed for maintenance and improvements of both the dominant estate and the easement itself. Said strip of land is to begin at the southeasterly corner of the Rosary M. Larochelle's contiguous estate, also known as 161 York Street, and extend thirteen (13) feet east along York Street to a point and thence in a northwesterly direction fifty-six (56) feet parallel to the eastern boundary of the Rosary M. Larochelle 's contiguous estate to a point and thence 90° westerly for thirteen (13) feet to a point and thence southerly along the easterly boundary of the Rosary M. Larochelle 's said contiguous estate for fifty-six (56) feet to the point of beginning.

Being the same premises conveyed to the Grantors herein by Corrective Deed from Rosary M. Larochelle dated October 31, 2014 and recorded in Cumberland County Registry of Deeds in Book 31885 Page 225.

Received
Recorded Register of Deeds
Sep 10,2015 01:38:19P
Cumberland County
Nancy A. Lane

Doc#: 47867 Bk:32580 Pg: 183

MAINE REAL ESTATE TAX PAID

WARRANTY DEED
Maine Statutory Short Form

KNOW ALL BY THESE PRESENTS, that I, **Rosary M. Larochelle,** of Portland, Maine, for consideration paid, grant to:

York Street Redevelopment, LLC

a limited liability company organized and existing under the laws of the State of Maine, whose mailing address is: 42 Market Street, Portland, Maine 04101, with **warranty covenants**, the real estate situated in Portland, County of Cumberland, and State of Maine, described as follows:

> A certain lot or parcel of land, together with any buildings and improvements thereon, situated in the City of Portland, County of Cumberland, and State of Maine being more particularly described in Exhibit A attached hereto and made a part hereof.

Witness my hand and seal this 9th day of September, 2015.

Signed, Sealed and Delivered
in the presence of

Rosary M. Larochelle

Rosary M. Larochelle

State of Maine
County of Cumberland

September 9, 2015

Then personally appeared before me the above-named Rosary M. Larochelle and acknowledged the foregoing instrument to be her free act and deed.

Before me,

Attorney at Law/~~Notary Public~~
Printed Name:

DONNELLY S. DOUGLAS
Maine Attorney at Law
Maine Bar No. 147

EXHIBIT A
163 YORK STREET, PORTLAND, MAINE

Certain lots or parcels of land with the buildings thereon situated in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

FIRST: A certain lot or parcel of land, situated on the northwesterly side of York Street in said Portland and more particularly bounded and described as follows:

Beginning at the northwesterly side of York Street at the southerly corner of land conveyed by Alpheus Boothby to Josephine Sachelie et al. by deed dated July 7, 1924, and recorded in the Cumberland County Registry of Deeds in Book 1173, Page 185; thence southwesterly by the northwesterly sideline of York Street seventy-four and twenty-five one hundredths (74.25) feet to the easterly corner of land conveyed by Nathan Dyer et al. to Stephen K. Dyer by deed dated May 26, 1862, and recorded in said Registry of Deeds in Book 313, Page 204; thence northwesterly by said Dyer land sixty (60) feet to the southeasterly sideline of the land conveyed by George W. Verrill, Assignee, to Ansel G. Dewey by deed dated June 8, 1877, and recorded in said Registry in Book 439, Page 183; thence northeasterly by said Dewey land and by land conveyed by Francis 0. Sawyer to Charles Dyer by deed dated November 11, 1872, and recorded in said Registry in Book 395, Page 492, seventy-four and twenty-five one hundredths (74.25) feet to the westerly corner of said Sachelie land; thence southeasterly by said Sachelie land sixty (60) feet to the point of beginning.

SECOND: Also, a certain lot or parcel of land situated on the southeasterly side of Guilford Court in said Portland and more particularly bounded and described as follows:

Beginning on the southeasterly sideline of land conveyed by Brown Company to Carmelo S. Sachelie by deed dated April 6, 1942, and recorded in said Registry in Book 1676, Page 128, at the northerly corner of land conveyed by George W. Verrill, Assignee, to Ansel G. Dewey by deed dated June 8, 1877, and recorded in said Registry in Book 439, Page 183; thence northeasterly by said Sachelie land and by the southeasterly sideline of Guilford Court seventy-five (75) feet to the westerly corner of land conveyed by Cynthia Rhodes to Adeline N. Skelton by deed dated March 21, 1872, and recorded in said Registry in Book 393, Page 176; thence southeasterly by said Skelton land seventy (70) feet to the northerly corner of land conveyed by Alpheus Boothby to Josephine Sachelie by deed dated July 7, 1924, and recorded in said Registry in Book 1173, Page 185; thence southwesterly by said Sachelie land and by the first parcel herein described seventy-five (75) feet to the easterly corner of said Dewey land; thence northwesterly by said Dewey land seventy (70) feet to the point of beginning.

Also conveying all the right, title and interest in and to Guilford Court and in the passageway four and one-half (4 ½) feet wide leading to York Street of which this Grantor may be possessed.

EXCEPTING AND RESERVING from the above-described premises a certain lot or parcel of land being more particularly described as follows: Beginning at a point on the northwesterly side of York Street fifty-three (53) feet from the intersection of York Street and State Street; thence northeasterly along said York Street twenty-one (21) feet to a point; thence northwesterly sixty (60) feet, more or less, along the land now or formerly of Charles Dyer to a court or passageway now or formerly of F.O. Sawyer; thence northeasterly along said court or passageway fifteen (15) feet to a point; thence southeasterly sixty (60) feet, more or less, along a line parallel to said prior sixty (60) feet course along the land of Dyer to the northwesterly side of York Street; and thence southwesterly along said York Street fifteen (15) feet to the point of beginning.

Being a portion of the premises conveyed by warranty deed October 11, 1973 from Josephine B. Martorana to Rosary M. Larochelle and Ralph A. Larochelle as joint tenants recorded in Cumberland County Registry of Deeds in Book 3471 Page 143. The said Ralph A. Larochelle deceased January 2, 2010 and the said Rosary M. Larochelle acquired full title as surviving joint tenant.

Further reference is made to Affidavit of Rosary M. Larochelle dated September 9, 2015 to be recorded herewith.

Received
Recorded Register of Deeds
Sep 10,2015 01:37:11P
Cumberland County
Nancy A. Lane

WARRANTY DEED
(MAINE STAUTORY SHORT FORM)

KNOW ALL PERSONS BY THESE PRESENTS, that the Guilford Court Condominium Association, under Declaration dated April 29, 2005 and recorded with the Cumberland County Registry of Deeds in Book 22586, Page 99, acting by and through its President, Charles R. Gustafson ("Grantor") by agreement of all the Unit Owners, attached hereto as **Exhibit A**

for valuable consideration paid, the receipt of which is hereby acknowledged, RELEASES from said Declaration and GRANTS with WARRANTY COVENANTS to

YORK STREET REDEVELOPMENT, LLC, a Maine Limited Liability Company with a mailing address of 42 Market Street, Portland, ME, 04101 ("Grantee"),

the land, together with the rights and burdens of record thereon and appurtenant thereto, in the City of Portland, County of Cumberland, State of Maine, ("Land"), described as follows:

BEGINNING at a point marked by a drill hole on the westerly sideline of York Street at the southeasterly corner of land now or formerly of the Guilford Court Condominium Association as described in a Declaration recorded with the Cumberland County Registry of Deeds in Book 22586, Page 99. Said point being further described as the northeasterly corner of land now or formerly of York Street Redevelopment, LLC, as described in a Deed recorded in said Registry in Book 32580, Page 186;

THENCE North 54° 21' 28" West by and along the northerly line of said land of York Street Redevelopment, LLC and other land of York Street Redevelopment, LLC as described in a Deed recorded in said Registry in Book 32580, Page 183, a distance of 132.00 feet to a point on the easterly sideline of Guilford Court;

THENCE North 35° 01' 53" East by and along the easterly sideline of said Guilford Court a distance of 5.00 feet to a point;

THENCE South 54° 21' 28" East over and across land of Grantor a distance of 132.00 to a point on the westerly sideline of York Street;

THENCE South 35°01'53" West by and along the westerly sideline of York Street a distance of 5.00 feet to the Point of Beginning.

Said Land containing 660 square feet or .015 acres, more or less.

MAINE REAL ESTATE TAX PAID

MEANING and intending to convey a portion of the same premises described in the Declaration recorded in said Registry in Book 22586, Page 99, being a portion of the same premises described in a Deed from Tacha Vosburgh, recorded in said Registry in Book 13221, Page 193.

RESERVING to Grantor an Easement to use the Land for utility, vehicular, and pedestrian access to land of the Grantor, inclusive of parking as may be permitted by the City of Portland or other competent authority from time-to-time, and storage of household refuse and recycling, provided any such storage shall be in covered containers designed for such purposes and maintained in good order and repair.

Notwithstanding the Easement, Grantor and Grantee acknowledge Grantee, its heirs, successors, and assigns, may utilize said Land for ingress and egress from York Street, Guilford Court, and other public and private rights-of-way as may exist from time-to-time, provided any such use by Grantee shall not unreasonably interfere with Grantor's Easement.

IN WITNESS WHEREOF, I, Charles R. Gustafson, President of the Guilford Court Condominium Association, have hereunto set my hand this 5 day of APRIL, 2016.

Witness

Charles R. Gustafson

STATE OF FLORIDA

COUNTY OF COLLIER, ss.

On this 5 day of APRIL, 2016, before me personally appeared the above named CHARLES R. GUSTAFSON and acknowledged the foregoing instrument to be his free act and deed.

INGRID CHAVEZ
Notary Public - State of Florida
Commission # FF 190178
My Comm. Expires Mar 12, 2019
Bonded through National Notary Assn.

Notary Public / Attorney-at-law

Exhibit A

GUILFORD COURT CONDOMINIUM ASSOCIATION

ACTION TAKEN BY UNANIMOUS WRITTEN
CONSENT OF ALL UNIT OWNERS WITHOUT MEETING

The undersigned, being all of the unit owners of the Guilford Court Condominium Association (the "Association") hereby consent to the taking of, and hereby take, the following Action, without holding a meeting, such Action being stated in the form of, and to be as fully effective as if taken by, a unanimous resolution or resolutions of the Unit Owners of the Association at a meeting thereof duly called and held on the date hereof at which all of the undersigned Unit Owners were present and action throughout:

RESOLVED: that the President, Charles R. Gustafson, be authorized to execute a Deed on behalf of the Association conveying a certain parcel of Land described in **Schedule A** attached hereto to York Street Redevelopment, LLC, subject to certain rights retained by the Association; and be it further

RESOLVED: that said Deed shall be executed and delivered on or before June 1, 2016, or it shall be of no force or effect; and be it further

RESOLVED: that York Street Redevelopment, LLC may correspond with holders of security interests as may be required under Maine law to effectuate said conveyance; and be it further

RESOLVED: that the Association shall receive a release from a certain easement presently held by York Street Redevelopment, LLC burdening the land of the Association as consideration; and be it

CERTIFIED: that Charles R. Gustafson is duly serving as President.

This document shall be filed with the minutes of the Association and recorded in the Cumberland County Registry of Deeds.

[SIGNATURE PAGES FOLLOW]

I, Eric A. Fortin, owner of Unit #1A by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 26314, Page 229, hereunto set my hand this 1 day of April, 2016.

Witness

Eric A. Fortin

STATE OF ME

COUNTY OF Cumberland, ss.

On this 1st day of April, 2016, before me personally appeared the above named _____ and acknowledged the foregoing to be his/her free act and deed.

Michele Murphy
Notary Public / Attorney-at-law

MICHELE M. MURPHY
Notary Public, Maine
My Commission Expires July 17, 2016

SEAL

I, Jeremy J. Daros, owner of Unit #1B by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 27212, Page 204, hereunto set my hand this 17th day of March, 2016.

Witness Debra Rancourt

Jeremy J. Daros

STATE OF Maine

COUNTY OF Cumberland, ss.

On this 17 day of March, 2016, before me personally appeared the above named Jeremy Daros and acknowledged the foregoing to be his/her free act and deed.

Notary Public / Attorney-at-law

CHERYL D. DEGEORGE
NOTARY PUBLIC
State of Maine
My Commission Expires
October 15, 2021

SEAL

I, Townsend S. Crum, owner of Unit #1C by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 26231, Page 251, hereunto set my hand this 19 day of February, 2016.

Witness

Townsend S. Crum

STATE OF ME

COUNTY OF Cumberland, ss.

On this 19th day of February, 2016, before me personally appeared the above named Townsend S. Crum and acknowledged the foregoing to be his/her free act and deed.

Notary Public / Attorney-at-law

SEAL

AMY E. BURROW
Notary Public, Maine
My Commission Expires June 12, 2021

I, Jensine Fraser, owner of Unit #1D by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 30001, Page 289, hereunto set my hand this 29 day of March, 2016.

Katherine Knight
Witness

Jensine Fraser

STATE OF Maine

COUNTY OF Cumberland, ss.

On this 29 day of March, 2016, before me personally appeared the above named Jensine Fraser and acknowledged the foregoing to be his/her free act and deed.

Alexandra Nichols
Notary Public / Attorney-at-law

SEAL

ALEXANDRA NICHOLS
Notary Public-Maine
My Commission Expires
January 22, 2022

We, Charles R. Gustafson and Mickey H. Gustafson, owners of Unit #2A by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 23348, Page 003, hereunto set our hands this 5 day of APRIL, 2016.

Witness

Charles R. Gustafson

Witness

Mickey H. Gustafson

STATE OF FLORIDA

COUNTY OF COLLIER, ss.

On this 5 day of APRIL, 2016, before me personally appeared the above named CHARLES R. GUSTAFSON and acknowledged the foregoing to be his/her free act and deed.

INGRID CHAVEZ
Notary Public - State of Florida
Commission # FF 190178
My Comm. Expires Mar 12, 2019
Bonded through National Notary Assn.

Notary Public / Attorney-at-law

STATE OF FLORIDA

COUNTY OF COLLIER, ss.

On this 5 day of APRIL, 2016, before me personally appeared the above named MICKEY H. GUSTAFSON and acknowledged the foregoing to be his/her free act and deed.

INGRID CHAVEZ
Notary Public - State of Florida
Commission # FF 190178
My Comm. Expires Mar 12, 2019
Bonded through National Notary Assn.

Notary Public / Attorney-at-law

We, Joann M. Wallace and Barry D. Pfouts, owners of Unit #2B by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 32436, Page 082, hereunto set our hands this _____ day of _____, 2016.

_____
Witness

_____
Joann M. Wallace

_____
Witness Calvin Maina

_____
Barry D. Pfouts

STATE OF _____

COUNTY OF _____, ss.

On this _____ day of _____, 2016, before me personally appeared the above named _____ and acknowledged the foregoing to be his/her free act and deed.

_____
Notary Public / Attorney-at-law

STATE OF FL

COUNTY OF Manatee, ss.

On this 1st day of April, 2016, before me personally appeared the above named Barry D Pfouts and acknowledged the foregoing to be his/her free act and deed.

CALVIN MAINA NOTARY My Comm. Expires October 9, 2018 No. FF 167362 PUBLIC STATE OF FLORIDA

_____
Notary Public / Attorney-at-law

We, Joann M. Wallace and Barry D. Pfouts, owners of Unit #2B by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 32436, Page 082, hereunto set our hands this 1st day of April, 2016.

Witness — Joann M. Wallace

Witness — Barry P. Pfouts

STATE OF Maine

COUNTY OF Cumberland, ss.

On this 1st day of April, 2016, before me personally appeared the above named Joann M Wallace and acknowledged the foregoing to be ~~his~~/her free act and deed.

~~Notary Public~~ / Attorney-at-law
Susan E Hunter.

STATE OF _____

COUNTY OF _____, ss.

On this _____ day of _____, 2016, before me personally appeared the above named _____ and acknowledged the foregoing to be his/her free act and deed.

Notary Public / Attorney-at-law

We, Jason Ouellette and Megan Ouellette, owners of Unit #3A by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 32442, Page 123, hereunto set our hands this 1st day of March, 2016.

Witness

Jason Ouellette

Tamara P. O'Donnell
Witness

Megan Ouellette

STATE OF MA

COUNTY OF Norfolk, ss.

On this 1st day of March, 2016, before me personally appeared the above named Jason Ouellette and acknowledged the foregoing to be his/her free act and deed.

THOMAS E. MERRIGAN, JR.
Notary Public
Massachusetts
Commission Expires Mar 25, 2022

Notary Public / Attorney-at-law

STATE OF Maine

COUNTY OF Cumberland, ss.

On this 2nd day of March, 2016, before me personally appeared the above named Megan J. Ouellette and acknowledged the foregoing to be his/her free act and deed.

Deborah Flanagan
Notary Public / Attorney-at-law
My Commission Expires: 09.12.20

SEAL

I, Lynn Miller, Trustee of the Lynn Szuchan Miller Trust, owner of Unit #3B by virtue of a Deed recorded in the Cumberland County Registry of Deeds in Book 31148, Page 223, hereunto set our hands this 3 day of March, 2016. I further certify the Trust remains in full force and effect and that I am empowered to take this action on its behalf.

Cynthia McBrady
Witness

Lynn Miller, Trustee

STATE OF Maine

COUNTY OF Cumberland, ss.

Subscribed and sworn before me this 3 day of March, 2016, by Lynn Miller, proved to me on the basis of satisfactory evidence to the be person who appeared before me.

Deborah M Hubbard
Notary Public / Attorney-at-law

SEAL

DEBORAH HUBBARD
Notary Public, Maine
My Commission Expires January 23, 2017

SCHEDULE A

A certain parcel of land, together with the rights and burdens of record thereon and appurtenant thereto, in the City of Portland, County of Cumberland, State of Maine, ("Land"), described as follows:

BEGINNING at a point marked by a drill hole on the westerly sideline of York Street at the southeasterly corner of land now or formerly of the Guilford Court Condominium Association as described in a Declaration recorded with the Cumberland County Registry of Deeds in Book 22586, Page 99. Said point being further described as the northeasterly corner of land now or formerly of York Street Redevelopment, LLC, as described in a Deed recorded in said Registry in Book 32580, Page 186;

THENCE North 54° 21' 28" West by and along the northerly line of said land of York Street Redevelopment, LLC and other land of York Street Redevelopment, LLC as described in a Deed recorded in said Registry in Book 32580, Page 183, a distance of 132.00 feet to a point on the easterly sideline of Guilford Court;

THENCE North 35° 01' 53" East by and along the easterly sideline of said Guilford Court a distance of 5.00 feet to a point;

THENCE South 54° 21' 28" East over and across land of Grantor a distance of 132.00 to a point on the westerly sideline of York Street;

THENCE South 35□01'53" West by and along the westerly sideline of York Street a distance of 5.00 feet to the Point of Beginning.

Said Land containing 660 square feet or .015 acres, more or less.

Received
Recorded Register of Deeds
Apr 25,2016 09:22:08A
Cumberland County
Nancy A. Lane

R. Conformity with Conditional Use Standards

The following statement is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Article V Section 14-487.

R. OVERVIEW

This project conforms with all the applicable design standards of Section 14-487 (e) as demonstrated in the following narrative.

(e) Standards

1. Not applicable
2. Not applicable
3. Not applicable
4. The developer will pay the $110,00 fee-in-lieu to the Housing Trust Fund.
5. Not applicable
6. Not applicable
7. Not applicable

ACORN ENGINEERING, INC.

Shukria Wiar – City Planner
Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

February 9, 2017

Subject: Level III: Site Plan Final Application
Redevelopment of 161 York Street – Portland, Maine

Dear Shukria Wiar,

York Street Redevelopment, LLC is pleased to submit the accompanying package of submission materials related to the proposed eleven (11) condominium urban infill redevelopment at 161 York Street. This submission package is intended to address and meet the comments provided by the Planning Board, Planning Authority, City Staff and Peer Review Comments. set within the Planning Staff's application review comments. Notable changes include new building treatments, removal of the two surface parking spaces along York St., changes to the garage layout to increase parking efficiency, pedestrian entrance on York St, additional landscaping, fencing and green space.

The following documents and drawings will be uploaded into the City's electronic submission site to supplement those already submitted for the Preliminary Application:

Documents:

- Section D: *Updated* Conformity with Applicable Zoning Requirements
- Section F: *Updated* Request for Waivers
- Section H: *Updated* Stormwater Management Report
- Section J: *Updated* Fire Department Letter
- Section L: *Updated* Utility Cover
- Section N: *Updated* Architectural Narrative
- Section T: Final Application Cover
- Section U: Comment Response Letter
- Section V: Lighting Cut Sheets
- Section W: Geotechnical Report
- Section X: Final Site Plan Application
- Section Y: Condominium Declaration Draft
- Section Z: Stormwater Maintenance Agreement

Drawings:

- *Updated* Civil Plan Set, Dated February 9, 2017
  Plan 29. Subplat

- *Updated* Architectural Plan Set, Dated February 28, 2017

If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,

William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Shukria Wiar – City Planner
Planning Division, City of Portland
389 Congress Street
Portland, ME 04101

February 9, 2017

Subject: Comment Response Letter
Redevelopment of 161 York Street – Portland, Maine

On behalf of York Street Redevelopment, LLC we are pleased to respond to the civil-related comments provided by multiple reviewers.

To facilitate the review, comments are provided below in italics followed by Acorn Engineering, Inc.'s response.

Shukria Wiar, Planning and Zoning – Email, 12/13/16

Comment – *What is the average height of the building? The building will have to step back at 35'.*

Response – The architectural plans and elevations as well as the Perimeter Grading & Drainage Plan, C-31, shows the calculation of the average height of the building. The elevations at the four corners of the building have been averaged yielding a building height of 44.50 feet. Additionally, the building steps back to a ten foot setback at a height of 35' on the south-westerly side. The northeast side maintains more than ten feet of separation from the property line on all floors plans.

Comment – *Zoning information will need to be on the site plan.*

Response – The zoning information is provided on the Site Plan, C-10.

Comment – *Site Plans: Plans that need to be submitted as part of the final application.*
Survey
Subdivision Plat
Lighting and Photometric plan

Response – The Survey was included in the preliminary application under "Plan 3. Existing Conditions". The Subdivision Plat will be uploaded as Plan. 29. Furthermore, Cut Sheets will be provided under attachment V. Please let us know if a Photometric Plan is still required.

Comment – *Right, Title, and Interest to utilize Guilford Court*

Response – The pertinent documents were included in the preliminary application under "C. Right Title and Interest". From our understanding, the documents were reviewed by the City Corporation Counsel and found to support the Applicants RTI to utilize Guilford Court.

Comment – *Evidence of financial and technical capacity has to be submitted as part of the final application.*

Response – The evidence of technical and financial capacity was included in the preliminary application under "G. Technical and Financial Capacity".

Comment – *Evidence of DPW and communication capacity to serve the development.*

Response – The Utility Cover has been revised to include the correspondence that occurred after the preliminary application submission – namely the Wastewater Capacity Authorization letter. We have received a Wastewater Capacity Authorization letter from the Department of Public Works dated 11/29/16 stating their capacity to serve the development. Please refer to the attached.

Comment – *Manufacturer's verification that HVAC and manufacturing equipment meets the applicable and federal emissions requirements. All mechanical equipment will need to be shown on the plans and architectural drawings.*

Response – The HVAC and manufacturing equipment will meet the applicable requirements and evidence of this requirement will be submitted with the Building Permit. The equipment will be roof-mounted and depicted on the architectural plans and elevations and part of the Building Permit.

Comment – *Why is there a need to provide 22 parking spaces for 11 residential units? As you are aware the zoning requires 8 spaces.*

Response – The Owner wants to provide two spaces per unit due to the fact that many families have two vehicles. Additionally, this would ease the strain of on-street parking within the neighborhood. An analysis performed on AutoTurn, a vehicle circulation CAD accessory, shows the proposed parking layout to be adequate.

Furthermore, statistics from the Institute of Transportation Engineers, *Parking Generation, 3rd Edition*, show that on a weekday the average peak period parking demand was 1.46 vehicles per dwelling unit. The data confirms that there is a need for two spaces per unit. It also confirms that the traffic generation will not produce a negative impact on York Street, Guilford Court, or the surrounding neighborhood.

Lastly, projects such as the Munjoy Heights apartments and the 118 Congress apartments have provided 2 and 1.5 spaces per unit, respectively. This design has not resulted in adverse effects and the on-street parking demand has been reduced.

Comment – *If the owners could use Guilford, is it possible to have the majority of the vehicles to use this entrance instead of York Street.*

Response – Due to the slopes on site, should the majority of the vehicles be provided access from Guilford Court, would result in the elimination two residential units on the first floor and inefficient use of space the garage level. This would result in two level of parking adjacent to York St with the resulting lack of windows, decks, etc.

Additionally, the neighbors that live on Guilford Court would like to see a minimal traffic increase.

Comment – *How will the vehicle and traffic queuing be handled on York Street; as you are aware, this is a very busy street especially at morning and afternoon peak times.*

Response – Due to comments received from Tom Errico and the Planning Board, the two proposed exterior spaces off York Street have been eliminated. Thus, there will be no reverse movements onto York Street. Vehicles exiting the lower level parking garage will have adequate sight distance and will be able to turn into the traffic gaps in a safe manner in coordination with the signal phases at the intersection of York and State St.

Comment – *The existing curb cuts on York Street will need to be closed; a residential lot is only allowed a maximum of two curb cuts.*

Response – In conjunction with the above response, the curb cut on the south corner of the lot will be closed as there are no longer two proposed spaces off York Street. The curb cut at the eastern corner of the lot is subject to an easement with the abutter and shall be maintained for use 155-159 York Street residents. The design proposes to reduce this curb cut by nearly a foot.

Comment – *Condo documents will need to be submitted for review and approval by the City's Legal Department.*

Response – The condo documents will be submitted with the Final Application.

Tom Errico, Traffic – Email, 12/2/16

Comment – *Curbing and sidewalk along York Street shall be extended to the limits of the westerly property boundary. Backing maneuvers onto York Street will not be permitted.*

Response – Please see the revised site plans, C-10 and C-11. The design has closed this curb cut and there are no longer two parking spaces proposed off York Street.

Comment – *A driveway is provided along the easterly property boundary and I find conditions to be undesirable. This driveway should be eliminated (It is my understanding that this was a condition of approval for the abutting property).*

Response – This driveway is subject to an easement with the abutter with the majority of the driveway on 155-159 York St. Vehicles accessing 161 York Street will not have access to this driveway. However, the curb cut width will be decreased by nearly a foot up to the extent of the easement.

Comment – *I support a waiver for the parking aisle given that it is less than a foot narrower than City standards, vehicle turnover is expected to be minimal, and vehicle circulation appears to be accommodated on-site.*

Response – Thank you for the review – we agree with your statements.

Comment – *The driveway apron should be designed to provide a maximum cross slope of 2% along the walking route of pedestrians (pedestrian zone).*

Response – A Driveway/Sidewalk detail has been provided on Sheet C-40 to show this specification.

Comment – *The two end parking spaces within the garage will have difficulty in egress maneuvers. The applicant should provide information that acceptable circulation can be accommodated.*

Response – An analysis has been performed using AutoTurn to confirm that these spaces have adequate space for egress maneuvers.

Comment – *The applicant shall document that City driveway spacing standards along York Street are met.*

Response – The design no longer features a driveway on the southern corner of the property. Therefore, only one driveway is proposed along York Street and the driveway spacing standards are met.

Comment – *The existing sidewalk or a temporary sidewalk shall be provided along the property frontage during construction. The applicant should provide details on construction activity that would impact traffic on York Street and how traffic will be managed.*

Response – On Sheet C-03, there is a note for the contractor to keep the existing sidewalk open if feasible. The updated Construction Management Document will address both the sidewalk and the contractor's responsibility to control traffic movements during utility trenching in York Street.

Comment – *Based upon the low trip generation expected from the project a Traffic Study is not required.*

Response – Thank you for the review – we agree with your statement.

Lauren Swett, Civil Engineering – 12/7/16 Email

Comment – *The Portland City Council adopted a revised sidewalk material policy in October of this year. Per that policy, driveway aprons must match the sidewalk material. The applicant must provide a brick apron at the York Street driveway.*

Response – The Site Plan has been revised to propose a brick driveway apron.

Comment – *The Applicant should provide evidence of Right, Title, or Interest to utilize the private way (Guilford Court) for access to the Site.*

Response – The Right, Title, and Interest were submitted as part of the preliminary application. From our understanding, the documents were reviewed by the City Corporation Counsel and found to support the Applicants RTI to utilize Guilford Court.

Comment – *The Applicant has noted that there is an existing easement associated with the existing bituminous driveway on the northeastern side of the property. It is our understanding that this driveway was required to be discontinued as part of a prior project and the curb cut should be*

eliminated. The existing conditions survey notes that this driveway easement is to "to be extinguished". The Applicant should clarify the intent for this space.

Response – There is an existing easement that grants the rights of the driveway to the abutter. The Design Team has no knowledge of the condition of approval to close this curb cut for the prior project. We are proposing granite curb to make this curb cut approximately one foot smaller than the existing condition.

Comment – *Per Section 13 of the City's Technical Manual, the Applicant is required to submit a Boundary Survey that has been stamped by a Maine Licensed Professional Surveyor.*

Response – This requirement was submitted as part of the preliminary application under "Plan 3. Existing Conditions Plan".

Comment – *In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:*

a) *Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500. However, a detail should be provided for proposed sediment barriers. The sediment barrier location appears to be on abutting property in some areas. Sediment barrier should be installed on the subject parcel or the Applicant should verify that they will have a construction easement for the work.*

b) *General Standard: The project will result in a net increase in impervious area of approximately 5,410 square feet. As such, the project is required to include stormwater management features for stormwater quality control. The Applicant has proposed an Underdrained Subsurface Sand Filter. The stormwater system is required to comply with the requirements of Chapter 7.3 of Volume III of the MaineDEP Stormwater BMP Manual. In general, we are in agreement with the stormwater management approach, but we have a number of questions with regards to the stormwater modeling and design. See below for stormwater design questions*

c) *Flooding Standard: The project will result in a net increase in impervious area of approximately 5,410 square feet. As such, the project is required to control the rate or quantity of stormwater runoff from the site. The Applicant should address the following comments as well as the comments provided below on the underdrained subsurface sand filter:*

    - *The Applicant has utilized a direct entry of five minutes for the pre-development Time of Concentration; however, given the gradual slopes and pervious nature of the existing site, the Applicant should calculate a Time of Concentration and verify whether it exceeds five minutes.*

Response –

a) A sediment barrier detail has been added to Plan 17. Erosion & Sedimentation Control

Details. Furthermore, please refer to note 8 on Plan 4. Construction Management Plan for the note describing that the sediment barrier is offset of the property line for clarity purposes and does not depict the physical location of the sediment barrier.

b) Thank you for the review. The comments are addressed accordingly.

c) A Time of Concentration has been calculated for the predevelopment and the results can be seen in the HydroCAD attachments within the revised Stormwater Management Report.

Comment – *We have the following comments on the layout and design of the stormwater filter system. Some of the design elements for this system may be specifically associated with the site's constrains, so we recommend that the Applicant consider consulting with StormTech Manufacturer for review of the following design.*

- *The Applicant should provide sizing calculations for the pre-treatment Isolator Row.*
- *Access structures should be provided on both ends of the pre-treatment Isolator Row or indicate how maintenance will occur with the proposed layout.*
- *The Applicant should clarify how stormwater runoff is intended to flow from CB-3 through the Isolator Row and Chamber system; it appears that CB-3 has an outlet to both the Isolator Row and the Chamber located over the filter area, and that larger storms will bypass the Isolator Row and flow into the Chamber. The Applicant should note that overflow before the treatment row be directed towards additional storage chambers, but not to the system with the sand filter and underdrain.*
- *Subsurface exploration (test pits or borings) should be made within the filter area to identify depths to seasonal high groundwater and bedrock. A minimum of 1-foot of separation should be provided between the bottom of the filter and groundwater and bedrock. An impermeable liner system has been proposed.*
- *The design details specify that the 4-inch underdrain be surrounded by a minimum of 6 inches of bedding, but that the underdrain system by only 12 inches thick; the Applicant should clarify dimensions.*
- *We recommend that the transition layers be provided between the sand filter media and the underdrain system in-lieu of the filter fabric currently specified (filter fabric is prone to clogging).*
- *The applicant should clarify how the 958 CF of provided treatment volume was derived.*
- *The outlet control structure appears to be much larger in diameter than necessary; the Applicant should clarify the intent for such a large structure.*

Response –

- The sizing of the isolator row is specified in a letter to StormTech from Mark Bergeron at the MaineDEP in which the number of chambers needed in the isolator row can be determined by dividing the peak one-year 24-hour flowrate by the specific flow rate for the StormTech unit specified. The number of chambers this calculation yields is 0.1. The proposed layout features 3

chambers to provide extensive sediment removal. This calculation has been added to the stormwater report.

- The isolator row has been relocated so that there is now access from the catch basin as well as the outlet control structure. Additionally, an observation port will be provided in the middle chamber.
- The isolator has been relocated so that stormwater will have to flow through the isolator row.
- Probes and borings were taken on site. The two closest to the proposed stormwater system encountered bedrock at an average elevation of 46.5' which is well below the proposed system and building finished floor elevation. Groundwater was not encountered in any of the probes or borings. The Geotechnical Report will be uploaded as document W.
- The dimensions have been clarified on the revised Plan 16. Underdrained Subsurface Sand Filter.
- This recommendation will be considered in the design.
- The 958 Cubic Feet of storage was derived from the summation of chamber storage and stone storage. The revised storage as well as the derivation of this value has been included within the revised stormwater report.
- The outlet control structure is sized as such for the ability to access both sides of the weir wall. Similar structures have been installed in projects around the city and have proven to be effective.

Comment – *The Stormwater Management Plan should include a stormwater inspection and maintenance plan developed in accordance with and in reference to MaineDEP Stormwater BMP Manual Maintenance Criteria and Chapter 32 of the City of Portland Code of Ordinances.*

Response – The inspection and operation & maintenance agreement will be uploaded as Attachment Z.

Comment – *It appears that the Applicant is proposing to connect a field inlet to the foundation drain. This layout will likely introduce water into the foundation drain system. The applicant should clarify the intent.*

Response – The stormwater that flows into the foundation drain system will not cause a problem as the flows will be relatively low and oriented down-gradient towards the foundation drain connection to the proposed 8" storm drain. Additionally, groundwater was not encountered in any of the borings or probes and likely flows along the bedrock. Therefore, the foundation drain system is not expected to exceed capacity with the introduction of a field inlet into the system.

Comment – *The Applicant should provide a detail for proposed field inlets.*

Response – The Detail is referred to as "Inline Drain Detail" and was submitted as part of the preliminary application on Plan 15. Drainage Details.

Comment – *The Applicant is proposing to connect a 12-inch storm drain to an existing 12-inch underdrain located within York Street. The Applicant should clarify the method of connection being proposed and whether a new drain manhole structure will be necessary within the City Right-of-Way. This connection will require review by the Department of Public Works.*

Response – The proposed outlet is now an 8-inch storm drain that will connect to the existing 12-inch underdrain.

Comment – *The City of Portland Typical Pipe Trench Detail should comply with the City of Portland Technical Manual.*

Response – The Detail has been revised to comply with the Technical Manual.

Comment – *The Applicant is proposing a retaining wall over four feet in height. The Landscape Plan refers to the Structural Plan, which has not been received at this time, for the retaining wall design. A geotechnical evaluation of the proposed project was not submitted with the application. Has a geotechnical evaluation been performed, or are the subsurface soil types and soil bearing capacities assumed in the design of the slope stabilization / wall system? If assumed, we recommend nothing those assumptions on the plans and we recommend requiring verification of those assumptions and associated calculations by the contractor and design engineer during construction.*

Response – The geotechnical report will be submitted as document W. Furthermore, the retaining wall will be designed by the structural engineer and will be submitted with the building permit.

Comment – *The Applicant has noted that exterior lighting will be proposed, but cut sheets and photometric plan have not been provided at this time. Appropriate cut sheets and a photometric plan should be provided as part of the final application in accordance with the City of Portland Technical Manual.*

Response – Cut sheets will be submitted as Document V. A photometric plan is not expected to be needed for this project as lighting is minimal and building-mounted. The lighting will be cutoff with no light emitted above the horizontal plane. In addition, the six-foot tall fence will further prevent light from spilling over onto adjacent properties. The lights will be energy efficient LED's that are dark sky friendly.

Comment – *The Applicant has provided a letter from the Portland Water District demonstrating that there is a sufficient capacity to serve the proposed project. However, the Applicant should note that the approval of the final plans is also required. Evidence of District approval should be provided upon receipt. The Applicant has also submitted a Wastewater Capacity Application to the City of Portland and noted that the response will be provided upon receipt.*

Response – Final approval from Portland Water District is attached to the revised Utility Cover. Furthermore, we have since received the response and Wastewater Authorization from DPW which is also attached to the revised Utility Cover.

Jeff Tarling, Landscaping – 12/19/16 Email

Comment – *The Landscape Plan submitted for the 165 York Street project seems inadequate due to the lack of detail and landscape plant density typically seen in a project of this type. The landscape planting details could be better defined including plant bed structure, edges, mulch areas, non landscape areas shown in green. Additional plant density and details are suggested.*

Response – The Landscape Plan has been revised to include more plant density and diversity.

Furthermore, the details have been revised to include typical planting and mulching details.

Comment – *Street trees (4) located behind the sidewalk, consists of proposed 2 'Armstrong' Red Maples & 2 'Autumn Gold' Ginkgo.*

Both species, upright Red Maple & Ginkgo should work well and fit into the overall streetscape. Options mightbe best from a streetscape view if all 4 trees are similar unless this is a design intent. Tree sizes shall meet city standards of2-2.5" for all trees & plant material. The 3.25 GAL minimum listed in the landscape plan is too small for the Ginkgo as shown. The Landscape Plan 'Street view' recommendation is for additional landscape treatment in the tree planter along the back edge of curb between the sidewalk and foundation. This could include woody or herbaceous plantings, or groundcover planted in companion to the proposed 4 street trees.

Response – The 4 proposed street trees are now all Armstrong Red Maples. Furthermore, creeping juniper has been proposed for ground cover in addition to flower beds along York Street. 3 additional Armstrong Red Maples are proposed along the westerly property boundary.

Comment – *Landscape – the project edges appear avoid void of landscape treatment, unknown what is planned. Building shadows might suggest woody or herbaceous plants, or groundcover hardy to shade conditions.*

Response – The areas along the property line have been revised to add landscape density.

Comment – *Fencing – additional fencing or wooden guardrail is suggested in the parking space area where the landscape space is minimal, this would be an L shaped section from near the driveway entrance to the corner and down to near the building corner to better screen parked cars.*

Response – A 6-foot high cedar fence is now proposed along the parking area.

Comment – *The proposed Juniper planting (6) should work adequately, the proposed size of 3.5 GAL is too small and should be planted with 4-5' height minimum is recommended. There appears to be room to plan at least 2 small ornamental trees, one on the left side near the entrance.*

Response – The specified container size of the Juniper has been increased to 5 GAL. 3 Armstrong Red Maples have been proposed along the left side. Weigela and Summersweet shrubs will also be planted along the internal sidewalk on the left side of the property. Additionally, the area to the right of the building will be planted with switchgrass so there is little maintenance needed in the complex area between the retaining walls.

Comment – *The extensive use of Creeping Lily Turf "shown as LS" in this section while hard to the conditions offers minimum landscape screening value at 12" height. It may suffice at the head of the parking spaces where winter snow load could be an issue.*

Response – The Creeping Lily Turf plantings have been relocated to the head of the parking to help stabilize the steep slopes. Native flowers will compose the driveway border in place of the grasses.

Comment – *Additional Green Space – the space shown for two car space parking off York Street if removed could add green space to the project.*

Response – The spaces have been removed and a brick sidewalk and green space with shrubs and native flowers have been proposed in place of the parking area.

Comment – *Recommend revising / improving this section of landscape, the available green space while small for an 11 unit complex is important and should reflect landscape functions of screening to the extent possible and aesthetic for residents. Unknown if green infrastructure or rain gardens could be incorporated into the site plan.*

Response – The Landscape Plan has been improved to provide increased density and aesthetic interest. The site is too restrained to incorporate green infrastructure such as a rain garden.

Comment – *Existing Plantings to remain – any tree / plant save areas should be protected during construction with adequate measures. Any plant loss to be replaced with agreed upon plant types to match.*

Response – The existing plantings shall be protected as necessary as referenced on Plan 4. Construction Management Plan.

Keith Gautreau, Fire – 1/30/17 Memorandum

Comment – *Emergency access to the proposed site will primarily be via York Street. Secondary emergency access will be utilizing the small alley way off of Park Street.*

Response – We are in agreement of the design intent.

Comment – *The main entrance of the building must be the address for the property. This should be consistent with 911, tax assessor, Inspections Division, and future mailing address.*

Response – The design team will work with the Owner to maintain consistency between the various divisions. 161 York Street will be the address for this property due to the location of the main entrance.

Comment – *Street addresses shall be marked on the structure and shall be as approved by the City E-911 Addressing Officer.*

Response – The design team will work with the Owner to install street addresses that conform with the City standard and are approved by the Addressing Officer.

Comment – *If the building entry faces a different street, both the street name and number should be large enough to read from the street.*

Response – The main entrance will face York Street and the street name and number shall be visible from York Street.

Comment – *Address numbers must be a minimum of 4 inches high.*

Response – The design team will work with the Owner to ensure that the address number meets

the 4 inch requirement.

Comment – *The number should be in Arabic numerals rather than spelled out (for example, "130" instead of "One Hundred and Thirty").*

Response – The design team will work with the Owner to ensure that the numbers are of Arabic format.

Comment – *Color: Addresses should be in a color that contrasts with the background. Whenever possible, should be illuminated.*

Response – The design team will work with the Owner to ensure that the addresses are of contrasting color. The numbers will also be illuminated if feasible.

Comment – *Provide additional address signs at entrances to the property when the building address is not legible from the public street.*

Response – If the scenario arises where the building address is not legible from the public street, additional address signs will be provided.

Comment – *Buildings set back in groups that share common entrances can make quickly locating a specific building the shortest route difficult. On such sites, additional signs with directional arrows and/or diagrams of the buildings and access layout should be posted.*

Response – There are no shared driveways proposed as part of this project – please see the revised Site Plan. The previous site plan featured a shared driveway at the southerly property corner. This is no longer proposed. Furthermore, the driveway on the easterly property corner is part of an existing easement and will not be used by the 161 York Street residents. The driveway is a 24-foot section in length of pavement that is for use by the abutting property.

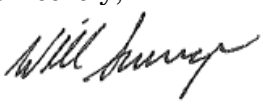
Comment – *An ability to serve letter from PWD will be required to submit to Fire Dept.*

Response – The ability to serve letter from PWD is attached to the revised document J. Fire Department Letter as well as acceptance via e-mail. A formal acceptance letter will be provided for the Building Permit Application

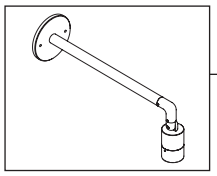
Mark Mueller Architects will respond to Caitlin Cameron's comments under separate cover.

Please let me know if you have any additional questions or comments.

Sincerely,



William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.



the power of dimming with adjust-e-lume® TECHNOLOGY

SIGN STAR™ STYLE L

PROJECT:	
TYPE:	A
CATALOG NUMBER:	
SOURCE:	
NOTES:	

CATALOG NUMBER LOGIC

SN		L	LED								
Example:	**SN**	- **24**	- **L**	- **LED**	- **e64**	- **NSP**	- **A9**	- **WHW**	- **12**	- **11**	- **A**

Series
SN - Sign Star™

Stem Length
18", 24", 30", 36", 42", or 48"
(Specify in inches)

Style
L - 90° Radius

Source
LED - **'e'** Technology with Integral Dimming Driver (See Specifications for Dimming)
Designed for use with remote 12VAC BKSSL® transformers. Requires magnetic Low Voltage dimmer.

LED Type
e64 - 7WLED/2.7K
e65 - 7WLED/3K
e66 - 7WLED/4K
e74 - 7WLED/Amber

Optics*
NSP - Narrow Spot (Red Indicator)
SP - Spot (Green Indicator)
MFL - Medium Flood (Yellow Indicator)
WFL - Wide Flood (Blue Indicator)

Adjust-e-Lume® Output Intensity *(Choose factory setting)*
A9 (Standard), **A8, A7, A6, A5, A4, A3, A2, A1**

Finish

Aluminum Finish

Powder Coat Color	Satin	Wrinkle
Bronze	**BZP**	**BZW**
Black	**BLP**	**BLW**
White (Gloss)	**WHP**	**WHW**
Aluminum	**SAP**	—
Verde	—	**VER**

Premium Finish

ABP	Antique Brass Powder	**CMG**	Cascade Mountain Granite	**RMG**	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	**CRI**	Cracked Ice	**SDS**	Sonoran Desert Sandstone
AQW	Antique White	**CRM**	Cream	**SMG**	Sierra Mountain Granite
BCM	Black Chrome	**HUG**	Hunter Green	**TXF**	Textured Forest
BGE	Beige	**MDS**	Mojave Desert Sandstone	**WCP**	Weathered Copper
BPP	Brown Patina Powder	**NBP**	Natural Brass Powder	**WIR**	Weathered Iron
CAP	Clear Anodized Powder	**OCP**	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Lens Type
12 - Soft Focus Lens
13 - Rectilinear Lens

Shielding
11 - Honeycomb Baffle

Cap Style
A - 45°
B - 90°
C - Flush
D - 45° less Weep Hole *(Interior Use Only)*
E - 90° less Weep Hole *(Interior Use Only)*
F - 90° cutoff with Flush Lens

DRIVER DATA

Input Volts	InRush Current	Operating Current	Dimmable	Operation Ambient Temperature
12VAC/DC 50/60Hz	250mA (non-dimmed)	700mA	Magnetic Low Voltage Dimmer	-22°F-194°F (-30°C - 90°C)

LM79 DATA

BK No.	CCT (Typ.)	Input Watts (Typ.)	CRI (Typ.)
e64	2700K	7.0	80
e65	3000K	7.0	80
e66	4000K	7.0	80
e74	Amber (590nm)	7.0	~

L70 DATA

Minimum Rated Life (hrs.) 70% of initial lumens(L_{70})
50,000
50,000
50,000
50,000

*OPTICAL DATA

Beam Type	Angle	e66 CBCP	Visual Indicator
Narrow Spot	13°	6889	Red Dot
Spot	15°	5225	Green Dot
Medium Flood	23°	1984	Yellow Dot
Wide Flood	31°	1300	Blue Dot

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RELEASED 06-13-16
DRAWING NUMBER SUB-2273-00

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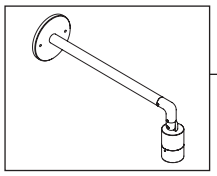
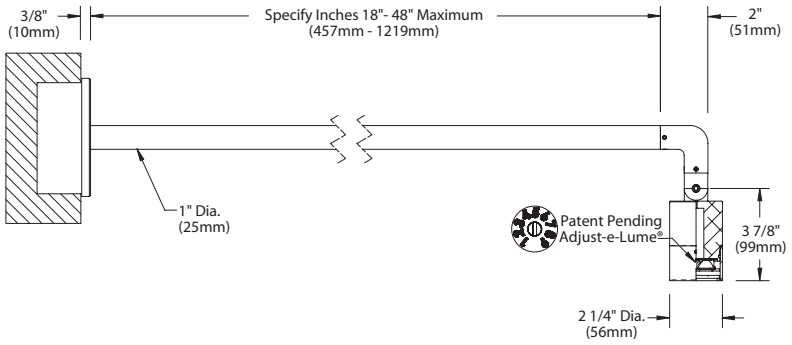


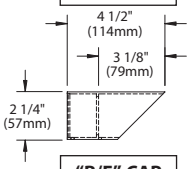
SIGN STAR™ STYLE L

PROJECT:	
TYPE:	A

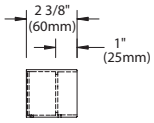
SIDE VIEW



"A/D" CAP



"B/E" CAP



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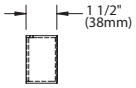

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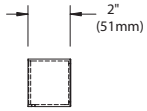
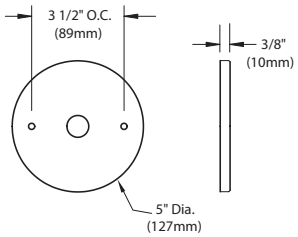
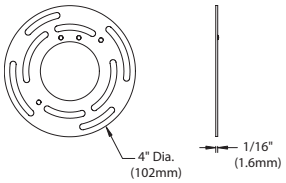


CANOPY DETAIL

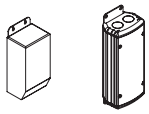


UNIVERSAL RING



Accessories *(Configure separately)*

Remote Transformers:



TR Series UPMRM™

All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6).

Style
'L' Style provides clean, 90° transition from fixture to stem.

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. Integral knuckle for maximum mechanical strength. High temperature, silicone 'O' Ring provides water-tight seal.

Knuckle
The LOCK™ (Locking 'O' Ring Compression Knuckle) is comprised of two components. The first is integral to the body and features an interior, machined taper. The second is machined from solid billet and features a second, reverse angle taper. The resultant mechanical taper-lock allows a full 180° vertical adjustment without the use of serrated teeth, which inherently limit aiming. High temperature, silicone 'O' Ring provides water-tight seal and compressive resistance to maintain fixture position. Design withstands 73 lb. static load prior to movement to ensure decades of optical alignment. Biaxial source control with 360° horizontal rotation in addition to vertical adjustment.

Cap
Fully machined. Accommodates [1] lens or louver media. Choose from 45° cutoff ('A' or 'D'), 1" deep bezel with 90° cutoff ('B' or 'E'), flush lens ('C') cap styles, or 1" deep cutoff with flush mounted lens ('F'). 'A' and 'B' caps include weep-hole for water and debris drainage. 'D' and 'E' caps exclude weep-hole and are for interior use only.

Stem
Fully machined, 1" dia. with internal threads for maximum visual appeal. Available in configurable lengths to 48" maximum overall.

Lens
Shock resistant, tempered, glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment. Specify soft focus (#12) or rectilinear (#13) lens.

BKSSL®
Integrated solid state system with 'e' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance. High power, forward throw source complies with ANSI C78.377 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components.

Integral, constant current driver. 12VAC/VDC input. 50/60Hz. Proprietary input control scheme achieves power factor correction and eliminates inrush current. Output, over-voltage, open-circuit, and short circuit protected. Inrush current limited to <250mA (non-dimming). Conforms to Safety Std. C22.2 No. 250.13-12.

Dimming
Line voltage dimmable via magnetic low voltage dimmer. For use with low voltage dimmer with dedicated neutral conductor. For purposes of dimming: Remote magnetic transformer with BKSSL® Power of 'e' technology loads should be loaded to 25% of the transformer VA (watts) rated value.

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution. Color-coded for easy reference: Narrow Spot (NSP) = Red. Spot (SP) = Green. Medium Flood (MFL) = Yellow. Wide Flood (WFL) = Blue.

Adjust-e-Lume® (Pat. Pending)
Integral electronics allows dynamic lumen response at the individual fixture. Indexed (100% to 25% nom.) lumen output. Maintains output at desired level or may be changed as conditions require. Specify factory preset output intensity.

Installation
5" dia., machined canopy permits mounting to 4" octagonal junction box. Junction box installation must be designed to hold full fulcrum weight of fixture (junction box and gasket by others).

Remote transformer
For use with 12VAC BKSSL remote transformer or magnetic transformers only. B-K Lighting cannot guarantee performance with third party manufacturers' transformers.

Wiring
PVC coated, 18AWG, 150V, 60°C rated and certified to UL 1838 standard.

Hardware
Tamper-resistant, stainless steel hardware. LOCK™ aiming screw and canopy mounting screws are additionally black oxide treated for additional corrosion resistance.

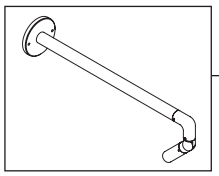
Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating.

Warranty
5 year limited warranty.

Certification and Listing
ITL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHs compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. IP 66 Rated. Made in USA.

c UL us LISTED RoHS MADE IN THE USA

®Energy Star is a registered trademark of the United States Environmental Protection Agency.



the power of e

MINI-MICRO™
SIGN STAR™ STYLE L

PROJECT:	
TYPE:	B
CATALOG NUMBER:	
SOURCE:	
NOTES:	

CATALOG NUMBER LOGIC

SN		L	MM	LED						

Example: SN - 18 - L - MM - LED - e70 - SP - BZP - 12 - 11 - A

Series
SN - Sign Star™

Stem Length
18", 24", 30", 36", 42", or 48"
(Specify in inches)

Style
L - 90° Radius

Fixture
MM - Mini-Micro™

Source
LED - **'e'** Technology with Integral Driver
Designed for use with remote 12VAC BKSSL® transformers.

LED Type

e70 - 3WLED/2.7K
e71 - 3WLED/3K
e72 - 3WLED/4K
e73 - 3WLED/Amber

Optics*

NSP - Narrow Spot (Red Indicator)
SP - Spot (Green Indicator)
MFL - Medium Flood (Yellow indicator)
ASY - Asymmetrical (Purple Indicator)

Finish

Aluminum Finish

Powder Coat Color	Satin	Wrinkle
Bronze	BZP	BZW
Black	BLP	BLW
White (Gloss)	WHP	WHW
Aluminum	SAP	—
Verde	—	VER

Premium Finish

ABP	Antique Brass Powder	CMG	Cascade Mountain Granite	RMG	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	CRI	Cracked Ice	SDS	Sonoran Desert Sandstone
AQW	Antique White	CRM	Cream	SMG	Sierra Mountain Granite
BCM	Black Chrome	HUG	Hunter Green	TXF	Textured Forest
BGE	Beige	MDS	Mojave Desert Sandstone	WCP	Weathered Copper
BPP	Brown Patina Powder	NBP	Natural Brass Powder	WIR	Weathered Iron
CAP	Clear Anodized Powder	OCP	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Lens Type

12 - Soft Focus Lens
13 - Rectilinear Lens

Shielding

11 - Honeycomb Baffle

Cap Style

A - 45°
B - 90°
C - Flush
D - 45° less Weep Hole *(Interior Use Only)*
E - 90° less Weep Hole *(Interior Use Only)*

DRIVER DATA

Input Volts	InRush Current	Operation Ambient Temperature
12VAC/DC 50/60Hz	10A Max	-10°F-130°F

LM79 DATA

BK No.	CCT (Typ.)	Input Watts (Typ.)	CRI
e70	2700K	3	80
e71	3000K	3	80
e72	4000K	3	80
e73	Amber (590nm)	3	~

L70 DATA

Minimum Rated Life (hrs.) 70% of initial lumens (L_{70})
50,000
50,000
50,000
50,000

*OPTICAL DATA

Beam Type	Angle	CBCP	Visual Indicator
NSP-Narrow Spot	17°	1585	Red Indicator
SP-Spot	21°	781	Green Indicator
MFL-Medium Flood	28°	616	Yellow Indicator
ASY-Asymmetrical	17°x31°	721	Purple Indicator

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www.bklighting.com • info@bklighting.com

RELEASED 07-25-16
DRAWING NUMBER SUB-2258-00

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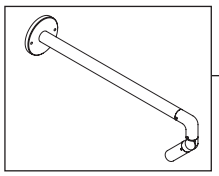
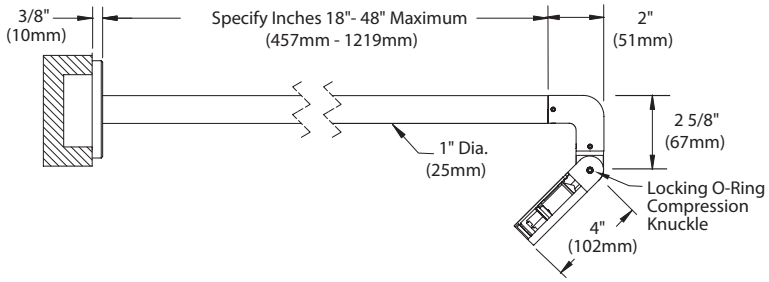


the power of e

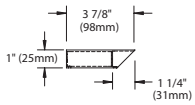
MINI-MICRO™
SIGN STAR™ STYLE L

PROJECT:	
TYPE:	

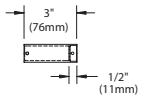
SIDE VIEW



"A/D" CAP

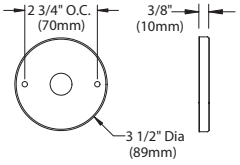


"B/E" CAP



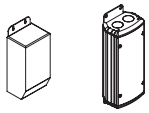
"C" CAP

CANOPY DETAIL



Accessories *(Configure separately)*

Remote Transformers:



TR Series UPMRM™

All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6).

Style
'L' Style provides clean, 90° transition from fixture to stem.

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. Integral knuckle for maximum mechanical strength. High temperature, silicone 'O' Ring provides water-tight seal.

Knuckle
The LOCK™ (Locking 'O' Ring Compression Knuckle) is comprised of two components. The first is integral to the body and features an interior, machined taper. The second is machined from solid billet and features a second, reverse angle taper. The resultant mechanical taper-lock allows a full 180° vertical adjustment without the use of serrated teeth, which inherently limit aiming. High temperature, silicone 'O' Ring provides water-tight seal and compressive resistance to maintain fixture position. Design withstands 73 lb. static load prior to movement to ensure decades of optical alignment. Biaxial source control with 360° horizontal rotation in addition to vertical adjustment.

Cap
Fully machined. Accommodates [1] lens or louver media. Choose from 45° cutoff ('A' or 'D'), 3/8" deep bezel with 90° cutoff ('B' or 'E'), or flush lens ('C') cap styles. 'A' and 'B' caps include weep-hole for water and debris drainage. 'D' and 'E' caps exclude weep-hole and are for interior use only.

Stem
Fully machined, 1" dia. with internal threads for maximum visual appeal. Available in configurable lengths to 48" maximum overall.

Lens
Shock resistant, tempered, glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment. Specify soft focus (#12) or rectilinear (#13) lens.

BKSSL®
Integrated solid state system with 'e' technology. High power, forward throw source complies with ANSI C78.377 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components.

Integral non-dimming driver. Minimum 50,000 hour rated life at 70% of initial lumens (L70). BKSSL® technology provides long life, significant energy reduction and exceptional thermal management.

Optics
OPTIKIT™ modules are color-coded for easy reference: Narrow Spot (NSP) = Red, Spot (SP) = Green. Medium Flood (MFL) = Yellow and Asymmetrical (ASY) = Purple.

Installation
3-1/2" dia., machined canopy permits mounting to 3" octagonal junction box or 4" junction box with mud ring. Junction box installation must be designed to hold full fulcrum weight of fixture (junction box and gasket by others).

Remote Transformer
For use with 12VAC BKSSL remote transformer or magnetic transformers only. B-K Lighting cannot guarantee performance with third party manufacturers' transformers.

Wiring
PVC coated, 18AWG, 150V, 60°C rated and certified to UL 1838 standard.

Hardware
Tamper-resistant, stainless steel hardware. LOCK™ aiming screw and canopy mounting screws are additionally black oxide treated for additional corrosion resistance.

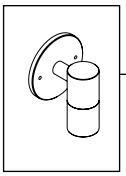
Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating.

Warranty
5 year limited warranty.

Certification and Listing
ITL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHs compliant. Suitable for indoor or outdoor use. Suitable for use in wet locations. IP 66 Rated. Made in USA.

c UL us LISTED RoHS MADE IN THE USA

**Energy Star is a registered trademark of the United States Environmental Protection Agency.*



BKSSL® SOLID STATE LIGHTING

the power of dimming with adjust-e-lume® TECHNOLOGY

EL CAPITAN™

PROJECT:	
TYPE:	C
CATALOG NUMBER:	
SOURCE:	
NOTES:	

CATALOG NUMBER LOGIC

Example	-	**EC**	-	**LED**	-	**e65**	-	**SP**	-	**A7**	-	**BLW**	-	**12**	-	**11**	-	**B**

Material

Blank - Aluminum
B - Brass
S - Stainless Steel

Series

EC - El Capitan Series™

Source

LED - **'e'** Technology with Integral Dimming Driver (See Specifications for Dimming)
Designed for use with remote 12VAC BKSSL® transformers. Requires magnetic Low Voltage dimmer.

LED Type

e64 - 7WLED/2.7k
e65 - 7WLED/3k
e66 - 7WLED/4k
e74 - 7WLED/Amber

Optics*

NSP - Narrow Spot (Red Indicator)
SP - Spot (Green Indicator)
MFL - Medium Flood (Yellow Indicator)
WFL - Wide Flood (Blue Indicator)

Adjust-e-Lume® Output Intensity *(Choose factory setting)*

A9 (Standard), **A8, A7, A6, A5, A4, A3, A2, A1**

Finish

Aluminum Finish

Powder Coat Color	Satin	Wrinkle
Bronze	BZP	BZW
Black	BLP	BLW
White (Gloss)	WHP	WHW
Aluminum	SAP	—
Verde	—	VER

Brass Finish

Machined	MAC
Polished	POL
Mitique™	MIT

Stainless Finish

Machined	MAC
Polished	POL
Brushed	BRU *Interior use only.*

Premium Finish

ABP	Antique Brass Powder	CMG	Cascade Mountain Granite	RMG	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	CRI	Cracked Ice	SDS	Sonoran Desert Sandstone
AQW	Antique White	CRM	Cream	SMG	Sierra Mountain Granite
BCM	Black Chrome	HUG	Hunter Green	TXF	Textured Forest
BGE	Beige	MDS	Mojave Desert Sandstone	WCP	Weathered Copper
BPP	Brown Patina Powder	NBP	Natural Brass Powder	WIR	Weathered Iron
CAP	Clear Anodized Powder	OCP	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Lens Type

12 - Soft Focus Lens
13 - Rectilinear Lens

Shielding

11 - Honeycomb Baffle*

Cap Style

A - 45°
B - 90°
C - Flush
D - 45° less Weep Hole *(Interior Use Only)*
E - 90° less Weep Hole *(Interior Use Only)*
F - 90° cutoff with Flush Lens

**Accommodates up to 2 Lens/Shielding media*

DRIVER DATA

Input Volts	InRush Current	Operating Current	Dimmable	Operation Ambient Temperature
12VAC/DC 50/60Hz	250mA (non-dimmed)	700mA	Magnetic Low Voltage Dimmer	-10°F-130°F

LM79 DATA

BK No.	CCT (Typ.)	Input Watts (Typ.)	CRI (Typ.)
e64	2700K	7.0	80
e65	3000K	7.0	80
e66	4000K	7.0	80
e74	Amber (590nm)	7.0	~

L70 DATA

Minimum Rated Life (hrs.) 70% of initial lumens(L70)
50,000
50,000
50,000
50,000

*OPTICAL DATA

Beam Type	Angle	e66 CBCP	Visual Indicator
Narrow Spot	13°	6889	Red Dot
Spot	15°	5225	Green Dot
Medium Flood	23°	1984	Yellow Dot
Wide Flood	31°	1300	Blue Dot

B-K LIGHTING

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RELEASED 06-06-16

DRAWING NUMBER SUB000942

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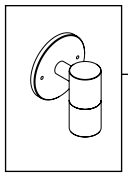


BKSSL® SOLID STATE LIGHTING

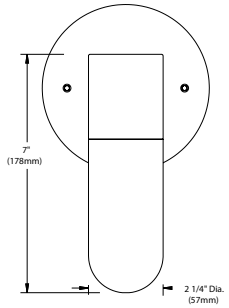
the power of dimming with adjust-e-lume® TECHNOLOGY

EL CAPITAN™

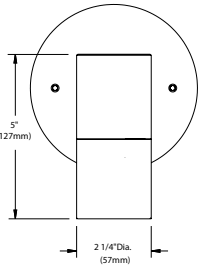
PROJECT:	
TYPE:	

FRONT VIEW

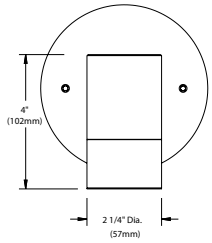
"A/D" CAP



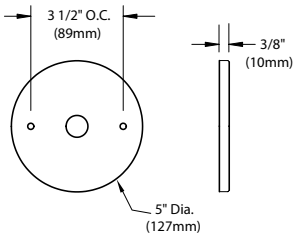
"B/E/F" CAP



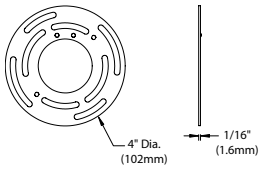
"C" CAP



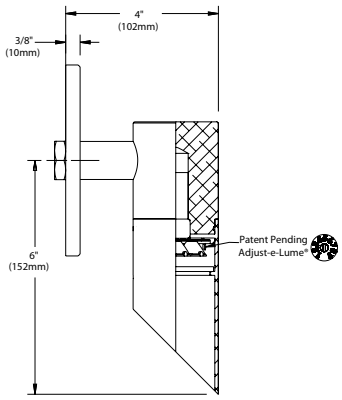
CANOPY DETAIL

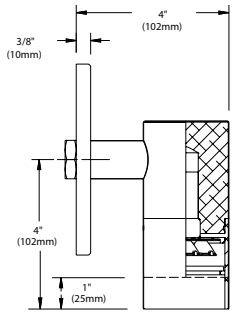


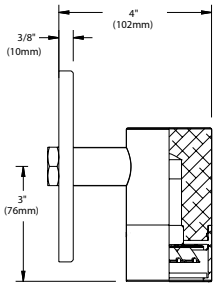
UNIVERSAL RING



SIDE VIEW

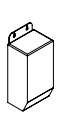




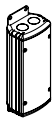


Accessories *(Configure separately)*

Remote options:



TR Series



UPMRM™

All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6), Brass (Type 360) or Stainless Steel (Type 316).

Body
Fully machined from solid billet. Unibody design provides enclosed, water-proof wireway and integral heat sink for maximum component life. High temperature, silicone 'O' Ring provides water-tight seal.

Cap
Fully machined. Accommodates [1] lens or louver media. Choose from 45° cutoff ('A' or 'D'), 1" deep bezel with 90° cutoff ('B' or 'E'), flush lens ('C') cap styles, or 1" deep cutoff with flush mounted lens ('F'). 'A' and 'B' caps include weephole for water and debris drainage. 'D' and 'E' caps exclude weep-hole and are for interior use only.

Lens
Shock resistant, tempered, glass lens is factory adhered to fixture cap and provides hermetically sealed optical compartment. Specify soft focus (#12) or rectilinear (#13) lens.

BKSSL®
Integrated solid state system with 'e' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance. High power, forward throw source complies with ANSI C78.377 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components. Integral, constant current driver. 12VAC/VDC input. 50/60Hz. Proprietary input control scheme achieves power factor correction and eliminates inrush current. Output, over-voltage, open-circuit, and short circuit protected. Inrush current limited to <1A (non-dimmed). Conforms to Safety Std. C22.2 No. 250.13-12.

Dimming
Line voltage dimmable via magnetic low voltage dimmer. For use with low voltage dimmer with dedicated neutral conductor. For purposes of dimming: Remote magnetic transformer with BKSSL® Power of 'e' technology loads should be loaded to 25% of the transformer VA (watts) rated value.

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution. Color-coded for easy reference: Narrow Spot (NSP) = Red. Spot (SP) = Green. Medium Flood (MFL) = Yellow. Wide Flood (WFL) = Blue.

Adjust-e-Lume® (Pat. Pending)
Integral electronics allows dynamic lumen response at the individual fixture. Indexed (100% to 25% nom.) lumen output. Maintains output at desired level or may be changed as conditions require. Specify factory preset output intensity.

Installation
5" dia., machined canopy with stainless steel universal mounting ring permits mounting to 4" octagonal junction box (by others). Suitable for uplight or downlight installation.

Remote Transformer
For use with 12VAC BKSSL remote transformer or magnetic transformers only. B-K Lighting cannot guarantee performance with third party manufacturers' transformers.

Wiring
Teflon® coated, 18AWG, 600V, 250° C rated and certified to UL 1659 standard.

Hardware
Tamper-resistant, stainless steel hardware. Canopy mounting screws are additionally black oxide treated for additional corrosion resistance.

Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. Brass components are available in powder coat or handcrafted metal finish. Stainless steel components are available in handcrafted metal finish. (Brushed finish for interior use only).

Warranty
5 year limited warranty.

Certification and Listing
ITL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. Suitable for indoor or outdoor use. Suitable for use in wet locations. RoHs compliant. Made in USA.

c UL us LISTED RoHS MADE IN THE USA

**Teflon is a registered trademark of DuPont Corporation.*
**Energy Star is a registered trademark of the United States Environmental Protection Agency.*

B-K LIGHTING

40429 Brickyard Drive • Madera, CA 93636 • USA
559.438.5800 • FAX 559.438.5900
www.bklighting.com • info@bklighting.com

RELEASED	DRAWING NUMBER
06-06-16	SUB000942

VERSA STAR™

PROJECT:	
TYPE:	D
CATALOG NUMBER:	
SOURCE:	
NOTES:	

CATALOG NUMBER LOGIC

S	VS	LED	e101	WFL	A9	POL	12	- - - -

Example: S - VS - LED - e100 - SP - A6 - MAC - 13 - 11

Material
Blank - Aluminum
B - Brass
S - Stainless Steel

Series
VS - Versa Star™

Source
LED - **'e'** Technology with Integral Dimming Driver (See Specifications for Dimming)
Designed for use with remote 12VAC BKSSL® transformers. Requires magnetic Low Voltage dimmer.

LED Type
e100 - 5WLED/2.7K
e101 - 5WLED/3K
e102 - 5WLED/4K
e103 - 5WLED/Amber

Optics*
NSP - Narrow Spot (Red Indicator)
SP - Spot (Green Indicator)
MFL - Medium Flood (Yellow Indicator)
WFL - Wide Flood (Blue Indicator)

Adjust-e-Lume® Output Intensity *(Choose factory setting)*
A9 (Standard)**, A8, A7, A6, A5, A4, A3, A2, A1**

Finish

Aluminum Finish

Powder Coat Color	Satin	Wrinkle
Bronze	BZP	BZW
Black	BLP	BLW
White (Gloss)	WHP	WHW
Aluminum	SAP	—
Verde	—	VER

Brass Finish

Machined	MAC
Polished	POL
Mitique™	MIT

Stainless Finish

Machined	MAC
Polished	POL
Brushed	BRU *Interior use only.*

Premium Finish

ABP	Antique Brass Powder	CMG	Cascade Mountain Granite	RMG	Rocky Mountain Granite
AMG	Aleutian Mountain Granite	CRI	Cracked Ice	SDS	Sonoran Desert Sandstone
AQW	Antique White	CRM	Cream	SMG	Sierra Mountain Granite
BCM	Black Chrome	HUG	Hunter Green	TXF	Textured Forest
BGE	Beige	MDS	Mojave Desert Sandstone	WCP	Weathered Copper
BPP	Brown Patina Powder	NBP	Natural Brass Powder	WIR	Weathered Iron
CAP	Clear Anodized Powder	OCP	Old Copper	*Also available in RAL Finishes See submittal SUB-1439-00*	

Lens Type
12 - Soft Focus Lens
13 - Rectilinear Lens

Shielding
11 - Honeycomb Baffle

DRIVER DATA

Input Volts	InRush Current	Operating Current	Dimmable	Operation Ambient Temperature
12VAC/DC 50/60Hz	<250mA (non-dimmed)	500mA	Magnetic Low Voltage Dimmer	-22°F-194°F (-30°C - 90°C)

LM79 DATA

BK No.	CCT (Typ.)	Input Watts (Typ.)	CRI (Typ.)
e100	2700K	5.0	80
e101	3000K	5.0	80
e102	4000K	5.0	80
e103	Amber (590nm)	5.0	~

L70 DATA

Minimum Rated Life (hrs.) 70% of initial lumens(L70)
50,000
50,000
50,000
50,000

*OPTICAL DATA

Beam Type	Angle	e102 CBCP	Visual Indicator
Narrow Spot	13°	4527	Red Dot
Spot	15°	3434	Green Dot
Medium Flood	23°	1304	Yellow Dot
Wide Flood	31°	805	Blue Dot

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www.bklighting.com • info@bklighting.com

RELEASED 08-10-16
DRAWING NUMBER SUB001016

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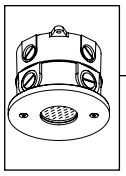


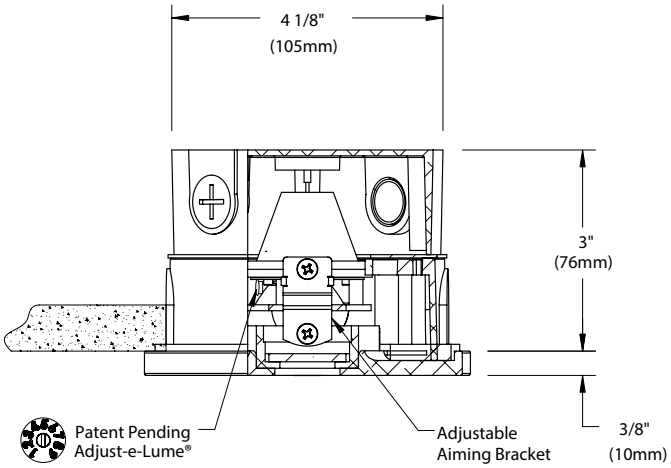
BKSSL SOLID STATE LIGHTING

the power of dimming with adjust-e-lume® TECHNOLOGY

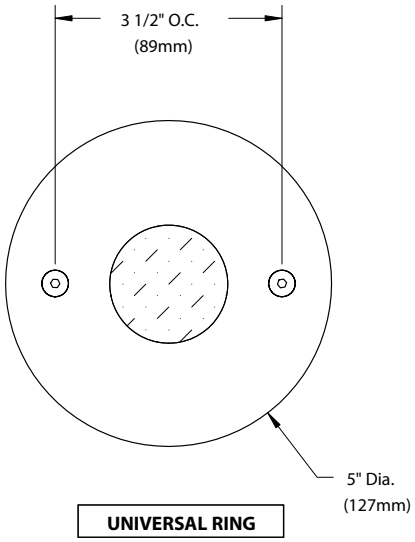
VERSA STAR™

PROJECT:	
TYPE:	D

SIDE VIEW

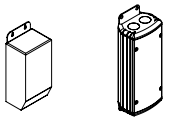


FACEPLATE DETAIL



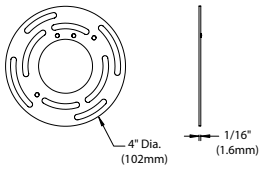
Accessories *(Configure separately)*

Remote options:



TR Series UPMRM™

UNIVERSAL RING



All dimensions indicated on this submittal are nominal.
Contact Technical Sales if you require more stringent specifications.

SPECIFICATIONS

GreenSource Initiative™
Metal and packaging components are made from recycled materials. Manufactured using renewable solar energy, produced on site. Returnable to manufacturer at end of life to ensure cradle-to-cradle handling. Packaging contains no chlorofluorocarbons (CFC's). Use of this product may qualify for GreenSource efficacy and recycling rebate(s). Consult www.bklighting.com/greensource for program requirements.

Materials
Furnished in Copper-Free Aluminum (Type 6061-T6), Brass (Type 360) or Stainless Steel (Type 316).

Backbox
Round, 4-1/4" dia. x 3-1/8" deep construction with [2] mounting tabs. Front access for wire connection and inspection. Provided with [5] 1/2" NPS tapped holes and [4] plugs. Suitable for concrete pour.

Faceplate
Fully machined from solid billet. Countersunk holes provide for flush hardware mounting with [2] tamper-resistant, stainless steel mounting screws. Stainless steel universal mounting ring for faceplate adjustment and 1/8" thick HT-805A silicone foam gasket with acrylic adhesive for water-tight seal. Accommodates [1] lens or louver media.

Lens
Shock resistant, tempered, glass lens is factory adhered to faceplate. Specify soft focus (#12) or rectilinear (#13) lens.

BKSSL®
Integrated solid state system with 'e' technology is scalable for field upgrade. Modular design with electrical quick disconnects permit field maintenance. High power, forward throw source complies with ANSI C78.377 binning requirements. Exceeds ENERGY STAR® lumen maintenance requirements. LM-80 certified components.

Integral, constant current driver. 12VAC/VDC input. 50/60Hz. Proprietary input control scheme achieves power factor correction and eliminates inrush current. Output, over-voltage, open-circuit, and short circuit protected. Inrush current limited to <1A (non-dimming). Conforms to Safety Std. C22.2 No. 250.13-12.

Dimming
Line voltage dimmable via magnetic low voltage dimmer. For use with low voltage dimmer with dedicated neutral conductor. For purposes of dimming: Remote magnetic transformer with BKSSL® Power of 'e' technology loads should be loaded to 25% of the transformer VA (watts) rated value.

Optics
Interchangeable OPTIKIT™ modules permit field changes to optical distribution. Color-coded for easy reference: Narrow Spot (NSP) = Red. Spot (SP) = Green. Medium Flood (MFL) = Yellow. Wide Flood (WFL) = Blue. Adjustable optical bracket provides up to 24° vertical aiming.

Adjust-e-Lume® (Pat. Pending)
Integral electronics allows dynamic lumen response at the individual fixture. Indexed (100% to 25% nom.) lumen output. Maintains output at desired level or may be changed as conditions require. Specify factory preset output intensity.

Remote Transformer
For use with 12VAC BKSSL remote transformer or magnetic transformers only. B-K Lighting cannot guarantee performance with third party manufacturers' transformers.

Wiring
Teflon® coated, 18AWG, 600V, 250° C rated and certified to UL 1659 standard.

Hardware
Tamper-resistant, stainless steel hardware. Faceplate screws are additionally black oxide treated for additional corrosion resistance.

Finish
StarGuard®, our exclusive RoHs compliant, 15 stage chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. Brass components are available in powder coat or handcrafted metal finish. Stainless steel components are available in handcrafted metal finish. (Brushed finish for interior use only).

Warranty
5 year limited warranty.

Certification and Listing
ITL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards. RoHs compliant. Suitable for indoor or outdoor use. Suitable for installation in combustible materials (Type Non-IC). Suitable for use in wet locations. Suitable for installation within 4' of the ground. IP65 Rated. Made in USA.

c UL us LISTED RoHS MADE IN THE USA

**Teflon is a registered trademark of DuPont Corporation.*
**Energy Star is a registered trademark of the United States Environmental Protection Agency.*

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www.bklighting.com • info@bklighting.com

RELEASED	DRAWING NUMBER
08-10-16	SUB001016

TBLW-LED

WALL | CEILING | PENDANT | OUTDOOR

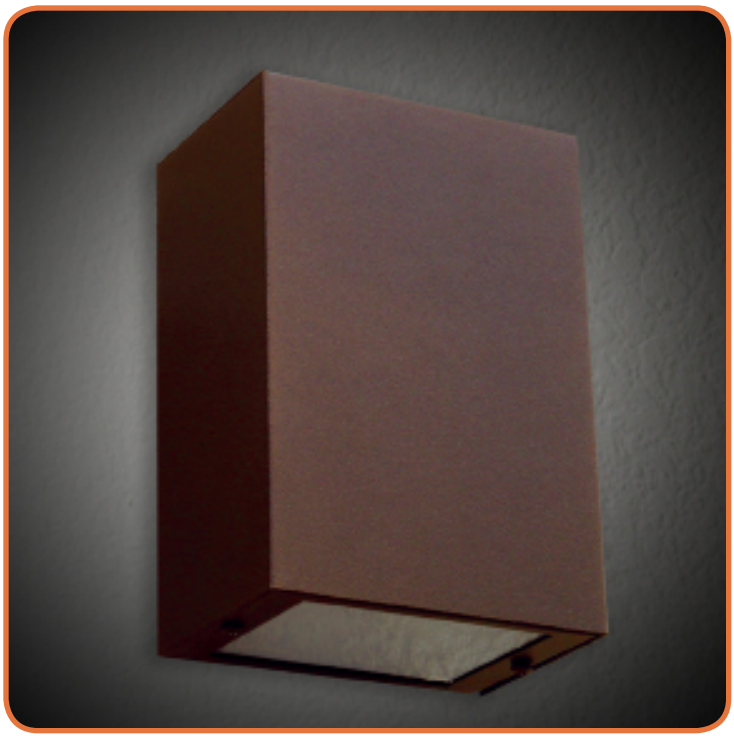
Construction:
- Steel housing and chassis
- Bottom lens is clear tempered glass

Light Source:
- LED
- Dimming (0 - 10v) to 10% **Included**

Notes:
- Integral mounting plate
- Optional all aluminum construction painted finish only
- Optional photocell - specify voltage 120v or 277v
- Optional battery backup; increases fixture depth by ¾"
- UL and CUL listed WET location
- LED Components
  - OSRAM Distributed Array
  - CRI > 80
  - 11w - 1200 Lumens
  - 18w - 2100 Lumens
  - Osram LED Driver
  - 5-Year Warranty on LED Components

OSRAM LED TECHNOLOGY INCLUDED

Type:	
Job Name:	E



TBLW-13-LED
Height - 13 ¾"
Width - 7 ¾"
Depth - 7 ¼"

ORDERING INFORMATION

Example: TBLW-13-LED-U-11W-3-Z3-CEG

TBLW-13-LED		U	11W	2	B1	CEG	

Model	Cage	Voltage	Lamping	Kelvin	Finish	Diffuser	Options
TBLW-13-LED		**U** 120 - 277	**11w** LED / 1200lm **18w** LED / 2100lm	**2** 3000K **3** 3500K **4** 4000K	**B1** Satin Black **W2** Gloss White **Z1** Satin Bronze **Z3** Text Bronze **Optional** (See Price List) **W1** Yolk **W3** Text White **B2** Text Black **T4** Shimmer Gray **M13** Anod Silver **T6** Pewter **W13** Pearl Beige **P2** Brushed Alum **P9** Brushed Nickel **M16** Antique Brass	**CEG** Clear Tempered Glass	**DIM** LED dimming driver (0 - 10v) Dimming to 10% (**Included**) **DIM1** LED dimming driver (0 - 10v) Dimming to 1% (**See Price List**) **42** All Aluminum Construction **21** Photocell - *See Notes* -**01** 120 volt -**02** 277 volt **Battery Back Options** **BB10** 10 Watts for 90-Minutes

28435 Industry Drive., Valencia, California 91355
West Coast Sales: 800-325-4448 /661-257-0286• fax 800-323-2346 /661-257-0201
East Coast Sales: 866-350-0991 • fax 866-490-5754
www.lightwayind.com • sales@lightwayind.com

4 Corners 2700K LED Deck Light TZT

16111TZT27 (Textured Tannery Bronze)

Project Name: _____
Location: _____
Type: F
Qty: _____
Comments: _____

Ordering Information

Product ID	16111TZT27
Finish	Textured Tannery Bronze
Available Finishes	AZT, AZT, BKT, BKT, TZT, TZT

Electrical

Voltage	15V

Qualifications

Safety Rated	Wet
Warranty	www.kichler.com/warranty

Primary Lamping

Light Source	LED
Lamp Included	Not Included
Max or Nominal Watt	2.5W

Dimensions

Height	2.25"
Width	3.25"

Kichler
7711 East Pleasant Valley Road
Cleveland, Ohio 44131-8010
Toll free: 866.558.5706 or kichler.com

Notes:
1) Information provided is subject to change without notice. All values are design or typical values when measured under laboratory conditions.
2) Incandescent Equivalent: The incandescent equivalent as presented is an approximate number and is for reference only.

KICHLER

Att. W

The key to success starts with a solid foundation.
ENGINEERING | EXPLORATION | EXPERIENCE

`

Geotechnical Report

Proposed Condominiums

161 York Street, Portland, Maine

Client
York Street Redevelopment, LLC
42 Market Street
Portland, ME

SUMMIT
GEOENGINEERING SERVICES

145 Lisbon Street (PO Box 7216) Lewiston, Maine 04243 | (207) 576-3313
173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

Project #: 16161
Date: 9/19/2016

September 19, 2016
Summit #16161

York Street Redevelopment, LLC
Attn: Michael Cianchette
42 Market Street
Portland, Maine 04104

Reference: Geotechnical Engineering Services - Proposed Condominiums,
161 York Street, Portland, Maine

Dear Michael;

Summit Geoengineering Services, Inc. (SGS) has completed a geotechnical investigation for the proposed condominium building at the site referenced above. Our scope of services included the drilling of four test borings and one test probe within the proposed building footprint, laboratory testing of collected soil samples, and preparing this geotechnical report summarizing our findings and providing geotechnical recommendations.

Our scope of services for this project did not include an environmental site assessment or further investigation for the presence or absence of hazardous or toxic material on, below, or around the site. Any statements in this report, or on the soil boring logs, regarding odors or unusual and suspicious conditions observed are for informational purposes and are not intended to constitute an environmental assessment.

1.0 Project and Site Description

We understand that the project consists of the construction of a new 5 story steel framed building located at 161 York Street in Portland, Maine. Based on a preliminary floor plan concept and grading plan of the proposed development, the new building will be rectangular in shape and have a footprint of approximately 7,000 square feet. The ground floor will have a finish floor elevation (FFE) of 50.75 feet, consist of parking and storage/mechanical rooms, and will be accessed from York Street to the east. The first floor will have a FFE of 60.75', will consist of partially parking and partially condos, and will be accessed from Guilford Court to the north. The top three floors will be condos. Two exterior retaining walls are proposed along the north side of the property, one in the parking area to the north of the proposed building and one for a patio area. The maximum exposed height of the exterior retaining walls will be 6 feet.

The existing site is bound by York Street to the east, existing apartments to the north and south, and Guilford Court to the west. Existing grades slope up in a westerly direction from elevation 50 feet at York Street to elevation 64 feet at the west end of the property. The front portion of the site adjacent to York Street is a gravel surface and the back end of the site is partially wooded and grassed. There are loose stone and timber retaining walls present around

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173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

the perimeter of the site. There were two buildings (both 2-story dwellings towards the front end of the site) on the property that were demolished earlier this year. We understand that the entirety of the building foundations were removed.

Based on the building layout concepts provided to us, the west end (Guilford Court) of the garage floor will extend out beyond the upper floor footprint approximately 13 feet. This "bumpout" will be covered with soil and the area above will be used as parking accessed via Guilford Court. Including the height of soil above the wall, the garage walls will retain soil heights of up to 13 feet. In general, finish exterior grade around the proposed building will approximately match existing grade. During construction, cuts of up to 16 feet will be required to construct the footings.

2.0 Subsurface Exploration and Laboratory Testing

2.1 Subsurface Exploration

Summit Geoengineering Services (SGS) observed the subsurface conditions with the drilling of 4 test borings and 1 test probe on August 24, 2016 using a track mounted AMS Power Probe 9500 VTR rig. The borings (B-1 thru B-4) and the probe (P-1) were performed within the building footprint. Refusal (probable bedrock) was encountered in all of the borings and probe ranging in depth from 6.1 feet to 16.1 feet below ground surface.

The borings were advanced using 2 1/4" hollow stem augers. During the borings, split spoon sampling was conducted in general accordance with ASTM D1586 at a minimum of 5 foot intervals. Test probe P-1 was advanced to refusal using a direct push spear-tip probe.

The boring and probe locations were marked by SGS prior to the day of the explorations. The locations of the explorations are shown on the Exploration Location Plan in Appendix A. Boring Logs and the Probe Log are provided in Appendix B.

2.2 Laboratory Testing

Laboratory testing was performed on a sample of the existing fill recovered from a split spoon sample in Boring B-4. Laboratory testing consisted of a grain size analysis in accordance with ASTM D6913. Results from the grain size test are summarized below:

GRAIN SIZE ANALYSIS RESULTS – EXISTING FILL						
Boring	**Sample**	**Depth**	**Composition**			**[1]USCS**
			Gravel	Sand	Fines	
B-4	S-2	5' to 7'	11%	57%	32%	SM

[1]USCS = Unified Soil Classification System

Detailed results from the laboratory testing can be found in Appendix C.

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173 Pleasant Street Rockland, Maine 04841 | (207) 318-7761
www.summitgeoeng.com

3.0 Subsurface Conditions

The subsurface conditions presented herein are based on the findings from the test borings and probe performed by SGS on August 24, 2016.

3.1 Soil

The following subsurface layers and thicknesses were encountered in our geotechnical investigation, starting from the ground surface:

- ***Topsoil,*** 6 inches to 12 inches
- ***Fill,*** 4.0 feet to 11.0 feet
- ***Glacial Till,*** 3.9 feet to 7.2 feet (Borings B-3 and B-4 only)

The ***Topsoil*** was encountered starting at the ground surface in Borings B-3 and B-4 and Probe P-1 and is described as brown sandy silt with rootlets. It is dry, loose, and visually classifies as ML in accordance with the Unified Soil Classification System (USCS). Existing fill was encountered at the ground surface for the remaining borings (see below for description).

The ***Fill*** encountered in the borings ranges in thickness from 4.0 feet to 11.0 feet and is described as reddish brown to brown silty sand or sandy silt with trace to some gravel and cobble pieces. Possible rubble or cobbles were encountered during auger advancement within the fill layer. A few small wood pieces were present in the fill in Boring B-2 and ash/brick is present in the fill at Boring B-4. Blow counts collected during Standard Penetration Tests (SPT N-values) for the fill range from 8 blows per foot (bpf) to 40 bpf and average 16 bpf. In general, the fill is dry to humid and compact to dense.The fill visually classifies as SM and/or ML in accordance with the USCS.

The ***Glacial Till*** deposit was encountered in Borings B-3 and B-4 and starts a depth of 5 feet to 7 feet below ground surface and extends to refusal. The glacial till is described as tan fine sandy silt with no to little clay and trace to little cobbles and gravel. It is compact, humid to moist, and visually classifies as ML in accordance with USCS. SPT N-values for the glacial till range from 15 blows per foot (bpf) to 23 bpf and average 19 bpf.

3.2 Bedrock

Bedrock (presumed from auger refusal) was encountered at depths ranging from 6.1 feet to 16.1 feet below existing ground surface. Based on interpolation from a site plan provided to us, bedrock surface elevation ranges from EL 42.2 feet to EL 50.6 feet with no specific trend across the site. Mapping by the Maine Geological Survey indicates the bedrock at the site is of the Precambrian Z Spring Point Formation consisting of green schist and amphibolites facies ranging from mafic to felsic volcanic rock.

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The table below summarizes the bedrock depths and approximated elevations encountered in our explorations.

BEDROCK DEPTH and ELEVATION		
Boring/Probe	**Bedrock Depth (ft.)**	**Bedrock Elevation (ft.)**
B-1	11.0’	41.5’ +/-
B-2	6.1’	50.6’ +/-
B-3	8.9’	47.6’ +/-
B-4	14.2’	44.8’ +/-
P-1	16.1’	42.2’ +/-

NOTE: Bedrock elevations are approximated from interpolation of a topographic site plan provided to us.

3.3 Groundwater

On the day of the explorations, groundwater was not observed in the borings. The soil/rock fragments recovered in the spoon samples collected at the bedrock surface were moist to wet, likely indicating that groundwater flows along the surface of the bedrock. Groundwater elevation may rise during seasonal fluctuations of rainfall and snowmelt.

4.0 Geotechnical Evaluation

There are multiple geotechnical considerations associated with the construction of the proposed condominium building, which include following:

- Potential for differential or local settlement of footings bearing partially on bedrock and partially on granular soil.
- Potential for bedrock removal required to construct the footings, garage slab, or underground stormwater detention chambers.
- Presence of existing rubble in foundation excavations.
- Large loads on garage foundation walls that will retain up to 14 feet of soil.
- Need for temporary shoring along the west side of the property. We estimate a maximum cut of 16 feet will be required within 5 feet of the property line.

Based on the findings from our geotechnical explorations, the new building can be adequately supported using conventional shallow footings on a frost wall with a slab-on-grade. The recommendations provided in Section 5.0 will address the considerations listed above.

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5.0 Foundation Recommendations

The proposed building can be supported using conventional shallow footings on a frost wall with a slab-on-grade. Recommendations for the foundation design, subgrade preparation, groundwater control, and seismic design are presented herein.

5.1 Foundation Bearing Pressure

Based on our explorations and the assumed ground level FFE of 50.75', we anticipate that interior and exterior footings will be supported on a combination of existing fill, native glacial till, and bedrock. Assuming that the recommendations provided below are followed, we recommend that footings bearing on existing fill and native glacial till be proportioned using an allowable bearing pressure of 4,000 psf and footings bearing on bedrock be proportioned using an allowable bearing pressure of 10,000 psf. Total settlement is expected to be less than 1.0" and differential settlement is expected to remain within tolerable limits. The allowable bearing pressure above is based on the following conditions:

- All topsoil and existing demolition rubble/debris is removed from within the proposed building footprint.
- If present, existing foundation elements are removed from within the proposed building footprint. Based on our observations, geotechnical investigation, and conversation with our client, it appears that the foundation elements from the existing buildings have been removed.
- All footings exposed to freezing temperatures (including interior footings constructed in non-heated garage areas) are constructed at the recommended frost protection depth of 4' below finish grade for footings constructed on soil or a minimum of 2' below grade for footings constructed on bedrock.
- All interior footings in heated areas are constructed a minimum of 1.5 feet below finished floor elevation. Thickening of the slab at column locations is also an option.
- Any soft, wet, loose, or otherwise unsuitable material exposed at the bottom of the footing excavations is removed and replaced with ¾" crushed stone. Unsuitable soils should be removed from beneath footings at a 1H:1V taper beyond all edges of the footing. SGS should be notified in the event that substantial unsuitable soils are discovered.
- Soil exposed at the bottom of the footing excavations is proofrolled by making a minimum of 4 passes with a walk-behind plate compactor.
- If bedrock is exposed in the footing excavation, any loose or weathered rock is removed from beneath the footing area to expose a hard, competent bedrock surface. Any large gaps or voids created by removing loose pieces of bedrock are filled with ¾" crushed stone, flowable fill, or lean concrete.
- All placed fill within the building footprint consists of Structural Fill (SF, see Section 5.6 for gradation and compaction requirement) or ¾" crushed stone.

- Transition zones for footings spanning bedrock to native glacial till/existing fill are constructed in accordance with the Bedrock Transition Zone Construction Detail provided in Appendix A.

5.2 Retaining Wall Design Parameters

Based on the plans provided to us, foundation walls for the proposed building will retain up to 13 feet of soil. Assuming that the recommendations presented in this report are followed, Foundation Backfill (FB, presented in Section 5.3) can be assumed to be the soil on the exterior of the foundation walls, and either native glacial till/existing fill or bedrock can be assumed to be located beneath the footing.

PARAMETER	[1]Foundation Backfill	[2]Native Till/ Existing Fill	Bedrock
Total Natural (moist) Unit Weight (γ_t)	125 pcf	130 pcf	140 pcf
Saturated (buoyant) Unit Weight (γ_s)	63 pcf	58 pcf	78 pcf
Friction Coefficient (f)	0.40	0.45	0.60
Passive Earth Pressure Coefficient (K_p)	3.20	3.0	--
At Rest Earth Pressure Coefficient (K_o)	0.47	0.50	--
Active Earth Pressure Coefficient (K_a)	0.30	0.33	--
Effective Friction Angle (ϕ')	32^0	32^0	45^0
Undrained Shear Strength (S_u)	0	0	10,000 psf

[1]Based on 95% compaction of Foundation Backfill by ASTM D1557, Modified Proctor Test Method.
[2]Based on the proofrolling requirements presented in Section 5.1.

Equivalent fluid pressure on the foundation walls can be calculated by multiplying the applicable earth pressure coefficient by the soil unit weight. At-rest earth pressure coefficient (K_o) should be used if the wall is restricted against movement at the top (i.e., braced by framing) prior to backfilling. If the wall is designed as a cantilever wall and movement at the top is unrestricted, the active earth pressure coefficient can be used. When calculating the earth pressure on the foundation walls, the soil height above the top of the wall should be included in the force calculation. Any applicable vehicular or construction surcharge loading should be included in the design. Any foundation walls that include backfill on both sides that are not designed to accommodate differential soil pressures should not exceed a differential soil height of 2 feet.

Uplift capacity of the foundation includes the dead weight of the foundation, friction of the mobilized soil along the soil-to-soil shear plane, and weight of soil above the footings. Sliding

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resistance of the foundation includes passive resistance of the soil against the side of the foundation wall and the friction between the bottom of the footing and the underlying soil/bedrock. If additional sliding or uplift capacity is required, bedrock doweling or rock anchors should be considered. To mobilize the passive resistance of soil backfill against the wall, the wall must move a minimum of 0.2% of the total wall height. If the wall is not designed to undergo this movement, the passive soil resistance should be ignored.

5.3 Frost Protection

The design air freezing index for the Portland area is approximately 1,200 degree F days (10 year, 90% probability). Based on this, a total of 4 feet of frost protection should be provided for the exterior footings and interior footings exposed to freezing temperatures. However, in locations where the footing is supported by bedrock, footings may be constructed at a minimum depth of two feet below exterior finish grade provided that footings are cast directly on bedrock and foundation underdrains are constructed in accordance with Section 5.5.

We recommend that the exterior of all foundation elements exposed to freezing temperatures be backfilled with Foundation Backfill (FB). The portion of FB passing the 3" sieve size should meet the following gradation requirements:

FOUNDATION BACKFILL	
Sieve Size	**Percent Finer**
3 inch	100
¼ inch	25 to 100
No. 40	0 to 50
No. 200	0 to 7

Reference: MDOT Specification 703.06, Type E (2014)

Maximum particle size should be limited to 6 inches. Foundation backfill should be placed in 6 to 12 inch lifts and compacted to 95% of its optimum dry density determined in accordance with ASTM D1557.

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5.4 Seismic Design

Based on the summary of field and laboratory testing, we recommend Site Class C "very dense soil and soft rock" be used in accordance with the 2012/2015 International Building Code. The following seismic site coefficients should be used:

SUBGRADE SITE SEISMIC DESIGN COEFFICIENTS - IBC	
Seismic Coefficient	Site Class C
Short period spectral response (S_S)	0.241
1 second spectral response (S_1)	0.078
Maximum short period spectral response (S_{MS})	0.289
Maximum 1 second spectral response (S_{M1})	0.133
Design short period spectral response (S_{DS})	0.192
Design 1 second spectral response (S_{D1})	0.089

Subgrade conditions are not considered susceptible to liquefaction during seismic events.

5.5 Groundwater Control

Based on observed groundwater levels, groundwater is anticipated to be at or near the surface of the bedrock. However, seasonal perched water may be present during wet periods or from runoff and snowmelt. It will be critical to dewater behind the garage foundation walls to ensure that the garage area remains dry. Based on this, we recommend perimeter underdrains be installed along the exterior foundation walls. In addition, we recommend exterior grades slope away from the building footprint to reduce runoff water from infiltrating the foundation backfill soils.

Perimeter underdrains should consist of 4 inch rigid perforated PVC placed adjacent to the exterior footings and surrounded by a minimum of 6 inches of crushed stone wrapped in filter fabric to prevent clogging from the migration of the fine soil particles in the foundation backfill soils. The underdrain pipe should outlet to a location where it will be free flowing. If exposed at the ground surface, the ends of pipes should be screened or otherwise protected from entry and nesting of wildlife, which could cause clogging.

5.6 Ground Floor Slab-on-Grade and/or Pavement

This section provides recommendations for a concrete slab-on-grade or pavement surface in the event that both types of surface are used for the ground floor area. Additionally, this section will provide recommendations for both heated and unheated conditions. Based on an approximated finish floor elevation (FFE) of 50.75 feet, we anticipate that the slab/pavement will be supported on a combination of native till/existing fill and bedrock.

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5.6.1 Concrete Slab-on-Grade

To avoid cracking due to differential settlement, we recommend that the slab be constructed on a minimum of 12" of Structural Fill (SF, see table below). If bedrock is exposed beneath the slab, the SF layer can be reduced to 6". If the slab area is unheated, the slab subgrade thickness should be increased to 24" and the slab should be constructed on 2" of rigid insulation. Any exposed soil beneath the slab subgrade should be proof rolled with a minimum of 4 passes in each of two perpendicular directions with a 5 ton minimum (operating weight) vibratory roller. Any exposed rubble, debris, or other non-soil materials should be removed and replaced with ¾" crushed stone. If bedrock is exposed, any loose rock fragments or weather rock should be removed and replaced with ¾" crushed stone or compacted SF.

The portion of SF passing the 3" sieve shall meet the following gradation requirements:

STRUCTURAL FILL (SF)	
Sieve Size	**Percent finer**
3 inch	100
½ inch	38 to 80
¼ inch	25 to 65
No. 40	0 to 30
No. 200	0 to 7

Reference: MDOT Specification 703.06, Type D

The maximum particle size should be limited to 6 inches. Structural Fill should be placed in 6 to 12 inch lifts and should be compacted to a minimum of 95 percent of its maximum dry density, determined in accordance with ASTM D1557. For the conditions described above, the slab can be designed using a subgrade modulus value of 175 pci.

5.6.2 Pavement

The mean annual freezing index for the Portland area is estimated at 1,200 degree days. Based on the subgrade and mean annual freezing index, the anticipated mean annual frost penetration depth is 36 inches.

We recommend a minimum total section thickness of 18 inches for pavement areas. If bedrock is exposed in pavement subgrade excavations, the subbase soil thickness can be reduced as needed. 3" of base soil should be provided in all cases. We further recommend that the pavement section consist of the following materials:

MATERIAL	THICKNESS (in)	SPECIFICATION
Asphalt Surface Course	1	MDOT 703.09 Type 9.5 mm or Type 12.5 mm
Asphalt Binder Course	2	MDOT 703.09 Type 19 mm
Base Soil	3	MDOT 703.06 Type A
Subbase Soil	12	MDOT 703.06 Type D

For portions of the pavement subjected to light traffic loads of cars and light trucks we recommend MDOT Type 9.5mm surface course. The following specifications are for MDOT base and subbase gravel:

SIEVE SIZE	Percent Passing a 3-inch Sieve	
	MDOT Type A (Base)	MDOT Type D (Subbase)
3 Inch	100	100
2 Inch	100	--
½ Inch	45 – 70	35 – 80
¼ Inch	30 – 55	25 – 65
No. 40	0 – 20	0 – 30
No. 200	0 – 6	0 – 7

Reference: MDOT Specification 703.06, Aggregate for Base and Subbase (2014)

The recommendations above can be used for exterior pavement areas.

6.0 Exterior Retaining Walls

Two exterior retaining walls are proposed along the east side of the property, one in the parking area to the north of the proposed building and one for a patio area. The maximum height of the retaining walls will be 6 feet. We recommend that consideration be given to a segmental block retaining wall system consisting of a precast concrete block gravity wall. Segmental block walls are tolerant to some differential settlement and do not need to extend to full frost depth.

The exterior retaining walls should be designed by a qualified Maine Licensed Professional Engineer. An underdrain system should be provided continuously behind the retaining walls near their base to prevent the buildup of hydrostatic pressures. All underdrains should consist of 4" or 6" rigid perforated PVC surrounded by a minimum of 6 inches of ¾" crushed stone and filter fabric to prevent clogging from the migration of the fine soil particles in the foundation backfill soils. There should be a minimum of 12" of crushed stone behind the entire wall between the back of the concrete and the wall backfill to allow for any infiltrated water behind

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the wall to drain down to the underdrain pipe. Underdrains should outlet at the end of the walls to a location where it will be free flowing.

All topsoil, loose soil, or organic soil should be removed entirely from within the proposed retaining wall footprint prior to construction of the footing or leveling pad. If a segmental block wall is used, we recommend that the leveling pad consist of a minimum 9" thick layer of ¾" crushed stone place on a geotextile fabric (such as Mirafi 180N), which is placed directly on the proofrolled subgrade soil. We recommend that the exposed soil beneath the leveling pad be proofrolled prior to placing the geotextile and crushed stone. We recommend that the walls be designed using a minimum live load surcharge of 150 psf for temporary construction loading or vehicular loading behind the wall.

Segmental block retaining walls should be designed in accordance with the National Concrete Masonry Association (NCMA), 3rd Edition design manual. Foundation soil properties presented in Section 5.2 can be used in the retaining wall design.

Based on our explorations, we do not believe that a global stability analysis is necessary for the proposed retaining walls. We recommend that the final wall design be made available for SGS to review prior to construction.

7.0 Earthwork Considerations

Based on the proposed ground floor FFE and the existing site grades, we anticipate that temporary shoring will be required along part of the south wall, closer to the southwest corner of the site. Due to the presence of shallow bedrock, we believe that installed sheeting will have to be supported with a tieback or raker. Alternatively, steel H-Piles socketed into bedrock with timber lagging or a soil nail and shotcrete facing wall can be considered. The soil properties presented in Section 5.2 can be used in the design of this system. SGS is available to provide assistance for the design of the temporary shoring.

The existing fill/native till soils are classified as OSHA Type C soil. Based on this, general excavations less than a depth of 20 feet are limited to a maximum side slope of 1.5 horizontal to 1 vertical in the existing fill/native glacial till.

Excavations within the existing fill soil or native glacial till may be susceptible to subgrade softening when exposed to excessive surface water or groundwater. Surface water should be redirected from excavation areas. Where softened, we recommend the subgrade at the base of the excavation be over-excavated and replaced with a minimum of 12 inches of Crushed Stone. Alternatively, soft areas can be reinforced with geotextile. Crushed Stone should be should be tamped to lock the stone structure together. Crushed Stone should meet the following gradation specification:

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CRUSHED STONE ¾ INCH	
Sieve Size	**Percent finer**
1 inch	100
¾ inch	90 to 100
½ inch	20 to 55
⅜ inch	0 to 15
No. 4	0 to 5

Reference: MDOT Specification 703.13, Crushed Stone ¾-Inch (2014)

In the event that rubble is encountered in the foundation excavation, it should be removed from beneath slab or footings areas and replaced with compacted SF or ¾" crushed stone.

In general, we do not anticipate groundwater within footing excavations. If localized perched groundwater is encountered, dewatering may consist of shallow sumps at the base of the excavation. Diversion and control of surface water should be performed to prevent water flow from rain or snowmelt from entering the excavations.

We recommend that a qualified geotechnical consultant be retained to monitor and test soil materials used during construction and confirm that soil conditions and construction methods are consistent with this report.

Controlled blasting should be performed in accordance with the General Blasting Criteria included in Appendix D. All blasting should be complete prior to the construction of any footings.

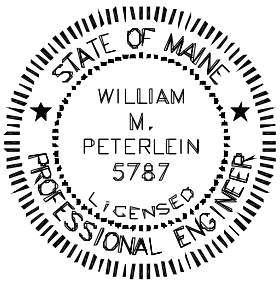
8.0 Closure

Our recommendations are based on professional judgment and generally accepted principles of geotechnical engineering and project information provided by others. Some changes in subsurface conditions from those presented in this report may occur. Should these conditions differ materially from those described in this report, SGS should be notified so that we can re-evaluate our recommendations.

It is recommended that this report be made available in its entirety to contractors for informational purposes and be incorporated in the construction Contract Documents. We recommend that SGS be retained to review final construction documents relevant to the recommendations in this report, including the foundation design, any temporary shoring plans, and retaining wall designs.

We appreciate the opportunity to serve you during this phase of your project. If there are any questions or additional information is required, please do not hesitate to call.

Sincerely,
Summit Geoengineering Services, Inc.



Mathew Hardison, EI
Geotechnical Engineer

William M. Peterlein, PE
President & Principal Engineer

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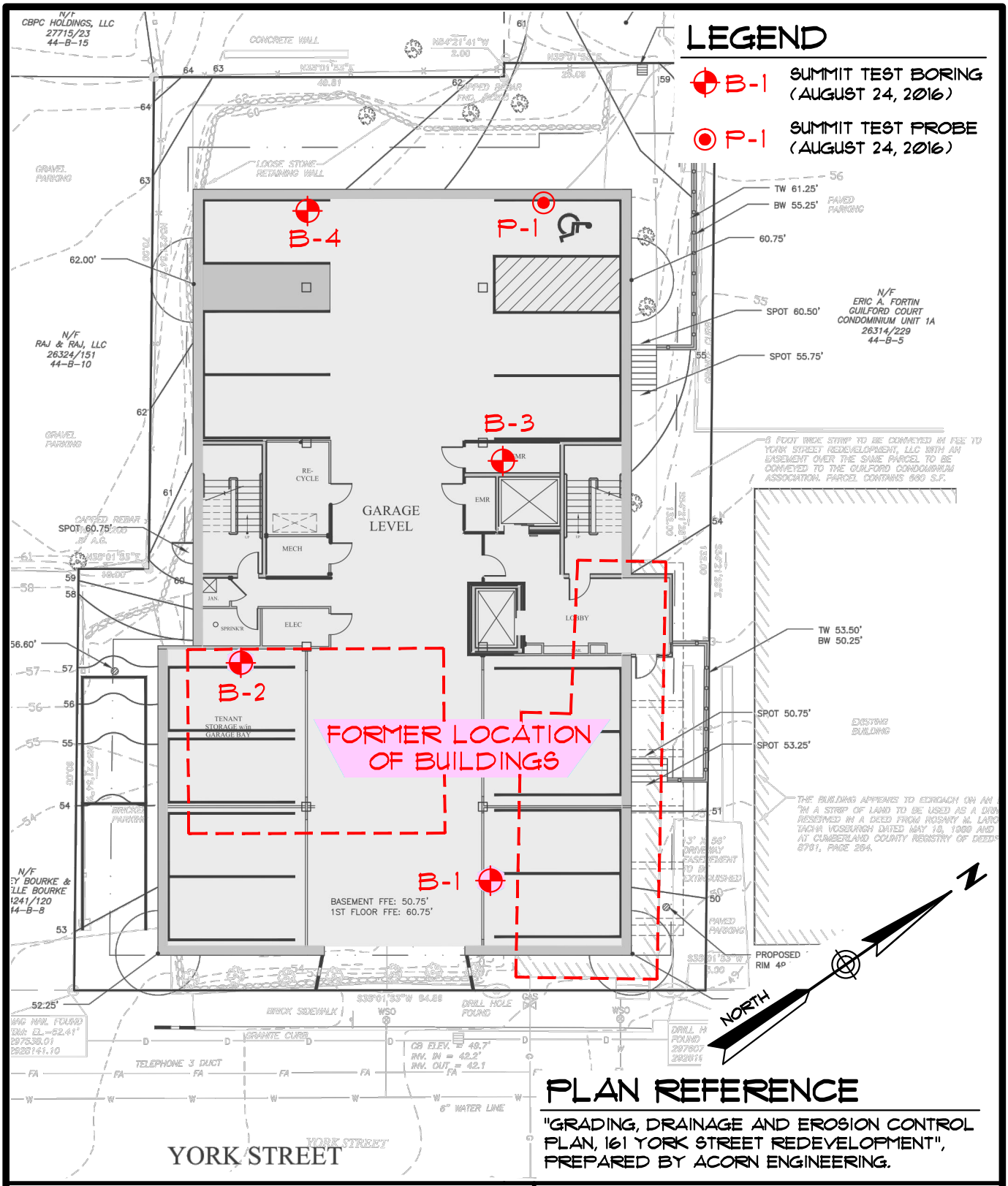
APPENDIX A

FIGURES



PLAN REFERENCE

"GRADING, DRAINAGE AND EROSION CONTROL PLAN, 161 YORK STREET REDEVELOPMENT", PREPARED BY ACORN ENGINEERING.

TEST BORING LOCATION PLAN
PROPOSED APARTMENT BUILDING

161 & 163 YORK STREET - PORTLAND, MAINE

PREPARED FOR

YORK STREET REDEVELOPMENT, LLC

DATE: 9-15-2016	DRAWN BY: KRF	CHECKED BY: WMP
JOB: 16161	SCALE: 1" = 20'	FILE: 16161 BOR

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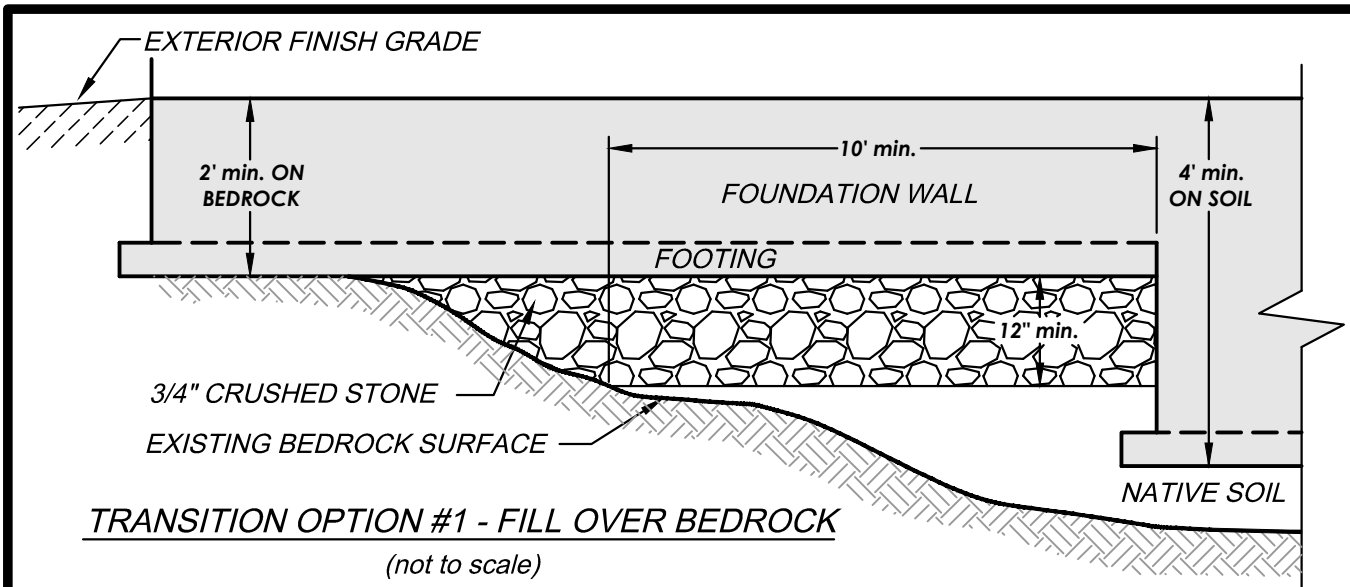
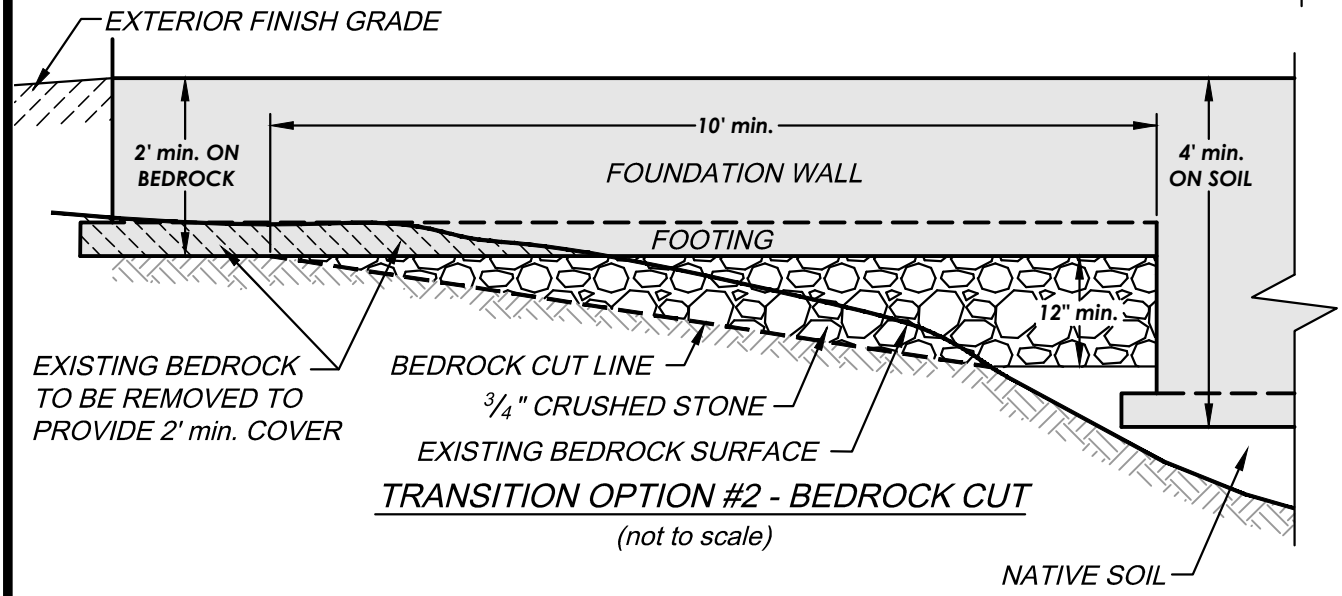


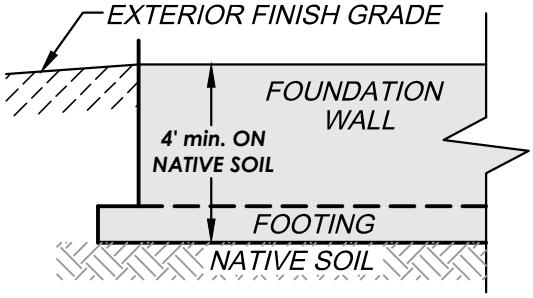
TRANSITION OPTION #1 - FILL OVER BEDROCK

(not to scale)



TRANSITION OPTION #2 - BEDROCK CUT

(not to scale)



FOOTING - NO BEDROCK

(not to scale)

BEDROCK TRANSITION DETAIL
PROPOSED APARTMENT BUILDING

161 & 163 YORK STREET - PORTLAND, MAINE

PREPARED FOR

YORK STREET REDEVELOPMENT, LLC

DATE: 9-15-2016	DRAWN BY: KRF	CHECKED BY: WMP
JOB: 16161	SCALE: 1" = 20'	FILE: 16161 BOR

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APPENDIX B

EXPLORATION LOGS

EXPLORATION COVER SHEET

The exploration logs are prepared by the geotechnical engineer from both field and laboratory data. Soil descriptions are based upon the Unified Soil Classification System (USCS) per ASTM D2487 and/or ASTM D2488 as applicable. Supplemental descriptive terms for estimated particle percentage, color, density, moisture condition, and bedrock may also be included to further describe conditions.

Drilling and Sampling Symbols:

SS = Split Spoon Sample
UT = Thin Wall Shelby Tube
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RW = Rotary Wash
SV = Shear Vane
PP = Pocket Penetrometer
RC = Rock Core Sample
FV = Field Vane Shear Test
PS = Concrete Punch Sample
Hyd = Hydraulic Advancement of Drilling Rods
Push = Direct Push of Drilling Rods
WOH = Weight of Hammer
WOR = Weight of Rod
PI = Plasticity Index
LL = Liquid Limit
W = Natural Water Content
USCS = Unified Soil Classification System
Su = Undrained Shear Strength
Su(r) = Remolded Shear Strength

Water Level Measurements:

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations. Groundwater monitoring wells may be required to record accurate depths and fluctuation.

Gradation Description and Terminology:

Boulders:	Over 12 inches	Trace:	Less than 5%
Cobbles:	12 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 30%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 30%
Silt:	No. 200 sieve to 0.005 mm		
Clay:	less than 0.005 mm		

Density of Granular Soils and Consistency of Cohesive Soils:

CONSISTENCY OF COHESIVE SOILS		DENSITY OF GRANULAR SOILS	
SPT N-value blows/ft	**Consistency**	**SPT N-value blows/ft**	**Relative Density**
0 to 2	Very Soft	0 to 4	Very Loose
2 to 4	Soft	5 to 10	Loose
5 to 8	Firm	11 to 30	Compact
9 to 15	Stiff	31 to 50	Dense
16 to 30	Very Stiff	>50	Very Dense
>30	Hard		

SOIL BORING LOG

SUMMIT GEOENGINEERING SERVICES

Project:	Proposed Condominiums	Boring #:	**B-1**
Location:	161 York Street	Project #:	16161
City, State:	Portland, Maine	Sheet:	1 of 1
		Chkd by:	

Drilling Co:	Summit Geoengineering Services	Boring Elevation:	52.5 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Existing Conditions / Site Plane by Spurwink Surveying, LLC. Dated 9/23/15
Summit Staff:	M. Hardison, E.I.	Date started: 8/24/2016	Date Completed: 8/24/2016

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	2.25" H.S.A.	Hammer:	140 lb
Hammer Style:	Automatic	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
8/24/2016	-	-	Dry to bottom of hole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	S-1	24/4	0 to 2	2		Brown Silty SAND, some Gravel, compact to dense, dry, SM (Minimal Recovery)		
1				13				
				12/5"				FILL
2								
3								
						Cobbles or Rubble encountered in drilling from 3' depth		
4						to 5' depth		
5								
	S-2	24/24	5 to 7	14		Reddish Sandy SILT, some Gravel and Cobble pieces,		
6				18		dense, dry, ML		
				22				
7				21				
8								
9								
10								
	S-3	24/5	10 to 12	32		Brown Silty SAND with frequent Cobble pieces,		
11				50/6"	41.5'	dense, moist, SM		
						End of Boring at 11.0', Refusal on Probable Bedrock		PROBABLE BEDROCK
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Proposed Condominiums	Boring #:	B-2
Location:	161 York Street	Project #:	16161
City, State:	Portland, Maine	Sheet:	1 of 1
		Chkd by:	

Drilling Co:	Summit Geoengineering Services	Boring Elevation:	56.7 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Existing Conditions / Site Plane by Spurwink Surveying, LLC. Dated 9/23/15
Summit Staff:	M. Hardison, E.I.	Date started: 8/24/2016	Date Completed: 8/24/2016

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	2.25" H.S.A.	Hammer:	140 lb
Hammer Style:	Automatic	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
8/24/2016	-	-	Dry to bottom of hole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	S-1	24/10	0 to 2	3		Brown Sandy SILT, trace Gravel, compact, dry, ML		
1				7				
				6				FILL
2				7				
	S-2	24/3	2 to 4	2		similar to above, occasional wood pieces (Minimal		
3				5		Recovery)		
				8				
4				5				
5								
	S-3	24/12	5 to 7	3		Reddish brown Silty SAND, loose to compact, moist to		
6				7	50.6'	wet, SM		
				6/1"		End of Boring at 6.1', Refusal on Probable Bedrock		PROBABLE BEDROCK
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-3**

Project:	Proposed Condominiums	Project #:	16161
Location:	161 York Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services	Boring Elevation:	56.5 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Existing Conditions / Site Plane by Spurwink Surveying, LLC. Dated 9/23/15
Summit Staff:	M. Hardison, E.I.	Date started: 8/24/2016	Date Completed: 8/24/2016

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	2.25" H.S.A.	Hammer:	140 lb
Hammer Style:	Automatic	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
8/24/2016	-	-	Dry to bottom of hole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	S-1	24/20	0 to 2	1		Brown Sandy SILT, trace rootlets, very loose, dry,		
1				1	55.5'	ML		TOPSOIL
				3				
2				6				
						Cobbles or Rubble encountered in drilling from 2' depth		FILL
3						to 5' depth		
4								
5					51.5'			
	S-2	24/24	5 to 7	7		Tan fine Sandy SILT, trace Gravel and Cobble		
6				11		pieces, mottling, compact, humid, ML		GLACIAL TILL
				12				
7				16				
8						Cobbles encountered in drilling at 8.9' depth		
9					47.6'			
						End of Boring at 8.9', Refusal on Probable Bedrock		PROBABLE BEDROCK
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-4**

Project: Proposed Condominiums | Project #: 16161
Location: 161 York Street | Sheet: 1 of 1
City, State: Portland, Maine | Chkd by:

Drilling Co: Summit Geoengineering Services
Driller: C. Coolidge, P.E.
Summit Staff: M. Hardison, E.I.

Boring Elevation: 59.0 ft. +/-
Reference: Existing Conditions / Site Plane by Spurwink Surveying, LLC. Dated 9/23/15
Date started: 8/24/2016 Date Completed: 8/24/2016

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	2.25" H.S.A.	Hammer:	140 lb
Hammer Style:	Automatic	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
8/24/2016	dry to 9.4'	-	Measured after completion, caved at 9.4'

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	S-1	24/6	0 to 2	1	58.5'	Brown Sandy SILT, trace rootlets, very loose, dry, ML		TOPSOIL
1				4		Brown Silty SAND and ASH, loose, dry, SM		
				4				
2				3				FILL
3								
4								
5							Gravel = 11%	
	S-2	24/20	5 to 7	8		Brown Silty medium to fine SAND with Brick pieces and	Sand = 57%	
6				11		Ash, Cobble, compact, humid, ML	Fines = 32%	
				11			Moisture = 10.3%	
7				8	52.0'			
8								
9								GLACIAL TILL
10								
	S-3	24/8	10 to 12	4		Tan fine Sandy SILT, little Clay and Cobble pieces,		
11				5		moist, ML		
				10				
12				15				
13								
14					44.8'			
						End of Boring at 14.2', Refusal on Probable Bedrock		PROBABLE BEDROCK
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL PROBE LOG

Probe #: **P-1**

Project:	Proposed Condominiums	Project #:	16161
Location:	161 York Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services	Boring Elevation:	58.3 ft. +/-
Driller:	C. Coolidge, P.E.	Reference:	Existing Conditions / Site Plane by Spurwink Surveying, LLC. Dated 9/23/15
Summit Staff:	M. Hardison, E.I.	Date started: 8/24/2016	Date Completed: 8/24/2016

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	N/A
Model:	AMS Power Probe	Diameter:	N/A
Method:	Speartip	Hammer:	N/A
Hammer Style:	Automatic	Method:	N/A

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
8/24/2016	-	-	

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
				PROBE				
16				▼	42.2'	End of Probe at 16.1', Speartip Refusal on Probable Bedrock		PROBABLE BEDROCK

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

APPENDIX C

LABORATORY TEST RESULTS

SUMMIT
GEOENGINEERING SERVICES

GRAIN SIZE ANALYSIS - ASTM D6913

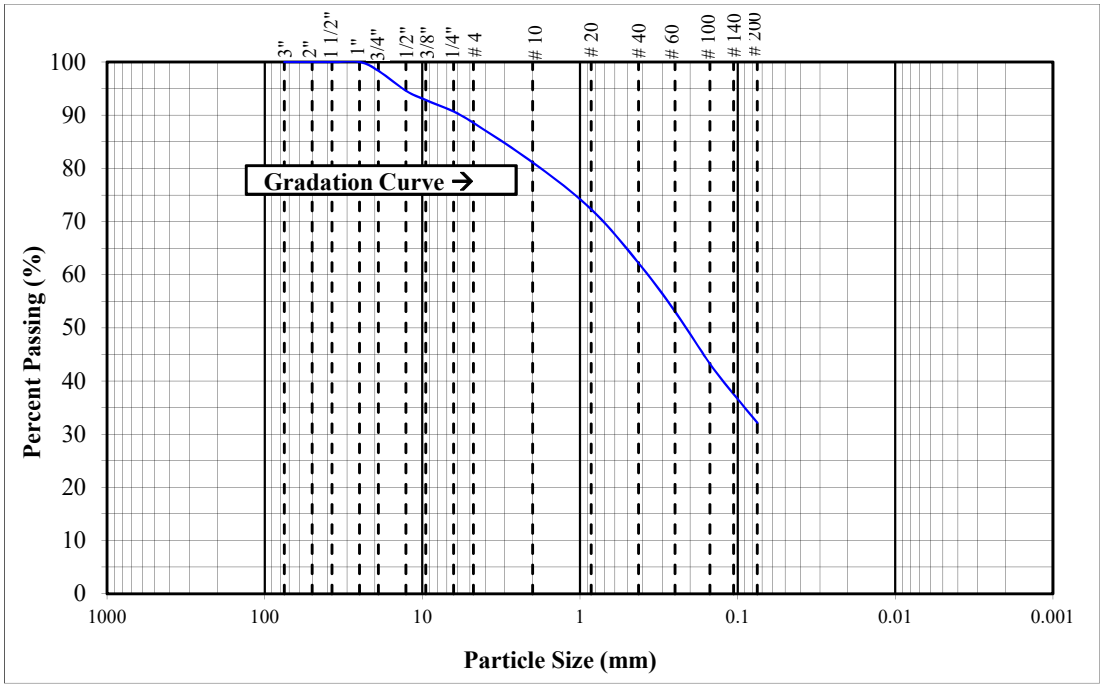
PROJECT NAME:	Proposed Condominiums	PROJECT #:	16161
PROJECT LOCATION:	161 & 163 York Street, Portland, ME	EXPLORATION #:	B-4
CLIENT:	York Street Redevelopment, LLC	SAMPLE #:	S-2
TECHNICIAN:	Erika Stewart, E.I.	SAMPLE DEPTH:	5' - 7'
TEST DATE:	8/26/2016	SOIL DESCRIPTION:	Med-fine SAND, some Silt, little Gravel, SM

TEST PROCEDURE

Sample Source: Split Spoon	**Sieve Stack:** Composite	**Specimen Procedure:** Moist
Test Method: Method A	**Separating Sieve(s):** 3/8 Inch	**Dispersion Type:** Tap Water

DATA

STANDARD SIEVE DESIGNATION (mm)	ALTERNATIVE SIEVE DESIGNATION (in)	PERCENT PASSING (%)
75	(3 in)	100
50	(2 in)	100
37.5	(1-1/2 in)	100
25.0	(1 in)	100
19.0	(3/4 in)	98
12.7	(1/2 in)	95
9.5	(3/8 in)	93
6.35	(1/4 in)	91
4.75	(No. 4)	89
2.00	(No. 10)	81
0.850	(No. 20)	72
0.425	(No. 40)	62
0.250	(No. 60)	53
0.150	(No. 100)	43
0.106	(No. 140)	38
0.075	(No. 200)	32



REMARKS: Moisture Content = 10.3%.

APPENDIX D

GENERAL BLASTING CRITERIA

GENERAL BLASTING RECOMMENDATIONS

Introduction

Blasting operations will be performed in general accordance with the applicable Maine Revised Statute Title 125 and Title 38, U.S. Department of the Interior Rules, the recommendations provided below, and a normal standard of care.

Blast Design

The blasting contractor shall submit a blasting plan to the Owner for approval prior to blasting operations. The blasting plan shall include a schedule, sketches of the drill patterns (hole spacing and depth), type and amount of explosives, number and sequence of delays, methods for minimizing flyrock, and any other information pertinent to demonstrating compliance with the applicable U.S. Department of the Interior Rules and the requirements of the applicable Statute requirements of 38 MRSA.

Notification

Oral notification to the abutters within one-half mile of the blast area shall be provided prior to blasting. Warning and all clear signals of different character or pattern that are audible within one-half mile from the point of the blast shall be given. The meaning of the signals shall be conveyed to the abutters at the time they are notified.

Pre-blast Surveys

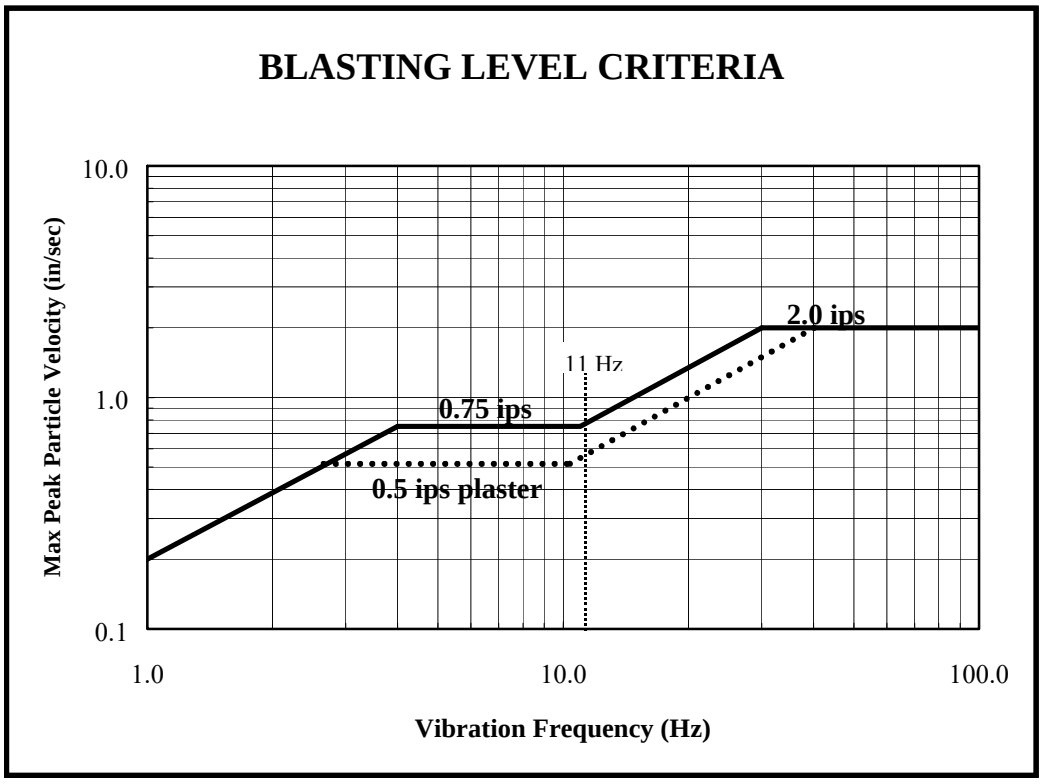
All blasting operations are the direct responsibility of the Blasting Contractor. Reports of damage to structures caused by blasting operations are the sole responsibility of the Blasting Contractor. Therefore, it is incumbent upon the Blasting Contractor to perform pre-blast surveys as they deem necessary.

Airblast Limits

Airblast overpressure shall not exceed the limits stipulated in 38 MRSA 490-Z(14)(H) at the nearest structure. This currently requires sound from blasting to not exceed 129 decibels peak at inhabited structures and 140 decibels peak at uninhabited structures.

Ground Vibration Limits

The maximum ground vibration at any structure shall not exceed the limits presented in the following chart:



REFERENCE: OSM alternative blasting criteria (Modified from figure B-1, Bureau of Mines, RI 8507)

The Blasting Contractor shall provide a seismographic record to the Owner for each blast event at the nearest off-site structure. The record shall include the date and time of the blast, peak and resultant particle velocities and associated frequencies, and the airblast overpressure.

Flyrock

Sufficient stemming, matting, or natural protective cover shall be provided to prevent flyrock from leaving property owned or under control of the operator or from entering protected natural resources or natural buffer strips.

Records

Records of blasts shall be recorded in accordance with Maine Statute 38 MRSA 490-Z(14)(L). The current requirements are as follows.

- Name of blasting company or blasting contractor
- Location, date and time of blast
- Name, signature and social security number of blaster
- Type of material blasted
- Number and spacing of holes and depth of burden or stemming
- Diameter and depth of holes
- Type of explosives used
- Total amount of explosives used
- Maximum amount of explosives used per delay period of 8 milliseconds or greater
- Maximum number of holes per delay period of 8 milliseconds or greater
- Method of firing and type of circuit
- Direction and distance in feet to the nearest dwelling, public building, school, church or commercial or institutional building neither owned nor controlled by the developer
- Weather conditions, including factors such as wind direction and cloud cover
- Height or length of stemming
- Amount of mats or other protection used
- Type of detonators used and delay periods used
- The exact location of each seismograph and the distance of each seismograph from the blast
- Seismographic readings
- Name and signature of the person operating each seismograph
- Names of the person and the firm analyzing the seismographic data

MAXIMUM PARTICLE VELOCITY/DISTANCE CRITERIA
FOR BLASTING NEAR UNCURED CONCRETE

Time From Batching (hr)	Non-Structural Concrete	Structural Concrete
0 – 4	4D	2D
4 – 24	1D	0.25D
24 – 72	1.5D	1D
72 – 168	3D	2D
168 – 240	8D	5D
Over 240	15D	10D

Distance (ft)	D (in/sec)
0 to 50	1.0
50 to 150	0.8
150 to 250	0.7
Over 250	0.6

NOTE: Allowable vibration levels are reduced with increasing distance since concrete can withstand higher vibration levels at higher frequencies. Vibration frequencies decrease as the distance from the blast increases because there is an attenuation of frequency with distance.

Reference: Wyllie, Duncan C. Foundations on Rock, 1st Ed, Chapman & Hall, London, 1992

Att. X

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
p.m. (207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30

PROJECT NAME:

161 York Street Redevelopment

PROPOSED DEVELOPMENT ADDRESS:

161 York Street Portland, Maine 04101

PROJECT DESCRIPTION:

11-unit urban infill project utilizing an energy efficient building design with implementation of the latest green infrastructure.

CHART/BLOCK/LOT: 044-B-007

PRELIMINARY PLAN 11/8/2016
FINAL PLAN 2/9/2017

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Michael J. Cianchette Business Name, if applicable: York Street Redevelopment, LLC Address: 42 Market Street City/State : Portland, Maine Zip Code: 04101	**Applicant Contact Information** Work #: (207) 774-1000 Home #: Cell #: Fax#: e-mail: mcianchette@theregency.com
Owner – (if different from Applicant) Name: N/A Address: City/State : Zip Code:	**Owner Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Agent/ Representative Name: Acorn Engineering, Inc. Will Savage, P.E. Address: 158 Danforth Street City/State : Portland, Maine Zip Code: 04102	**Agent/Representative Contact information** Work #: (207) 775-2655 Home #: Cell #: (207) 317-1884 e-mail: wsavage@acorn-engineering.com
Billing Information Name: See applicant information Address: City/State : Zip Code:	**Billing Contact Information** Work #: Home #: Cell #: Fax#: e-mail:

Engineer Name: See agent information Address: City/State : Zip Code:	**Engineer Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Surveyor Name: Spurwink Surveying LLC James Mullen, P.L.S. Address: 182 Spurwink Road City/State : Scarborough, Maine Zip Code: 04074	**Surveyor Contact Information** Home #: Work #: (207) 799-2654 Cell #: (207) 321-8966 Fax#: e-mail: spurwinksurveying@gmail.com
Architect Name: Mark Mueller Architects Mark Mueller, A.I.A. Address: 100 Commercial Street, Suite205 City/State : Portland, Maine Zip Code: 04101	**Architect Contact Information** Work #: (207) 774-9057 Home #: Cell #: (207) 749-6876 Fax#: e-mail: mark@muellerarchitects.com
Attorney Name: See applicant information Address: City/State : Zip Code:	**Attorney Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Designated person/person(s) for uploading to e-Plan: Name: Olivia Dawson, E.I. (Acorn Engineering, Inc.) e-mail: odawson@acorn-engineering.com Name: Sam Lebel, E.I. (Acorn Engineering, Inc.) e-mail: slebel@acorn-engineering.com Name: Will Savage, P.E. (Acorn Engineering, Inc.) e-mail: wsavage@acorn-engineering.com	

APPLICATION FEES:

Level III Development (check applicable reviews)	**Other Reviews (check applicable reviews)**
_X_ Less than 50,000 sq. ft. ($750.00) ___50,000 - 100,000 sq. ft. ($1,000) ___100,000 – 200,000 sq. ft. ($2,000) ___200,000 – 300,000 sq. ft. ($3,000) ___over 300,00 sq. ft. ($5,000) ___Parking lots over 11 spaces ($1,000) ___After-the-fact Review ($1,000.00 plus applicable application fee) **Plan Amendments (check applicable reviews)** ___Planning Staff Review ($250) ___Planning Board Review ($500) _____ The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($50.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	___Traffic Movement ($1,500) _X_ Stormwater Quality ($250) _X_ Subdivisions ($500 + $25/lot) # of Lots (11) x $25/lot = $775 ___Site Location ($3,500, except for residential projects which shall be $200/lot) # of Lots___x $200/lot = _____ ___Other _____ ___Change of Use ___Flood Plain ___Shoreland ___Design Review ___Housing Replacement _X_ Historic Preservation

INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov (Please be sure to designate a person who will be responsible for uploading documents and drawings.) This step will generate the project ID number for your project.

2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at Pay Your Invoice , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.

3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
   Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
   Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
   Tab 3 - Preparing and uploading revised drawings and documents

   Applying Online Instructions

5. When ready, upload your files and documents into the following folders:
   "Application Submittal – Drawings"
   "Application Submittal – Documents"

6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

APPLICANT SIGNATURE:

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	Date:
	11-8-16

PROJECT DATA

The following information is required where applicable, in order to complete the application.

Total Area of Site	11,046 sq. ft.
Proposed Total Disturbed Area of the Site	11,046 sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.	
Impervious Surface Area	
Impervious Area (Total Existing)	3,271 sq. ft.
Impervious Area (Total Proposed)	8,536 sq. ft.
Building Ground Floor Area and Total Floor Area	
Building Footprint (Total Existing)	2,039 sq. ft.
Building Footprint (Total Proposed)	6,194 sq. ft.
Building Floor Area (Total Existing)	4,038 sq. ft.
Building Floor Area (Total Proposed)	31,462 sq. ft.
Zoning	
Existing	R-6
Proposed, if applicable	
Land Use	
Existing	Single-Family
Proposed	Multi-family
Residential, If applicable	
# of Residential Units (Total Existing)	2
# of Residential Units (Total Proposed)	11
# of Lots (Total Proposed)	1
# of Affordable Housing Units (Total Proposed)	0
Proposed Bedroom Mix	
# of Efficiency Units (Total Proposed)	0
# of One-Bedroom Units (Total Proposed)	0
# of Two-Bedroom Units (Total Proposed)	8
# of Three-Bedroom Units (Total Proposed)	3
Parking Spaces	
# of Parking Spaces (Total Existing)	3
# of Parking Spaces (Total Proposed)	20
# of Handicapped Spaces (Total Proposed)	1
Bicycle Parking Spaces	
# of Bicycle Spaces (Total Existing)	0
# of Bicycle Spaces (Total Proposed)	5 Internal
Estimated Cost of Project	**$4.9 million**

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
X		1	Completed Application form
X		1	Application fees
X		1	Written description of project
X		1	Evidence of right, title and interest
N/A		1	Evidence of state and/or federal approvals, if applicable
X		1	Written assessment of proposed project's compliance with applicable zoning requirements
X		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
X		1	Written requests for waivers from site plan or technical standards, if applicable.
X		1	Evidence of financial and technical capacity
N/A		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
X		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
X		Proposed grading and contours;	
X		Existing structures with distances from property line;	
X		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
X		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
X		Preliminary infrastructure improvements;	
X		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
N/A		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
X		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
X		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
X		Exterior building elevations.	

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Completed Application form
X		1	* Application fees
X		1	* Written description of project
X		1	* Evidence of right, title and interest
X		1	* Evidence of state and/or federal permits
X		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
X		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
X		1	* Evidence of financial and technical capacity
X		1	Construction Management Plan
N/A		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
N/A		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
X		1	Stormwater management plan and stormwater calculations
X		1	Written summary of project's consistency with related city master plans
X		1	Evidence of utility capacity to serve
X		1	Written summary of solid waste generation and proposed management of solid waste
X		1	A code summary referencing NFPA 1 and all Fire Department technical standards
X		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
X		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	**Final Site Plans including the following:**
X		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
X		Existing and proposed structures on parcels abutting site;	
X		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
X		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
X		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
N/A		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
N/A		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
X		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
X		Location of all snow storage areas and/or a snow removal plan;	
X		A traffic control plan as detailed in Section 1 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
N/A		Location and proposed alteration to any watercourse;	
N/A		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for wetlands;	
X		Existing soil conditions and location of test pits and test borings;	
X		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
X		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
X		Grading plan;	
X		Ground water protection measures;	
X		Existing and proposed sewer mains and connections;	

- Continued on next page -

X		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
X		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
X		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
X		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
X		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
N/A		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
N/A		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
X		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
N/A		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
N/A		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
X		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: November 8, 2016

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 161 York Street Portland, Maine 04101

Chart Block Lot Number: 044-B-007

Proposed Use: Residential
Previous Use: Residential
Existing Sanitary Flows: 270 GPD
Existing Process Flows: 0 GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
Proposed connection to the 36" sewer main within York Street

Site Category		
	Commercial *(see part 4 below)*	
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	X
	Other *(specify)*	

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: TBD Phone:
Owner/Developer Name: Michael J. Cianchette, York Street Redevelopment, LLC
Owner/Developer Address: 42 Market St. Portland, ME 04101
Phone: (207) 774-1000 Fax: E-mail: mcianchette@theregency.com
Engineering Consultant Name: Will Savage, P.E. - Acorn Engineering, Inc.
Engineering Consultant Address: 158 Danforth Street, Portland Maine 04102
Phone: (207) 775-2655 Fax: E-mail: wsavage@acorn-engineering.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 2,070 GPD
Peaking Factor/ Peak Times: Diurnal Residential Flow Pattern
Specify the source of design guidelines: *(i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify)* State of Maine Subsurface Wastewater Disposal Rules, Effective 8/3/15

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

Do you currently hold Federal or State discharge permits? Yes_____No ____

Is the process wastewater termed categorical under CFR 40? Yes_____No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

-------DRAFT-------

DECLARATION OF CONDOMINIUM FOR
The Foreview

YORK STREET REDEVELOPMENT, LLC, a Maine limited liability company, hereinafter called the ***Declarant***, makes the following declaration.

ARTICLE 1
CREATION OF THE CONDOMINIUM

Section 1.1. Submission of the Property. The Declarant is the owner of the property described in **Exhibit A** attached hereto, located in Portland, Cumberland County, Maine, and hereby declares said property, together with all improvements thereon and all interests appurtenant thereto (hereinafter ***Property***), to be a condominium and submits the same to the provisions of the Maine Condominium Act, 33 M.R.S.A. §1601-101 *et seq.,* as it may from time to time be amended.

Section 1.2. Name. The name of the condominium is *The Foreview*. The name of the unit owners' association is *The Foreview Condominium Association*

Section 1.3. Plans. A plat depicting the condominium property and floor plans of the condominium buildings have been recorded in the Cumberland County Registry of Deeds and are labeled *The Foreview, Portland, Maine*.

ARTICLE 2 UNITS

Section 2.1. Number of Units. The Declarant is hereby declaring eleven (11) units in the condominium, as depicted on the plat and plans. The proposed location and dimension of each unit, together with the appurtenant limited common elements of each proposed unit are depicted on the plat and plans; however, the location and dimension of each proposed unit and of the building such unit would be constructed within are subject to change by the Declarant until such time as the unit is transferred to a purchaser, in the case of a unit, or all proposed units within a building have been transferred to a purchaser, in the case of a building. Such proposed improvements and units need not be built or added, may be built or added in any sequence or order, and may be built or added with configurations and locations different than those shown on the plat and plans, as further described in Article 4, below.

Section 2.2 <u>Unit Boundaries</u>. Each unit is bounded below by the unit's floors or portions of floors which, as shown on the condominium floor plans, lie directly and immediately above a common element or the foundation of the building. Each unit is bounded above by the unit's ceilings which, as shown by the floor plans, lie directly and immediately below a common element or the roof of the building. Each unit is bounded on its sides by the unit's walls or portions of walls which, as shown by the condominium floor plans, adjoin directly and immediately to another unit, a common element, or the exterior or foundation of the building. Each unit's side boundaries extend to the exterior surfaces of any doors or windows in the walls or portion of walls which constitute the unit's side boundaries.

Of the floors, ceilings, and walls which constitute a unit's boundaries, all lath, furring, wallboard, plasterboard, plaster, paneling, tiles, wallpaper, paint, finished flooring, and any other materials forming any part of the finished surfaces thereof are part of the unit, and all other portions of such floors, ceilings and walls (for example structural components of exterior walls or of interior walls shared between units (whether framed with lumber and/or created by poured concrete or otherwise), and trusses) are part of the common elements of the condominium. Except for the limited common elements described in Article 3 below, all spaces, interior partitions, and other fixtures and improvements within the boundaries of a unit are part of the unit. Any exterior doors, windows, or other fixtures designed to serve a single unit, but located outside of the unit's boundaries, are limited common elements allocated exclusively to that unit, as described in Article 3 below.

Section 2.3. <u>Allocated Interests</u>. Each unit is allocated a percentage of undivided interest in the common elements, a percentage of the common expenses, and a number of votes in the unit owners' association.

The allocated percentage interest in the common elements is equal for each unit and is obtained by dividing one by the total number of units in the condominium.

The allocated percentage of the common expenses [**to be finally determined based on permitted parking design, including any waivers granted by the Planning Authority]**

One vote in the unit owners' association is allocated to each unit.

In the event one or more additional units are added to the condominium or one or more units are withdrawn from the condominium, the formulas described above shall be used to reapportion the allocated interests among all the units in the condominium. Such reapportionment shall be made by the executive board.

Attached hereto as **Exhibit B** is a list of the identifying numbers of the units which sets forth the allocated interests appurtenant to each unit

Section 2.4. Alterations of Units. In addition to the Declarant's Development Rights provided elsewhere herein, a unit owner, after having given written notice to the executive board at least thirty days in advance, may make any improvements or alterations to the unit owner's unit which do not impair the structural integrity of the building or the mechanical systems and which do not lessen the support of any portion of the condominium. No notice need be given for cosmetic changes to a unit which do not involve demolition or construction of any sort and which will not otherwise effect the enjoyment of the condominium or common areas by other unit owners or licensees (e.g. painting, picture hanging and wallpapering do not require prior approval). No unit owner may change the exterior appearance of the unit owner's unit nor change the appearance of any other portion of the condominium, unless the unit owner has first obtained written permission from the unit owners' association.

If a unit owner acquires an adjoining unit the unit owner may, after having given written notice to the executive board at least thirty days in advance, remove or alter any intervening partition or create apertures in any such partition, even if the partition is partially or wholly a common element, if, and only if, those acts do not impair the structural integrity of the building or the mechanical systems and do not lessen the support of any portion of the condominium.

Section 2.5. Relocation of Unit Boundaries. No unit boundary may be altered, except as permitted pursuant to the Declarant's Development Rights, as described in Article 4, below.

Section 2.6. Subdivision of Units. No unit may be subdivided, except as permitted pursuant to the Declarant's Development Rights, as described in Article 4, below.

Section 2.7. Leases of Units (SUBJECT TO CHANGE BASED ON CITY DECISIONS RELATED TO SHORT-TERM RENTALS). A unit owner may lease the unit owner's unit, provided any unit lease is for seven (7) or more consecutive days. Any such lease shall be in writing, on the form of lease approved by the executive board, and restate the conditions of Article 5 of this declaration and provide that the tenant must comply in full with the provisions of the Maine Condominium Act, this declaration, the bylaws of the unit owners' association, and the rules and regulations of the condominium. No lease (written or otherwise) shall relieve the unit owner from nor reduce the unit owner's obligations and liability under said documents. Each unit owner is responsible for ensuring such owner's unit is cleaned upon the expiration of a lease and no less frequently than weekly during the term of a lease. Prior to occupancy, each unit owner shall inform the executive board of the names and addresses of any tenant(s), and provide the executive board with a copy of any written lease that is entered. Unit owners are reminded of their obligation to keep the executive board apprised of their current mailing addresses (see Section 6.5). Any unit owner that fails to comply with the provisions of this Section 2.7 is subject to a fine of up

to, but not greater than, $50 per violation. The unit owners' association is permitted to perform (or hire a company to perform) cleaning and other services contemplated hereby to maintain units in a clean, quality condition and to preserve the overall appearance and quality of the condominium, and a unit owner shall provide reasonable access to his unit for such purpose. Any fine as well as the cost of any services performed as a result of a unit owners' failure to comply with the obligations hereunder, shall constitute a special assessment against the unit owner's unit. Furthermore, the unit owners' association may from time to time adopt rules and regulations which are reasonably related to furtherance of this Section 2.7, including the right to conduct periodic inspections of units which have been or are to be rented, to ensure compliance with the terms and conditions of this Section.

Section 2.8. Maintenance. The division between the unit owners and the unit owners' association of the responsibility for maintenance of the units shall be controlled by the provisions of the bylaws of the unit owners' association.

ARTICLE 3 COMMON ELEMENTS

Section 3.1. Common Elements. All portions of the condominium which do not constitute or lie within the boundaries of a unit, as described above, are common elements. All unit owners have an undivided ownership interest in all of the common elements. The common elements consist primarily of the structural members and exterior of the buildings, the grounds, and the parking areas. Additionally, all units share equally in the appurtenant easements benefiting the common elements, as depicted on the plat or plans or otherwise described herein. Common elements with a shared purpose (such as a rooftop deck) may be used for any purpose deemed reasonable by the executive board, so long as such use does not violate any municipal, state or federal rules, laws, ordinances or regulations, and does not jeopardize the not for profit designation of the unit owners' association.

Section 3.2. Limited Common Elements. Limited common elements are common elements of which the use is granted exclusively to one or more, but fewer than all, of the units. Limited common elements may be allocated to units as designated on the condominium plat. Any parking spaces, not allocated to particular units as limited common elements by designation on the condominium plat, may be so allocated to a unit or units by the executive board or may remain unallocated for use by any unit owners and visitors. Any exterior doors, windows, or other fixtures designed to serve a single unit, but located outside the unit's boundaries, are limited common elements allocated exclusively to that unit. If any chute, flue, chimney, duct, wire, conduit, bearing wall, bearing column, or other fixture lies partly within and partly outside of the boundaries of a unit, then any portion which serves only that unit is a limited common element, and any portion which serves more than one unit or which serves part of the common elements is a common element. In resolving any doubts as to the designation of any such fixture, preference shall be given to construing it as a common element.

Section 3.3. Reallocation of Limited Common Elements. Subject to requirements of Section 3.4, below, the limited common elements may be reallocated upon the written request of all of the owners of the units affected to the unit owners' association.

Section 3.4. Alteration of Common Elements. No unit owner shall make any alteration, improvement, or change of any of the common elements, including the limited common elements or any part of them, without having first obtained the permission of the unit owners' association, except as permitted by Article 2 above. This prohibition includes, but is not limited to, antennas, satellite dishes, clothes lines, fences, and air conditioning units.

Section 3.5. Alienation of Common Elements. Portions of the common elements may be conveyed or subjected to a security interest by the unit owners' association if agreed to by unit owners entitled to cast seventy percent (70%) or more of the votes in the unit owners' association and if also agreed to by unit owners entitled to cast seventy percent (70%) of the votes allocated to units not owned by the Declarant and, in the case of limited common elements, if agreed to by all of the owners of all of the units to which the element to be conveyed or subjected to a security interest is allocated. This section shall not be construed to require the consent of the unit owners' association for a unit owner to grant a mortgage of the unit owner's unit and its allocated interests and limited common elements, or to limit the development rights of the Declarant described herein.

Section 3.6. Maintenance. The provisions of the bylaws of the unit owners' association control the responsibility for maintenance of the common elements.

ARTICLE 4 DECLARANT'S RIGHTS

Section 4.1. Development Rights. In addition to the easement rights reserved elsewhere in this Article 4 of the Declaration, the Declarant reserves to itself and for the benefit of its successors and assigns, the right:

(a) to connect with, repair, relocate, alter, remove and/or make use of utility lines, wires, pipes, and conduits and the related easements located on the Property for construction and sales purposes, provided that the Declarant shall be responsible for the costs of services so used;

(b) to use the Common Elements for ingress and egress, for the repair and construction of the units and Common Elements including the movement and temporary storage of construction materials and equipment, and for the installation of signs and lighting for sales and promotional purposes;

(c) to convert any unit(s) into Common Elements or Limited Common Elements;

(d) to divide any unit owned by the Declarant into one or more additional units and to

combine any unit (or portion thereof) owned by the Declarant into another unit which is likewise owned by the Declarant, subject to applicable laws and ordinances;

(e) to complete some or all contemplated improvements on the plat and plans (subject to the conditions in Section 4.4, below), to construct new improvements on Common Elements, to maintain unsold units as models and sales offices, and to relocate the sales offices as the Declarant deems necessary or appropriate, to exercise the easements reserved to it in the Declaration, to make the Condominium part of a larger Condominium, to make the Condominium subject to a Master Association, to appoint or remove any officer or Board Member during any period of Declarant control of the unit owners' association, and to exercise any other special Declarant rights as are now allowed or in the future may be allowed by the Act;

(f) to develop the Condominium in phases, as provided herein; and

(g) to withdraw units owned by the Declarant, Property and/or Property interests (including Common Elements) from the Condominium, including but not limited the transfer of fee or easement holder interests to one or more persons, including but not limited to a qualified land conservation easement holder.

The foregoing shall be referred to collectively, along with any and all other Special Declarant rights, as provided herein or pursuant to the Act as the "Development Rights" and each individually as a "Development Right". The exercise of the Development Rights shall be in accordance with and governed by the provisions of the Act, including, without limitation Section 1602-110 of the Act.

Any improvements that may be erected pursuant to any such Development Right shall be located on the Common Elements and will be generally compatible with the existing improvements on the Condominium in terms of architectural style, quality of construction, and size.

All restrictions in the Declaration affecting the use, occupancy, and alienation of the units will apply to any units created pursuant to any Development Right reserved by the Declarant.

The assurances made in this Section do not apply in the event that any Development Right is not exercised by the Declarant.

Section 4.2. Easements. Until the construction, marketing and sale of all units is completed, the Declarant shall have the right to grant and reserve easements and rights-of-way through, under, over and across the Property: (a) for construction and subdivision purposes, (b) for the installation, maintenance and inspection of the lines and appurtenances for public and private water, sewer, drainage, gas, electricity, telephone, television, and other like utilities and services, and (c) for use by and transfer to persons (including the public) for access to Property or Property rights which is/are withdrawn

from the condominium and/or conveyed. Declarant also reserves the right to relocate existing easements and rights of way encumbering the Property within the Common Areas of the Property, but, to the extent reasonably possible, shall do so in a manner which minimally interferes with the Condominium. Thereafter, the condominium owners' association shall have the right to grant easements for the purposes stated in (b) above and to the extent permitted by law, to relocate existing easements and rights of way encumbering Common Areas of the Property, but such right shall not be exercised so as to unreasonably disrupt any unit, and the unit owners' association shall be responsible for any damage that occurs to the Common Elements, Limited Common Elements or to any unit as the result of the exercise of this right.

Section 4.3. Exercise of Development Rights By Declarant. The exercise of Development Rights by Declarant shall be subject to the following restrictions:

(a) no changes shall be made to the site plan and subdivision approved by the **[planning authority approval]**, unless applicable approval is received pursuant to the appropriate and relevant ordinances of the City of Portland or other authority of competent jurisdiction.

Section 4.4. Declarant's Use of Units. The Declarant is the owner of any unsold unit(s) and has all the rights of a unit owner with respect thereto. As long as any unit remains unsold, the Declarant may use any unsold unit as a model to be displayed to prospective purchasers or as a sales office or management office for business related to the condominium, and the Declarant may erect and maintain signs on the common elements advertising the condominium and/or sale of any unit(s).

Section 4.5. Declarant Control Period. There shall be a Declarant Control Period, during which the Declarant shall appoint the officers and members of the executive board of the unit owners' association and may remove members and appoint others. The officers and members appointed by the Declarant need not be unit owners. The Declarant Control Period shall last until seventy-five percent of the units have been sold to persons other than the Declarant or for seven (7) years from the date of sale of the first unit to a person other than the Declarant, whichever first occurs, but the Declarant may voluntarily end the Declarant Control Period at an earlier time. Within sixty days after the Declarant Control Period has ended, the executive board members shall be elected by the association in accordance with its bylaws.

ARTICLE 5
RESTRICTIONS ON USE, OCCUPANCY, AND ALIENATION

Section 5.1. Use. All of the units not owned by the Declarant shall be used only for single-family, residential purposes, which term "residential purposes" expressly includes rentals subject to Section 2.7 hereof. No livestock or animals of any kind shall be kept in or about any unit for any purposes, including, but not limited to, breeding or sale or as pets, except for dogs, cats and other domesticated pets deemed reasonable and acceptable to the

executive board. No explosive, hazardous, or similarly dangerous materials may be kept inside any unit, including specifically, but not limited to, propane gas cylinders or tanks.

Section 5.2. Occupancy. Each unit may be owned by any person or entity, but may be occupied only by a single family. As used herein, the phrase "single family" means a group of persons all of whom are related to one another as spouses, parent and child, or siblings, with not more than three persons who are not so related occupying a unit. Any questions as to what constitutes a "single family" shall be settled by the executive board, whose decision may be appealed to the association.

Section 5.3. Alienation. Subject to Section 2.7, any unit may be leased, and the unit owners' association reserves no right of first refusal or option to purchase any unit.

Section 5.4. Rules and Regulations. The executive board shall adopt rules and regulations that shall further regulate the management of the condominium and the conduct of the unit owners and their permitees, invitees, and lessees, which rules and regulations may include limiting the use of and access to common areas at particular times or during certain weather conditions or other circumstances. In particular, but without limiting the generality of the foregoing, the executive board may regulate parking at the condominium, including the type and number of vehicles which may be parked and the locations where parking is allowed, and require a standard form of lease be used when leasing a unit. Notwithstanding the foregoing, in the event a parking area is granted to a unit as a limited common element, the executive board may not limit the use of said parking area for any period longer than is necessary to complete usual and customary maintenance and repair. The executive board may restrict access to parts of the Common Elements, as it deems necessary, for the purpose of safety, construction, maintenance and/or repair.

Section 5.5. Violations by Unit Owners. The violation of any rules or regulations, the breach of any of the bylaws, or the breach of any provision of this declaration shall give the executive board the right to take whatever action is reasonably necessary to terminate the particular violation or breach, to remedy any damage occasioned by such violation or breach, and to prevent further violation or breach. Such action on the part of the executive board may include entry into any unit where such violation or breach exists without giving rise to any manner of trespass and may include the bringing of any appropriate legal action. The costs of any such termination, reparation, or prevention, including reasonable attorneys' fees, shall be assessed against the unit of the unit owner in violation or breach. Except as otherwise provided herein, the executive board shall impose reasonable fines, up to $100 per day/violation, for such violations or breaches.

ARTICLE 6
UNIT OWNERS' ASSOCIATION

Section 6.1. Membership. The Foreview Condominium Association shall be

organized to govern and operate the condominium. All unit owners shall be members of the unit owners' association, and no one other than a unit owner shall be a member.

Section 6.2. Powers. The unit owners' association shall have all of the powers allowed by the Maine Condominium Act, but it shall not exercise its powers to acquire real property or to cause additional improvements to be made as a part of the common elements or to alter the outward appearance of the condominium buildings, unless unit owners entitled to cast seventy percent (70%) or more of the votes in the unit owners' association agree to such action, nor shall it make or authorize a non-budgeted expenditure of funds unless unit owners entitled to cast seventy percent (70%) or more of the votes in the unit owners' association agree to such action.

Section 6.3. Meetings. The unit owners' association shall meet at least once in each calendar year. A quorum shall be present if unit owners entitled to cast more than thirty percent (30%) of the votes in the association are present in person or by proxy. The vote allocated to a unit must be cast as one vote; no vote may be divided.

Section 6.4. Executive Board. The executive board shall consist of no less than three (3) nor more than five (5) members, who shall be elected by the unit owners' association in accordance with its bylaws (except as provided in section 4.3 above). The executive board may act on behalf of the unit owners' association in all instances, subject to the provisions of the Maine Condominium Act and this declaration. The executive board shall not make nor authorize non-budgeted expenditures of funds unless required in cases of emergency.

Section 6.5. Notice. The executive board shall cause notice of matters affecting the condominium to be given to all unit owners by sending a written statement thereof by the United States Postal Service, postage prepaid, return receipt requested, to each unit owner at the address last given in writing to the executive board by the unit owner or by delivering a written statement thereof in hand to each unit owner and obtaining a receipt therefor from the unit owner. If a unit is owned by more than one person, then notice given to one of the unit owners shall be sufficient to serve as notice to all of the owners of that unit. If the notice is of a meeting at which a unit owner has the right to vote or of an action to be taken to which a unit owner has the right to consent or refuse consent, then the notice shall be given to such unit owner at least fifteen days prior to such meeting or the taking of such action. Notwithstanding the foregoing, unit owners may elect in writing to accept electronic notice. The form and means of such election shall be specified by the executive board, provided any unit owner may revoke said election in writing at any time for any reason without penalty.

Section 6.6. Bylaws. The bylaws of the unit owners' association shall contain provisions for its operation and governance. No provision of the bylaws shall be inconsistent with this declaration.

ARTICLE 7 ASSESSMENTS

Section 7.1. Common Expenses. Except as set forth in this Article, the common expenses shall be assessed against all of the units in the condominium in accordance with the percentages of liability for the common expenses listed in **Exhibit B**.

Section 7.2. Limited Common Elements. Any common expense arising from the maintenance, repair, or replacement of a limited common element and any common expense which benefits fewer than all of the units, even though not arising from a limited common element, shall be assessed in the same manner as common expenses.

Section 7.3. Misconduct. Any common expense caused by the misconduct of a unit owner or owners shall be assessed by the unit owners' association against the unit owner's unit or the unit owners' units.

ARTICLE 8 AMENDMENT

This declaration may be amended only by complying with the procedures specified by the Maine Condominium Act. Any amendment which requires a vote of the unit owners, but does not require unanimous consent, shall fail of passage unless agreed to by the unit owners of units to which seventy percent (70%) or more of the votes in the unit owners' association have been allocated.

ARTICLE 9 EASEMENTS

The condominium is subject to the following easements, and all units are conveyed subject thereto, see attached **Exhibit C.**

ARTICLE 10 GENERAL PROVISIONS

Section 10.1. Definitions. Terms not defined in this declaration shall have the meanings defined in the Maine Condominium Act. The use herein of the term *Declarant* includes any successor declarant or assignee of the Declarant. The term *unit owner* refers equally to all of the owners of a unit, of whatever number and gender.

Section 10.2. Construction and Severability. The provisions of this declaration shall be construed, if possible, so as to be valid and enforceable under the laws of the State of Maine. If any provision cannot be so construed and is held to be unenforceable, then it shall be considered severable, and the remaining provisions shall continue to be valid and enforceable.

Section 10.3. Precedence. No provision of the bylaws or rules and regulations of the unit owners' association shall conflict or be inconsistent with this declaration. Any such conflicting or inconsistent provision shall be void and of no effect.

In witness whereof_____, has caused this instrument to be signed and sealed in its company name by its undersigned officer, hereunto duly authorized, this _____day of_____, 2017.

[signature and notary blocks to be inserted]

The Foreview

EXHIBIT A

[to be inserted]

The Foreview

EXHIBIT B

[To be determined based upon final planning approval]

EXHIBIT C
Easements and Encumbrances

[to be completed upon planning approval and final utility agreements]

STORMWATER DRAINAGE SYSTEM MAINTENANCE AGREEMENT

IN CONSIDERATION OF the site plan and subdivision approval granted by the Planning Board of the City of Portland to the proposed 161 York Street Redevelopment shown on the Subdivision Plat recorded in the Cumberland County Registry of Deeds in Plan Book ___, Page ___ (the "Plan") and associated Grading & Drainage Plan (Sheet C-31), dated 02/09/2017 prepared by Acorn Engineering, Inc. of P.O. Box 3372, Portland, ME 04104 dated and pursuant to a condition thereof, York Street Redevelopment, LLC, a Maine limited liability company with a principal place of business in Portland, Maine, and having a mailing address of 42 Market Street, Portland, Maine 04101, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the "Owner"), as follows:

Maintenance Agreement

That it, its successors and assigns, will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the underdrained subsurface sand filter BMP system, StormTech Isolator Row, storm drain pipes, and underdrain pipes (hereinafter collectively referred to as the "stormwater system") as shown on the Stormwater Maintenance Agreement Drainage Plan, Drawing EX-01, attached hereto as **Exhibit B** and in strict compliance with the approved Stormwater Inspection & Maintenance Plan and Stormwater Maintenance and Inspection Log, dated 02/09/2017, copies attached as **Exhibit A and C** respectively and Chapter 32 of the Portland City Code.

Owner of the subject premises further agrees, at its own cost, to keep a Stormwater Maintenance and Inspection Log in the forms attached as **Exhibit C**. Such log shall be made available for inspection by the City of Portland upon reasonable notice and request.

Said agreement is for the benefit of the said City of Portland and all persons in lawful possession of the property and abutters thereto; further, that the said City of Portland or said persons in lawful possession may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice and a stated time to perform, the said City of Portland, by its authorized agents or representatives, may, but is not obligated to, enter upon said premises to maintain, repair,

or replace said stormwater system ,including but not limited to the underdrained subsurface sand filter BMP system, StormTech Isolator Row, storm drain pipes, underdrain pipes, and other drainage structures thereon in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the Owner upon written demand. Any funds owed to the City under this paragraph shall be secured by a lien on the property.

This Agreement shall not confer upon the City of Portland or any other person the right to utilize said stormwater system for public use or for the development of any other property, and the Owner shall bear no financial responsibility by virtue of this Agreement for enlarging the capacity of said system for any reason whatsoever.

This Agreement shall also not be construed to allow any change or deviation from the requirements of the subdivision and/or site plan most recently and formally approved by the Planning Board of the City of Portland.

This agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon the Owner's successors and assigns as their interests may from time to time appear.

The Owner agrees to provide a copy of this Agreement to any successor or assign and to forward to the City an Addendum signed by any successor or assign in which the successor or assign states that the successor or assign has read the Agreement, agrees to all its terms and conditions and the successor or assign will obtain and forward to the City's Department of Public Works and Department of Planning and Urban Development a similar Addendum from any other successor or assign.

For the purpose of this agreement and release "Owner" is any person or entity who is a successor or assign and has a legal interest in part, or all, of the real estate and any building. The real estate shown by chart, block and lot number in the records on file in the City Assessor's office shall constitute "the property" that may be entered by the City and liened if the City is not paid all of its costs and charges following the mailing of a written demand for payment to the owner pursuant to the process and with the same force and effect as that established by 36 M.R.S.A. §§ 942 and 943 for real estate tax liens.

Any written notices or demands required by the agreement shall be complete on the date the notice is attached to one or more doors providing entry to any buildings or

residential units and mailed by certified mail, return receipt requested or ordinary mail or both to the owner of record as shown on the tax roles on file in the City Assessor's Office.

If the property has more than one owner on the tax rolls, service shall be complete by mailing it to only the first listed owner. The failure to receive any written notice required by this agreement shall not prevent the City from entering the property and performing maintenance or repairs on the stormwater system, or any component thereof, or liening it or create a cause of action against the City.

Dated at Portland, Maine this _____ day of _____, 2017.

YORK STREET REDEVELOPMENT, LLC
A Maine limited liability company

_____
Michael Cianchette, Manager

STATE OF MAINE
CUMBERLAND, ss. Date: _____

Personally appeared the above-named Michael Cianchette, Manager of York Street Redevelopment, LLC, and acknowledged the foregoing instrument to be his free act and deed in his said capacity.

Before me,

_____
Notary Public/Attorney at Law

Print name: _____

Exhibit A: Stormwater Inspection & Maintenance Plan

Exhibit B: Stormwater Maintenance Agreement Drainage Plan to be included once approved

Exhibit C: Stormwater Maintenance and Inspection Log

ACORN
ENGINEERING, INC.

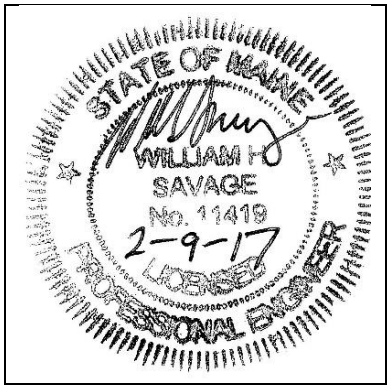
POST CONSTRUCTION - STORMWATER INSPECTION & MAINTENANCE PLAN

Prepared For:

York Street Redevelopment, LLC
42 Market St
Portland, Maine 04101

Prepared By:

Acorn Engineering, Inc.
158 Danforth Street
Portland, Maine 04102



February 2017

ACORN ENGINEERING, INC.

RESPONSIBLE PARTY

The owner, York Street Redevelopment, LLC, and or their successor shall be responsible for contracting with a qualified stormwater professional to implement the Inspection and Maintenance Plan. The qualified stormwater professional shall maintain a stormwater log (report) summarizing inspections, maintenance, and corrective action taken. The Qualified Stormwater Professional shall annually submit the Stormwater Log to the Department of Public Services prior to June 30th.

The following is an example of a qualified stormwater professional that the homeowners association may contract through.

Organization: Will Savage, PE
Acorn Engineering, Inc
Portland, Maine

Phone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The inspection and maintenance criteria is based upon the Maine DEP - Stormwater Management for Maine, Volume III: BMPs Technical Design Manual. Refer to the Grading and Drainage Plan for the location of the BMPs

PURPOSE

This Inspection and Maintenance Plan has been individually tailored to this parcel's stormwater infrastructure, site characteristics, and their respective opportunities and limitations related to reducing the pollutant load on the receiving watershed. The maintenance of a parcel's impervious surfaces and stormwater infrastructure is critical to extending the long-term performance and effectiveness of Best Management Practices (BMPs). The Inspection and Maintenance Plan represents the parcel's minimum activities to meet the permit requirements. The parcel shall still be subject to any applicable Civil Site Plans, Permit Applications, Erosion and Sedimentation Control Plans Reports, Stormwater Management Plans, Inspection and Maintenance Manuals, and all Municipal, State, and Federal rules.

OPERATION AND MAINTENANCE ACTIVITY

Underdrained Subsurface Sand Filter (USSF):

The maintenance of the underdrained subsurface sand filter shall be in accordance with the following activities identified below and the most recent version of the Maine DEP Volume III BMPs Technical Design Manual Chapter 7.3 Underdrained Subsurface Sand Filter.

- The system should be inspected after every major storm in the first few months to ensure proper function. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 24 hours to 36 hours.
- Inspect Outlet Control Structures (OCS) to ensure they are in good working order and that the orifice and trash racks are unobstructed from trash and debris.
- Inspect and maintain the StormTech Isolator Row in accordance with the attached proprietary Operation and Maintenance Plan.

Sweeping:

Annual sweeping of the driveway and parking areas following the snow melt for accumulated winter sand, if necessary. Appropriately dispose of all collected material.

Storm Drains:

The storm drain shall be annually inspected for the presence of accumulated sediment or debris. Any sediment shall be removed as required.

- The equipment shall meet the following minimum specifications; power jet and water source for washing down the storm drain, vacuum attachment for catch basin cleaning, and a liquid handling method to dewater the material.
- Inspect and legally dispose of accumulated sediment and debris within the storm drains between basins. Liquids must be decanted on-site and returned to the catch basin.

Catch Basins:

Catch basins shall be inspected to confirm the structure is operating properly.

- Inspect the presence of accumulated sediment or debris any sediment shall be removed. The equipment shall meet the following minimum specifications; power jet and water source for washing down the storm drain, vacuum attachment for catch basin cleaning, and a liquid handling method to dewater the material.
- Sediment shall be removed when accumulation is within 6 inches of the outfall pipe invert. Legally dispose of accumulated sediment and debris from the bottom of the basin, inlet grates, and inflow channels to the basin.
- If the basin outlet is designed with a hood to trap floatable materials (e.g. Snout), check to ensure watertight seal is working.
- Appropriately dispose of all collected material.

Landscaped, Vegetated and Areas Adjacent to Retaining Walls:

Inspect all landscaped and or vegetated slopes and embankments on an annual basis. Vegetated areas with bare areas or sparse growth (<90% coverage) shall be revegetated. Mulch shall be applied to landscaped areas, as necessary. Dead or decaying landscaping (ground cover, shrubs, trees etc.) shall be replanted in accordance with the approved Landscape Plan.

If signs of rill erosion or scour are present within areas tributary to the retaining walls, or stormwater flow is observed flowing over the wall, Acorn Engineering should be immediately contacted to perform an inspection and/or to contact the appropriate professional. Should concerns arise from the downhill abutters related to groundwater flow from the retaining wall weep hole outlets, Acorn Engineering should be contacted to perform a site inspection and to meet with the concerned abutter. Periodic inspections of the retaining walls shall be performed, under separate contract, by a Professional Geotechnical Engineer.

INSPECTION AND MAINTENANCE TABLE

Inspection and Maintenance Frequency	Spring or Yearly	Summer	Fall	As Necessary
Underdrained Subsurface Sand Filter	X		X	X
Sweeping	X			X
Storm Drains		X		X
Catch Basins		X		X
Landscaped/Vegetated/Wall Areas	X			X

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A division of ADS

Save Valuable Land and Protect Water Resources

Isolator® Row O&M Manual

StormTech® Chamber System for Stormwater Management

1.0 The Isolator® Row

1.1 INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a patented technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.

Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.

1.2 THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC-310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

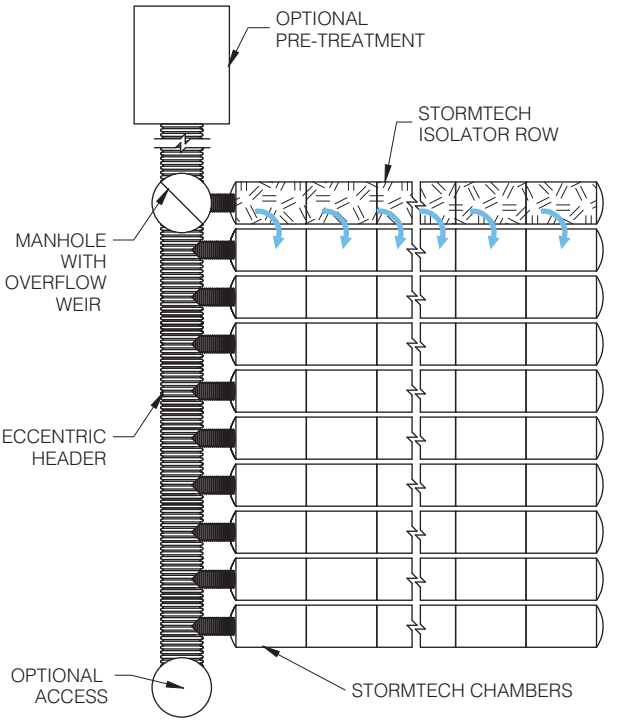
Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row is typically designed to capture the "first flush" and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.

StormTech Isolator Row with Overflow Spillway
(not to scale)



2.0 Isolator Row Inspection/Maintenance

2.1 INSPECTION

The frequency of Inspection and Maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

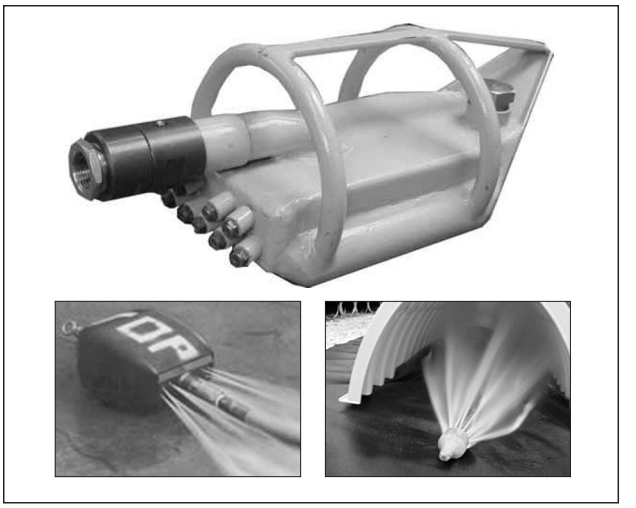
At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

2.2 MAINTENANCE

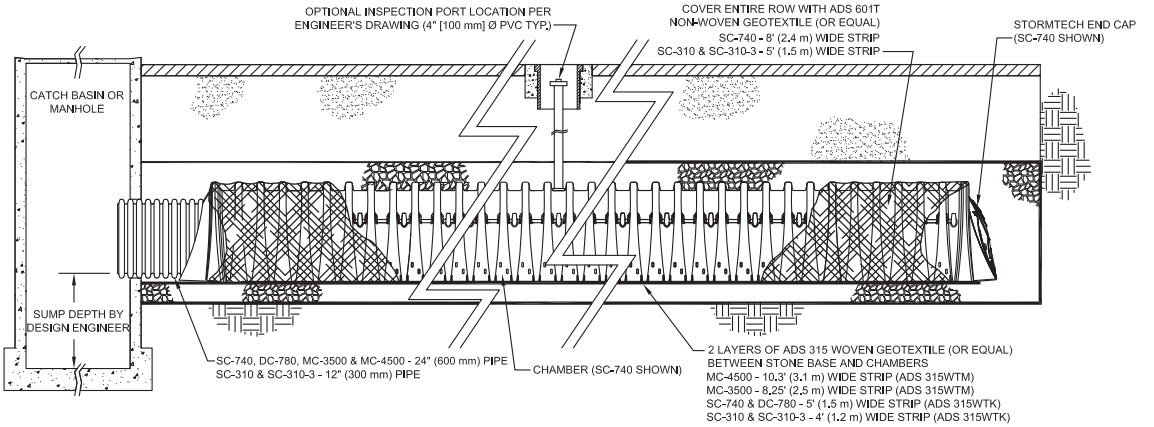
The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.



Examples of culvert cleaning nozzles appropriate for Isolator Row maintenance. (These are not StormTech products.)

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row (not to scale)



NOTE: NON-WOVEN FABRIC IS ONLY REQUIRED OVER THE INLET PIPE CONNECTION INTO THE END CAP FOR DC-780, MC-3500 AND MC-4500 CHAMBER MODELS AND IS NOT REQUIRED OVER THE ENTIRE ISOLATOR ROW.

3.0 Isolator Row Step By Step Maintenance Procedures

Step 1) Inspect Isolator Row for sediment

A) Inspection ports (if present)

i. Remove lid from floor box frame

ii. Remove cap from inspection riser

iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.

iv. If sediment is at, or above, 3 inch depth proceed to Step 2. If not proceed to step 3.

B) All Isolator Rows

i. Remove cover from manhole at upstream end of Isolator Row

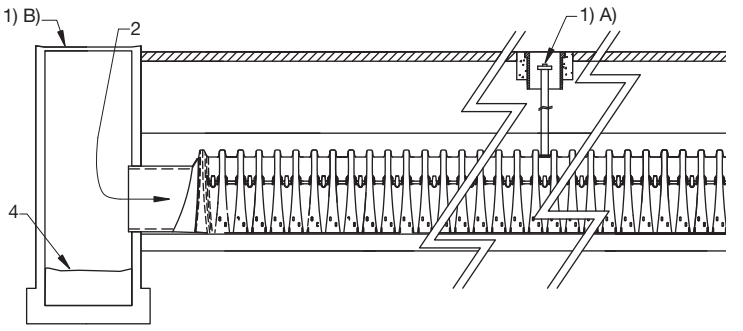
ii. Using a flashlight, inspect down Isolator Row through outlet pipe

1. Mirrors on poles or cameras may be used to avoid a confined space entry

2. Follow OSHA regulations for confined space entry if entering manhole

iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches) proceed to Step 2. If not proceed to Step 3.

StormTech Isolator Row (not to scale)



Step 2) Clean out Isolator Row using the JetVac process

A) A fixed culvert cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable

B) Apply multiple passes of JetVac until backflush water is clean

C) Vacuum manhole sump as required

Step 3) Replace all caps, lids and covers, record observations and actions

Step 4) Inspect & clean catch basins and manholes upstream of the StormTech system

Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1) - (2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/01	6.3 ft.	none		New installation. Fixed point is CI frame at grade	djm
9/24/01		6.2	0.1 ft.	Some grit felt	sm
6/20/03		5.8	0.5 ft.	Mucky feel, debris visible in manhole and in Isolator row, maintenance due	rv
7/7/03	6.3 ft.		0	System jetted and vacuumed	djm

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STORMWATER MAINTENANCE AND INSPECTION AGREEMENT: INSPECTION LOG

FILTRATION BMP:		
Location: 161 York Street Portland, Maine	**Latitude:**	43.64991389°
	Longitude:	70.25986111°
Description of Located Point: Northwest area of lot - behind the building	**Inspector:**	
	Date of Inspection:	
	Weather Conditions:	

Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
Underdrained Ditch, Vegetated Underdrain Soil Filter, Bio-retention Cell, etc.							
Sand filter retains the design volume for a drain down time greater than 24-hours and less than 36-hours	☑	☑	☐	☐ Yes ☐ No ☐ N/A			
The outlet control structure is in good working condition.	☑	☐	☐	☐ Yes ☐ No ☐ N/A			
Inlet and pre-treatment measures are free of sediment and floatables accumulation.	☑	☐	☐	☐ Yes ☐ No ☐ N/A			
Maintain in accordance with manufacturer's recommendations	☐	☐	☑	☐ Yes ☐ No ☐ N/A			
Treatment device is working properly and is free of debris and sediment	☐	☐	☑	☐ Yes ☐ No ☐ N/A			
Sediment is less than 3 inches within the isolator row	☐	☐	☑	☐ Yes ☐ No ☐ N/A			
Catch basin is working properly and is free of debris and sediment	☐	☐	☑	☐ Yes ☐ No ☐ N/A			
Basin outlet hood (if any) is working properly.	☑	☑	☐	☐ Yes ☐ No ☐ N/A			
The outlet control structure is in good working condition	☐	☑	☐	☐ Yes ☐ No ☐ N/A			
Inter-basin storm drain is functioning properly and free of sediment and debris.	☑	☑	☐	☐ Yes ☐ No ☐ N/A			

STORMWATER MAINTENANCE AND INSPECTION AGREEMENT: INSPECTION LOG

Maintenance Items	Inspect In Spring	Inspect In Fall	Inspect As Necessary		Maintenance Requested (Date)	Maintenance Completed (Date)	Summary of Maintenance Required
General							
Access to facility is adequate	☐	☑	☐	☐ Yes ☐ No ☐ N/A			
Photographs of most recent site inspection are included	☐	☑	☐				Photographs are attached.
Additional Comments:							

PC1

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

161 York Street

Katherine Searles <libbyvalley@yahoo.com> Thu, Dec 15, 2016 at 3:44 PM
Reply-To: Katherine Searles <libbyvalley@yahoo.com>
To: "shukriaw@portlandmaine.gov" <shukriaw@portlandmaine.gov>

Hello,
This is in response to a neighborhood meeting we attended on Dec 12th concerning 161 York St. Could you explain how the height requirement works, this area has a 45 foot height limit and this new project is 5 stories on the York St side and 4 stories on the Guilford Court side, and we are aware of the fact that there is a difference in the elevation from the front to the back and this is to be a flat roof. There is a section in back and on the side that the previous owners used as a compost area so we were wondering if the developers are using that elevation to increase their percentage of height. Also they plan a roof top stair exit that seems in extreme in height and size, is this allowed for it will increase the overall height. We are hoping that a 45 foot height building will not end up as a 58 foot building.
Thank you for any feed back on this issue.

Katherine Searles
14 Stetson Court
Portland Maine
632-5947

Google Groups

161 York St., Application #2016-261, CBL #044 B006

Busby, Margaret M <MBusby@unum.com> Feb 23, 2017 9:41 AM
Posted in group: **Planning Board**

Hello Planning Board Members,

I attended the 1/17/17 workshop that addressed the proposal referenced above, and I made comments at the meeting. I am documenting those comments here, and adding comments and questions I didn't have time for. These comments and questions are presented without the benefit of seeing revisions to the original proposal, as my work hours conflict with the hours that City Hall is open and revisions have not yet been posted to the website.

1. Have questions about the right to access Guilford Ct. been resolved?

2. Use of Guilford Ct. for any additional vehicles beyond those of existing residents would be an undue strain on this small private road. The proposed 6 vehicles to use Guilford would be a 25% increase in the number of vehicles using the road. This road is only wide enough for 1 vehicle to pass at a time, and gets narrower during winter with banked snow. Where much of the snow from the road is banked would be eliminated for a Guilford Ct. parking entrance, thus narrowing the road further while also increasing traffic. The applicants mentioned that there could be snow storage at the end of the road. That location is already used for snow storage, and can't accommodate more. My property begins where the road ends, and snow storage from the road already makes it awkward to exit my driveway in an average winter.

3. If there is a parking entrance/exit on Guilford, as the city does not plow or maintain the road, how will snow removal be handled for that entrance/exit, and how will new owners contribute to road plowing costs and road maintenance?

4. I disagree with the applicant's comment during the meeting that the original planting plan is dense. Applicant's submittals note that only 4 street trees and 1 on-site tree are proposed rather than the 11 required "due to constraints within the property." This seems like saying that they're building so large to maximize profits that they don't have room to comply with the requirements. Two waivers are requested, for the street tree requirement and the landscape preservation requirement. I ask that these waivers not be granted, especially as all of the trees on the property, including those in the property setbacks, are to be cut down. A number of these are old growth trees. Granting the waiver for new trees due to a large a building footprint defeats the purpose of the requirement to plant trees in the developed site. Donation to the City's tree fund simply leads to trees being planted in another location, not around the development space where they're intended to be. This makes it easier for developers to circumvent the tree requirement by building something large and not accounting for room for trees. Jeff Tarling's comments in the original packet, under Existing Plantings to Remain, state "any plant loss to be replaced with agreed upon plant types to match." Does this include trees? The significant reduction in green space from the site's prior condition also reduces wildlife habitat, which is already very limited within the city.

5. There is existing chain link fencing along the boundary between my property and the site. This has prevented people passing from one property to the other, or through from York St. Since the chain link fence is to be removed, I request that new fencing be required at the rear of the property. At the 1/17 meeting, the applicants stated that they intend to include such fencing.

6. It appears that a significant stretch of Guilford may need to be dug up for utility work. Will that limit resident use of the road for a certain period of time? If so, will the developer make alternate and convenient parking arrangements for impacted residents?

7. If there is a parking entrance/exit on Guilford Ct., the plan appears to have that sloped up from the current grade. Will this cause water to flow down the road, leading to icier conditions during the winter?

7. Can abutters review the required boundary survey prior to the plan being finalized so any potential

disputes can be resolved in advance?

8. Is there potential impact to property taxes in the neighborhood? I realize that this may be difficult to predict, but many long-term residents have left Portland due to increasing property taxes.

Thank you for your consideration.

Margaret Busby
16 Stetson Ct. (rear of property abuts Guilford Ct.)
Portland, ME 04101

Portland Maine | Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

161 York St. Proposal - Application ID# 2016-261, CBL # 044 B006001

Busby, Margaret M <MBusby@unum.com> Mon, Dec 19, 2016 at 1:50 AM
To: "shukriaw@portlandmaine.gov" <shukriaw@portlandmaine.gov>

Hello Ms. Wiar - My properties on Stetson Ct. and Guilford Ct. (CBL 044-B-022-001 and CBL 044-B-013-001) abut the above-referenced property and I would like to provide some comments on the proposal.

1) The developers propose to use Guilford Ct. as access/egress for 6 vehicles. Guilford Ct. is a very small private road. The City does not plow it, and it is only wide enough to allow one vehicle at a time. If a vehicle is coming into the Court from Park St., and a vehicle is leaving the Court, the vehicle leaving must back up into the Court, sometimes halfway, to allow the other vehicle to enter, as the entering vehicle is more likely to have traffic behind it and be unable to back up. This is particularly difficult in the winter, when snow banks narrow the Court and must be navigated. Guilford Ct. is already at vehicle capacity. The addition of 6 vehicles would be a 25% increase in the number of vehicles using this small road, and would further complicate access/egress. I ask that the use of Guilford Ct. for access/egress be denied.

Use of Guilford Ct. for access/egress would also significantly alter how current Court residents manage snow storage. First, because the Court is so narrow, most snow from the road is pushed up to the end of the road, bordering my property. Although this may narrow my driveway entrance in snow-heavy years, this practice has always been acceptable to me, with the understanding that all residents would share the cost of removing some of the snow if my driveway became inaccessible. This would no longer be possible if use of the Court is allowed for access/egress, as it would block the proposed location of Court access/egress for the York St. property. This would require that more snow be banked along the road, further narrowing an already narrow road while increasing the number of vehicles using it. If use of the Court is approved, it would need to be required that snow from that entrance to be stored on the York St. property, as there would be no space for that snow to be stored along the road. Second, the cost of plowing is shared by all current residents using the Court based on the number of units in their buildings. If use of Guilford Ct. is approved for access/egress, we would require that any new residents using the Court also pay a share of these costs, but how would we enforce that?

2) The height of the building appears to exceed restrictions. I understand that an average is taken of heights at various points. It seems like this allows architects/developers to essentially circumvent the restrictions by having certain points on the building exceed the limits as long as other points are proportionately below the limit. If heights are measured just at the corners of the building, and there is a stair/elevator stack on the roof but not at a corner, this increases height but would not be figured into the measurement at all. Is this what the City intended?

3) There is currently an old chain link fence on much of three sides of the York St. property, including the line between my property and the York St. property. This has prevented individuals from passing between the properties. The current proposal shows no planned fencing at the rear of the York St. property, but the existing fencing is to be removed and some plantings to be added. At the 12/12/16 neighborhood meeting, the developers indicated they were open to discussion about fencing along this rear line. I ask that fencing at the rear of the York St. property to be required to prevent individuals from crossing between the properties, as the existing fence does.

4) There are currently a number of mature deciduous trees on the York St. property. These are proposed to all be removed and small evergreens and shrubs to be planted, with the exceptions of a few small trees to be added at the front of the building and one small tree to be added at the left of the building. At the 12/12/16 neighborhood meeting, the developers indicated that they were open to discussion regarding plantings. I ask that some of the mature perimeter trees on the property be preserved to be consistent with the scale of the building and to maintain the current character of the neighborhood, which has scattered mature, large trees. At the very least, I ask that larger trees be planted rather than the small trees, evergreens and shrubs that are that are proposed.

5) Guilford Ct. will need some maintenance within the next few years due to inadequate subgrade support/preparation when the road was paved by developers of the most recent building on the Court, and winter frost heaves. If use of the Court is approved for access/egress, that increased use of the Court will require maintenance to be done sooner. As the City does not provide any maintenance of the Court, we would expect that residents using the Court share in those costs, as with Court snow plowing, but how would we enforce that?

Thank you for the opportunity to provide comments. If you have any questions, please let me know.

Margaret M. Busby

16 Stetson Ct.

Portland, ME 04101

mbusby@unum.com

207-772-6258

Portland Maine Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

161 York Street proposal - Application ID# 2016-261, CBL #044 B044-B-013-001

Lynn Miller <lsmiller18@me.com> Mon, Jan 2, 2017 at 11:32 AM
To: shukriaw@portlandmaine.gov

Dear Ms. Wiar,

As an owner at 16 Guilford Ct (3B), I would like to state some concerns I have with the proposal noted above.

My most serious concern is the height of the building, which appears to exceed restrictions with the appearance of circumvention by the developers. As someone whose unit overlooks this proposed development, my view would be directly impacted by this proposed taller building. I ask that the height restrictions imposed by the city be honored.

I am also concerned about the proposal to clear cut the mature deciduous trees on 161 York Street. I feel that these trees should be left as natural boundaries and habitats for wildlife, as well as to blend in with the rest of our neighborhood.

I also ask that this new development share in any cost of maintenance and clearing of our access road.

Thank you for your consideration of this matter.

Lynn S. Miller
16 Guilford Ct #3B
Portland 04101

Portland Maine | Yes, Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

161 York St

Katherine Searles <libbyvalley@yahoo.com> Sun, Feb 26, 2017 at 2:21 PM
Reply-To: Katherine Searles <libbyvalley@yahoo.com>
To: Shukria Wiar <shukriaw@portlandmaine.gov>

Hello Shukria,
I have just read the latest documents on 161 York St regarding the 11 units. I am most concern with the addition of 6 cars on Guilford Ct . In two places in the documents it reads 9 - 2 bedroom units and 2 - 3 bedroom units this is under Proposed Development then it read under parking that there are to be 3 - 3 bedroom units and 8 - 2 bedroom units. The city only requires 8 parking spots and the developer wants to offer 2 per unit stating that there is the need for additional parking plus it would make his development more attractive to the higher cost that he wants.
To add an additional 14 parking spots is not the right way, no other development that I know of does this. I would like to see the document they provided to the city stating that 2 spaces per unit were necessary. If in fact there are either 2 or 3 units that are 3 bedroom by offering 2 spots for those units only would reduce the parking to either 10 or 11 parking spots. This would eliminate the use of Guilford Ct. While I recognize that they have the right to use the courtyard, I also believe the existing owners who also have that right deserve the right to have a safe roadway which by placing additional 6 cars on a narrow one lane road does not provide. The city does not want them to back out into York St however they are ok with backing out onto Park St? Park St is not a quiet road that is easily backed out on. My understanding that there would be a road maintenance agreement, who is to enforce this?
I ask that you please reconsider granting a waive on the amount of parking spaces allowed, the city set up these requirements for a reason and I ask that you follow that requirement.

Katherine

161 YORK STREET REDEVELOPMENT

YORK STREET REDEVELOPMENT, LLC
PORTLAND, MAINE

LEGEND

EXISTING

REFER TO THE EXISTING CONDITIONS PLAN FOR ADDITIONAL INFORMATION

PROPOSED

UNDERDRAIN	
BRICK SIDEWALK	
GREEN SPACE	
PROPOSED PAVEMENT	
UTILITY PAVEMENT CUTS	
FENCELINE	
STRIPING	
SEDIMENTATION BARRIER	
EDGE OF EX. PAVEMENT	
CURB	
SIGN	
LAMP OR LIGHT POLE	
UTILITY POLE	
GUY WIRE	
WATER VALVE	
FIRE HYDRANT	
SEWER MANHOLE	
CATCH BASIN	
OIL-WATER SEPARATOR	
FLOOR DRAIN / FIELD INLET	
UNDERGROUND ELECTRIC LINE	UGE
UNDERGROUND WATER LINE	6"W 6"W
MINOR CONTOURS (1 FT)	64
MAJOR CONTOURS (5 FT)	65
GAS LINE	GAS GAS
STORM DRAIN LINE	SD SD
GARAGE SEWER	
SANITARY SEWER LINE	S S
EXISTING/PROPOSED BUILDING	
FOUNDATION DRAIN	
UNDERGROUND ELECTRICAL/TELEPHONE/CABLE	UGE/T/C
PROPERTY LINE	
SETBACKS	

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UTILITIES

SEWER:

DEPARTMENT OF PUBLIC WORKS (DPW)
55 PORTLAND STREET
PORTLAND, MAINE 04101
CONTACT: BRADLEY ROLAND, P.E.
(207) 874-8846

WATER:

PORTLAND WATER DISTRICT (PWD)
225 DOUGLASS STREET
PO BOX 3553
PORTLAND, MAINE 04104
ATTN: MEANS DIVISION
(207) 774-5961

ELECTRIC:

CENTRAL MAINE POWER COMPANY (CMP)
162 CANCO ROAD
PORTLAND, MAINE 04103
CONTACT: PAUL DUPERRE
(207) 828-2882

TELEPHONE:

FAIRPOINT COMMUNICATIONS
45 FOREST AVENUE
PORTLAND, MAINE 04101
CONTACT: SCOTT DERRIG
(207) 797-1866

CABLE:

CHARTER COMMUNICATIONS
(FORMERLY TIME WARNER CABLE)
118 JOHNSON ROAD
PORTLAND, MAINE 04102
CONTACT: MARK PELLETIER
(877) 546-0962

NATURAL GAS:

UNITIL SERVICE CORP.
1075 FOREST AVENUE
PORTLAND, ME 04103
CONTACT: BRIDGET HARMON
(207) 541-2536

CALL BEFORE YOU DIG
1-888-DIG-SAFE
1-888-344-7233

PROJECT TEAM

DEVELOPER:

YORK STREET DEVELOPMENT, LLC
PORTLAND, MAINE
CONTACT: MICHAEL CIANCHETTE
(207) 774-1000

ARCHITECT:

MARK MUELLER ARCHITECTS
PORTLAND, MAINE
CONTACT: MARK MUELLER, MAINE LICENSED ARCHITECT
(207) 774-9057

SURVEYOR:

SPURWINK SURVEYING LLC
SCARBOROUGH, MAINE
CONTACT: JAMES MULLEN, P.L.S.
(207) 321-8966

GEOTECHNICAL ENGINEER:

SUMMIT GEOENGINEERING SERVICES, INC.
LEWISTON, MAINE
CONTACT: BILL PETERLEIN, P.E.
(207) 576-3313

STRUCTURAL ENGINEER:

STRUCTURAL INTEGRITY CONSULTING ENGINEERS, INC.
PORTLAND, MAINE
CONTACT: AARON JONES, P.E.
(207) 774-4614

ABBREVIATIONS

PARTIAL LIST OF ABBREVIATIONS AND THEIR CORRESPONDING MEANING. PLEASE CONTACT THE ENGINEER FOR ANY CLARIFICATION

APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CY	CUBIC YARD
DIP	DUCTILE IRON PIPE
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FT.	FEET
GAL.	GALVANIZED
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
L	LENGTH
MAX.	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
MFG.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHE/T/C	OVERHEAD ELECTRIC/TELEPHONE/CABLE
PC	PRECAST
PE	PROFESSIONAL ENGINEER
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PROP.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
RET.	RETAINING
ROW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TWC	TIME WARNER CABLE/CHARTER COMM.
TYP.	TYPICAL
UD	UNDERDRAIN
UGE	UNDERGROUND ELECTRIC

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
PRELIM. APP.	WHS	11/8/16
FINAL APP.	WHS	2/9/17

DRAWING NAME: COVER SHEET & LEGEND
PROJECT NAME: 161 YORK STREET REDEVELOPMENT
CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

ACORN ENGINEERING, INC.
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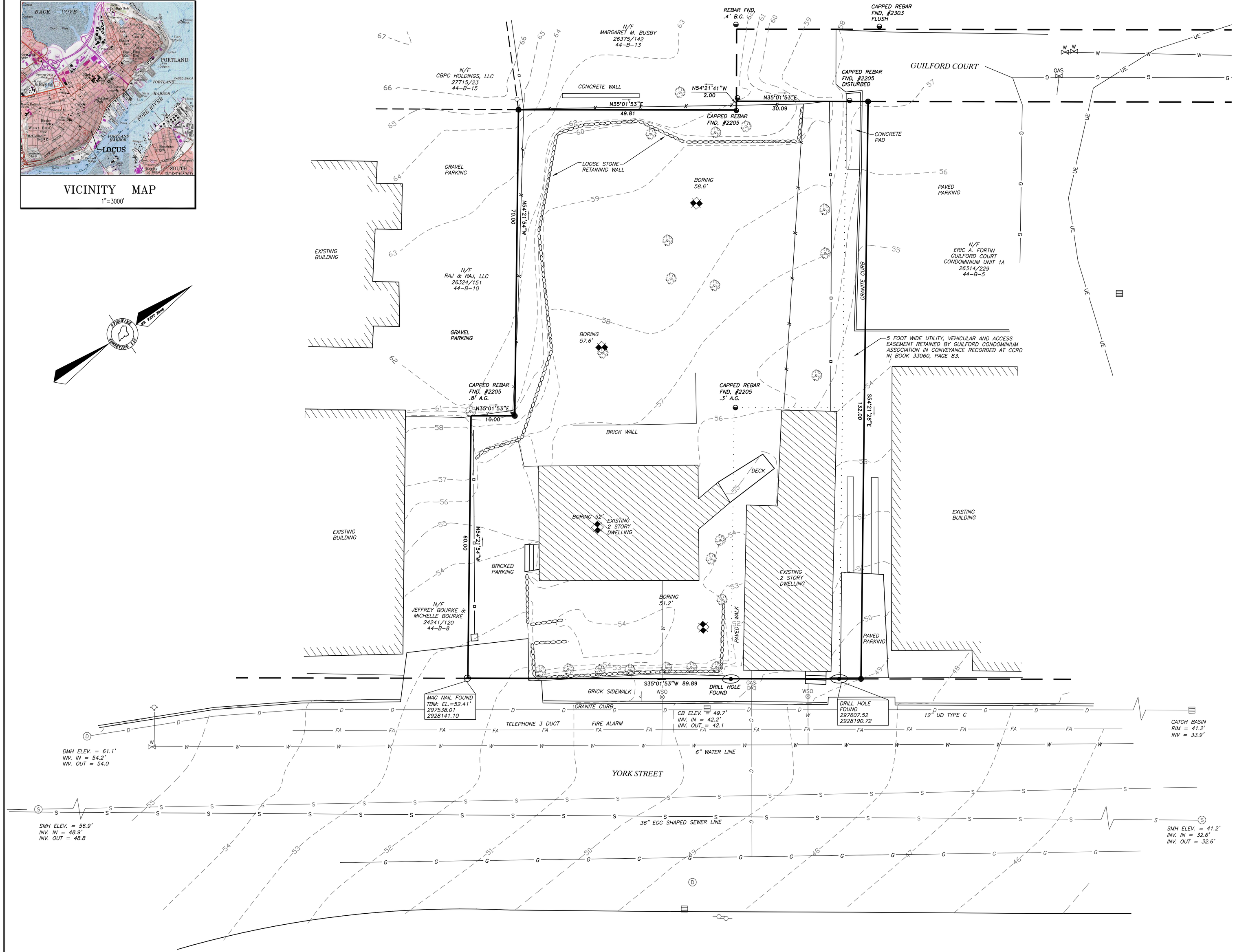
158 DANFORTH STREET PORTLAND, MAINE 04102
(207) 775-2855

FILE: 1074_CIVIL
JN: 1074
SCALE: NTS
DESIGNED BY: WHS
DRAWN BY: SJL
CHECKED BY: WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 14419
2-9-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-01

VICINITY MAP
1"=3000'



LEGEND

- #5 REBAR WITH PLASTIC CAP STAMPED P.L.S. #2028
- FOUND IRON PIPE (SIZE & TYPE AS NOTED)
- FOUND IRON ROD
- FOUND CAPPED IRON ROD (NUMBER AS NOTED)
- UTILITY POLE (NUMBER AS NOTED)
- FOUND DRILL HOLE
- CHAIN LINK FENCE
- STOCKADE FENCE
- FOUND DECIDUOUS TREE (SIZE & TYPE AS NOTED)
- FOUND CONIFEROUS TREE (SIZE & TYPE AS NOTED)
- BOUNDARY LINE
- EASEMENT LINE
- EDGE OF PAVEMENT
- RIGHT-OF-WAY LINE
- ABUTTER LINE
- OHU — OVERHEAD UTILITY
- N/F — NOW OR FORMERLY OWNED BY
- 1234/567 — DEED BOOK AND PAGE (????CRD)
- 12-3-45 — TAX MAP-BLOCK-LOT
- (123.45') — PARENTHESIS DENOTE RECORD DATA
- WSO — WATER SHUT OFF
- FIRE HYDRANT

NOTES

1. THE BASIS OF BEARING FOR THIS SURVEY IS MAINE STATE COORDINATE SYSTEM, WEST ZONE. ELEVATIONS AND CONTOURS ARE REFERENCED TO NAVD 1929.
2. DEED AND PLAN BOOK REFERENCES ARE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS
3. RECORD OWNERSHIP OF 161 YORK STREET CAN BE FOUND IN A DEED FROM REBECCA A. LAKE AND ROXANNE A. LAROCHELLE TO YORK STREET REDEVELOPMENT, LLC DATED SEPTEMBER 9, 2015 AND RECORDED AT CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN DEED BOOK 32580, PAGE 186. RECORD OWNERSHIP OF 163 YORK STREET CAN BE FOUND IN A DEED FROM ROSARY M. LAROCHELLE TO YORK STREET REDEVELOPMENT, LLC DATED SEPTEMBER 9, 2015 AND RECORDED AT CCRD IN DEED BOOK 32580, PAGE 183. DEED FROM GUILFORD COURT CONDOMINIUM ASSOCIATION TO YORK STREET REDEVELOPMENT, LLC DATED APRIL 8, 2016 AND RECORDED AT CCRD IN BOOK 33060, PAGE 83.
4. REFERENCE IS MADE TO THE FOLLOWING PLANS:
   a. "STANDARD BOUNDARY SURVEY, LOTS AT 161 & 163 (A.K.A.165) YORK STREET FOR ROSARY M. LAROCHELLE & RALPH A. LAROCHELLE, PORTLAND, MAINE" BY ROSSBOUNDARY SURVEYS DATED OCTOBER 2004. RECORDED AT CCRD IN PLAN BOOK 214, PAGE 119.
   b. "SUBDIVISION RECORDING PLAT OF GUILFORD COURT AT 157 YORK STREET" FOR WAYNE BARKER AND TACHA VOSBURGH BY BACK BAY BOUNDARIES, INC." DATED NOVEMBER 11, 2002. RECORDED AT CCRD IN PLAN BOOK 204, PAGE 447.
5. THE PARCEL SURVEYED IS IDENTIFIED ON THE CITY OF PORTLAND TAX ASSESSOR'S MAP 44, BLOCK B, PARCELS 6 &7.
6. THE PARCEL SURVEYED IS LOCATED IN THE R6 ZONE/DISTRICT*. PORTIONS OF BULK AND SPACE REQUIREMENTS ARE AS FOLLOWS:

   FRONT SETBACK: 5 FEET
   SIDE SETBACK: 5 FEET
   REAR SETBACK: 10 FEET

   *OTHER MUNICIPAL AND STATE OVERLAY ZONES MAY EXIST AND APPLY. BEFORE PROCEEDING ON ANY PROJECT WE RECOMMEND VERIFYING CURRENT ZONING / SETBACKS / RESTRICTIONS WITH THE APPROPRIATE AGENCIES.
7. YORK STREET IS AN ACCEPTED CITY STREET 4 RODS (66') WIDE. GUILFORD COURT IS A PRIVATE STREET ONE ROD (16.5 FEET) WIDE.
12. THE UTILITIES SHOWN ON THIS PLAN WERE MARKED BY DIG SAFE ON 10/8/2015 AND THEIR LOCATIONS ARE TO BE CONSIDERED APPROXIMATE. THERE MAY BE OTHER UTILITIES EXISTING THAT ARE NOT SHOWN. CONTRACTOR TO CONTACT DIG-SAFE (888)DIG-SAFE PRIOR TO ANY EXCAVATION WORK.

Revision:	By:	Date:	Change:
C	J.A.M.	2-28-17	REVISED PROPERTY LINES AND EASEMENTS
B	J.A.M.	9-14-16	ADDED UTILITY INFORMATION
A	J.A.M.	12-16-2015	ADDED 5' STRIP/EASEMENT CROSS CONVEYANCE W/ GUILFORD CONDOMINIUMS

PROJECT: 201563	DRAWING NAME: YORKSTREETREDEVELOPMENT,LLC.DWG	
DATE: SEPTEMBER 29, 2015	SCALE: 1"=10'	FB # 12 E. FB Y
FIELDED BY: J.A.M. & K.P.	FIELD DATE: 9-23-2015	DRAWN BY: J.A.M.

Drawing Name and Location:
EXISTING CONDITIONS/SITE PLAN
161 & 163 YORK STREET, PORTLAND, MAINE

Owner:
YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

Prepared For:
YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

SURVEYING LAND PLANNING
Spurwink Surveying LLC
INCORPORATED
182 SPURWINK ROAD, SCARBOROUGH, MAINE
tel 207.799.2654 cell 207.321.8966 e-mail spurwinksurveying@gmail.com

0 10' 20' 40'

STAMP AND SIGNATURE

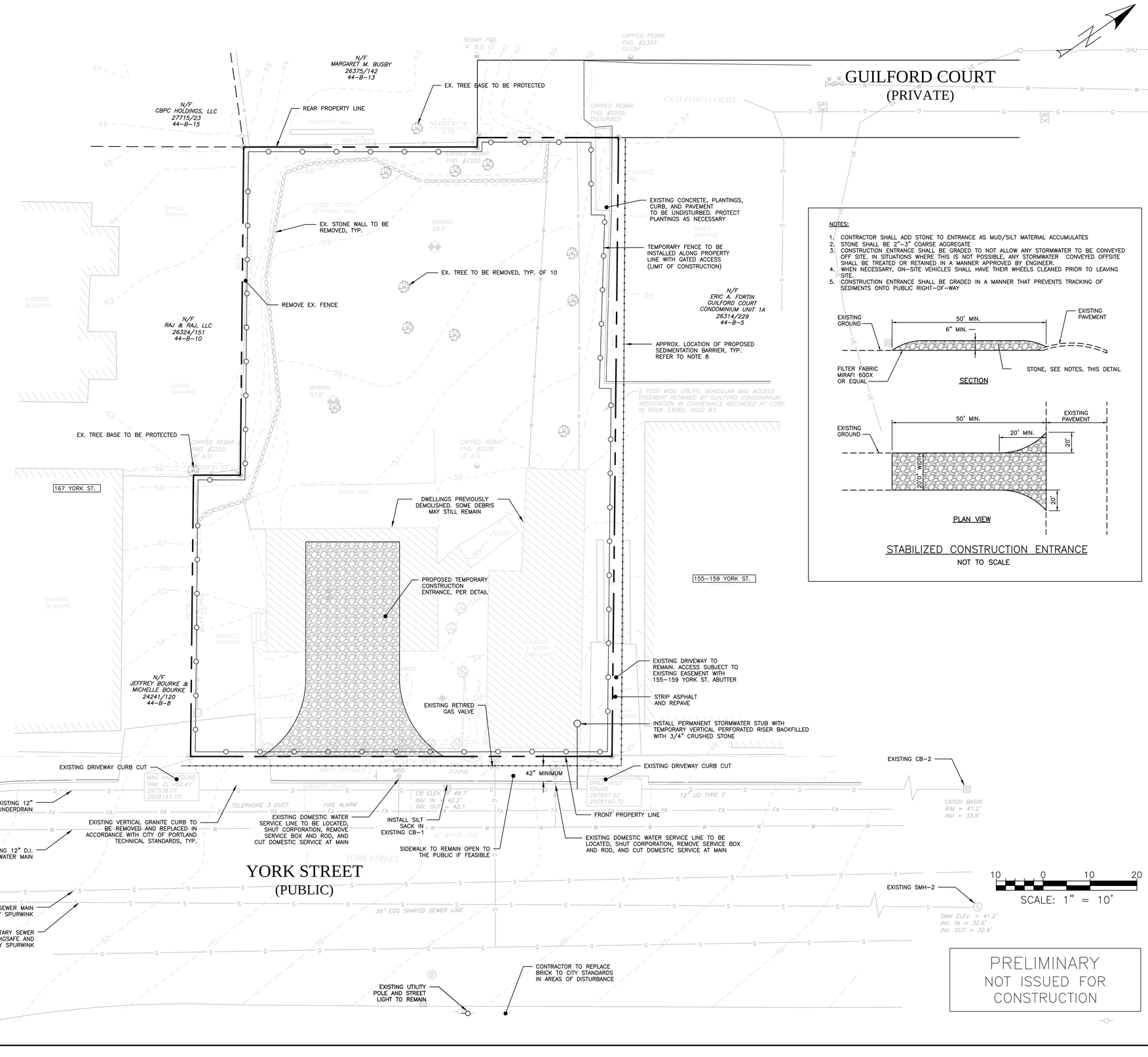
James A. Mullen MARCH 8, 2017
JAMES A. MULLEN DATE
MAINE P.L.S. No. 2028

STATE OF MAINE · JAMES A. MULLEN PLS 2028 · PROFESSIONAL LAND SURVEYOR

IF THIS PLAN DOES NOT CONTAIN AN EMBOSSED SEAL, IT IS NOT AN ORIGINAL AND MAY BE VOID.
EMBOSSED SEAL ABOVE

GENERAL NOTES:

1. CONTRACTOR TO COORDINATE WITH PORTLAND WATER DISTRICT TO ABANDON EXISTING WATER SERVICE LINES.
2. ANY EXISTING ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
3. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTOR SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" TO DEMONSTRATE PROPER DISPOSAL OF ALL MATERIALS.
4. SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE POTENTIAL CONFLICT WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
6. CONTRACTOR TO COORDINATE SITE DEMOLITION WITH YORK STREET REDEVELOPMENT.
7. NOTE THAT ALL CONSTRUCTION SIGNAGE IS TEMPORARY AND WILL BE REMOVED AT PROJECT COMPLETION.
8. SEDIMENT BARRIERS TO BE PLACED DIRECTLY ON THE FRONT AND SIDE PROPERTY LINES, DOWN GRADIENT OF THE PROPOSED PROJECT WORK PER DETAIL; SEDIMENT BARRIER AND CONSTRUCTION FENCE ARE OFFSET OF THE PROPERTY LINES AS SHOWN ON THE PLAN FOR CLARITY PURPOSES AND DO NOT NECESSARILY REPRESENT THE SPECIFIC LOCATION OF PHYSICAL LOCATION.
9. CONTRACTOR SHALL PLACE CATCH BASIN INLET PROTECTION ON CATCH BASINS AND FIELD INLETS DOWN-GRADIENT OF ALL NON-STABILIZED SURFACES, PER DETAIL.
10. CONTRACTOR SHALL INSTALL CONSTRUCTION ENTRANCE AT ALL LOCATIONS OF INGRESS AND EGRESS DURING CONSTRUCTION TO THE SITE. SEE DETAIL.
11. ALL EXISTING TREES AND BRUSH WITHIN PROPERTY LINE SHALL BE REMOVED.
12. DEMOLITION PLAN IS NOT INCLUSIVE OF ALL EXISTING ITEMS TO BE REMOVED AS PART OF SITE CONSTRUCTION INCLUDING BUT NOT LIMITED TO LANDSCAPING, UTILITIES, WORK WITHIN THE ROW, ETC. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND REGULATIONS.
13. AN EXISTING SEWER SERVICE WAS NOT LOCATED. CONTRACTOR TO VERIFY.
14. THE EXISTING CONCRETE, PLANTINGS, GRANITE CURB, AND PAVEMENT IN THE AREA ABUTTING "N/F ERIC A. FORTIN" SHALL BE UNDISTURBED.
15. THE EXISTING BITUMINOUS DRIVEWAY SHARED WITH 155-159 YORK ST. SHALL BE STRIPPED AND REPAVED TO FACILITATE INSTALLATION OF UNDERGROUND ELECTRIC, TELEPHONE, AND CABLE. AN EASEMENT EXISTS FOR THIS DRIVEWAY.



NOTES:

1. CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES
2. STONE SHALL BE 2"-3" COARSE AGGREGATE
3. CONSTRUCTION ENTRANCE SHALL BE GRADED TO NOT ALLOW ANY STORMWATER TO BE CONVEYED OFF SITE. IN SITUATIONS WHERE THIS IS NOT POSSIBLE, ANY STORMWATER CONVEYED OFFSITE SHALL BE TREATED OR RETAINED IN A MANNER APPROVED BY ENGINEER.
4. WHEN NECESSARY, ON-SITE VEHICLES SHALL HAVE THEIR WHEELS CLEANED PRIOR TO LEAVING SITE.
5. CONSTRUCTION ENTRANCE SHALL BE GRADED IN A MANNER THAT PREVENTS TRACKING OF SEDIMENTS ONTO PUBLIC RIGHT-OF-WAY

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17
PB COMMENTS	WHS 3/14/17

DRAWING NAME: CONSTRUCTION MANAGEMENT PLAN

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC.
158 DANFORTH STREET PORTLAND, MAINE 04102
T: (207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN, EITHER GRAPHICALLY OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1074_CIVIL
JN:	1074
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H SAVAGE
No. 11418
4-14-17
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
C-03

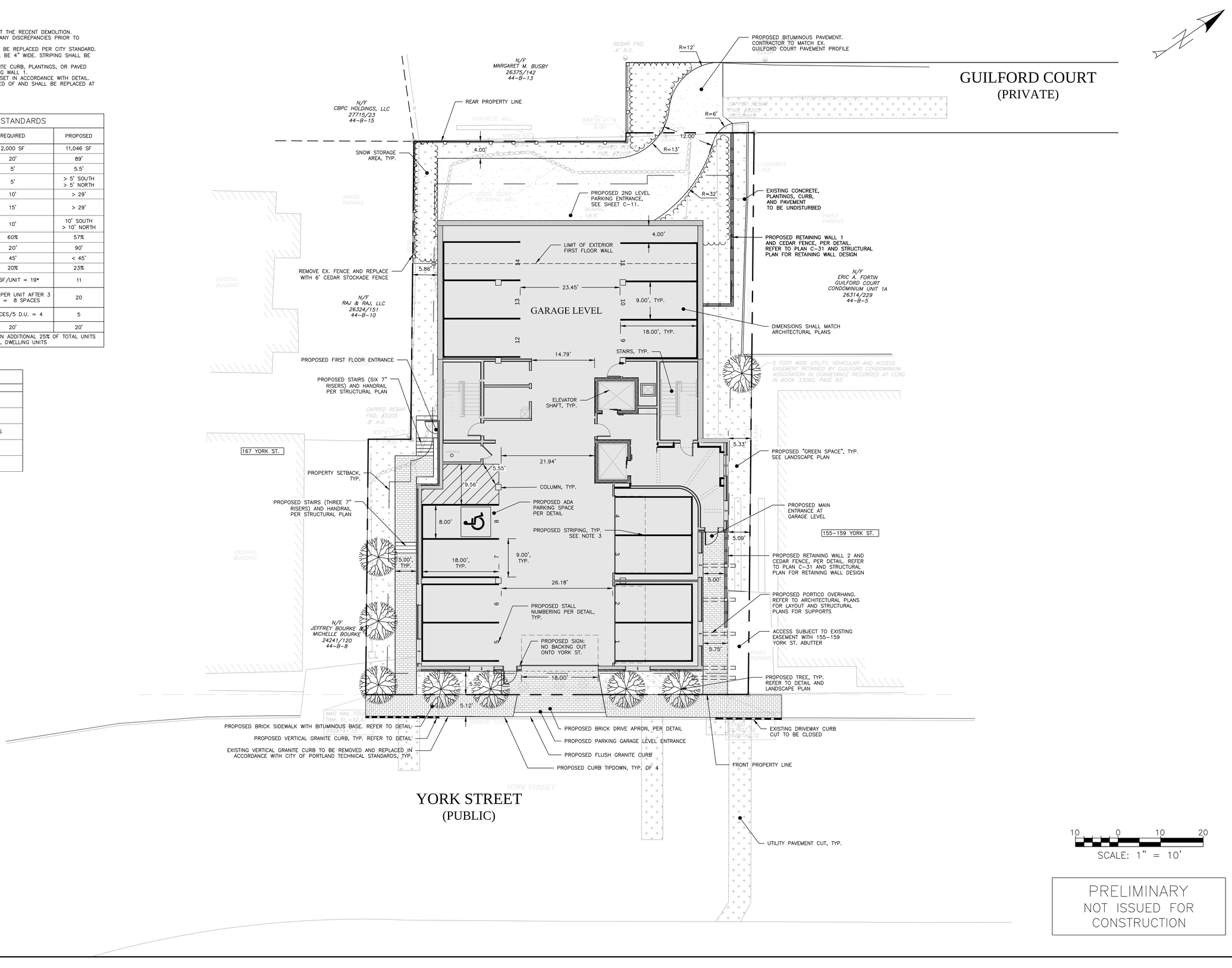
GENERAL NOTES:

1. EXISTING CONDITIONS PLAN DOES NOT DEPICT THE RECENT DEMOLITION. CONTRACTOR SHALL INSPECT THE SITE FOR ANY DISCREPANCIES PRIOR TO PLACING A BID.
2. ALL BRICK SIDEWALK AND GRANITE CURB TO BE REPLACED PER CITY STANDARD.
3. STRIPING AS INDICATED ON SITE PLAN SHALL BE 4" WIDE. STRIPING SHALL BE WHITE UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL NOT DISTURB THE GRANITE CURB, PLANTINGS, OR PAVED PARKING NORTHEAST OF PROPOSED RETAINING WALL 1.
5. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

SPACE AND BULK STANDARDS		
ZONE: R6	REQUIRED	PROPOSED
MINIMUM LOT SIZE	2,000 SF	11,046 SF
MINIMUM STREET FRONTAGE	20'	89'
FRONT YARD SETBACK	5'	5.5'
SIDE YARD SETBACK	5'	> 5' SOUTH > 5' NORTH
REAR YARD SETBACK	10'	> 29'
STRUCTURE STEPBACKS (REAR YARD ABOVE 35')	15'	> 29'
STRUCTURE STEPBACKS (SIDE YARD ABOVE 35')	10'	10' SOUTH > 10' NORTH
MAXIMUM LOT COVERAGE	60%	57%
MINIMUM LOT WIDTH	20'	90'
MAXIMUM BUILDING HEIGHT	45'	< 45'
MINIMUM LANDSCAPED OPEN AREA	20%	23%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 19*	11
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 8 SPACES	20
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 4	5
MAXIMUM GARAGE OPENING	20'	20'
*PER INCLUSIONARY HOUSING DENSITY BONUS, AN ADDITIONAL 25% OF TOTAL UNITS ARE ADDED TO THE MAXIMUM, ALLOWABLE TOTAL DWELLING UNITS		

LEGEND	
HATCH STYLE	ASSOCIATED AREAS
	BRICK SIDEWALK
	GREEN SPACE
	UTILITY PAVEMENT CUTS
	CONCRETE
	SNOW STORAGE AREA

GARAGE LEVEL PARKING SUMMARY	
PARKING DIMENSION	# PARKING SPACES
STANDARD (9'X18')	13
ADA (8'X18')	1
TOTAL SPACES	14



PRELIMINARY
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ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17
PB COMMENTS	WHS 3/14/17

DRAWING NAME: SITE PLAN - GARAGE LEVEL

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND MAINE 04102
(207) 775-2655

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JN:	1074
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

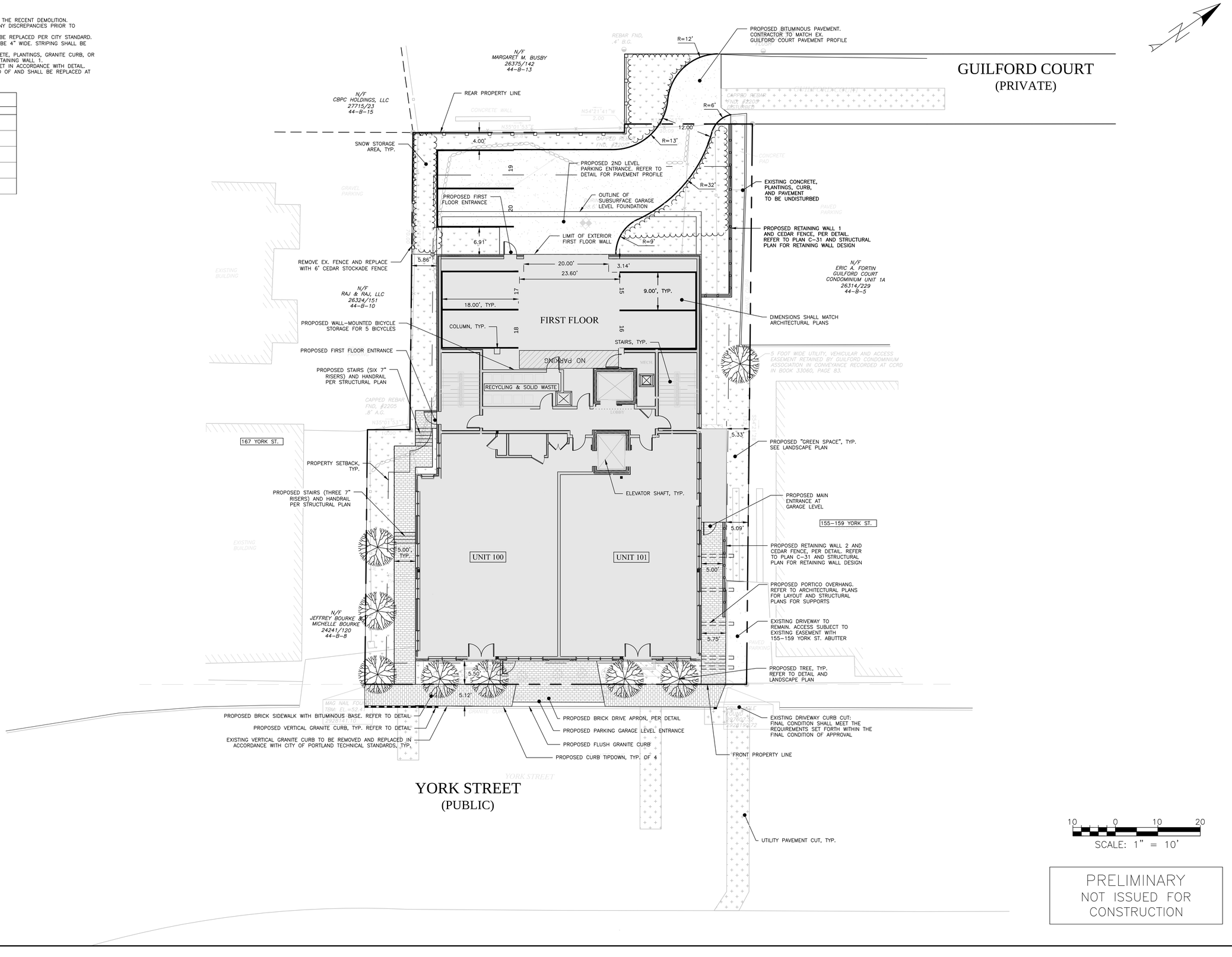
DRAWING NO.
C-10

GENERAL NOTES:

1. EXISTING CONDITIONS PLAN DOES NOT DEPICT THE RECENT DEMOLITION. CONTRACTOR SHALL INSPECT THE SITE FOR ANY DISCREPANCIES PRIOR TO PLACING A BID.
2. ALL BRICK SIDEWALK AND GRANITE CURB TO BE REPLACED PER CITY STANDARD.
3. STRIPING AS INDICATED ON SITE PLAN SHALL BE 4" WIDE. STRIPING SHALL BE WHITE UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL NOT DISTURB THE CONCRETE, PLANTINGS, GRANITE CURB, OR PAVED PARKING NORTHEAST OF PROPOSED RETAINING WALL 1.
5. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

LEGEND	
HATCH STYLE	ASSOCIATED AREAS
	BRICK SIDEWALK
	GREEN SPACE
	UTILITY PAVEMENT CUTS
	CONCRETE
	SNOW STORAGE AREA

PARKING SUMMARY	
PARKING DIMENSION	# PARKING SPACES
STANDARD (9'X18')	6
TOTAL SPACES	6



PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17
PB COMMENTS	WHS 3/14/17

DRAWING NAME: SITE PLAN – 1ST FLOOR

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET PORTLAND MAINE 04102
(207) 775-2855

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JN:	1074
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H SAVAGE
No. 11415
3-14-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-11

GENERAL NOTES:

1. ALL PROPOSED GREEN SPACES AND ASSOCIATED PLANT SPECIES ARE TO COMPLY WITH THE CITY OF PORTLAND TECHNICAL STANDARDS. ANY SUBSTITUTIONS SHALL BE REVIEWED FOR APPROVAL BY THE CITY ARBORIST.
2. NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
3. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
4. ALL CONTAINER MATERIAL TO BE GROWN IN CONTAINER MINIMUM OF 6 MONTHS.
5. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
6. CONTRACTOR SHALL REPAIR ALL DAMAGE TO PROPERTY FROM PLANTING OPERATIONS AT NO COST TO OWNER.
7. THE PROPERTY OWNER IS RESPONSIBLE FOR THE CONTINUED CARE AND MAINTENANCE OF THE LANDSCAPED AREA. NEW PLANTINGS THAT SHOW SIGNS OF CONSTRUCTION DAMAGE WITHIN A ONE YEAR PERIOD FOLLOWING CONSTRUCTION SHALL BE REJECTED AND REPLACED PRIOR TO ANY DEFECT GUARANTEE AT NO COST TO THE OWNER.
8. THE ENGINEER MAY TAG ALL PLANTS AT THE NURSERY AND INSPECT THEM AFTER DELIVERY TO THE SITE; ALL PLANT MATERIALS SHALL BE INSPECTED BY THE ENGINEER ON SITE PRIOR TO INSTALLATION.
9. THE MAJORITY OF SPECIES ARE SPECIFIED WITHIN THE MAINE DEP BUFFER ZONE PLANT LIST AND ARE NATIVE AND SALT & DROUGHT RESISTANT.
10. SEE PERMANENT SEEDING TABLE ON SHEET C-46 FOR MAINTAINED LAWN AREAS.

PLANT SCHEDULE

ID	BOTANICAL NAME	COMMON NAME	QTY	SIZE
	GRASSES			
LS	LIRIOPE SPICATA	CREEPING LILY TURF	32	3 QT.
PV	PANICUM VIRGATUM	SWITCH GRASS	150	3 QT.
	PERENNIALS			
RH	RUDBECKIA HIRTA	BLACK EYED SUSAN	28	1 GAL.
SS	SALVIA SYLVESTRIS	SAGE 'MAY NIGHT'	17	1 GAL.
JH	JUNIPERUS HORIZONTALIS	CREEPING JUNIPER	7	1 GAL.
LC	LOBELIA CARDINALIS	CARDINAL FLOWER	23	1 GAL.
	SHRUBS			
CS	CORNUS SERICEA	RED TWIG DOGWOOD	5	3 GAL.
WF	WEIGELA FRENCH	FRENCH LACE WEIGELA	1	3 GAL.
CA	CLETHRA ALNIFOLIA	RUBY SPICE SUMMERSWEET	1	3 GAL.
	TREES			
JV	JUNIPERUS VIRGINIANA	RED CEDAR	6	4–5 FT.
AR	ACER RUBRUM	ARMSTRONG RED MAPLE	5	2" CA.
MS	MAGNOLIA STELLATA	STAR MAGNOLIA	3	3 GAL.

LEGEND

STYLE	ASSOCIATED AREAS
	LANDSCAPED AREA
	BRICK SIDEWALK
	PAVEMENT
	BUILDING FOOTPRINT

GUILFORD COURT
(PRIVATE)

N/F MARGARET M. BUSBY 26375/142 44-B-13

N/F CBPC HOLDINGS, LLC 27715/23 44-B-15

EROSION CONTROL BLANKET TO BE INSTALLED WITH ORNAMENTAL GRASSES FOR EROSION CONTROL
LS (32)

JV (6) MIN. 6' APART O.C.

N54°21'41"W 2.00

N35°37'53"E

ALTERNATING PERENNIALS MIN. 30" APART:
RH (7)
SS (7)

PROPOSED RETAINING WALL AND CEDAR FENCE, PER DETAIL. REFER TO PLAN C-31 AND STRUCTURAL PLAN FOR RETAINING WALL DESIGN

USSF MANHOLE, TYP. OF 2

PROPOSED FIRST FLOOR ENTRANCE

EXISTING PLANTINGS TO REMAIN

REMOVE EX. FENCE AND REPLACE WITH 6' CEDAR STOCKADE FENCE

CS (5) PLANTED MIN. 6' APART O.C.

N/F ERIC A. FORTIN GUILFORD COURT CONDOMINIUM UNIT 1A 26314/229 44-B-5

N/F RAJ & RAJ, LLC 26324/151 44-B-10

FIRST FLOOR

PV (50)

PROPOSED FIRST FLOOR ENTRANCE

FOOT WIDE UTILITY, VEHICULAR AND ACCESS EASEMENT RETAINED BY GUILFORD CONDOMINIUM ASSOCIATION IN CONVEYANCE RECORDED AT CCRD CONDOMINIUM PAGE 41

PV (100)

EROSION CONTROL BLANKET

WF (1)

167 YORK ST.

LC (2)
SS (2)

CA (1)

RH (4)
LC (4)

PROPOSED MAIN ENTRANCE AT GARAGE LEVEL

155–159 YORK ST.

UNIT 100

UNIT 101

RH (4)
SS (4)

N/F JEFFREY BOURKE & MICHELLE BOURKE 24241/120 44-B-8

PROPOSED RETAINING WALL AND CEDAR FENCE, PER DETAIL. REFER TO PLAN C-31 AND STRUCTURAL PLAN FOR RETAINING WALL DESIGN

LC (4)
SS (4)

PLANT GROUND COVER AROUND TREE TRUNKS JH, TYP. OF 7

AR (5)

MS (3)

RH (13)
LC (13)

PROVIDE RAISED GRANITE BORDER AROUND TREES ALONG STREET FRONTAGE

YORK STREET
(PUBLIC)

10 0 10 20
SCALE: 1" = 10'

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17
PB COMMENTS	WHS 3/14/17

DRAWING NAME: LANDSCAPE PLAN

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

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FILE:	1074_CIVIL
JN:	1074
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11415
3-14-17
LICENSED
PROFESSIONAL ENGINEER

DRAWING NO.
L-1

GENERAL NOTES:

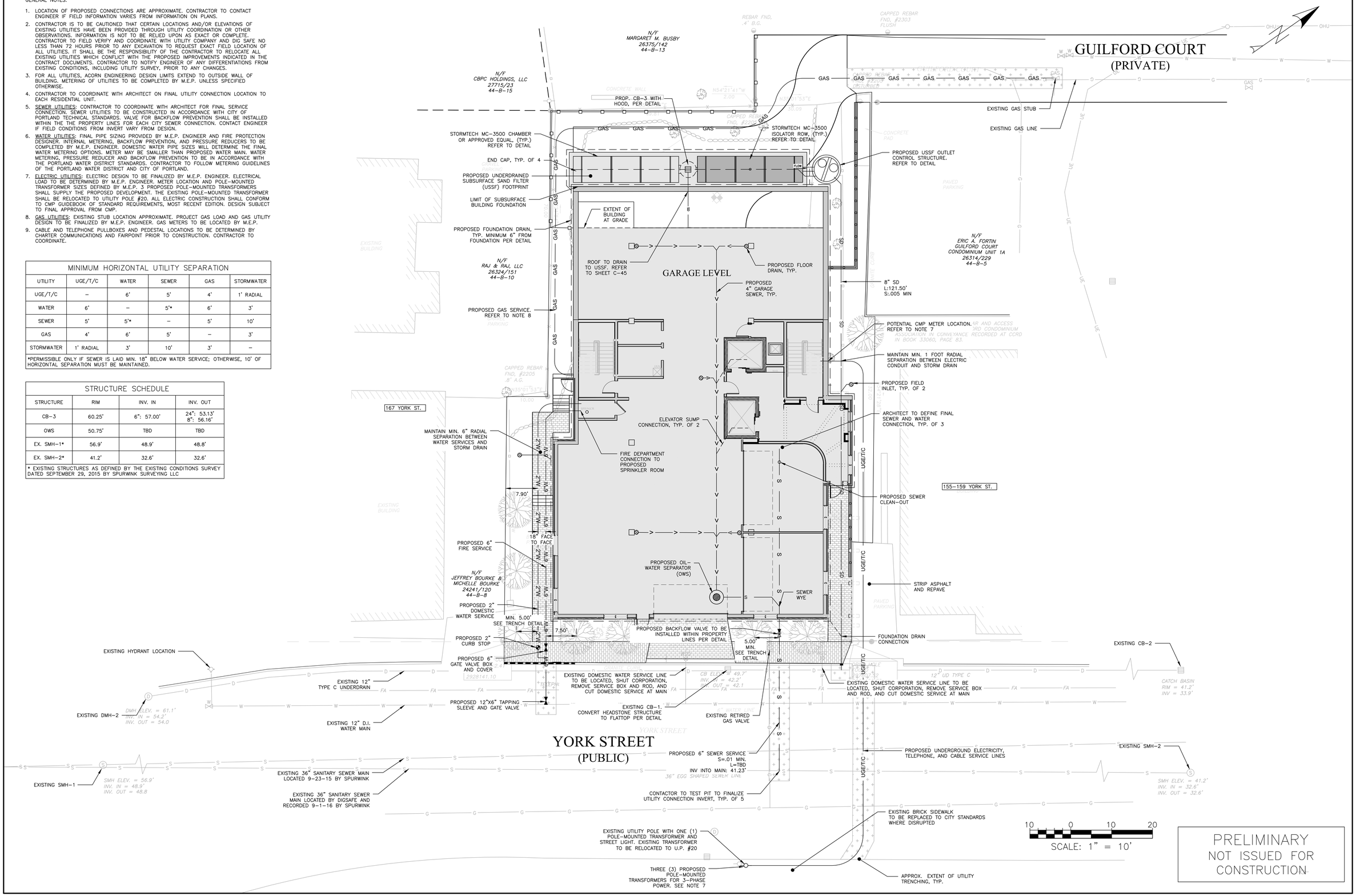
1. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
2. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY SURVEY, PRIOR TO ANY CHANGES.
3. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS EXTEND TO OUTSIDE WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
4. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTION LOCATION TO EACH RESIDENTIAL UNIT.
5. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF FIELD CONDITIONS FROM INVERT VARY FROM DESIGN.
6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.
7. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND POLE-MOUNTED TRANSFORMER SIZES DEFINED BY M.E.P. 3 PROPOSED POLE-MOUNTED TRANSFORMERS SHALL SUPPLY THE PROPOSED DEVELOPMENT. THE EXISTING POLE-MOUNTED TRANSFORMER SHALL BE RELOCATED TO UTILITY POLE #20. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
8. GAS UTILITIES: EXISTING STUB LOCATION APPROXIMATE. PROJECT GAS LOAD AND GAS UTILITY DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. GAS METERS TO BE LOCATED BY M.E.P.
9. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND FAIRPOINT PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE.

MINIMUM HORIZONTAL UTILITY SEPARATION					
UTILITY	UGE/T/C	WATER	SEWER	GAS	STORMWATER
UGE/T/C	–	6'	5'	4'	1' RADIAL
WATER	6'	–	5'*	6'	3'
SEWER	5'	5'*	–	5'	10'
GAS	4'	6'	5'	–	3'
STORMWATER	1' RADIAL	3'	10'	3'	–

*PERMISSIBLE ONLY IF SEWER IS LAID MIN. 18" BELOW WATER SERVICE; OTHERWISE, 10' OF HORIZONTAL SEPARATION MUST BE MAINTAINED.

STRUCTURE SCHEDULE			
STRUCTURE	RIM	INV. IN	INV. OUT
CB-3	60.25'	6": 57.00'	24": 53.13' 8": 56.16'
OWS	50.75'	TBD	TBD
EX. SMH-1*	56.9'	48.9'	48.8'
EX. SMH-2*	41.2'	32.6'	32.6'

* EXISTING STRUCTURES AS DEFINED BY THE EXISTING CONDITIONS SURVEY DATED SEPTEMBER 29, 2015 BY SPURWINK SURVEYING LLC



PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
ABILITY TO SERVE	WHS 8/3/16
UTILITY REVIEW	WHS 11/2/16
PRELIM. APP.	WHS 11/8/16
PWD APPROVAL	WHS 2/8/17
FINAL APP.	WHS 2/9/17
PB COMMENTS	WHS 3/14/17

DRAWING NAME: UTILITY PLAN
PROJECT NAME: 161 YORK STREET REDEVELOPMENT
CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

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ACORN ENGINEERING, INC.
158 DANFORTH STREET PORTLAND MAINE 04102
(207) 775-2655

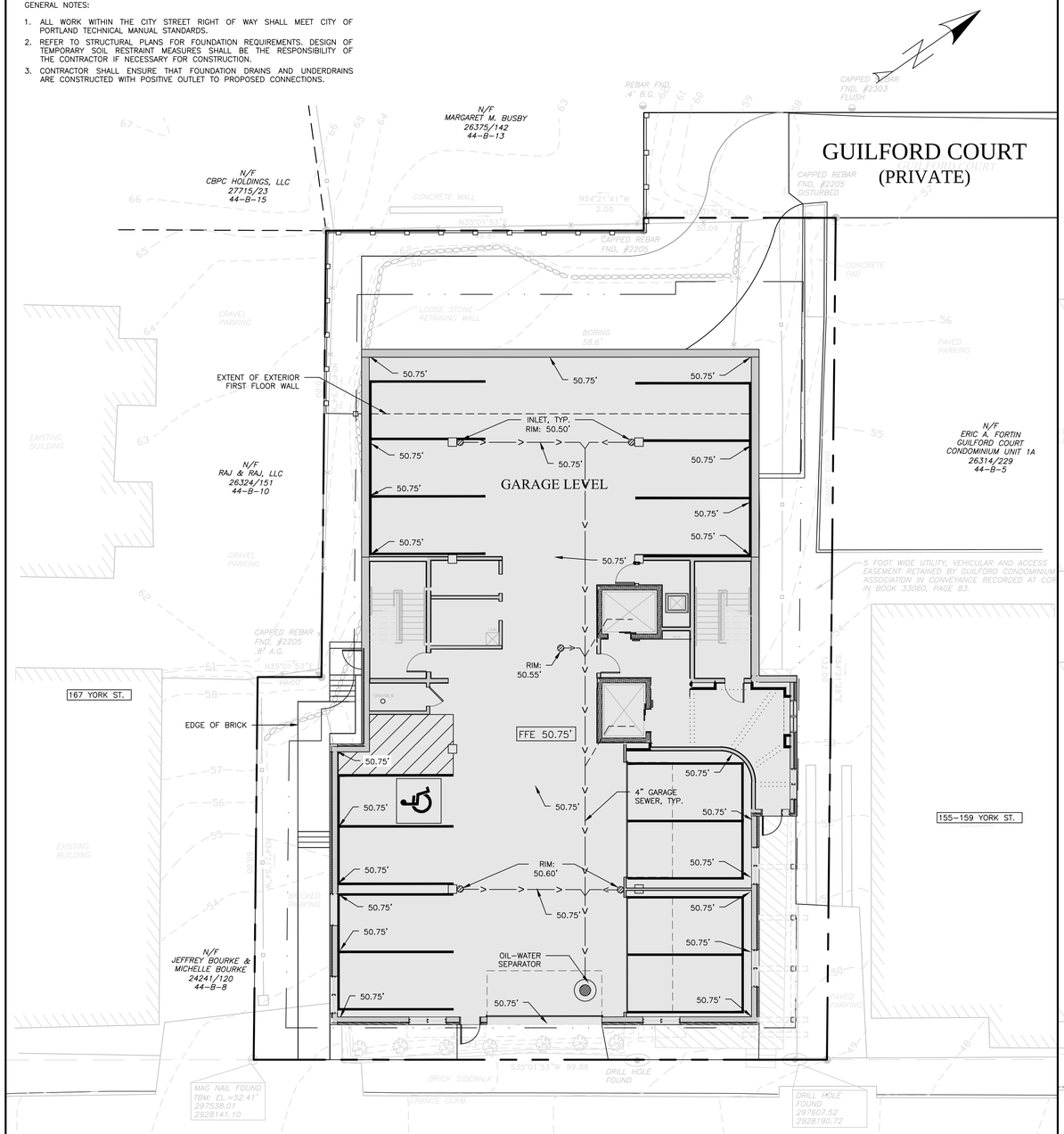
FILE: 1074_CIVIL
JN: 1074
SCALE: 1"=10'
DESIGNED BY: SJL
DRAWN BY: SJL
CHECKED BY: WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11416
2-14-17
LICENSED PROFESSIONAL ENGINEER

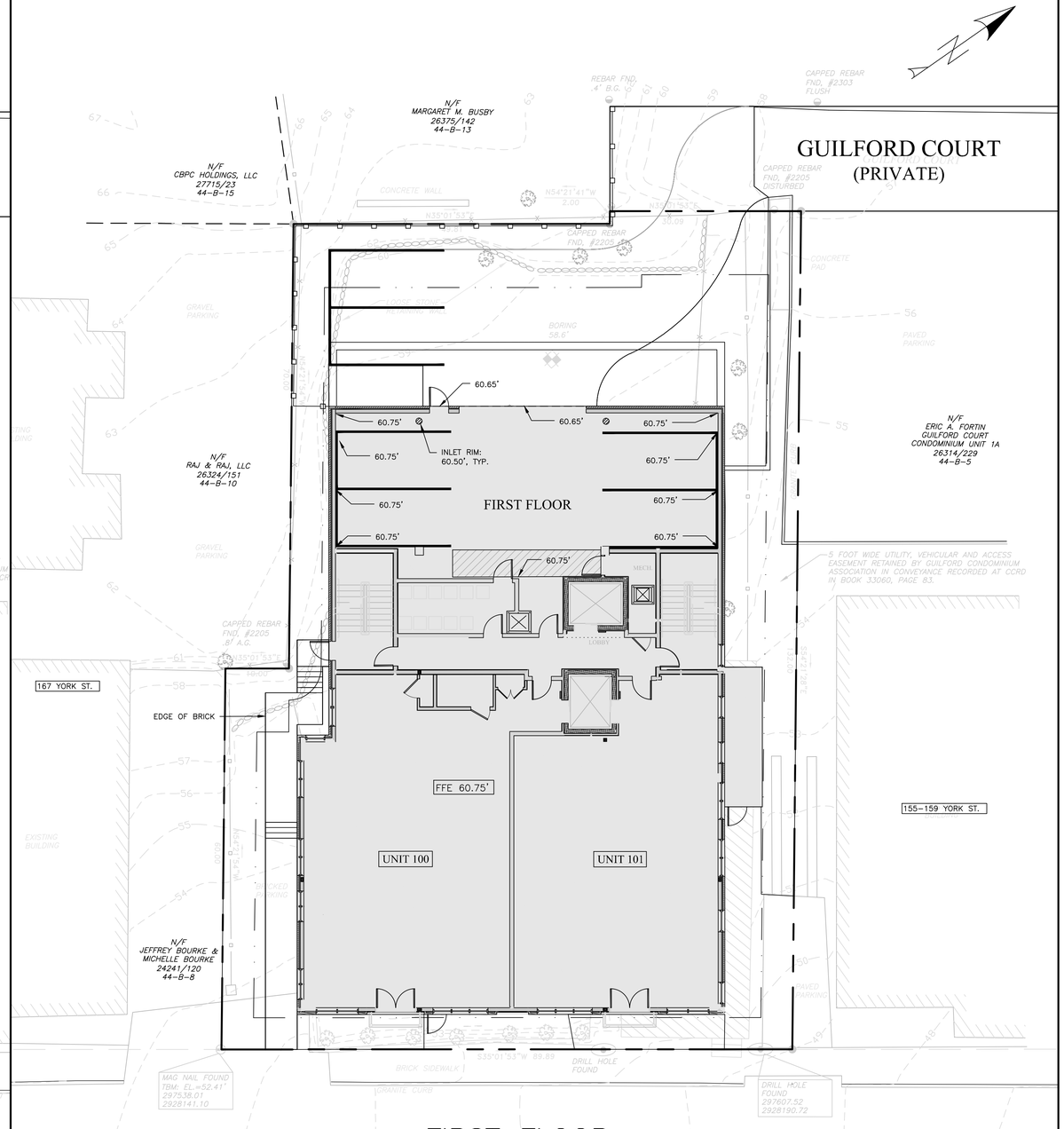
DRAWING NO.
C-20

GENERAL NOTES:

1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
2. REFER TO STRUCTURAL PLANS FOR FOUNDATION REQUIREMENTS. DESIGN OF TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. CONTRACTOR SHALL ENSURE THAT FOUNDATION DRAINS AND UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.



GARAGE LEVEL



FIRST FLOOR

10 0 10 20
SCALE: 1" = 10'

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17
PB COMMENTS	WHS 3/14/17

DRAWING NAME: **INTERNAL GRADING PLANS – GARAGE AND FIRST FLOOR**

PROJECT NAME: **161 YORK STREET REDEVELOPMENT**

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

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ACORN ENGINEERING, INC.
158 DANFORTH STREET, PORTLAND, MAINE 04102
(207) 775-2655

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DRAWN BY:	SJL
CHECKED BY:	WHS

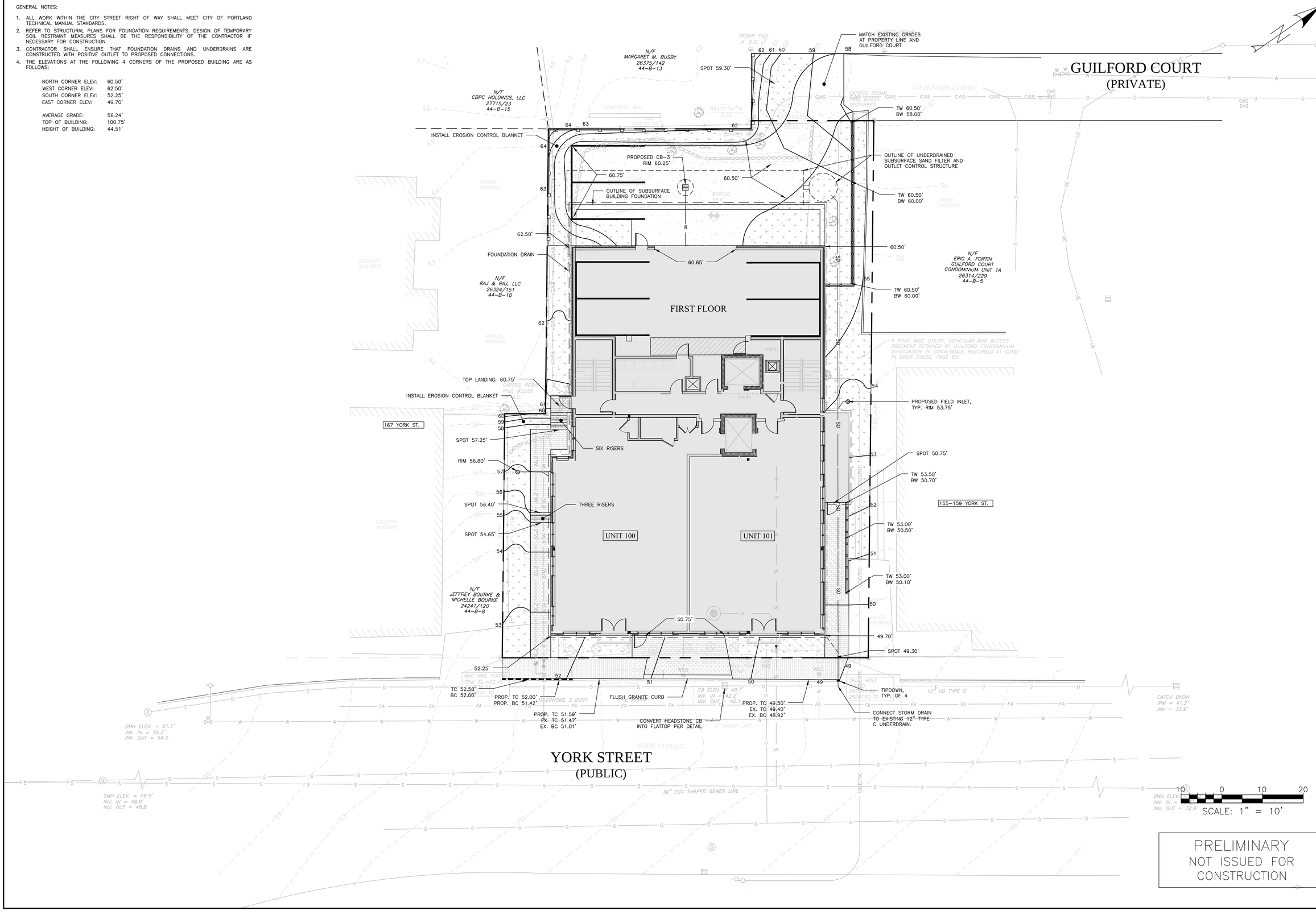
STATE OF MAINE
WILLIAM H. SAVAGE
No. 11415
3-14-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-30

GENERAL NOTES:

1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
2. REFER TO STRUCTURAL PLANS FOR FOUNDATION REQUIREMENTS. DESIGN OF TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. CONTRACTOR SHALL ENSURE THAT FOUNDATION DRAINS AND UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.
4. THE ELEVATIONS AT THE FOLLOWING 4 CORNERS OF THE PROPOSED BUILDING ARE AS FOLLOWS:

NORTH CORNER ELEV:	60.50'
WEST CORNER ELEV:	62.50'
SOUTH CORNER ELEV:	52.25'
EAST CORNER ELEV:	49.70'
AVERAGE GRADE:	56.24'
TOP OF BUILDING:	100.75'
HEIGHT OF BUILDING:	44.51'



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ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17
PB COMMENTS	WHS 3/14/17

DRAWING NAME: **PERIMETER GRADING & DRAINAGE PLAN**

PROJECT NAME: **161 YORK STREET REDEVELOPMENT**

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
CIVIL ENGINEERING AND LAND SURVEYING
158 DANFORTH STREET PORTLAND MAINE 04102
(207) 775-2855

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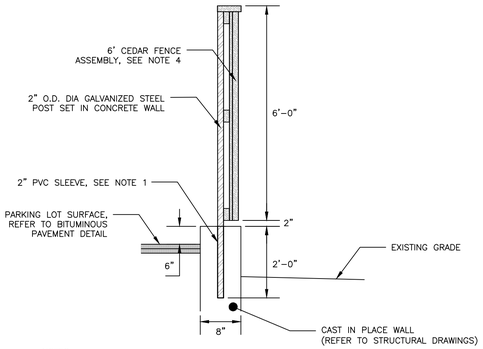
FILE:	1074_CIVIL
JN:	1074
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11419 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-31

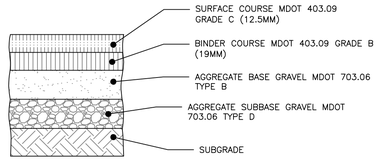


NOTES:

1. 2" I.D. PVC SLEEVE TO BE POURED IN PLACE DURING CONCRETE WALL CONSTRUCTION. SLEEVES TO BE SPACED A MAXIMUM OF 8' ALONG EXTENT OF WALL. CONTRACTOR TO DEFINE FINAL POST LOCATION BASED ON SITE CONDITIONS.
2. STEEL POSTS TO FACE IN TOWARDS THE PROPERTY.
3. FIRST 8' SECTION OF FENCE SHALL BE A 4' TALL ASSEMBLY FOLLOWED BY A SLOPED, TRANSITIONAL 8' SECTION STARTING AT 4' TALL TO THE STANDARD 6' TALL SECTION.
4. RECOMMENDED SUPPLIER FOR FENCE ASSEMBLY TO BE MAIN LINE FENCE OR AN APPROVED EQUAL.

CEDAR FENCE INSTALLED ON CAST IN PLACE RETAINING WALL DETAIL

NOT TO SCALE



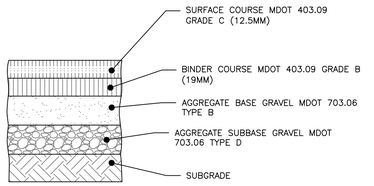
NOTES:

1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557
2. CONTRACTOR SHALL MATCH GUILFORD COURT PAVEMENT PROFILE WHEN EXTENDING ROADWAY. REAR DRIVEWAY SHALL BE CONSTRUCTED OF LOCAL PAVEMENT PROFILE.

THICKNESS OF LAYERS	
STANDARD	LAYERS
1-1/2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B
15"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

CITY OF PORTLAND LOCAL BITUMINOUS PAVEMENT PROFILE

NOT TO SCALE



NOTES:

1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557.
2. ARTERIAL BITUMINOUS PAVEMENT PROFILE APPLIES ONLY WITHIN YORK STREET R.O.W.

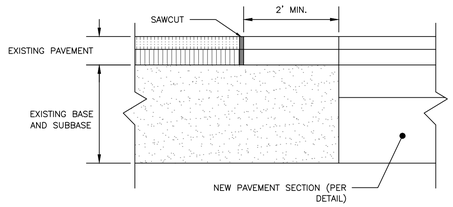
THICKNESS OF LAYERS	
STANDARD	LAYERS
2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
3"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
6"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B
18"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

CITY OF PORTLAND ARTERIAL BITUMINOUS PAVEMENT PROFILE: YORK STREET

NOT TO SCALE

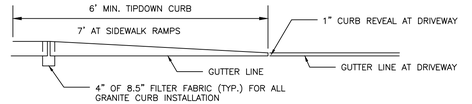
NOTES:

1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. APPLY BITUMINOUS TACK COAT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
2. THE NEW PAVEMENT SECTION SHALL MEET THE CITY OF PORTLAND ARTERIAL BITUMINOUS PAVEMENT SECTION DETAIL AT A MINIMUM OR THE THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH WHICHEVER IS GREATER.

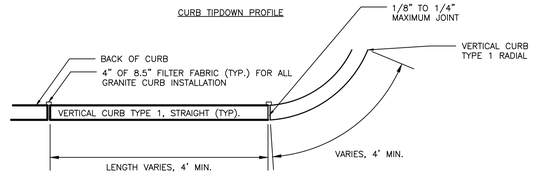


PAVEMENT SAWCUT DETAIL

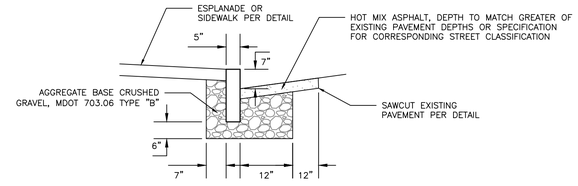
NOT TO SCALE



CURB TIPDOWN PROFILE



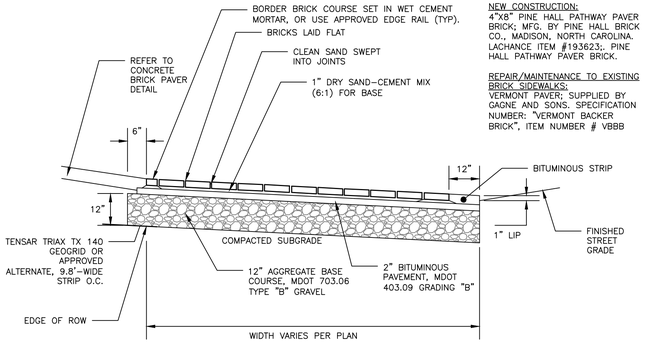
VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

VERTICAL GRANITE CURB AND TIPDOWN INSTALLATION

NOT TO SCALE



BRICKS TO BE USED:

NEW CONSTRUCTION:
4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623;. PINE HALL PATHWAY PAVER BRICK.

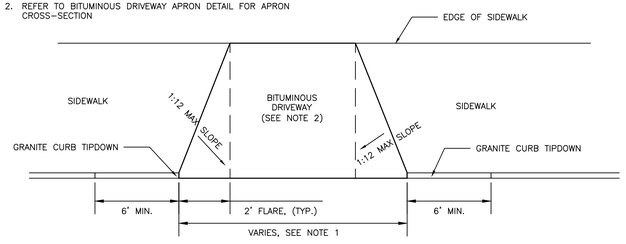
REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS:
VERMONT PAVER; SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: "VERMONT BACKER BRICK", ITEM NUMBER # VBBB

BRICK DRIVEWAY APRON WITH BITUMINOUS BASE DETAIL

NOT TO SCALE

NOTES:

1. REFER TO GRADING, DRAINAGE AND EROSION CONTROL PLANS FOR SITE GRADING
2. REFER TO BITUMINOUS DRIVEWAY APRON DETAIL FOR APRON CROSS-SECTION



DRIVEWAY APRON LAYOUT DETAIL

NOT TO SCALE

NOTES:

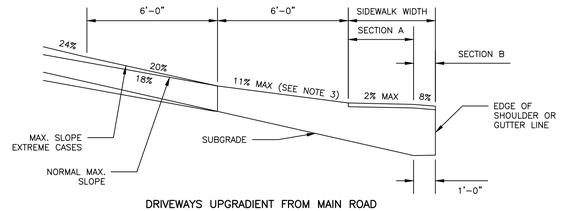
1. BRICKS TO BE USED:

   NEW CONSTRUCTION:
   4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623;. PINE HALL PATHWAY PAVER BRICK.

2. INSTALL BRICK FLUSH UP TO BUILDING, PAVEMENT, STAIRS, CONCRETE SURFACES, CURB OR LANDSCAPED AREAS.

BRICK SIDEWALK WITH BITUMINOUS BASE DETAIL

NOT TO SCALE



DRIVEWAYS UPGRADIENT FROM MAIN ROAD

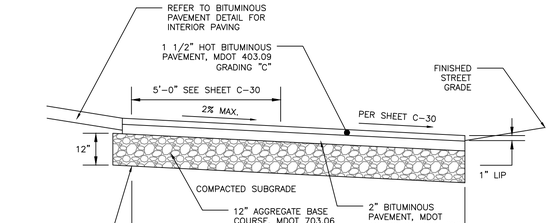
SIDEWALK CROWN TABLE	
SIDEWALK WIDTH	5'
SECTION A	4'
SECTION B	1'

GENERAL NOTES:
1. SEE DETAILS FOR SIDEWALK CONSTRUCTION MATERIALS.
2. SEE DETAILS FOR DRIVEWAY CONSTRUCTION MATERIALS.

MAXIMUM DRIVEWAY PROFILE NOTES:
1. THESE PROFILES ARE A GUIDE FOR THE MAJORITY OF CASES. CONTRACTOR TO FIELD CHECK ALL DRIVEWAYS PRIOR TO CONSTRUCTION.
2. IT IS UNDERSTOOD THAT THIS DETAIL REPRESENTS THE EXTREME LIMITS OF CONSTRUCTION ANGLES, AND THAT THE MAJORITY OF DRIVEWAYS WILL BE CONSTRUCTED WELL WITHIN THESE BOUNDS.
3. WHEN GRADING DRIVES THAT ARE FLATTER THAN THE MAXIMUM PROFILES, CONTRACTOR SHOULD NOT EXCEED A GRADE PERCENT CHANGE OF MORE THAN 9% PER 6-FOOT INCREMENT OF DRIVEWAY LENGTH (APPLIES TO BOTH UP-GRADIENT AND DOWN-GRADIENT PROFILES).

DRIVEWAY SLOPES ON SIDEWALK SECTION

NOT TO SCALE



BITUMINOUS DRIVEWAY APRON DETAIL

NOT TO SCALE

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
PRELIM. APP.	WHS	11/8/16
FINAL APP.	WHS	2/9/17

SITE DETAILS - 1

DRAWING NAME:

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

ACORN ENGINEERING, INC.

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ACORN ENGINEERING, INC.
158 DANFORTH ST. PORTLAND, MAINE 04102
(207) 775-2655

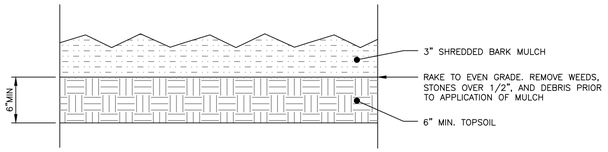
FILE:	1074_CIVIL
JN:	1074
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 14419
2-9-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-40

PLANTING NOTES:

1. ALL PLANT SELECTION AND INSTALLATION WILL BE IN COMPLIANCE WILL THE CITY OF PORTLAND TECHNICAL MANUAL (SECTION 4).
2. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
3. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER OF PLANTS SHOWN IN PLANT LIST (IF ANY), THE NUMBER OF PLANTS SHOWN ON PLAN WILL TAKE PRECEDENCE.
4. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
5. THE ENGINEER MAY TAG ALL PLANTS AT THE NURSERY AND INSPECT THEM AFTER DELIVERY TO THE SITE. ALL PLANT MATERIALS SHALL BE INSPECTED BY THE ENGINEER ON SITE PRIOR TO INSTALLATION.
6. ALL PROPOSED PLANTS SHALL BE LOCATED CAREFULLY AS SHOWN ON THE PLANS AND THE PLACEMENTS SHALL BE APPROVED BY ENGINEER BEFORE THE PLANTS ARE INSTALLED.
7. ALL DISTURBED AREAS NOT TO BE PAVED OR PLANTED SHALL BE LOAMED AND SEEDED AS SHOWN. THE SEED MIX SPECIFICATIONS ARE AS FOLLOWS: LESCO FINE FESCUE LINKS BLEND OF 35% HARD FESCUE, 35% CREEPING RED FESCUE, 20% CHEWINGS FESCUE AND 10% SHEEP FESCUE. ADD 5% LITTLE BLUESTEM AND 5% NORTHEAST WILDFLOWER SEED MIXTURE BY WEIGHT TO THE LINKS BLEND.
8. STAKING AND GUYING SHALL BE DETERMINED BY THE ENGINEER ON A TREE BY TREE BASIS. FOR PRICING PURPOSES, PROVIDE A PER TREE UNIT COST FOR STAKING AND GUYING. IF STAKING AND GUYING IS REQUIRED, REMOVE TREE WRAP, STAKES, AND GUY WIRES AT END OF FIRST GROWING SEASON.
9. FOR TREE PLANTING IN LAWN AREAS, ANY DISTURBED LAWN SHALL BE LOAMED AND SEEDED AS NECESSARY.



BARK MULCH DETAIL
NOT TO SCALE

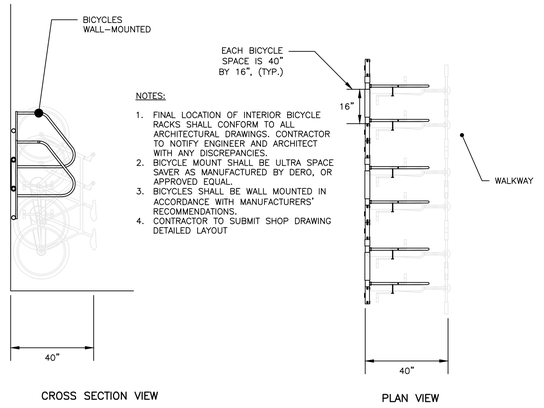
DIG HOLE AT LEAST 2 TIMES THE DIAMETER OF THE ROOT BALL AND AS DEEP AS THE ROOT BALL (NO DEEPER). SET ROOT BALL CENTERED, WITH THE TOP AT DOWNHILL EDGE OF THE HOLE.

TOPSOIL BACKFILL SHALL BE NATURAL FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING THE CHARACTERISTICS OF TOPSOIL IN THE VICINITY WHICH PRODUCE A HEAVY GROWTH. TOPSOIL SHALL CONTAIN NOT LESS THAN 6% NOR MORE THAN 20% ORGANIC MATTER. TOP SOIL SHALL HAVE A pH VALUE OF NOT LESS THAN 5.5 NOR MORE THAN 7.0.

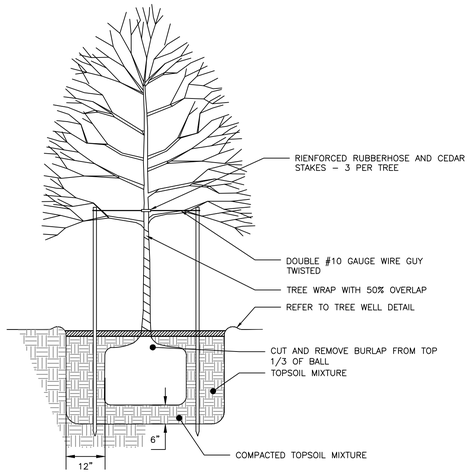
CONTAINER GROWN STOCK – REMOVE CONTAINER PROTECTING THE ROOT BALL. GENTLY COMB OUT THE ROOTS. PRUNE DAMAGED ROOTS.

BACKFILL THE HOLE WITH TOPSOIL TO A DEPTH NOT TO EXCEED 8" THEN WATER SUFFICIENTLY TO SETTLE TOPSOIL. REPEAT SOIL BACKFILL, WATER, DRAIN. TOPSOIL SHALL BE TAMPED UNDER EDGES OF THE BALLED PLANTS. BACKFILL TO FINISH GRADE AND CREATE AN EARTHEN SAUCER. SOAK PLANTS TWICE WITHIN THE FIRST TWENTY–FOUR HOURS OF PLANTING.

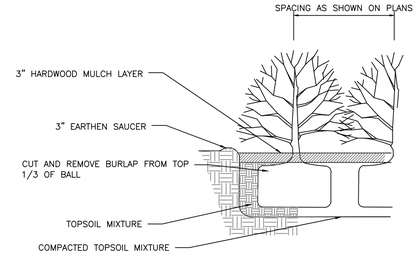
TYPICAL PLANTING
NOT TO SCALE



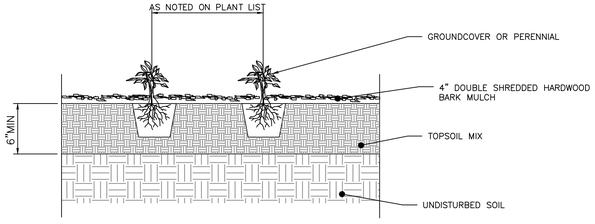
INTERIOR BICYCLE SPACE LAYOUT
NOT TO SCALE



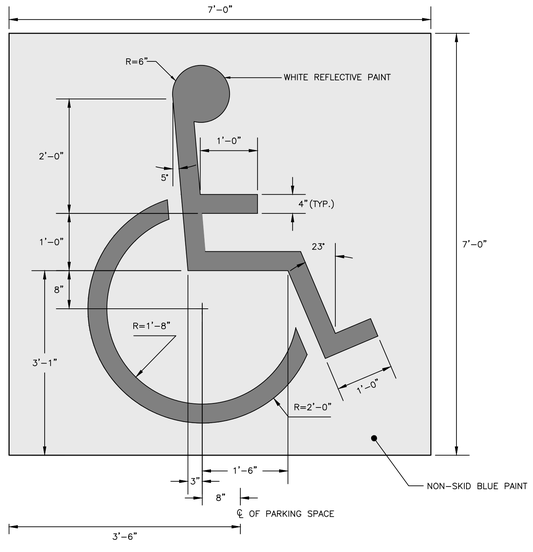
TREE PLANTING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE



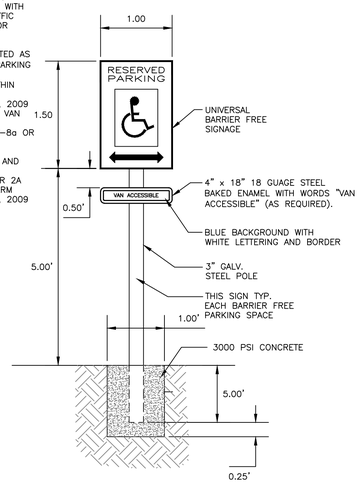
PERENNIAL PLANTING DETAIL
NOT TO SCALE



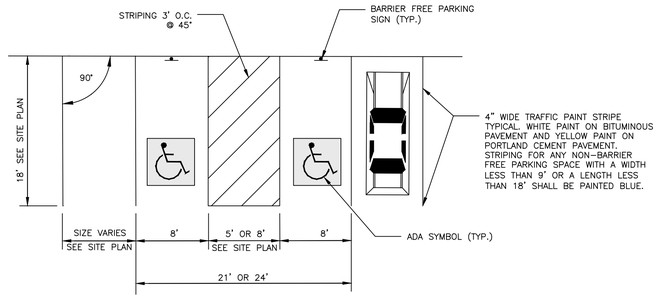
INTERNATIONAL BARRIER FREE SYMBOL
NOT TO SCALE

NOTES:

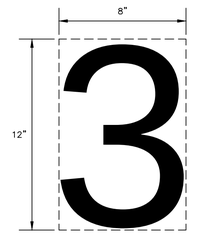
1. ALL ASPECTS OF RESERVED PARKING SIGN CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.
2. SIGN SHALL BE CONSTRUCTED AS SIGN R7–8 UNDER THE "PARKING AND STANDING SIGNS AND PLAQUES" (R7 SERIES) WITHIN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION. VAN ACCESSIBILITY SHALL BE CONSTRUCTED AS SIGN R7–8a OR R7–8b.
3. SIGN POST CONSTRUCTION AND MOUNTING SHALL BE IN ACCORDANCE WITH CHAPTER 2A OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.



BARRIER FREE PARKING SIGN
NOT TO SCALE



PARKING SPACE DIMENSIONS
NOT TO SCALE



NOTES:

1. NUMBERS TO BE PAINTED AS THE SAME COLOR AS THE CORRESPONDING PARKING SPACE.
2. BOTTOM OF NUMBER TO BE FLUSH WITH THE FRONT OF THE PARKING SPACE.

PARKING STALL NUMBER DETAIL
NOT TO SCALE

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17

DRAWING NAME: SITE DETAILS – 2

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

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ACORN ENGINEERING, INC.
158 DANFORTH ST. PORTLAND, MAINE 04102
(207) 775–2855

FILE:	1074_CIVIL
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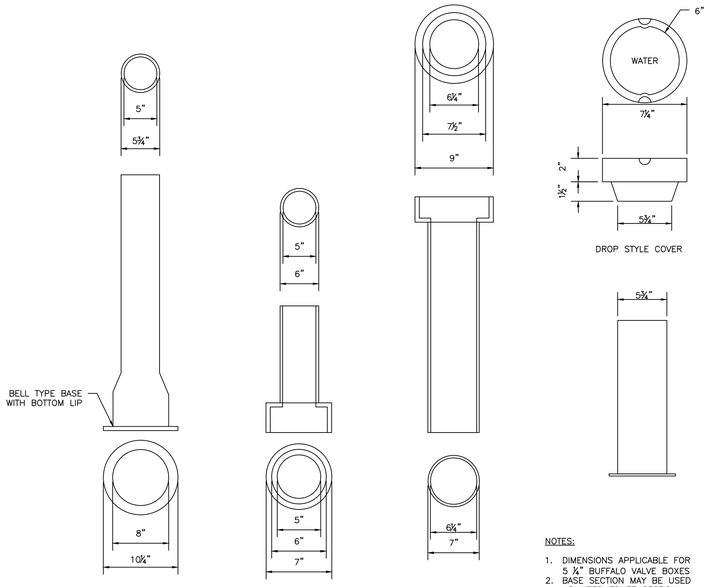
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11419
2-9-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-41



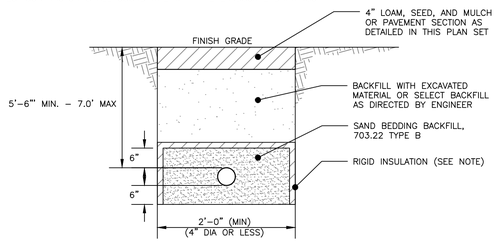
NOTES:

1. DIMENSIONS APPLICABLE FOR 5 ¼" BUFFALO VALVE BOXES
2. BASE SECTION MAY BE USED AS INTERMEDIATE SECTION

VALVE BOX & COVER
NOT TO SCALE

NOTES:

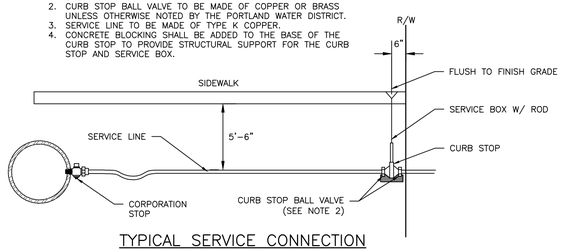
1. THE WATER TRENCH SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARD DETAILS & SPECIFICATIONS.
2. IF LESS THAN 5'–6" OF COVER IS POSSIBLE ADD 1 INCH OF "BLUE DOW" RIGID INSULATION FOR EVERY 12" LESS COVER.
3. ALL PROPOSED TREES WITHIN 5' PROXIMITY OF THE WATER PIPE SHALL BE PLANTED AT A DEPTH NO GREATER THAN 3' DEEP. PERMEABLE LANDSCAPE FABRIC SHALL CREATE A ROOT BARRIER AROUND THE WATER PIPES. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE DRAWINGS.



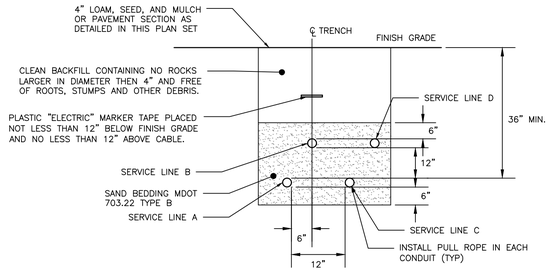
WATER SERVICE TRENCH SECTION DETAIL
NOT TO SCALE

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES MUST COMPLY WITH THE CITY OF PORTLAND WATER DISTRICT (PWD) SPECIFICATIONS.
2. CURB STOP BALL VALVE TO BE MADE OF COPPER OR BRASS UNLESS OTHERWISE NOTED BY THE PORTLAND WATER DISTRICT.
3. SERVICE LINE TO BE MADE OF TYPE K COPPER.
4. CONCRETE BLOCKING SHALL BE ADDED TO THE BASE OF THE CURB STOP TO PROVIDE STRUCTURAL SUPPORT FOR THE CURB STOP AND SERVICE BOX.



TYPICAL SERVICE CONNECTION
NOT TO SCALE



CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	2–5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	2–4"	SCHEDULE 40 PVC	COMMUNICATION	–
C	2–4"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	IF REQUIRED
D	2–4"	SCHEDULE 40 PVC	CABLE	–

NOTES:

1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND–OFF BRACKETS.
2. MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.

UTILITY TRENCH:
PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE
NOT TO SCALE

SERVICE SADDLE: 1–1/2" AND 2" C.C. THREAD
NOT TO SCALE

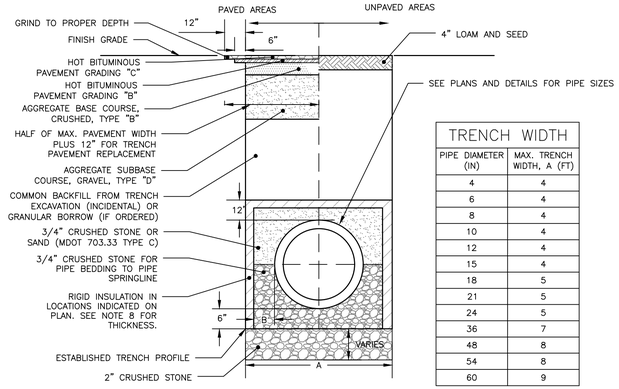
NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES MUST CONFORM TO MONMOUTH WATER ASSOCIATION (M.W.A.) SPECIFICATIONS, SEE SPECIFICATIONS BOOK FOR DETAILS.
2. M.W.A. REQUIRES THE USE OF COPPER FOR THE CUSTOMERS SIDE OF SERVICE.
3. CUSTOMERS PORTION OF SERVICE LINE IS THAT PORTION FROM THE PROPERTY LINE INTO THE BUILDING, IN THIS INSTANCE THE CUSTOMER IS ALSO RESPONSIBLE FOR THE INSTALLATION OF THE CURB STOP BALL VALVE.
4. FOR THE INTERIOR BUILDING PLUMBING REFER TO THE PLUMPING PLAN BY MECHANICAL SYSTEMS ENGINEERS.

SERVICE INSTALLATION DETAIL
NOT TO SCALE

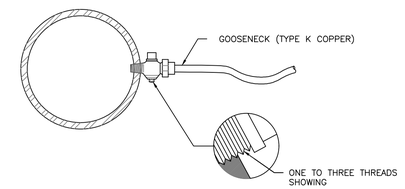
DESIGN NOTES:

1. ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II–2.
3. BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF. SD) SHALL BE ORIENTED UP.
5. ALL STORM DRAINS SHALL BE PVC SDR 35 MIN PS–46 RATING OR OR IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL , SECTION 2 – SANITARY SEWER AND STORM DRAIN – PART 2.5.2
6. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
7. THIS DETAIL SHALL BE APPLIED ONLY TO PIPE TRENCHES WITHIN OF THE CITY OF PORTLAND R.O.W.
8. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
9. DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.
10. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
11. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE TABLE BELOW.



TRENCH WIDTH	
PIPE DIAMETER (IN)	MAX. TRENCH WIDTH, A (FT)
4	4
6	4
8	4
10	4
12	4
15	4
18	5
21	5
24	5
36	7
48	8
54	8
60	9

CITY OF PORTLAND TYPICAL PIPE TRENCH DETAIL
NOT TO SCALE



SERVICE TAP: 3/4" AND 1" C.C. THREAD
NOT TO SCALE

SIDE VIEW

TAPPING SLEEVE AND VALVE
NOT TO SCALE

PERMITTING
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17

DRAWING NAME: UTILITY DETAILS – 1

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE BY ANY PERSON, OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

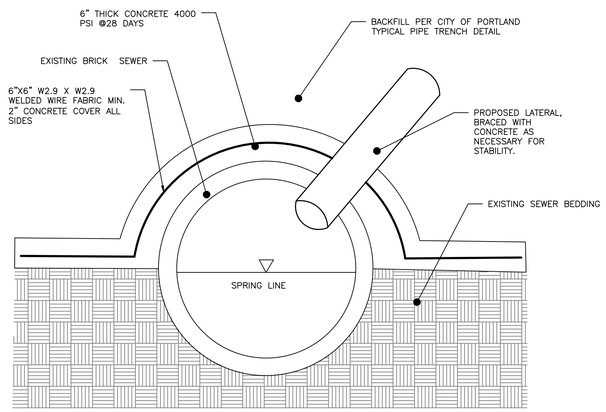
ACORN ENGINEERING, INC.
158 DANFORTH ST PORTLAND MAINE 04102
(207) 775–2455

FILE:	1074_CIVIL
JN:	1074
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

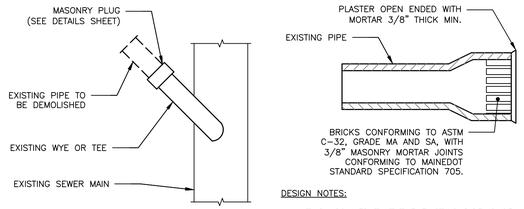
STATE OF MAINE — WILLIAM H SAVAGE — No. 11419 — 2-9-17 — LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
C-42

NOTES:
1. CONCRETE CASING AROUND PIPE SHALL CONTINUE LENGTHWISE FOR AT LEAST 4' OF PIPE, OR LENGTH OF PIPE DAMAGED DURING CONSTRUCTION, WHICHEVER IS GREATER.
2. INSTALL ALL ITEMS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. ENGINEER SHALL BE CONTACTED DURING CONNECTION TO BRICK SEWER. IF SEWER IS FOUND TO BE IN VERY GOOD CONDITION BY ENGINEER, THEN ONLY CONCRETE CASING AROUND PROPOSED LATERAL AND STUB SHALL BE REQUIRED.

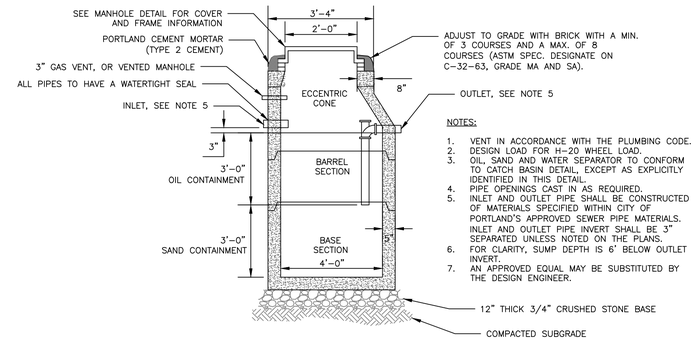


CONNECTION TO BRICK SEWER
NOT TO SCALE



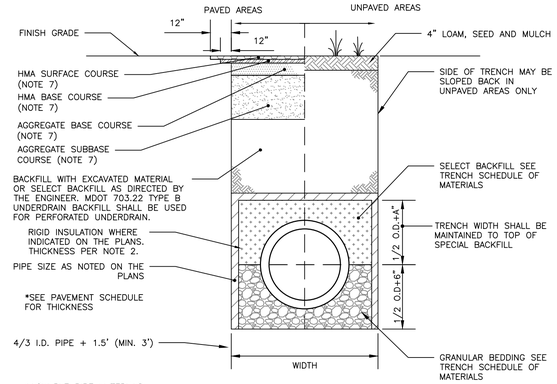
DESIGN NOTES:
1. IT IS ASSUMED THAT THE EXISTING PIPE IS OF VITRIFIED CLAY CONSTRUCTION. USE CAP OR PLUG FOR PVC PIPE

MASONRY PLUG DETAIL
NOT TO SCALE



NOTES:
1. VENT IN ACCORDANCE WITH THE PLUMBING CODE.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. OIL, SAND AND WATER SEPARATOR TO CONFORM TO CATCH BASIN DETAIL EXCEPT AS EXPLICITLY IDENTIFIED IN THIS DETAIL.
4. PIPE OPENINGS CAST IN AS REQUIRED.
5. INLET AND OUTLET PIPE SHALL BE CONSTRUCTED OF MATERIALS SPECIFIED WITHIN CITY OF PORTLAND'S APPROVED SEWER PIPE MATERIALS. INLET AND OUTLET PIPE INVERT SHALL BE 3" SEPARATED UNLESS NOTED ON THE PLANS.
6. FOR CLARITY, SUMP DEPTH IS 6' BELOW OUTLET INVERT.
7. AN APPROVED EQUAL MAY BE SUBSTITUTED BY THE DESIGN ENGINEER.

4'-0" DIAMETER PRECAST OIL AND WATER SEPARATOR
NOT TO SCALE

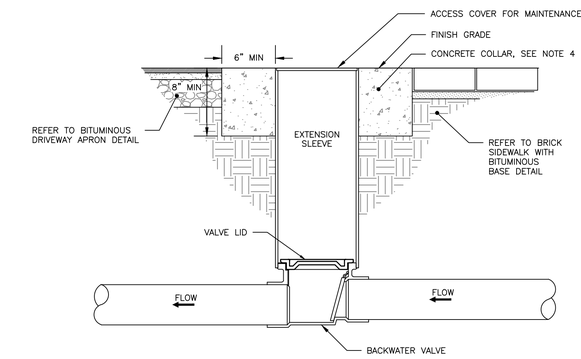


ALLOWABLE PIPE MATERIALS:
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
- PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
- PVC RING TYPE SEWER PIPE MEETING ASTM F 789
- DUCTILE IRON PIPE (DIP)
- ADS N-12 HP TRIPLE-WALL MIN PS-46 RATING
- ADS SANITITE HP MIN. PS-46

SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

NOTES:
1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2' RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
4. MINIMUM COVER
   4.1. 2'-0" - STORM DRAIN
   4.2. 5'-0" - SEWER
5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
6. THIS DETAIL SHALL BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE CITY OF PORTLAND ROW.
7. THICKNESS AS NOTED BY SURFACE DETAILS
8. ALL PROPOSED TREES WITHIN 5' PROXIMITY OF THE SEWER PIPE SHALL BE PLANTED AT A DEPTH NO GREATER THAN 3' DEEP. PERMEABLE LANDSCAPE FABRIC SHALL CREATE A ROOT BARRIER AROUND THE SEWER PIPES. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE DRAWINGS.

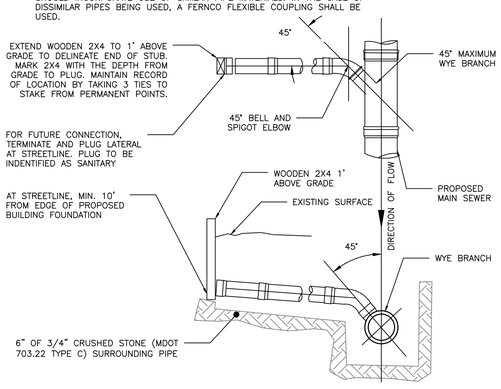
STORM DRAIN AND SEWER TYPICAL TRENCH SECTION
NOT TO SCALE



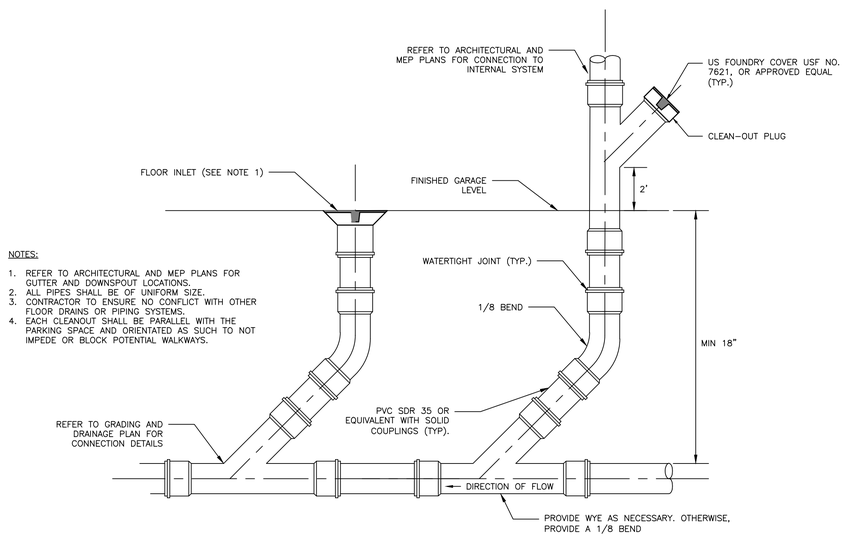
NOTES:
1. BACKFLOW VALVE TO BE PROVIDED BY AGRI DRAIN CORPORATION OR AN APPROVED EQUAL.
2. VALVE TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS AND COMPLY WITH RULES AND REGULATIONS AS OUTLINED IN SECTION 2 OF THE CITY OF PORTLAND TECHNICAL MANUAL.
3. VALVE SHALL BE INSTALLED WITH A VALVE BOX AND COVER TO PROVIDE EASY ACCESS AND MAINTENANCE; VALVE COVER SHALL STATE 'SEWER' ON LID FLUSH TO SURFACE. REFER TO VALVE & BOX COVER DETAIL FOR ADDITIONAL INFORMATION.
4. CONCRETE COLLAR AT A MINIMUM 24-HOUR COMPRESSIVE STRENGTH OF 3,000 PSI.

BACKFLOW VALVE ASSEMBLY
NOT TO SCALE

NOTES:
1. LOCATION WITH WARNING TAPE SHALL BE INSTALLED OVER CENTERLINE OF PIPE AT A MAXIMUM OF 24 INCHES BELOW FINISH GRADE.
2. SITE CONTRACTOR TO COORDINATE CONNECTION OF SEWER LATERAL TO HOUSEHOLD PLUMBING WITH ARCHITECTURAL CONTRACTOR.
3. CONNECTION OF PROPOSED SEWER LATERAL TO HOUSEHOLD PLUMBING SHOULD INCORPORATE USE OF SIMILAR PIPE MATERIALS. IN THE CASE OF DISSIMILAR PIPES BEING USED, A FERNCO FLEXIBLE COUPLING SHALL BE USED.

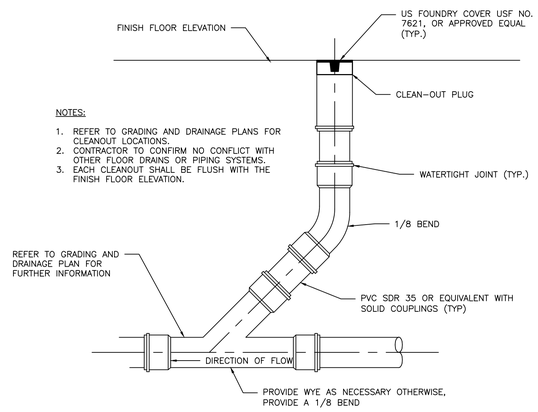


SEWER TEE/WYE CONNECTION DETAIL
NOT TO SCALE



NOTES:
1. REFER TO ARCHITECTURAL AND MEP PLANS FOR GUTTER AND DOWNSPOUT LOCATIONS.
2. ALL PIPES SHALL BE OF UNIFORM SIZE.
3. CONTRACTOR TO ENSURE NO CONFLICT WITH OTHER FLOOR DRAINS OR PIPING SYSTEMS.
4. EACH CLEANOUT SHALL BE PARALLEL WITH THE PARKING SPACE AND ORIENTATED AS SUCH TO NOT IMPEDE OR BLOCK POTENTIAL WALKWAYS.

FLOOR DOWNSPOUT WITH CLEANOUT AND FLOOR DRAIN CONNECTION DETAIL
NOT TO SCALE



NOTES:
1. REFER TO GRADING AND DRAINAGE PLANS FOR CLEANOUT LOCATIONS.
2. CONTRACTOR TO CONFIRM NO CONFLICT WITH OTHER FLOOR DRAINS OR PIPING SYSTEMS.
3. EACH CLEANOUT SHALL BE FLUSH WITH THE FINISH FLOOR ELEVATION.

CLEANOUT DETAIL
NOT TO SCALE

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17

DRAWING NAME: UTILITY DETAILS - 2

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

ACORN ENGINEERING, INC.
158 DANFORTH ST PORTLAND, MAINE 04102
(207) 775-2855

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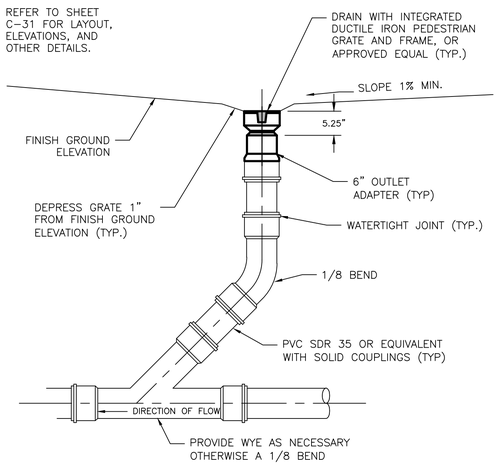
FILE:	1074_CIVIL
JN:	1074
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11419
2-9-17
REGISTERED PROFESSIONAL ENGINEER

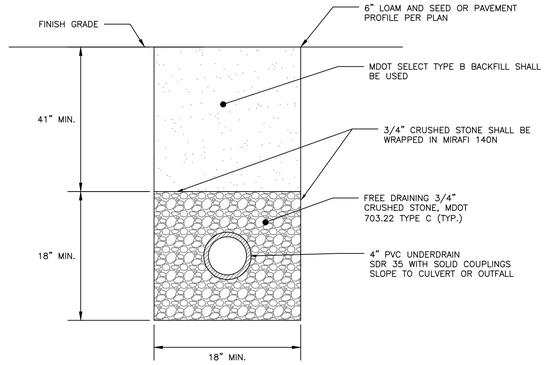
DRAWING NO.
C-43

NOTE:

1. REFER TO SHEET C-31 FOR LAYOUT, ELEVATIONS, AND OTHER DETAILS.



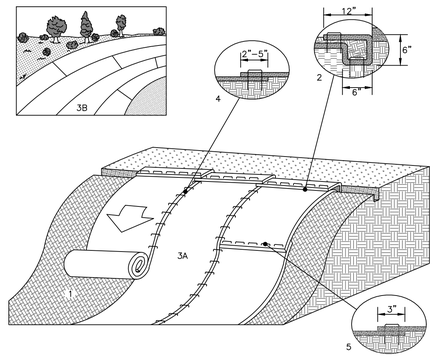
INLINE DRAIN DETAIL
NOT TO SCALE



NOTES:

1. MINIMUM UNDERDRAIN SLOPE 0.0025 (0.25%)
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.

UNDERDRAIN DETAIL
NOT TO SCALE



SLOPE INSTALLATION DETAIL

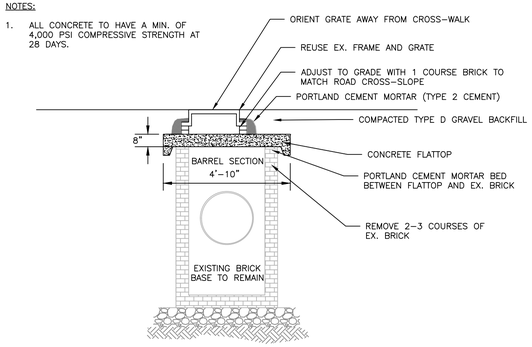
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (ECB), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE ECB IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF ECB EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE ECB WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF ECB BACK OVER THE SEED AND COMPACTED SOIL. SECURE ECB OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE ECB.
3. ROLL THE ECB (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. ECB WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL ECB MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL ECB MUST BE STAPLED WITH APPROXIMATELY 2" – 5" OVERLAP DEPENDING ON THE ECB TYPE.
5. CONSECUTIVE ECB SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE ECB WIDTH.

*NOTE:
IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE ECB.

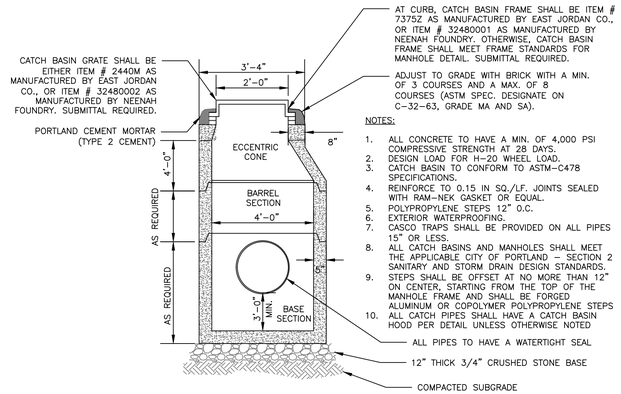
EROSION CONTROL BLANKET SLOPE INSTALLATION
NOT TO SCALE

NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.



EXISTING CATCH BASIN WITH PROPOSED FLATTOP
NOT TO SCALE



NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.15 IN SQ./LF. JOINTS SEALED WITH RAM-NEK GASKET OR EQUAL.
5. POLYPROPYLENE STEPS 12" O.C.
6. EXTERIOR WATERPROOFING.
7. CASCO TRAPS SHALL BE PROVIDED ON ALL PIPES 15" OR LESS.
8. ALL CATCH BASINS AND MANHOLES SHALL MEET THE APPLICABLE CITY OF PORTLAND – SECTION 2 SANITARY AND STORM DRAIN DESIGN STANDARDS.
9. STEPS SHALL BE OFFSET AT NO MORE THAN 12" ON CENTER, STARTING FROM THE TOP OF THE MANHOLE FRAME AND SHALL BE FORGED ALUMINUM OR COPOLYMER POLYPROPYLENE STEPS
10. ALL CATCH PIPES SHALL HAVE A CATCH BASIN HOOD PER DETAIL UNLESS OTHERWISE NOTED

4'-0" DIAMETER PRECAST CATCH BASIN
NOT TO SCALE

NOTES:

1. REFER TO THE BUILDING ARCHITECTS PLANS FOR THE BUILDING FOUNDATION, BACKFILL, ROOF DRAIN, SIDEWALK AND OTHER DETAILS.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.

FOUNDATION DRAIN DETAIL
NOT TO SCALE

NOTES:

1. INSTALL CATCH BASIN HOODS IN ALL CATCH BASINS UNLESS OTHER WISE NOTED
2. PREFERRED STYLE DESIGNED TO ELIMINATE CEMENTING OF THE TRAP.
3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS

CATCH BASIN HOOD DETAIL
NOT TO SCALE

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
PRELIM. APP.	WHS	11/8/16
FINAL APP.	WHS	2/9/17

DRAWING NAME: **DRAINAGE DETAILS**

PROJECT NAME: **161 YORK STREET REDEVELOPMENT**

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ENGINEERING, INC.
158 DANFORTH ST. PORTLAND, MAINE 04102
(207) 775-2855

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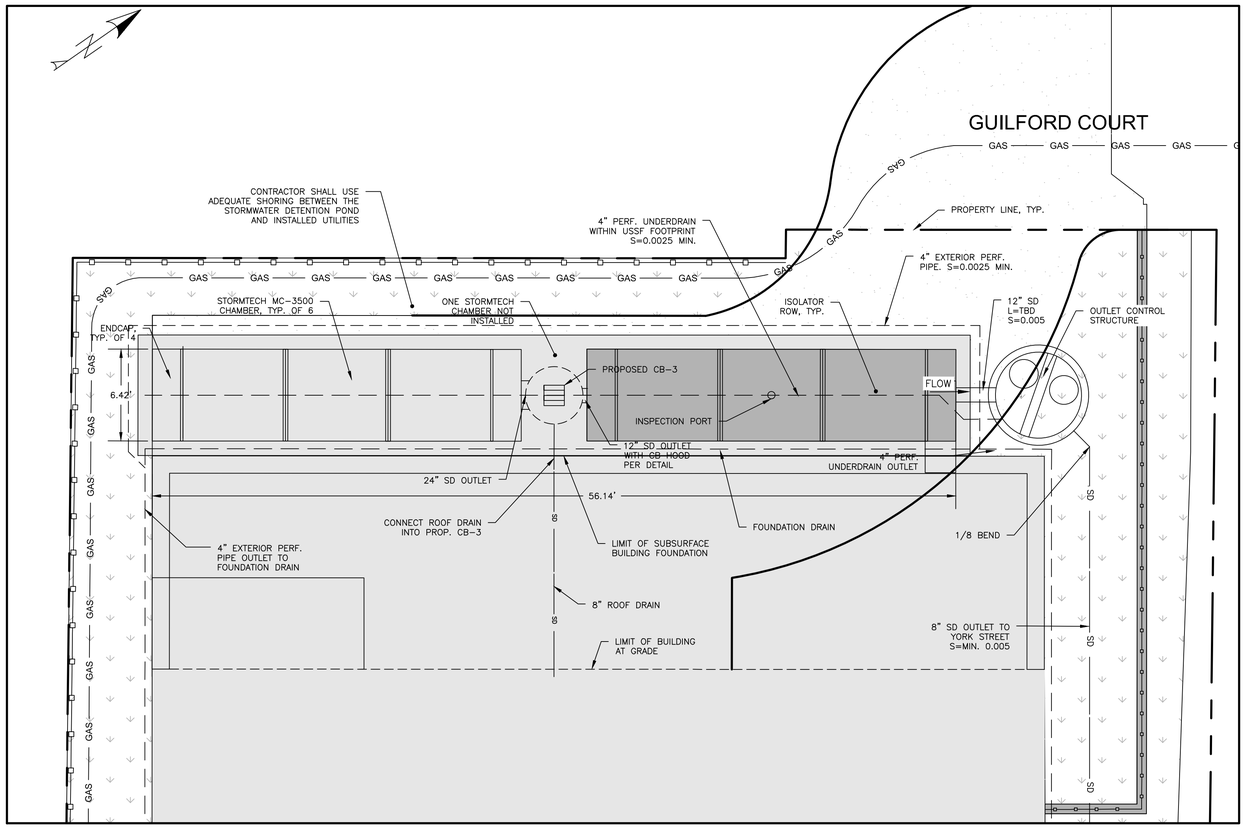
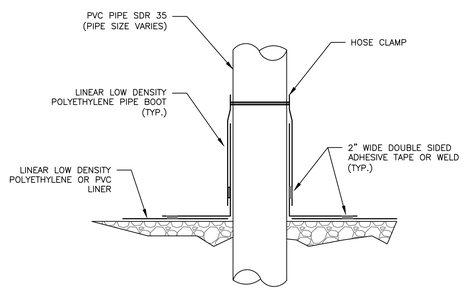
STATE OF MAINE
WILLIAM H. SAVAGE
No. 11419
2-9-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-44



USSF PLAN VIEW
1"=5'



TYPICAL PIPE PENETRATION DETAIL
NOT TO SCALE

MANUFACTURER'S NOTES:

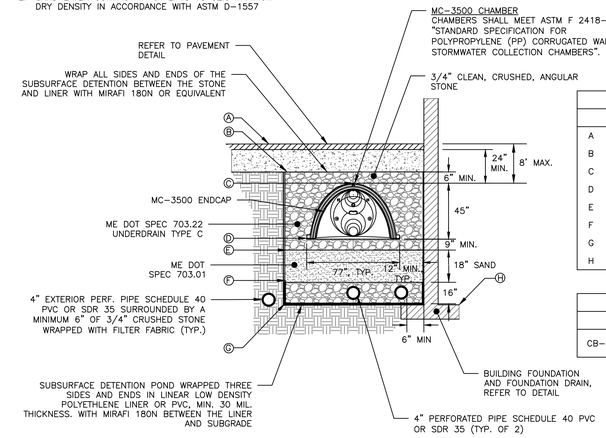
1. ALL DESIGN SPECIFICATIONS FOR STORMTECH MC-3500 CHAMBERS SHALL BE IN ACCORDANCE WITH THE STORMTECH DESIGN MANUAL.
2. THE INSTALLATION OF STORMTECH MC-3500 CHAMBERS SHALL BE IN ACCORDANCE WITH THE LATEST STORMTECH INSTALLATION INSTRUCTIONS.
3. THE CONTRACTOR IS ADVISED TO REVIEW AND UNDERSTAND THE INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION. CALL 1-888-892-2694 OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF THE LATEST STORMTECH INSTALLATION INSTRUCTIONS.
4. CHAMBERS SHALL MEET THE DESIGN REQUIREMENTS AND LOAD FACTORS SPECIFIED IN SECTION 12.12 OF THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

ENGINEER'S NOTES:

1. THE LAYOUT AND DIMENSION OF THE SUBSURFACE DETENTION MAY BE MODIFIED WITH AN ENGINEER APPROVED EQUAL WHICH PROVIDES EQUAL DETENTION STORAGE AND WATER QUALITY TREATMENT.
2. THE SUBSURFACE DETENTION SHALL BE INSPECTED BY THE DESIGN ENGINEER AT THE FOLLOWING INTERVALS:
   - AFTER PRELIMINARY CONSTRUCTION OF THE SUBSURFACE DETENTION GRADES
   - ONE SITE VISIT DURING THE INSTALLATION OF THE IMPERVIOUS LINER
   - ONE SITE VISIT AFTER THE UNDERDRAINS ARE INSTALLED BUT BEFORE THEY ARE BACKFILLED
   - DURING THE CONSTRUCTION OF THE SAND FILTER LAYER
   - DURING THE INSTALLATION OF THE STORMTECH ISOLATOR ROW
   - BEFORE BACKFILLING THE STORMTECH UNITS
3. THE FIRST YEAR OF MAINTENANCE SHALL BE PERFORMED BY THE MANUFACTURER TO ENSURE THAT THE SYSTEM IS OPERATING ACCORDING TO THE ESTABLISHED SPECIFICATIONS.
4. REFERENCE THE MANUFACTURER'S GUIDE FOR THE OPERATION AND MAINTENANCE PLAN.

NOTES:

1. REFER TO THE MAINE DEP TECHNICAL DESIGN MANUAL SECTION 7.3 FOR ADDITIONAL DESIGN DETAILS.
2. SAND LAYER COMPACT IN 6" LIFTS TO 92% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557



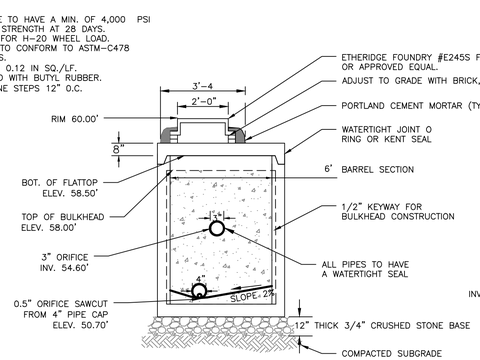
SCHEDULE		
	ITEM	ELEVATION
A	TOP OF GRADE	60.00'
B	TOP OF CRUSHED STONE	58.21'
C	TOP OF CHAMBER	57.71'
D	BOTTOM OF CHAMBER	53.96'
E	TOP OF SAND	53.21'
F	BOTTOM OF SAND	51.71'
G	BOTTOM OF SYSTEM	50.38'
H	BASEMENT FINISHED FLOOR	50.75'

STRUCTURE SCHEDULE			
	RIM	INV. IN	INV. OUT
CB-3	60.25'	57.00' (6")	54.13' (24") 56.16' (12")

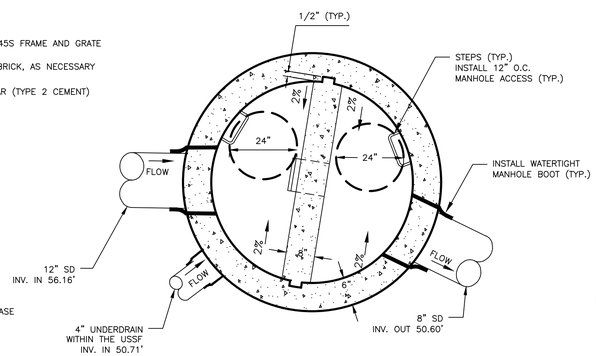
UNDERDRAINED SUB-SURFACE SAND FILTER TYPICAL CROSS SECTION
NOT TO SCALE

DESIGN NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF.
5. JOINTS SEALED WITH BUTYL RUBBER.
6. POLYPROPYLENE STEPS 12" O.C.

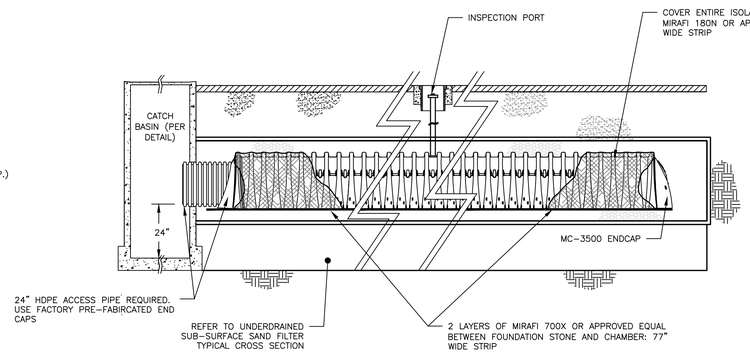


SIDE PROFILE

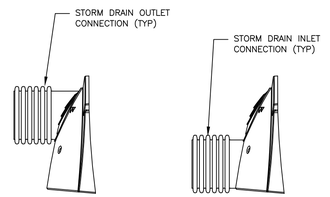


PLAN VIEW

OUTLET CONTROL STRUCTURE
NOT TO SCALE



ISOLATOR ROW - PROFILE VIEW
NOT TO SCALE



STORMTECH CONNECTION
NOT TO SCALE

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
PRELIM. APP.	WHS 11/8/16
FINAL APP.	WHS 2/9/17

DRAWING NAME: **UNDERDRAINED SUBSURFACE SAND FILTER DETAILS**

PROJECT NAME: **161 YORK STREET REDEVELOPMENT**

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

ACORN ENGINEERING, INC.
158 DANFORTH STREET PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1074_CIVIL
JN:	1074
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11419 — LICENSED PROFESSIONAL ENGINEER — 2-9-17

DRAWING NO.
C-45

1.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

AS PART OF THE SITE DEVELOPMENT, THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE IMPLEMENTED. DEVICES SHALL BE INSTALLED AS DESCRIBED IN THIS REPORT OR WITHIN THE PLAN SET. SEE THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES FOR FURTHER REFERENCE.

1.1 TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE PLANNED FOR THE PROJECT'S CONSTRUCTION PERIOD:

1.1.1 CRUSHED STONE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ALL ACCESS POINTS TO THE PROJECT SITE WHERE THERE ARE DISTURBED AREAS. THE FOLLOWING SPECIFICATIONS SHALL BE FOLLOWED AT A MINIMUM:
- STONE SIZE SHALL BE 2–3 INCHES, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THE THICKNESS OF THE ENTRANCE STONE LAYER SHALL BE NO LESS THAN 6 INCHES.
- THE ENTRANCE SHALL NOT BE LESS THAN 20 FEET WIDE, HOWEVER NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE LENGTH SHALL NOT BE LESS THAN 50 FEET IN LENGTH.
- GEOTEXTILE FABRIC (WOVEN OR NON–WOVEN) SHALL BE PLACED OVER THE ENTIRE ENTRANCE AREA.
- THE ENTRANCE/EXIT SHALL BE MAINTAINED TO THE EXTENT THAT IT WILL PREVENT THE TRACKING OF SEDIMENT ONTO PUBLIC ROAD WAYS.

1.1.2 SILTATION FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED DOWN GRADIENT OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL PERMANENT STABILIZATION IS ACHIEVED. THE SILT FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THE PLAN SET AND INSPECTED BEFORE AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE OR BERM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.

1.1.3 HAY MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15TH AND NOVEMBER 1ST ON SLOPES OF LESS THAN 15 PERCENT SHALL BE COVERED BY FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. MULCH PLACED BETWEEN NOVEMBER 1ST AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT AND EQUAL TO OR FLATTER THAN 2:1 SHALL USE MATS OR FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

1.1.4 AT ANY TIME OF THE YEAR, ALL SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH DOUBLE NET EROSION CONTROL BLANKET BIONET SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL, OR EROSION CONTROL MIX SLOPE PROTECTION AS DETAILED WITHIN THE PLANS.

1.1.5 YORK STREET AND GUILFORD COURT SHALL BE SWEPT TO CONTROL MUD AND DUST FROM THE CONSTRUCTION SITE AS NECESSARY. ADD ADDITIONAL STONE TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.

1.1.6 DURING DEMOLITION, CLEARING AND GRUBBING OPERATIONS, STONE CHECK DAMS SHALL BE INSTALLED AT ANY AREAS OF CONCENTRATED FLOW. THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL NOT EXCEED 2 FEET. THE CENTER OF THE CHECK DAM SHALL BE 6 INCHES BELOW THE OUTER EDGES OF THE DAM. THE CONTRACTOR SHALL MULCH THE SIDE SLOPES AND INSTALL STONE CHECK DAMS FOR ALL NEWLY EXCAVATED DITCH LINES WITHIN 24 HOURS OF THEIR CREATION.

1.1.7 SILT FENCE STAKE SPACING SHALL NOT EXCEED 6 FEET UNLESS THE FENCE IS SUPPORTED WITH 14 GAUGE WIRE IN WHICH CASE THE MAXIMUM SPACING SHALL NOT EXCEED 10 FEET. THE SILT FENCE SHALL BE "TOED" INTO THE GROUND.

1.1.8 STORMDRAIN INLET PROTECTION SHALL BE PROVIDED TO STORMDRAINS THROUGH THE USE OF ANY OF THE FOLLOWING: HAY BALE DROP INLET STRUCTURES, SILT FENCE DROP INLET SEDIMENT FILTER, GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER, OR CURB INLET SEDIMENT FILTER. BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL EVENT AND REPAIRED AS NECESSARY. SEDIMENTS SHALL BE REMOVED WHEN ACCUMULATION HAS REACHED ½ THE DESIGN HEIGHT.

1.1.9 DUST CONTROL SHALL BE ACCOMPLISHED BY THE USE OF ANY OF THE FOLLOWING: WATER, CALCIUM CHLORIDE, STONE, OR AN APPROVED MDEP PRODUCT. DUST CONTROL SHALL BE APPLIED AS NEEDED TO ACCOMPLISH DUST CONTROL.

1.1.10 TEMPORARY LOAM, SEED, AND MULCHING SHALL BE USED IN AREAS WHERE NO OTHER EROSION CONTROL MEASURE IS USED. APPLICATION RATES FOR SEEDING ARE PROVIDED AT THE END OF THIS REPORT.

1.1.11 STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF FORMATION UNLESS A SCHEDULED RAIN EVENT OCCURS PRIOR TO THE 7 DAY WINDOW, IN WHICH CASE THE STOCKPILE SHALL BE STABILIZED PRIOR TO THE RAIN EVENT. METHODS OF STABILIZATION SHALL BE MULCH, EROSION CONTROL MIX, OR EROSION CONTROL BLANKETS/MATS. SILT FENCE OR A WOOD WASTE COMPOST FILTER BERM SHALL BE PLACED DOWNHILL OF ANY SOIL STOCKPILE LOCATION.

1.1.12 FOR DISTURBANCE BETWEEN NOVEMBER 1 AND APRIL 15, PLEASE REFER TO WINTER STABILIZATION PLAN IN THIS REPORT AND THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR FURTHER INFORMATION.

1.1.13 IT IS OF THE UTMOST IMPORTANCE THAT STORMWATER RUNOFF AND POTENTIAL SEDIMENT FROM THE CONSTRUCTION SITE BE DIVERTED AROUND THE PROPOSED UNDERDRAINS UNTIL THE TRENCH IS BACKFILLED.

1.2 PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES ARE INTENDED FOR POST DISTURBANCE AREAS OF THE PROJECT.

1.2.1 ALL DISTURBED AREAS DURING CONSTRUCTION, NOT SUBJECT TO OTHER PROPOSED CONDITIONS, SHALL RECEIVE A MINIMUM 4" OF LOAM, LIMED, AND MULCHED. EROSION CONTROL BLANKETS OR MATS SHALL BE PLACED OVER THE MULCH IN AREAS NOTED IN PARAGRAPH 4.1 OF THIS REPORT.

1.2.2 ALL STORMWATER DEVICES SHALL BE INSTALLED AND TRIBUTARY AREAS STABILIZED PRIOR RECEIVING STORMWATER.

1.2.3 REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

2.0 EROSION AND SEDIMENTATION CONTROL PLAN

2.1 THE EROSION AND SEDIMENTATION CONTROL PLAN IS INCLUDED WITHIN THE PLAN SET.

3.0 DETAILS AND SPECIFICATIONS

3.1 EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

4.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

WINTER CONSTRUCTION CONSISTS OF EARTHWORK DISTURBANCE BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15, THEN THE SITE SHALL BE PROTECTED WITH OVER–WINTER STABILIZATION. ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MIX, EROSION CONTROL MATS, RIPRAP, OR GRAVEL BASE ON A ROAD SHALL BE CONSIDERED OPEN.

THE CONTRACTOR SHALL LIMIT THE WORK AREA TO AREAS THAT WORK WILL OCCUR IN DURING THE SUBSEQUENT 15 DAYS AND SO THAT IT CAN BE MULCHED ONE DAY PRIOR TO A SNOW EVENT. THE CONTRACTOR SHALL STABILIZE WORK AREAS PRIOR TO OPENING ADDITIONAL WORK AREAS TO MINIMIZE AREAS WITHOUT EROSION CONTROL MEASURES.

THE FOLLOWING MEASURES SHALL BE IMPLEMENTED DURING WINTER CONSTRUCTION PERIODS:

4.1 SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

4.2 MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75–LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCH THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE–INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4.3 SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR–INCH LAYER OF EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL.

4.4 SEEDING

BETWEEN THE DATES OF OCTOBER 15TH AND APRIL 1ST, LOAM OR SEED SHALL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS NOT BEEN LOAMED, FINAL GRADING WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.

DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH OR EROSION CONTROL BLANKETS. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

4.5 OVER WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15TH, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% SHALL BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS SHALL BE TAKEN TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION – BY OCTOBER 1ST, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3LBS PER 1,000 S.F., LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 LBS PER 1,000 S.F., AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1ST, THEN MULCH THE AREA FOR OVER–WINTER PROTECTION.
- STABILIZE THE SOIL WITH SOD – STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
- STABILIZE THE SOIL WITH MULCH – BY NOVEMBER 15TH, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 LBS PER 1,000 S.F. ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

4.6 OVER WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE–COVERED SLOPES SHALL BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15TH. ALL SLOPES TO BE VEGETATED SHALL BE SEEDED AND MULCHED BY SEPTEMBER 1ST. A SLOPE IS CONSIDERED A GRADE GREATER THAN 15%. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1ST, THEN ONE OF THE FOLLOWING ACTION SHALL BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS – BY OCTOBER 1ST THE DISTURBED SLOPE SHALL BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1,000 S.F. AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% F THE SLOPE BY NOVEMBER 1ST, THEN THE CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP.
- STABILIZE THE SOIL WITH SOD – THE DISTURBED SLOPE SHALL BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR SHALL NOT USE LATE–SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 3H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH EROSION CONTROL MIX – EROSION CONTROL MIX SHALL BE PROPERLY INSTALLED BY NOVEMBER 15TH. THE CONTRACTOR SHALL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 2H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH STONE RIPRAP – PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15TH. A REGISTERED PROFESSIONAL ENGINEER SHALL BE HIRED TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

5.0 INSPECTION AND MAINTENANCE

A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT PERIODIC VISUAL INSPECTIONS OF INSTALLED EROSION CONTROL MEASURES. THE FREQUENCY OF INSPECTION SHALL OCCUR AT LEAST ONCE EVERY TWO WEEKS, AS WELL AS AFTER A "STORM EVENT". A "STORM EVENT" SHALL CONSIST 0.5 INCHES OF RAIN WITHIN A 24 HOUR PERIOD. THE FOLLOWING EROSION AND SEDIMENT CONTROL – BEST MANAGEMENT PRACTICES (BMP'S) SHALL INSPECTED IN THE MANNER AS DESCRIBED.

5.1 SEDIMENT BARRIERS

HAY BALE BARRIERS, SILT FENCES AND FILTER BERMS SHALL BE INSPECTED AND REPAIRED FOR THE FOLLOWING IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER. FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

5.2 STABILIZED STONE CONSTRUCTION ENTRANCES

THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL AND REDISTRIBUTED ON SITE IN A STABLE MANNER. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS, WHICH HAVE EXPERIENCED MUD–TRACKING ON TO THE PAVEMENT OR TRAVELED WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

5.3 MULCHED AREAS

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE–INSTALL THE NETS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

5.4 DUST CONTROL

WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

5.5 STORMWATER APPURTENANCES

ALL UNDERDRAINS, STORM DRAINS, AND CATCH BASINS NEED TO BE OPERATING EFFECTIVELY AND FREE OF DEBRIS.

5.6 EROSION AND SEDIMENTATION CONTROL INSPECTIONS:

ACORN ENGINEERING HAS PERSONNEL QUALIFIED TO CONDUCT EROSION AND SEDIMENTATION CONTROL INSPECTIONS. FOR FURTHER INFORMATION CONTACT:

CONTACT: WILL SAVAGE, PE
TELEPHONE: (207) 775–2655

QUALIFICATIONS:

- MAINE PROFESSIONAL ENGINEERING LICENSE #11419
- MAINE DEP – CERTIFIED IN MAINTENANCE & INSPECTION OF STORMWATER BMP'S CERT #14
- CERTIFIED EROSION, SEDIMENT AND STORM WATER INSPECTOR (CESSWI) CERT #0293
- CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) CERT. #4620

THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION AND SEDIMENTATION REPORT/PLAN, INCLUDING CONTROL OF FUGITIVE DUST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

6.0 IMPLEMENTATION SCHEDULE

THE FOLLOWING IMPLEMENTATION SEQUENCE IS INTENDED TO MAXIMIZE THE EFFECTIVENESS OF THE ABOVE DESCRIBED EROSION CONTROL MEASURES. CONTRACTORS SHOULD AVOID OVEREXPOSING DISTURBED AREAS AND LIMIT THE AMOUNT OF STABILIZATION AREA.

1. INSTALL A STABILIZED CONSTRUCTION ENTRANCE IN ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL ENTER AND EXIT THE SITE.
2. INSTALL PERIMETER SILT FENCE OR EROSION CONTROL BERM.
3. INSTALL ALL OTHER EROSION CONTROL DEVICES AS NECESSARY THROUGHOUT THE REMAINDER OF THIS SCHEDULE.
4. COMMENCE INSTALLATION OF DRAINAGE INFRASTRUCTURE.
5. PRIORITIZE THE DOWNHILL RETAINING AND FOUNDATION WALLS TO CONTAIN RUNOFF WITHIN THE SITE WHILE PROVIDING AN ENGINEERED OUTLET WITH SILTATION BARRIER TO THE MUNICIPAL STORMWATER SYSTEM WITHIN YORK STREET.
6. COMMENCE EARTHWORK OPERATIONS, WALL AND FOUNDATION INSTALLATION.
7. COMMENCE INSTALLATION OF UTILITIES.
8. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
9. COMPLETE INSTALLATION OF DRAINAGE INFRASTRUCTURE, AS WELL AS OTHER UTILITY WORK.
10. COMPLETE REMAINING EARTHWORK OPERATIONS.
11. INSTALL SUB–BASE AND BASE GRAVELS IN PAVED AREAS.
12. INSTALL PAVING, CURBING AND BRICKWORK.
13. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS AND COMPLETE ALL LANDSCAPING.
14. ONCE THE SITE IS STABILIZED, 90% CATCH OF GRASS HAS BEEN OBTAINED, OR MULCHING OF LANDSCAPE AREAS IS COMPLETE REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
15. TOUCH UP AREAS WITHOUT A VIGOROUS CATCH OF GRASS WITH LOAM AND SEED.
16. COMPLETE SITE SIGNAGE AND STRIPING.
17. EXECUTE PROPER MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.

THE ABOVE IMPLEMENTATION SEQUENCE SHOULD BE GENERALLY FOLLOWED BY THE SITE CONTRACTOR. HOWEVER, THE CONTRACTOR MAY CONSTRUCT SEVERAL ITEMS SIMULTANEOUSLY. THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE OF THE COMPLETION OF THE WORK. IF THE CONTRACTOR IS TO COMMENCE THE CONSTRUCTION OF MORE THAN ONE ITEM ABOVE, THEY SHALL LIMIT THE AMOUNT OF EXPOSED AREAS TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE FOLLOWING 30 DAYS.

THE CONTRACTOR SHALL RE–VEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT. THE CONTRACTOR SHALL INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEMS AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE.

7.0 CONCLUSION

THE ABOVE EROSION CONTROL NARRATIVE IS INTENDED TO MINIMIZE THE DEVELOPMENT IMPACT BY IMPLEMENTING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

TEMPORARY SEEDING PLAN

SITE PREPARATION

THE SEEDED AREAS SHALL BE FEASIBLY GRADED OUT TO PROVIDE THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. IF NECESSARY, THE SITE MAY REQUIRE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL REPORT.

SEEDBED PREPARATION

FERTILIZER SHALL BE APPLIED TO THE SITE AT A RATE OF 13.8 POUNDS PER 1,000 SQUARE FEET. THE COMPOSITION OF THE FERTILIZER SHALL BE 10–10–10 (N–P205–K20) OR EQUIVALENT.

LIMESTONE SHALL BE APPLIED TO THE SITE AT A RATE OF 138 POUNDS PER 1,000 SQUARE FEET.

SEEDING

THE COMPOSITION AND AMOUNT OF TEMPORARY SEED APPLIED TO A SITE SHALL BE DETERMINED BY THE FOLLOWING TABLE:

TEMPORARY SEED APPLICATION RATES

SEED	LBS / ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	2.57	8/15 TO 10/1
OATS	1.84	4/1 TO 7/1 8/15 TO 9/15
ANNUAL RYGRASS	0.92	4/1 TO 7/1
SUDANGRASS	0.92	5/15 TO 8/15
PERENNIAL	0.92	8/15 TO 9/15
TOTAL	7.17 LBS/ACRE	

PERMANENT SEED APPLICATION RATES

SEED	LBS / ACRE
KENTUCKY BLUEGRASS	20.00
CREEPING RED FESCUE	20.00
PERENNIAL RYEGRASS	4.80
TOTAL	44.8 LBS/ACRE

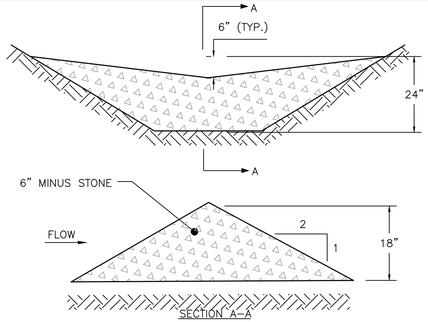
MULCHING

MULCH SHALL BE APPLIED AT A RATE OF 70 LBS – 90 LBS PER 1,000 SQUARE FEET. THE MULCH SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 INCHES. THE SEEDED AREA SHALL BE MULCHED IMMEDIATELY AFTER SEED IS APPLIED. MULCHING DURING THE WINTER SEASON SHALL BE DOUBLE THE NORMAL AMOUNT.

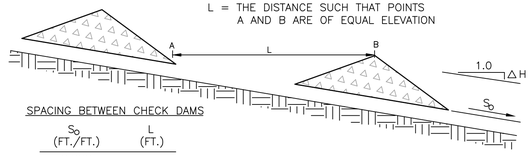
CONCLUSION

PLEASE REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION PERTAINING TO TEMPORARY SEEDING AND MULCHING.

PRELIMINARY
NOT ISSUED FOR
CONSTRUCTION



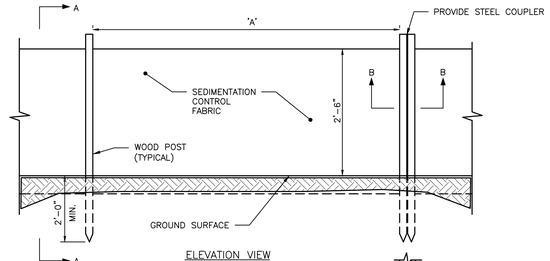
L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION



SPACING BETWEEN CHECK DAMS

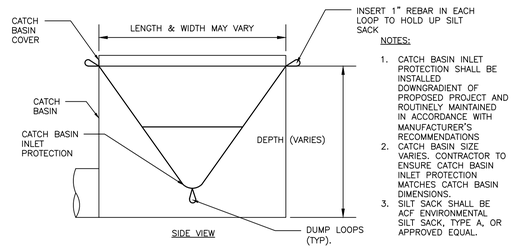
So (FT./FT.)	L (FT.)
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	10

STONE CHECK DAM
NOT TO SCALE



SILT FENCE REINFORCEMENT	MAX. SPACING "A"
NONE	6'
WIRE REINFORCEMENT 14 GAUGE, 6" MESH	10'

SILTATION FENCE DETAIL
NOT TO SCALE



NOTES:
1. CATCH BASIN INLET PROTECTION SHALL BE INSTALLED DOWNGRADIENT OF PROPOSED PROJECT AND ROUTINELY MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. CATCH BASIN SIZE VARIES. CONTRACTOR TO ENSURE CATCH BASIN INLET PROTECTION MATCHES CATCH BASIN DIMENSIONS.
3. SILT SACK SHALL BE ACF ENVIRONMENTAL SILT SACK, TYPE A, OR APPROVED EQUAL.

CATCH BASIN INLET PROTECTION
NOT TO SCALE

ISSUED FOR	BY	DATE
PRELIM. APP.	WHS	11/8/16
FINAL APP.	WHS	2/9/17

DRAWING NAME: EROSION & SEDIMENTATION CONTROL DETAILS
PROJECT NAME: 161 YORK STREET REDEVELOPMENT
CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC.
158 DANFORTH STREET PORTLAND, MAINE 04102
(207) 775–2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN, OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

WILLIAM H. SAVAGE No. 11419 2-9-17 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

FILE:	1074_CIVIL
JN:	1074
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

DRAWING NO.
C-46

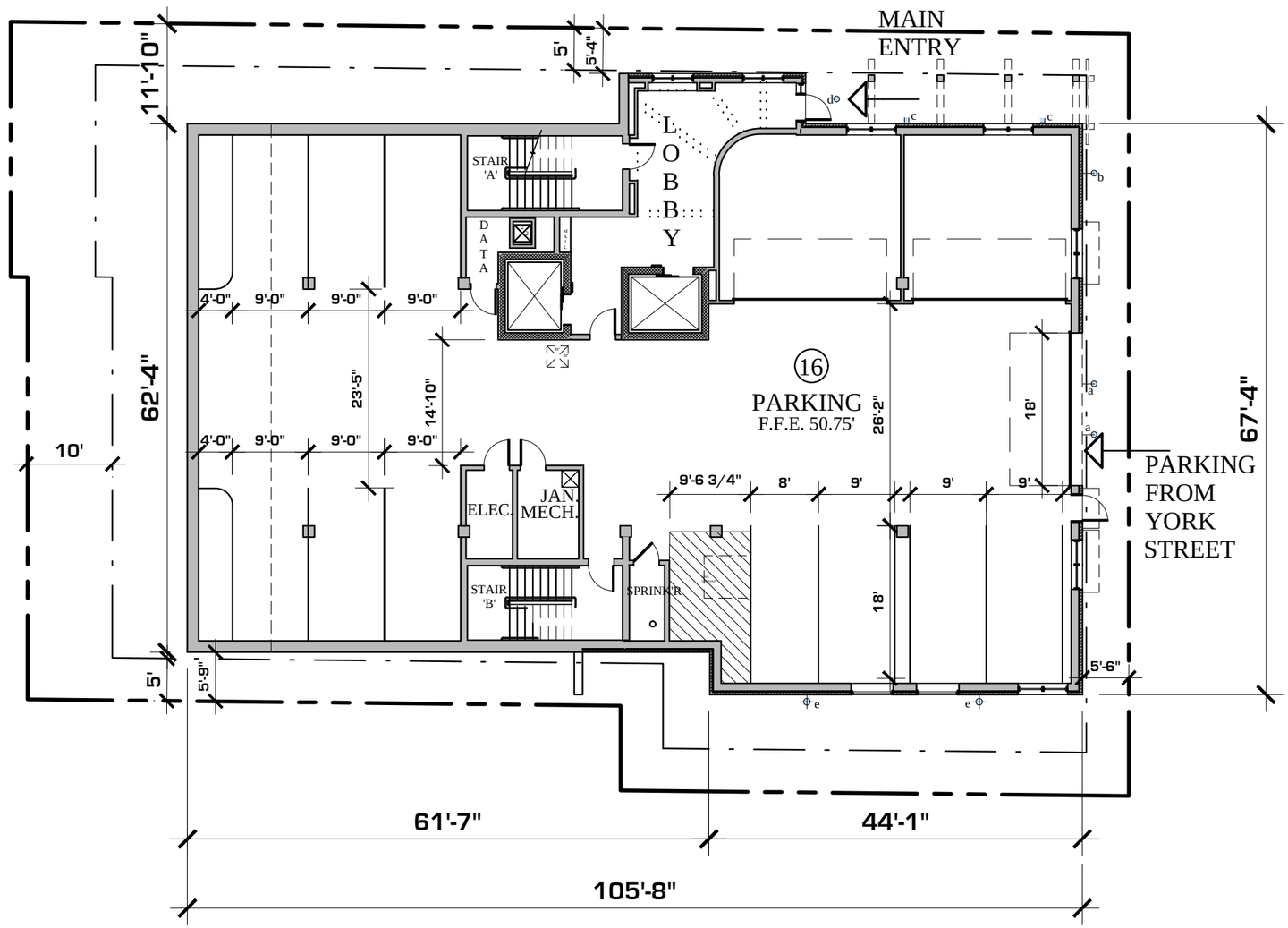
FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL

MARK
MUELLER
ARCHITECTS

LIGHTING LEGEND:

- a — SIDEWALK LIGHTING, WALL MOUNT DOWNLIGHT
- b — SIGN LIGHTING, WALL MOUNT DOWNLIGHT
- c — ENTRY WALK LIGHTING, WALL SCONCE
- d — ENTRY LIGHTING, RECESSED DOWNLIGHT
- e — WALKWAY LIGHTING, WALL SCONCE
- f — UNIT DECK LIGHTING, LOW MOUNT WALL SCONCE



LOWER LEVEL PLAN

1/16" = 1'-0"

YORK STREET

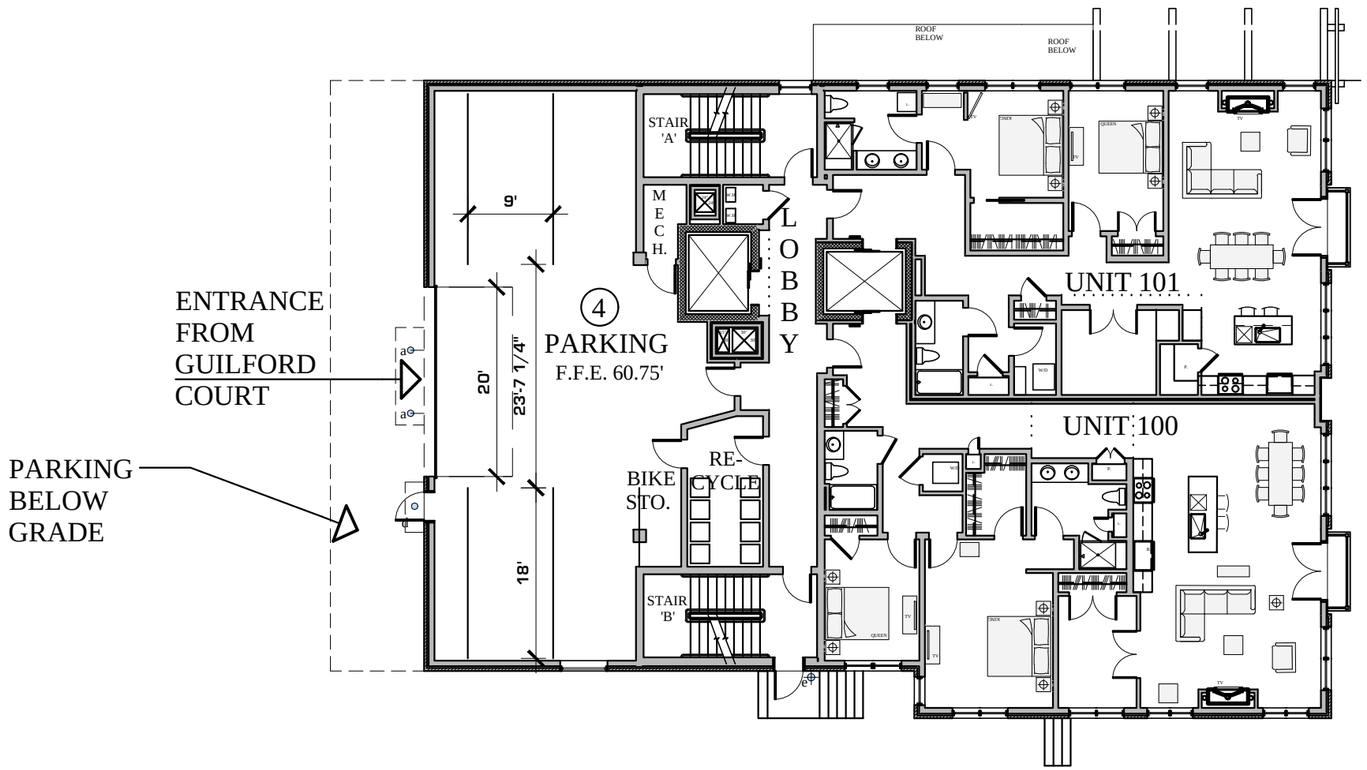
161

A-1.0

February 28, 2017
Revised: March 28, 2017

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL



FIRST FLOOR PLAN

1/16" = 1'-0"

MARK MUELLER ARCHITECTS

YORK STREET

161

A-1.1

February 28, 2017
Revised: March 28, 2017

GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE, ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN AUTOCAD FORMAT AND PAPER, STAMPED "AS-BUILT". IF AUTOCAD NOT AVAILABLE EXCLUDE FROM BID IN WRITING.
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED EXISTING CONDITIONS SURVEY BY SPURWINK SURVEYING LLC FOR YORK STREET REDEVELOPMENT, LLC, DATED SEPTEMBER 23, 2016.
8. SUBSURFACE DATA HAVE BEEN OBTAINED BY SUMMIT GEOENGINEERING SERVICES, INC. AND SHALL BE INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL ALSO REVIEW THE REPORT PRIOR TO SUBMITTING A BID.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AND ALL ADJACENT PROPERTIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THOUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
10. THE CONTRACTOR SHALL REVIEW ACORN'S CONSTRUCTION MANAGEMENT PLAN. CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ANTICIPATED PROJECT SCHEDULE AND CLOSURES. CONSTRUCTION MANAGEMENT, MEANS AND METHODS, TRAFFIC CONTROL, ETC. SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
12. THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH ACORN.
13. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF ADJACENT PROPERTIES INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBLE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL.

CIVIL SITE NOTES:

12. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO MODIFY THE CONTRACT DOCUMENTS.
13. ALL SHOP AND ERECTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION FOR ENGINEER'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
14. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
15. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
16. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
17. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
18. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
19. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
20. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
21. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED.
22. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE.
23. THE ENGINEER BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND OBSERVATION VISITS TO THE SITE DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.

SPECIAL INSPECTION NOTES:

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS, AS WELL AS SITE DRAINAGE, SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT.
3. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
4. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
5. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
6. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINE ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
7. THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY. INDIVIDUAL REPORTS OF PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND NET CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.
8. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER THE WORK REQUIRING A SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE AND BELIEF, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE. WORK NOT IN COMPLIANCE SHALL BE NOTED IN THE REPORT.
9. SPECIAL INSPECTION FIRM SHALL BE EMPLOYED BY YORK STREET REDEVELOPMENT LLC AND COORDINATED BY THE CONTRACTOR.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, OR ELEVATION AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO THEIR ORIGINAL LOCATION BY A REGISTERED LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
3. SIGNAGE, STRIPING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF PORTLAND, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE AND TO LOCATE PROPOSED FOUNDATION CORNERS.
6. CONTRACTOR TO ENSURE THAT DRIVEWAYS AND MAILBOXES ADJACENT TO THE PROJECT REMAIN FUNCTIONAL AND IN USE AT ALL TIMES.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF SITE PLAN – LEVEL III AND SUBDIVISION PERMIT FROM THE CITY OF PORTLAND.
2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.

GRADING AND DRAINAGE NOTES:

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY LOAM WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.
2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING. SEE BORING LOGS FOR ADDITIONAL INFORMATION.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY PRIVATE ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE OWNER. PRIOR TO THE CONTRACTOR PRICING THE WORK THE CONTRACTOR SHALL REQUEST PROOF OF SUCH EASEMENT OR TEMPORARY RIGHTS. SHOULD EASEMENTS OR TEMPORARY RIGHTS NOT BE AVAILABLE THE CONTRACTOR SHALL INCLUDE COST FOR BRACING AND SHORING AS NECESSARY.
4. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW EXISTING FINISH FLOOR ELEVATIONS.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST GEOTECHNICAL REPORT PREPARED BY THE PROJECT GEOTECHNICAL ENGINEER.
6. NO ADDITIONAL PAYMENT FOR UNSUITABLE MATERIALS.
7. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N=0.012 OR LESS.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. NATIVE SOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LIMIT THE DISTURBANCE TO SUBGRADE SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, DISTURBED AREAS SHALL BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.

EROSION CONTROL NOTES:

1. ALL ROUTINE MAINTENANCE ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
2. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
3. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
4. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.
5. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
6. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR TO BYPASS EXISTING SEWER FLOW CONTROL AT CONNECTION TO EXISTING SYSTEM AT NO ADDITIONAL COST.
3. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES.
4. CONTRACTOR TO PROVIDE 5' OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.
5. THRUST BLOCKS SHALL BE USED FOR THRUST RESTRAIN ON WATER MAINS. DETAIL AND LIMITS FOR THRUST BLOCKS ARE SHOWN ON SHEET C-42.
6. WATER INFRASTRUCTURE SHALL BE TESTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT DOCUMENT "WATER AND SEWER CONSTRUCTION SPECIFICATIONS AND PROCEDURES", MOST RECENT REVISION.
7. ALL REQUIRED FITTINGS FOR THE WATER MAIN ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS REQUIRED TO CONSTRUCT THE WATER MAIN IN ACCORDANCE WITH CITY OF PORTLAND, STATE OF MAINE, AND AMERICAN WATER WORKS ASSOCIATION STANDARDS AND REGULATIONS.
8. CONTRACTOR SHALL COORDINATE WORK REGARDING ANY WATER MAIN CONNECTION AND WATER MAIN SHUTDOWN WITH THE PORTLAND WATER DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
9. ALL WATER PIPE INSTALLATION SHALL CONFORM WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS AND PROCEDURES, MOST RECENT EDITION.
10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
11. SEWER, GAS, TELEPHONE, ELECTRICITY, CABLE, WATER AND ANY OTHER UTILITY CONNECTIONS SHALL BE REVIEWED BY PLUMBING, ELECTRICAL, AND MECHANICAL DESIGNER FOR CONSISTENCY WITH THEIR PLANS PRIOR TO CONSTRUCTION.
12. COORDINATE EXIT POINT FOR SECONDARY SERVICE WITH THE ARCHITECT/ELECTRICAL ENGINEER. SECONDARY LINE LOCATIONS NOT PROVIDED BY ACORN ENGINEERING WITHIN THE UTILITY PLAN.
13. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE CITY IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL PRIOR TO ANY WORK.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.

DEMOLITION NOTES:

1. THE FOLLOWING ITEMS ARE TYPICAL OF MATERIAL WHICH MAY STILL REMAIN AFTER THE SITE DEMOLITION OCURRED. THE CONTRACTOR IS ADVISED TO VISIT THE SITE TO CONFIRM DEMOLITION ITEMS SINCE THE LIST IS NOT INCLUSIVE OF THE SITE CONDITIONS WHICH MAY BE ENCOUNTERED:
   - ROCK AND CONCRETE FOUNDATIONS
   - CONCRETE SLABS
   - BITUMINOUS ASPHALT PAVEMENT
   - CONCRETE PADS AND BLOCKS
   - FENCE POST AND FENCING
   - UNDERGROUND UTILITY LINES
   - ABOVE AND OR BELOW FUEL OIL AND PROPANE GAS TANKS
   - STORM DRAIN PIPES AND APPURTENANCE STRUCTURES
   - OTHER TRASH & MISCELLANEOUS SOLID WASTES
2. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
PRELIM. APP.	WHS	11/8/16
FINAL APP.	WHS	3/9/17

DRAWING NAME: GENERAL NOTES

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET PORTLAND, ME 04101

ACORN ENGINEERING, INC.
ENGINEERING, INC.
158 DANFORTH STREET PORTLAND, MAINE 04102
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE WITHOUT SUCH CONSENT SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1074_CIVIL
JN:	1074
SCALE:	NTS
DESIGNED BY:	WHS
DRAWN BY:	SJL
CHECKED BY:	WHS

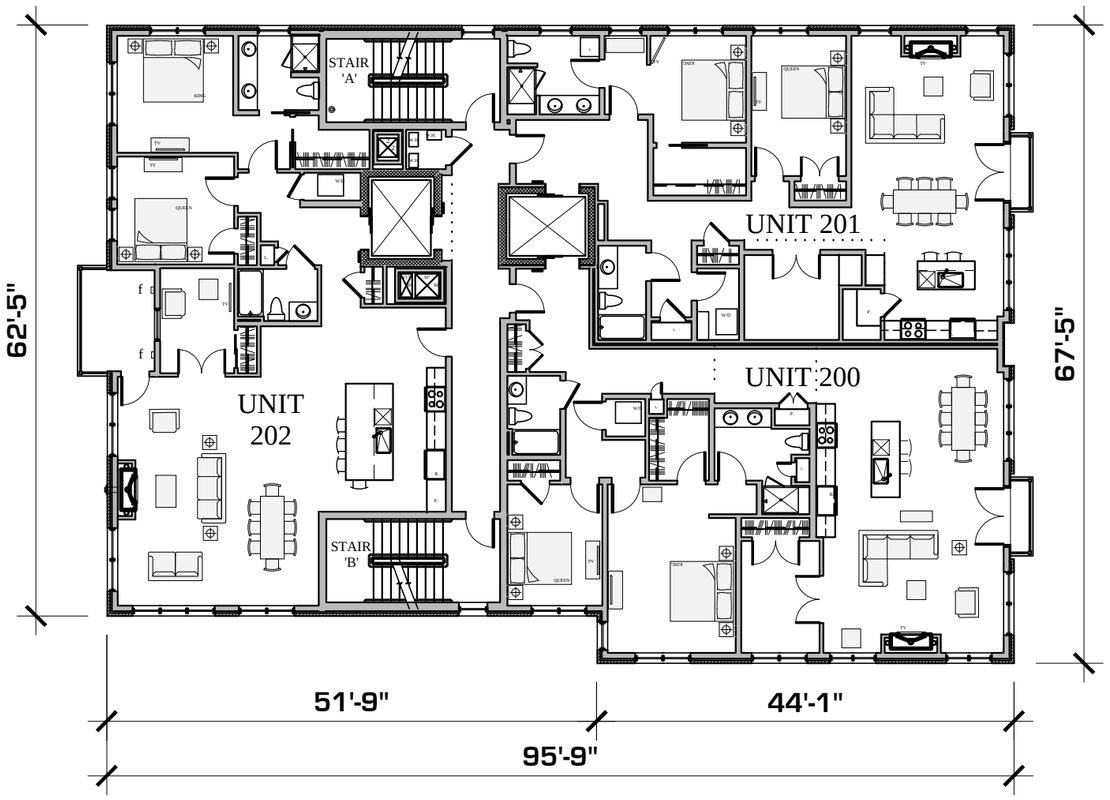
STATE OF MAINE
WILLIAM H. SAVAGE
No. 14415
2-9-17
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-02

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL

MARK
MUELLER
ARCHITECTS



YORK STREET
161

SECOND FLOOR PLAN

1/16" = 1'-0"

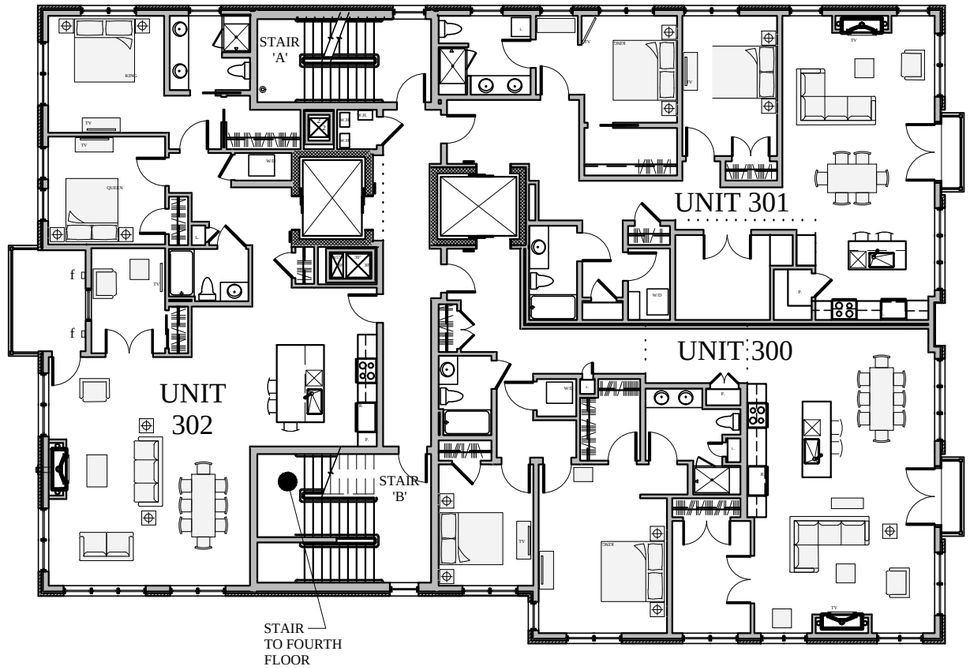
A-1.2

February 28, 2017
Revised: March 28, 2017

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL

MARK
MUELLER
ARCHITECTS



THIRD FLOOR PLAN

1/16" = 1'-0"

YORK STREET

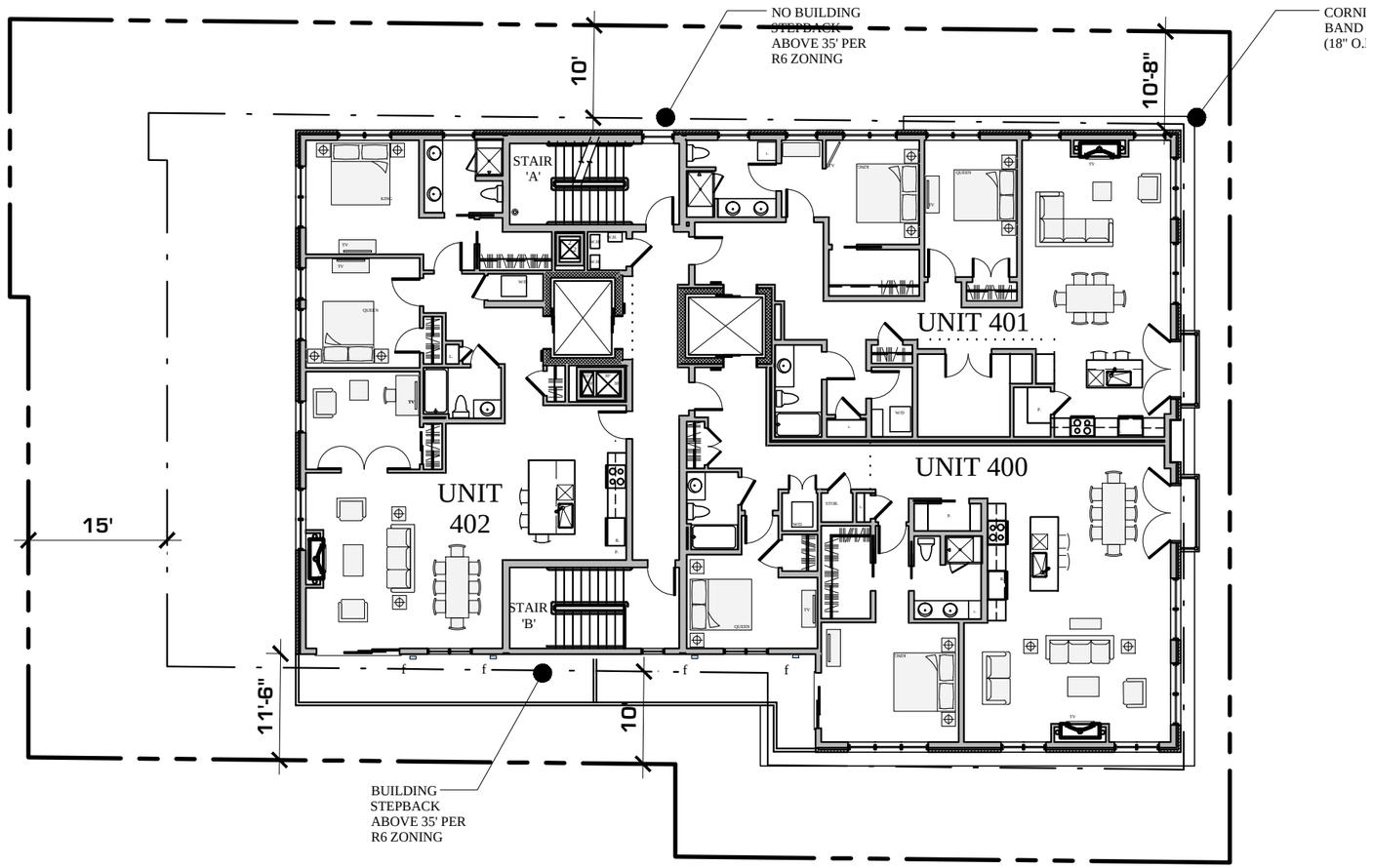
161

A-1.3

February 28, 2017
Revised: March 28, 2017

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL



MARK
MUELLER
ARCHITECTS

FOURTH FLOOR PLAN

1/16" = 1'-0"

YORK STREET

161

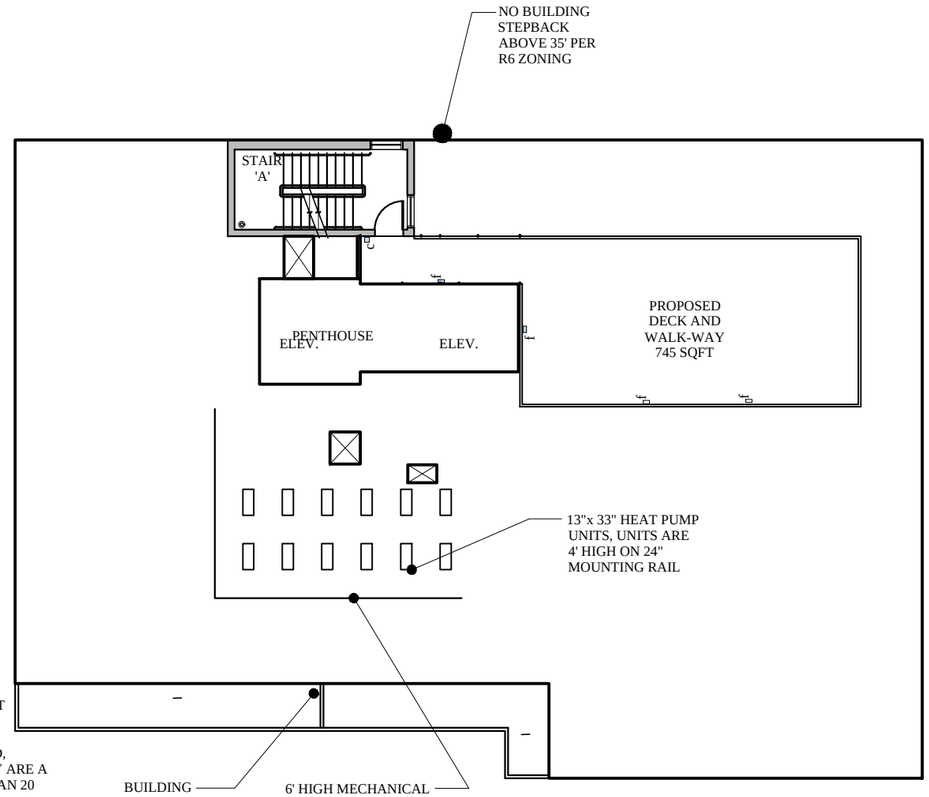
A-1.4

February 28, 2017
Revised: March 28, 2017

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL

MARK
MUELLER
ARCHITECTS



ROOF HVAC
EMISSIONS:

1) INDIVIDUAL UNIT: ARE ELECTRIC HEAT PUMPS AND THEREFORE PRODUCE NO CARBON EMISSIONS.
2) UNIT WATER HEATERS: ARE GAS FIRED, DIRECT VENT AND CONDENSING, THEY ARE A LOW NOx EMISSIONS TYPE OF LESS THAN 20 ppm.
3) THE PARKING GARAGES WILL BE EXHAUSTED BY FANS LOCATED ON THE ROOF. THE DESIGN EXHAUST RATE WILL BE APPROXIMATELY 1.0 cfm/sf PER NFPA 88A. THE EXHAUST FANS AT THE ROOF (UPBLAST TYPE) ARE DESIGNED TO ACHIEVE MAXIMUM EXHAUST DILUTION WITHIN A SHORT DISTANCE.
4) THE MECHANICAL HEAT PUMP UNITS FOR THE INDIVIDUAL LIVING UNITS PRODUCE 54db AT 3' FROM THE UNIT. ANTICIPATED LEVELS AT THE PROPERTY LINE VARY BETWEEN 48-50 db.

ROOF PLAN

1/16" = 1'-0"

YORK STREET

161

A-1.5

February 28, 2017
Revised: March 28, 2017

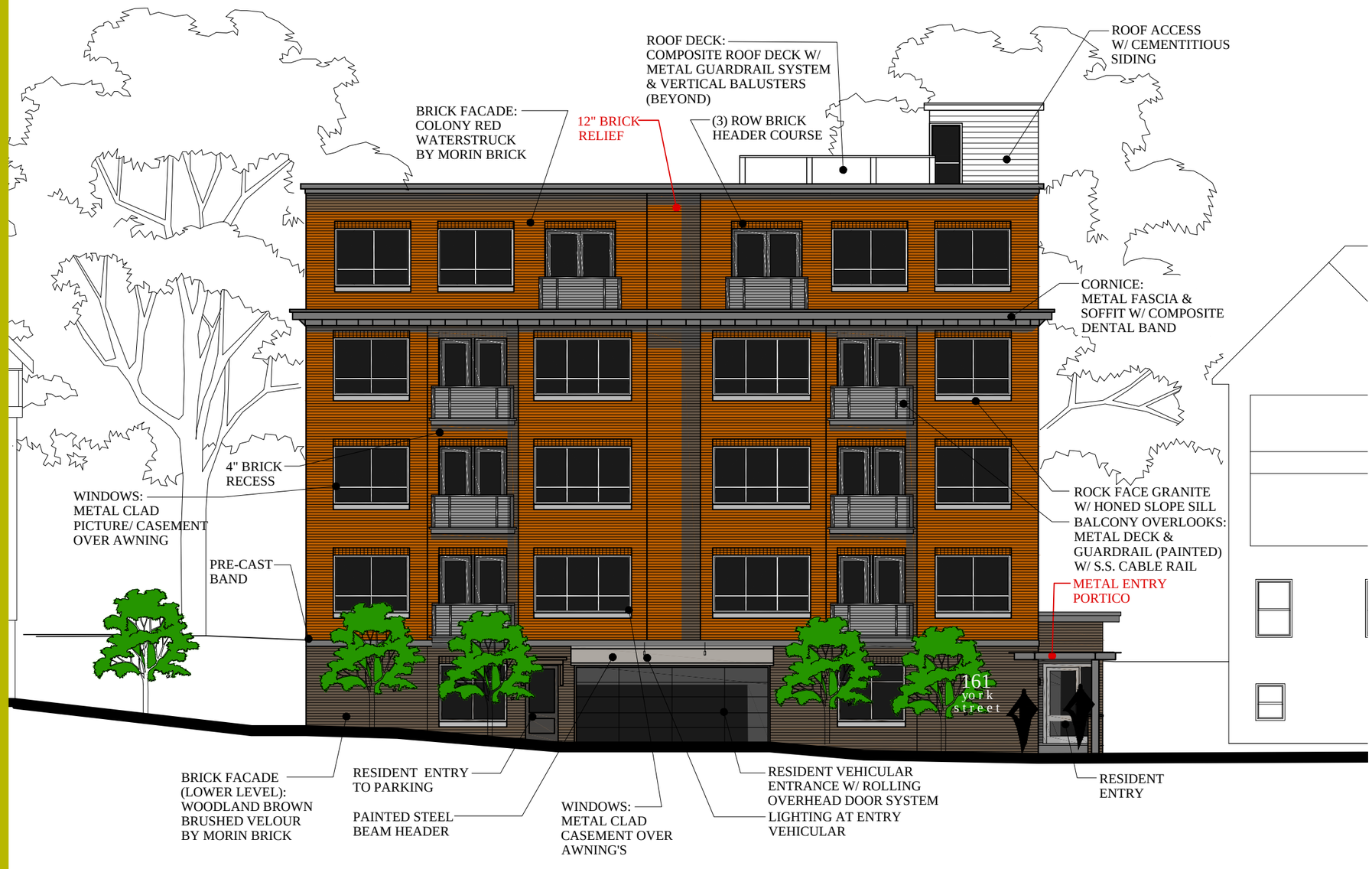
FOR:

YORK STREET REDEVELOPMENT, LLC

42 MARKET ST

PORTLAND, MAINE

FINAL



BUILDING ELEVATION

3/32" = 1'-0"

YORK STREET

161

A-1.6

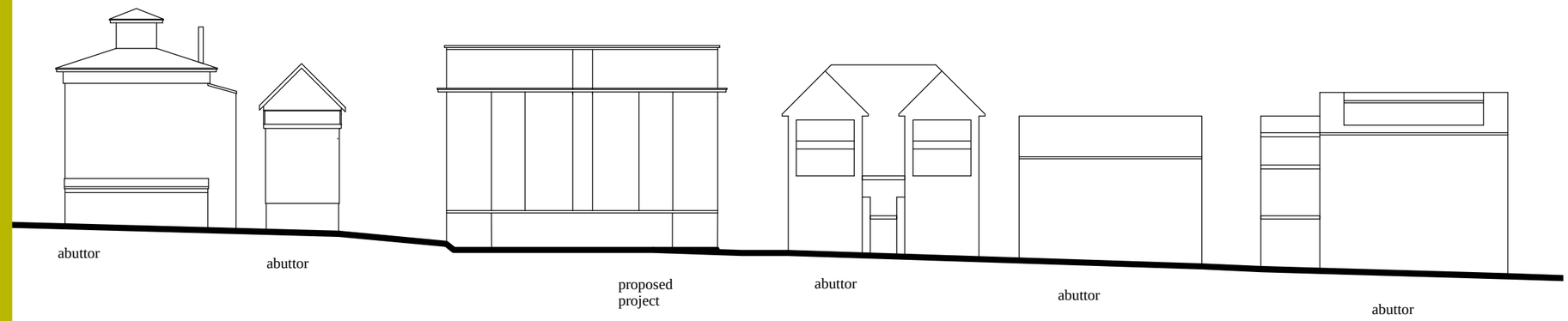
February 28, 2017

Revised: March 28, 2017

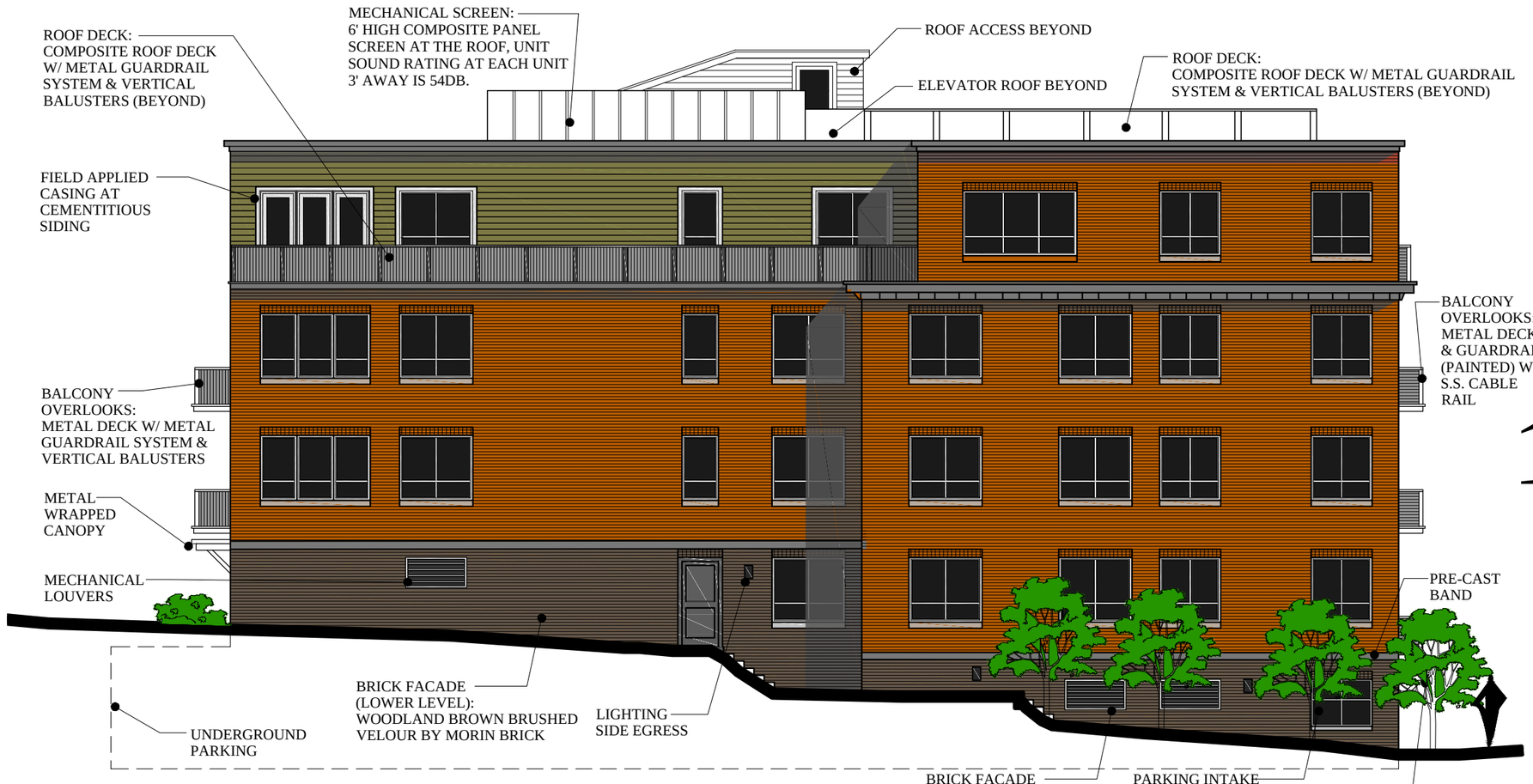
MARK MUELLER ARCHITECTS

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL



york street massing study



LEFT ELEVATION

BUILDING ELEVATION

3/32" = 1'-0"

MARK MUELLER ARCHITECTS

YORK STREET

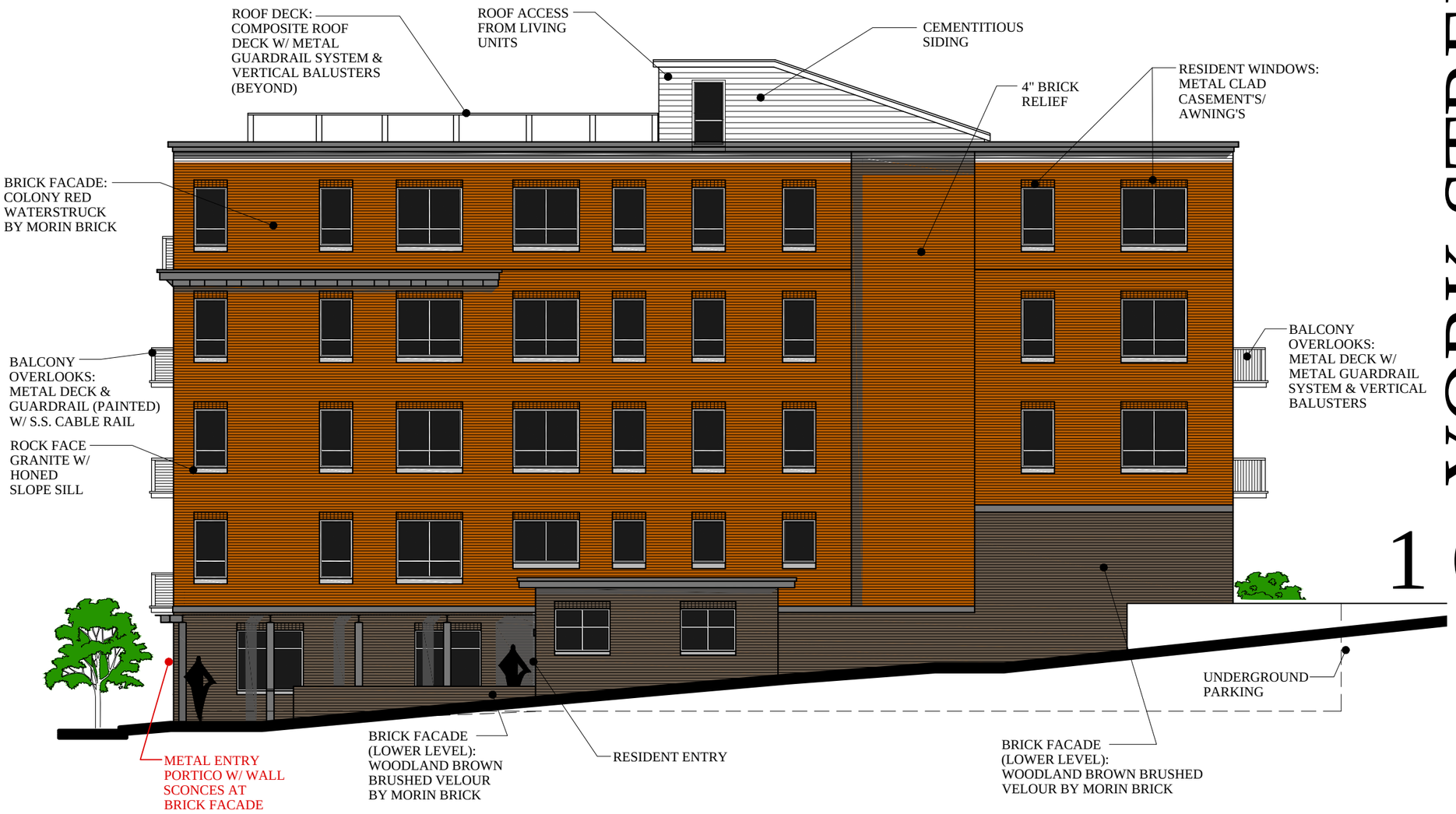
161

A-1.7

February 28, 2017
Revised: March 28, 2017

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL



RIGHT ELEVATION

BUILDING ELEVATION

3/32" = 1'-0"

YORK STREET

161

A-1.8

February 28, 2017
Revised: March 28, 2017

MARK MUELLER ARCHITECTS

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL

REAR ELEVATION

BUILDING ELEVATION

3/32" = 1'-0"

MARK MUELLER ARCHITECTS

YORK STREET

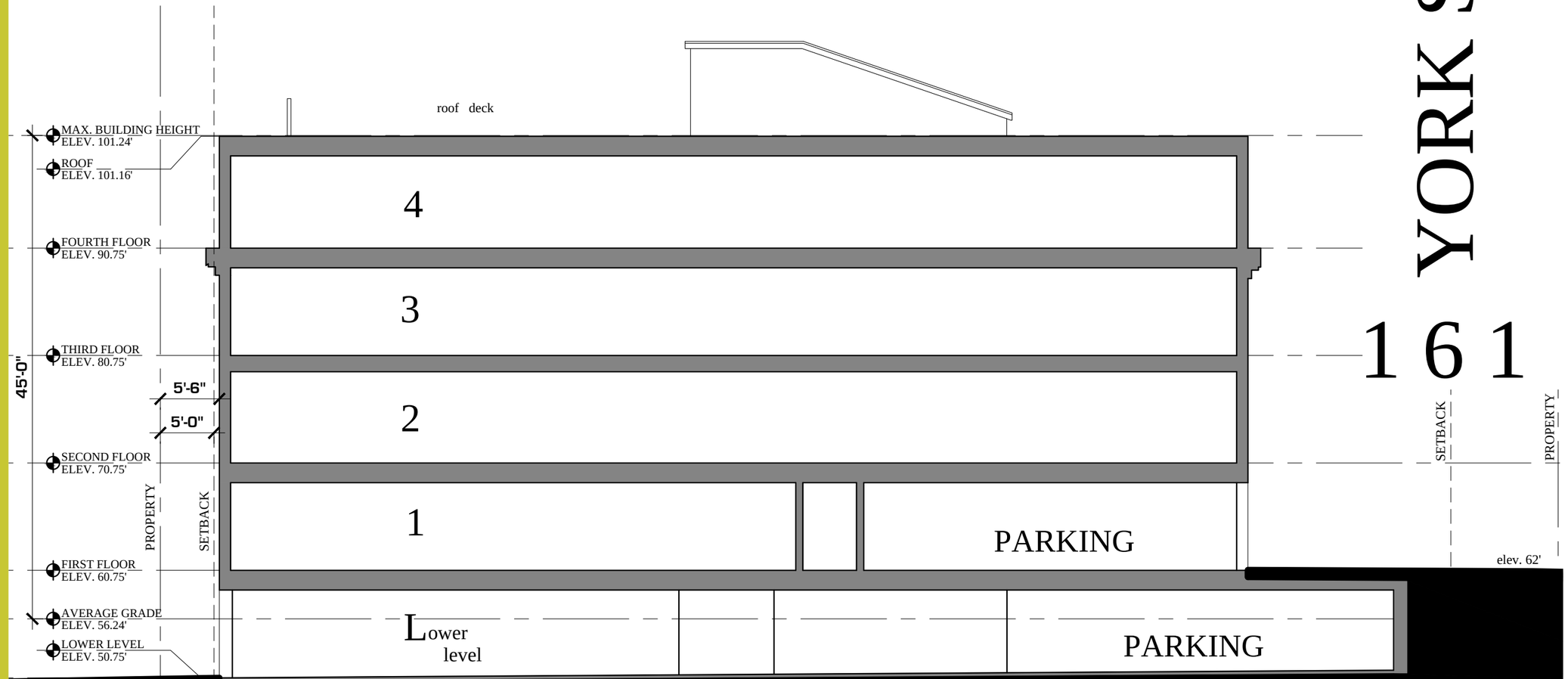
161

A-1.9

February 28, 2017
Revised: March 28, 2017

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL



YORK STREET

161

A-1.10

BUILDING SECTION
3/32" = 1'-0"

February 28, 2017
Revised: March 08, 2017

MARK MUELLER ARCHITECTS

GENERAL NOTES:

1. FOR INFORMATION REGARDING THE GARAGE LEVEL, REFER TO SITE PLAN, C-10, MOST RECENT VERSION.
2. FOR INFORMATION REGARDING PROPOSED UTILITY CHANGES, REFER TO UTILITY PLAN, SHEET C-20, MOST RECENT VERSION.
3. FOR INFORMATION REGARDING PROPOSED GRADING CHANGES, REFER TO GRADING & DRAINAGE PLAN, SHEET C-31, MOST RECENT VERSION.
4. UNIT TABULATION PROVIDED BY MARK MUELLER ARCHITECTS; REFER TO ARCHITECTURAL PLANS FOR FLOOR PLANS AND BUILDING HEIGHTS.
5. TOTAL SITE AREA INCLUDES 0.254 ACRES (11,046 S.F.). R.O.W. WIDTH FOR YORK STREET IS 66 FEET PER EXISTING CONDITIONS PLAN. REFER TO EXISTING CONDITIONS PLAN COMPLETED BY SPURWINK SURVEYING DATED 9/23/15 AND REVISED 12/16/15 & 9/4/16.
6. SITE BOUNDARIES PER EXISTING CONDITIONS PLAN AND PROPERTY PINS TO BE SET BY SPURWINK SURVEYING.
7. AS OF 03/09/2017, SITE IS BOUNDED BY THE R-6 ZONE ON ALL ABUTTING SIDES PER CITY OF PORTLAND GIS WEBSITE.
8. LOCUS PARCEL IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 44, BLOCK B, LOT 007.
9. LOCUS PARCEL DOES NOT SCALE IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 230051 0013B, INDEX DATED 7/17/1986.
10. BACKING MOVEMENTS ONTO YORK STREET BY VEHICLES SHALL NOT BE PERMITTED.
11. ALL BUILDING CORNER OFFSETS TO BOUNDARY LINES ARE FROM CORNERBOARDS AND NOT BUILDING FOUNDATION, UNLESS OTHERWISE NOTED.
12. THIS SHEET IS THE SUBDIVISION PLAT FOR THE CREATION OF UP TO ELEVEN (11) DWELLING UNITS ON THE EXISTING SUBJECT PROPERTY. APPROVAL OF THIS PLAT DOES NOT CREATE ANY SUBDIVISION OF THE LAND ON THE SUBJECT PROPERTY.
13. THE CONDOMINIUM DOCUMENTS ARE TO OUTLINE THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, RETAINING WALLS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, AND SNOW REMOVAL AS THE RESPONSIBILITY OF THE OWNER.
14. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, RETAINING WALLS, AND SNOW REMOVAL.
15. THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF CHAPTER 32 STORMWATER INCLUDING ARTICLE III, POST-CONSTRUCTION STORMWATER MANAGEMENT AGREEMENT, WHICH SPECIFIES ANNUAL INSPECTIONS AND REPORTING REQUIREMENTS AT A MINIMUM. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF THE SUBMITTED STORMWATER MANAGEMENT PLAN AND THE APPROVED PLANS, AND MEET CITY STANDARDS AND STATE GUIDELINES.
16. THE CONDOMINIUM ASSOCIATION SHALL BE RESPONSIBLE FOR AN EQUAL SHARE OF MAINTENANCE ON GUILFORD COURT, INCLUDING SNOW REMOVAL.
17. THE CONDOMINIUM ASSOCIATION MUST COMPLY TO THE FOLLOWING AS APPROVED BY THE CITY:

17.1. CONDOMINIUM DOCUMENTS: BOOK _____ PAGE _____

17.2. POST-CONSTRUCTION STORMWATER MANAGEMENT AGREEMENT: BOOK _____ PAGE _____

WAIVERS & CONDITIONS OF APPROVAL:

TBD

EASEMENTS:

ALL PROPOSED EASEMENTS TO BE REVIEWED BY SPURWINK SURVEYING AND RECORDED IN CCRD. ALL EXISTING EASEMENTS WILL BE RELEASED PRIOR TO PROJECT START. THERE ARE NO PROPOSED EASEMENTS.

EXISTING EASEMENTS:

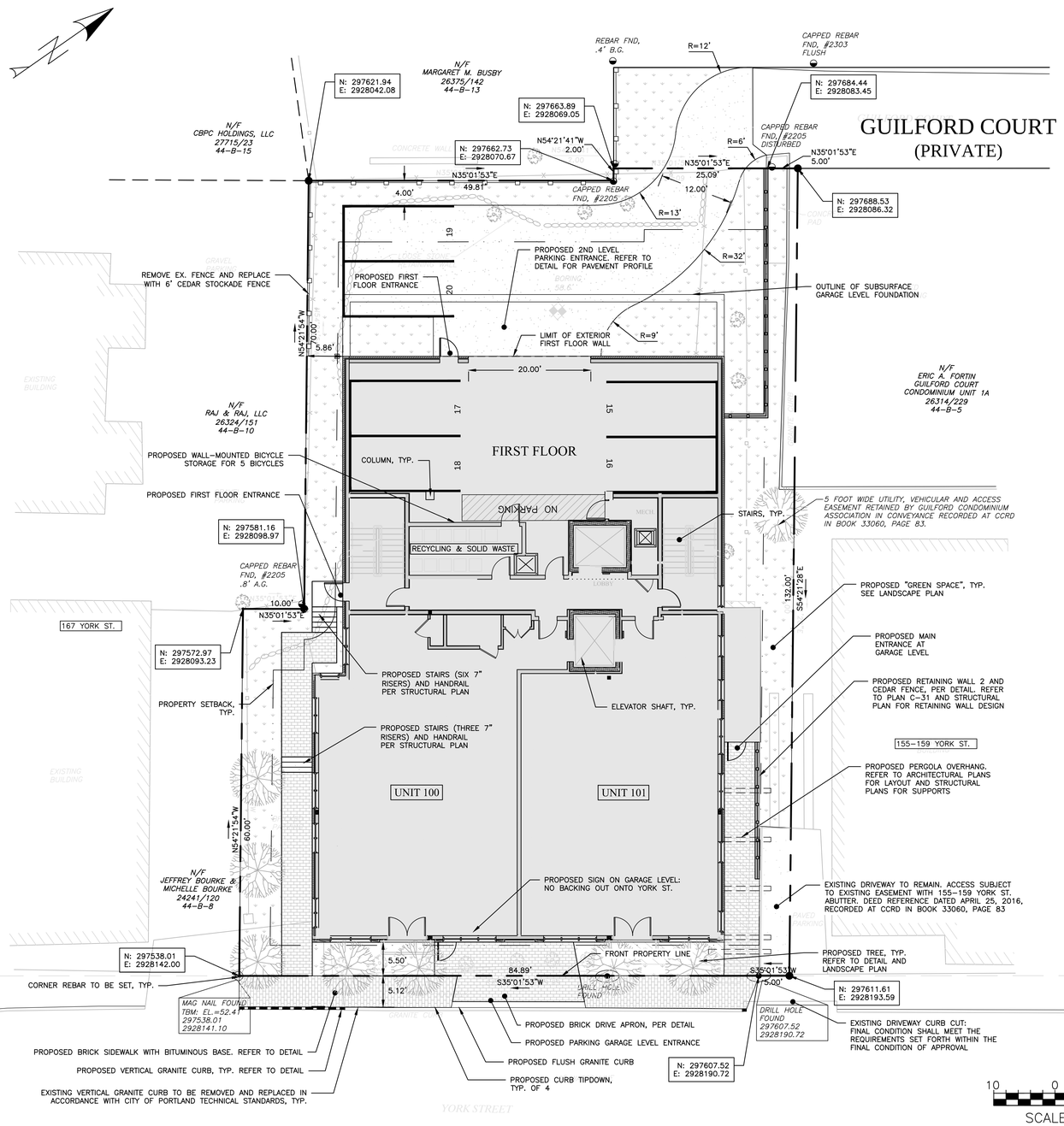
1. EASEMENT "IN A STRIP OF LAND TO BE USED AS A DRIVEWAY" RESERVED IN A DEED FROM ROSARY M. LAROCHELLE TO TACHA VOSBURGH DATED MAY 18, 1989 AND RECORDED AT CCRD IN BOOK 8761, PAGE 284. THIS EASEMENT HAS SINCE BEEN EXTINGUISHED.
2. AN EASEMENT EXISTS WITH 155-159 YORK STREET REGARDING THE 13'X56' DRIVEWAY. RECORDED AT THE CCRD ON APRIL 25TH, 2016 IN BOOK 33060, PAGE 83.

SURVEY NOTES:

1. THE BASIS OF BEARING FOR THIS SURVEY IS MAINE STATE COORDINATE SYSTEM, WEST ZONE. ELEVATIONS AND CONTOURS ARE REFERENCED TO NAVD 1929.
2. DEED AND PLAN BOOK REFERENCES ARE TO THE CCRD.
3. RECORD OWNERSHIP OF 161 YORK STREET CAN BE FOUND IN A DEED FROM REBECCA A. LAKE AND ROXANNE A. LAROCHELLE TO YORK STREET REDEVELOPMENT, LLC DATED SEPTEMBER 9, 2015 AND RECORDED AT CCRD IN DEED BOOK 32580, PAGE 186. RECORD OWNERSHIP OF 163 YORK STREET CAN BE FOUND IN A DEED DATED FROM ROSARY M. LAROCHELLE TO YORK STREET REDEVELOPMENT, LLC DATED SEPTEMBER 9, 2015 AND RECORDED AT CCRD IN DEED BOOK 32580, PAGE 183.
4. REFERENCE IS MADE TO THE FOLLOWING PLANS:
   - 4.1. "STANDARD BOUNDARY SURVEY, LOTS AT 161 & 163 (A.K.A. 165) YORK STREET FOR ROSARY M. LAROCHELLE & RALPH A. LAROCHELLE, PORTLAND, MAINE" BY ROSS BOUNDARY SURVEYS DATED OCTOBER 2004. RECORDED AT CCRD IN PLAN BOOK 214, PAGE 119.
   - 4.2. "SUBDIVISON RECORDING PLAT OF GUILFORD COURT AT 157 YORK STREET" FOR WAYNE BARKER AND TACHA VOSBURGH BY BACK BAY BOUNDARIES, INC. DATED NOVEMBER 11, 2002. RECORDED AT CCRD IN PLAN BOOK 204, PAGE 447.
5. THE PARCEL SURVEYED IS IDENTIFIED ON THE CITY OF PORTLAND TAX ASSESSOR'S MAP 44, BLOCK B, PARCELS 6 & 7.
6. THE PARCEL SURVEYED IS LOCATED IN THE R6 ZONE/DISTRICT*. PORTIONS OF BULK AND SPACE REQUIREMENTS ARE AS FOLLOWS:

   FRONT SETBACK: 5 FEET
   SIDE SETBACK: 5 FEET
   REAR SETBACK: 10 FEET

   *OTHER MUNICIPAL AND STATE OVERLAY ZONES MAY EXIST AND APPLY. BEFORE PROCEEDING ON ANY PROJECT WE RECOMMEND VERIFYING CURRENT ZONING / SETBACKS / RESTRICTIONS WITH THE APPROPRIATE AGENCIES.
7. YORK STREET IS AN ACCEPTED CITY STREET 4 RODS (66') WIDE. GUILFORD COURT IS A PRIVATE COURT ONE ROD (16.5') WIDE.
8. THE UTILITIES SHOWN ON THIS PLAN WERE MARKED BY DIG SAFE ON 10/8/2015 AND THEIR LOCATIONS ARE TO BE CONSIDERED APPROXIMATE. THERE MAY BE OTHER UTILITIES EXISTING THAT ARE NOT SHOWN. CONTRACTOR TO CONTACT DIG-SAFE (888)-DIG-SAFE PRIOR TO ANY EXCAVATION WORK.



10 0 10 20

SCALE: 1" = 10'

VICINITY MAP
1" = 300'

UNIT TABULATION

UNIT NUMBER	SIZE (SF)*
1	1670
2	1472
3, 5, 6	1755
4, 7, 10	1509
8	1679
9	1655
11	1572

*UNIT AREA MEASURED FROM OUTSIDE OF EXTERIOR WALLS TO THE CENTER OF SHARED WALLS

LEGEND:

- INTERNAL BRICK SIDEWALK
- CITY BRICK SIDEWALK
- LANDSCAPED AREAS
- BITUMINOUS PAVEMENT
- CONCRETE
- GRANITE CURB
- PROPOSED BUILDING
- PROPERTY LINE
- STRIPING
- CEDAR FENCE

SPACE AND BULK STANDARDS

ZONE: R6	REQUIRED	PROPOSED
MINIMUM LOT SIZE	2,000 SF	11,046 SF
MINIMUM STREET FRONTAGE	20'	89'
FRONT YARD SETBACK	5'	5'
SIDE YARD SETBACK	5'	> 5' SOUTH > 5' NORTH
REAR YARD SETBACK	10'	> 28'
STRUCTURE STEPBACKS (REAR YARD ABOVE 35')	15'	> 28'
STRUCTURE STEPBACKS (SIDE YARD ABOVE 35')	10'	10' SOUTH > 10' NORTH
MAXIMUM LOT COVERAGE	60%	57%
MINIMUM LOT WIDTH	20'	90'
MAXIMUM BUILDING HEIGHT	45'	< 45'
MINIMUM LANDSCAPED OPEN AREA	20%	23%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 19*	11
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 8 SPACES	20
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 4	5
MAXIMUM GARAGE OPENING	20'	20'

*PER INCLUSIONARY HOUSING DENSITY BONUS, AN ADDITIONAL 25% OF TOTAL UNITS ARE ADDED TO THE MAXIMUM, ALLOWABLE TOTAL DWELLING UNITS

PARKING SUMMARY

PARKING AREA	# PARKING SPACES
INTERNAL GARAGE LEVEL	14
INTERNAL FIRST LEVEL	4
EXTERNAL REAR	2
TOTAL SPACES	20

APPROVED: PORTLAND PLANNING BOARD

CHAIRPERSON: DATE:

RECORDING INFORMATION
STATE OF MAINE, CUMBERLAND
COUNTY REGISTRY OF DEEDS

RECEIVED: _____

RECORDED IN: _____

ATTEST: _____
REGISTRAR

OWNER/SUBDIVIDER:

YORK STREET REDEVELOPMENT, LLC
PORTLAND, MAINE
CONTACT: MICHAEL CIANCHETTE

CIVIL/SITE ENGINEER:

ACORN ENGINEERING, INC.
PORTLAND, MAINE
CONTACT: WILL SAVAGE, P.E.

SURVEYOR:

SPURWINK SURVEYING LLC
SCARBOROUGH, MAINE
CONTACT: JAMES MULLEN, P.L.S.

JAMES MULLEN, MAINE P.L.S. #2028

SPURWINK SURVEYING LLC DATE:

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
FINAL APP.	WHS 3/9/17
PRESENTATION REV.	WHS 3/9/17
PB COMMENTS	WHS 3/14/17

DRAWING NAME: SUBDIVISION PLAT

PROJECT NAME: 161 YORK STREET REDEVELOPMENT

CLIENT: YORK STREET REDEVELOPMENT, LLC
42 MARKET STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THIS PLAN WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
158 DANFORTH STREET PORTLAND, MAINE 04102
(207) 775-2655

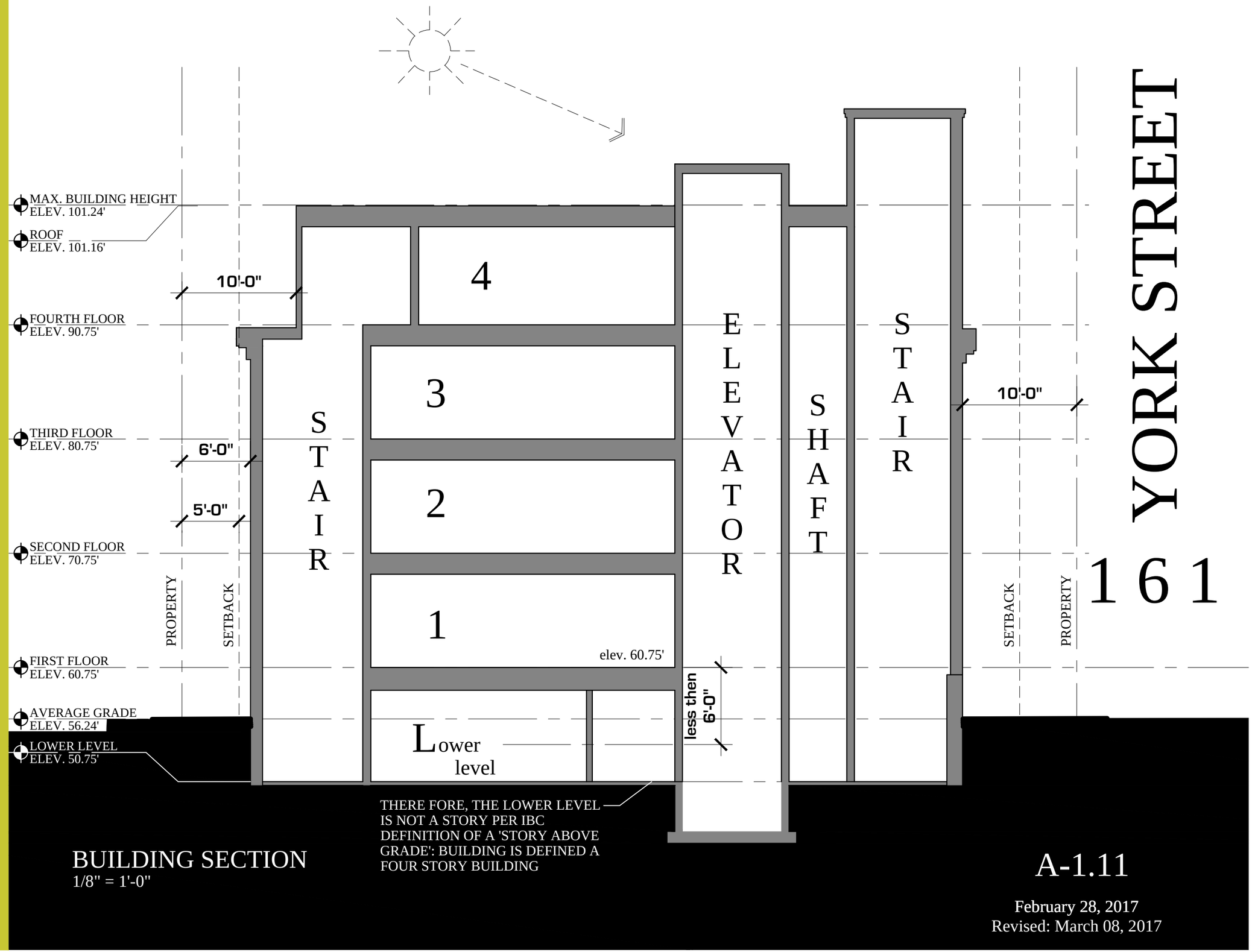
FILE:	1074_CIVIL
JN:	1074
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

STATE OF MAINE
WILLIAM H SAVAGE
No. 11419
3-14-17
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
PLAT

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL



THERE FORE, THE LOWER LEVEL IS NOT A STORY PER IBC DEFINITION OF A 'STORY ABOVE GRADE': BUILDING IS DEFINED A FOUR STORY BUILDING

BUILDING SECTION
1/8" = 1'-0"

MARK MUELLER ARCHITECTS

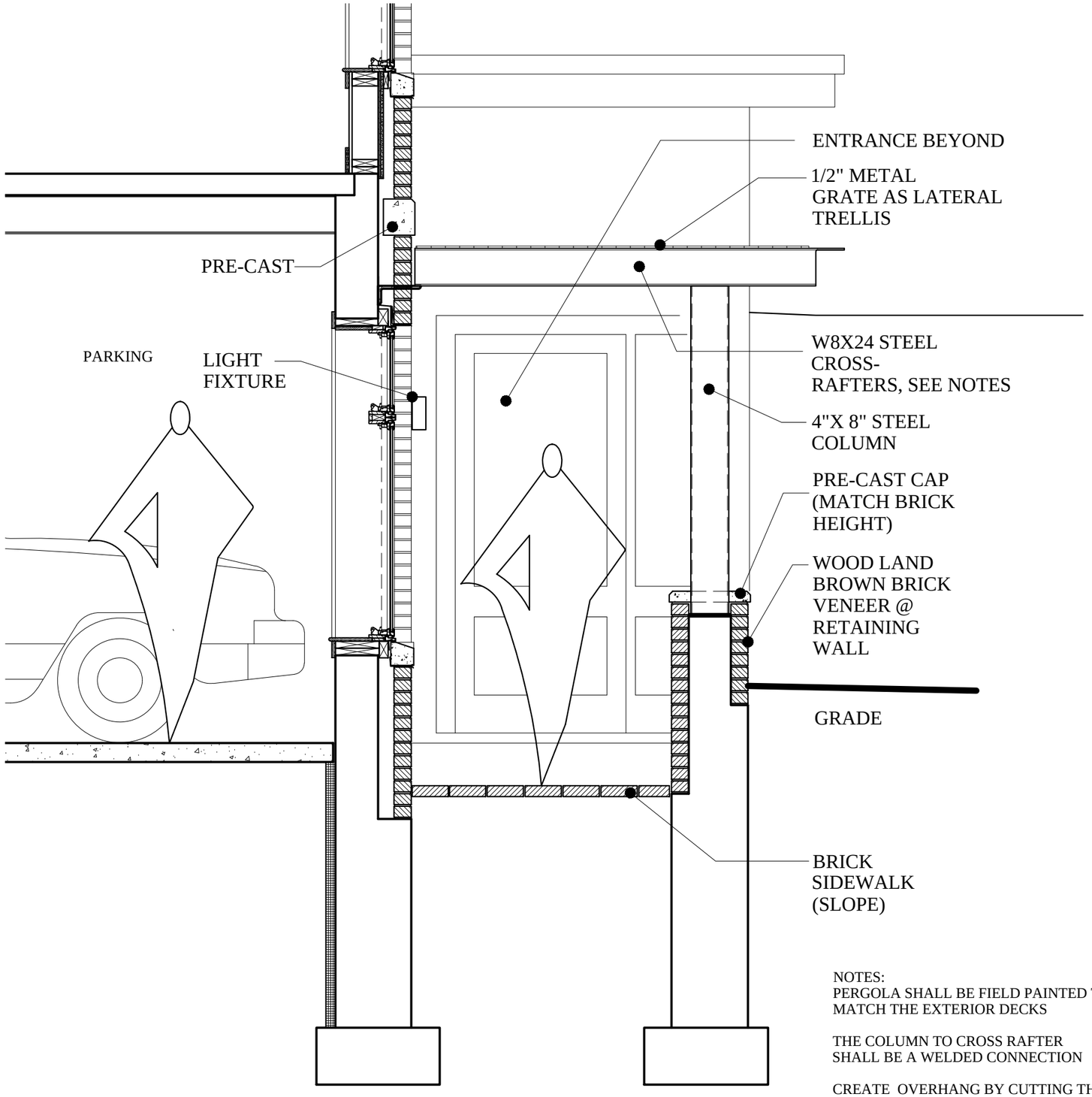
A-1.11

February 28, 2017
Revised: March 08, 2017

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL

MARK
MUELLER
ARCHITECTS



NOTES:
PERGOLA SHALL BE FIELD PAINTED TO MATCH THE EXTERIOR DECKS

THE COLUMN TO CROSS RAFTER SHALL BE A WELDED CONNECTION

CREATE OVERHANG BY CUTTING THE CROSS RAFTER BEAM FLANGE AND BOTTOM CHORD,
GRIND SMOOTH

WALL SECTION
1/2" = 1'-0"

YORK STREET
161

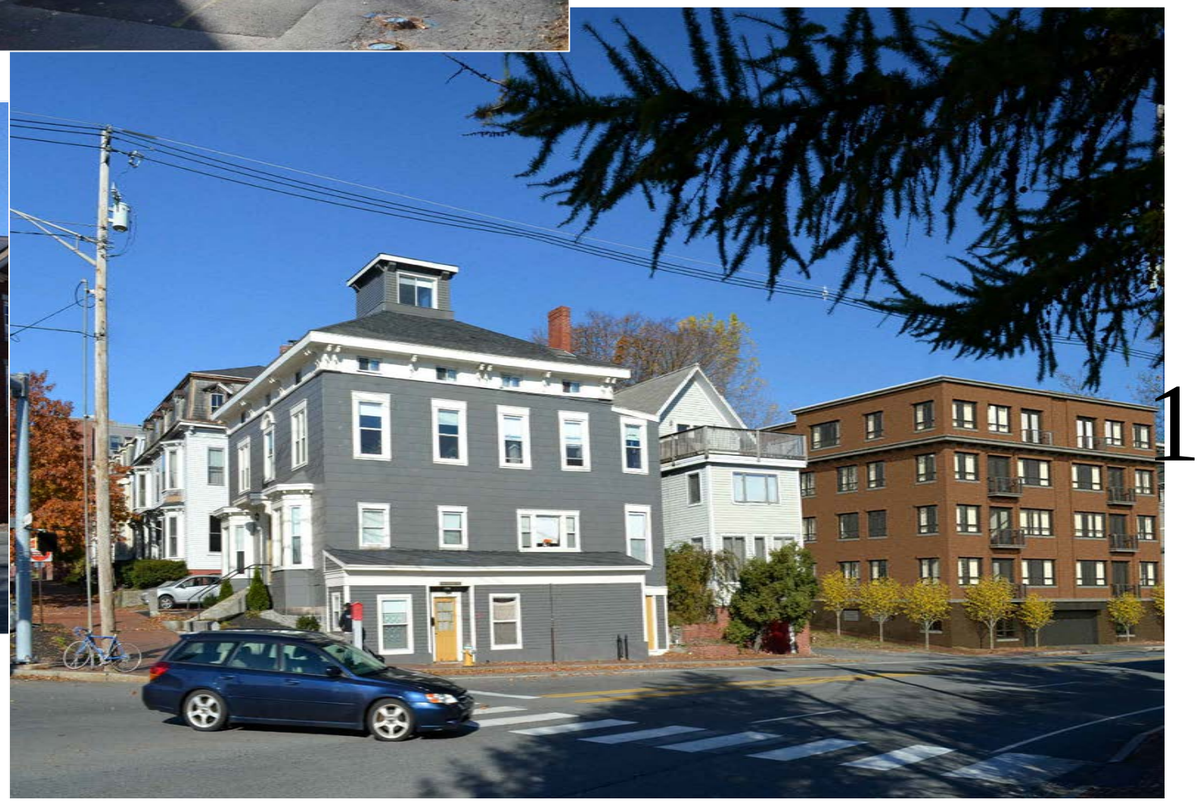
A-1.12

February 28, 2017
Revised: March 28, 2017

FOR:
YORK STREET
REDEVELOPMENT, LLC
42 MARKET ST
PORTLAND, MAINE

FINAL

MARK
MUELLER
ARCHITECTS



YORK STREET

161

A-2.0

February 28, 2017
Revised: March 28, 2017

PLANNING BOARD REPORT
PORTLAND, MAINE

Fred P. Hall Elementary School Reconstruction
23 Orono Road
Conditional Use and Level III Site Plan
2016-199 (Site Plan) and 2017-027 (Conditional Use)
Portland Public Schools, Applicant

Submitted to Portland Planning Board Public Hearing Date: March 28, 2017	Prepared by: Shukria Wiar Date: March 24, 2017

I. INTRODUCTION

Oak Point Associates, working on behalf of the City of Portland Recreation and Facilities Management Department and the Portland Public School District (PPS), has requested a workshop with the Planning Board to review the Conditional Use and Level III Site Plan Applications for the proposed elementary school located at 23 Orono Road in the Residential R-3 Zone. The project involves the demolition of the existing Fred P. Hall Elementary School and the construction of a new elementary school. The proposed school building will be a two-story building with a footprint of approximately 64,000 square feet and a floor area of approximately 85,000 square feet, with a capacity of 558 students. Major modifications to the existing site circulation are proposed, including segregating the existing site entrance from Warwick Street and constructing a new entrance from Lomond Street (via Riggs Street); a separated parent drop off/pick up areas, staff and visitor access will be constructed from Lomond Street, and a bus drop off/pick up loop access will be from Orono Road. A new parking area is proposed for staff and visitors: 100 spaces, including 4 handicapped accessible spaces. As part of the project, new playfields and playground areas are also proposed. This project had a Planning Board workshop on October 18, 2016

This is primarily a State-funded project and many of site features shown on the proposed plans have been designed in accordance with the State's written requirements for elementary schools. The other items, such as portions of the playground and additional stormwater treatment, are funded using local (City of Portland) funds as approved by the City's residents during a referendum in April of 2016.

Applicant: City of Portland and Portland Public Schools
Consultants: Jonah DeWaters, Oak Point Associates, Robert Tillotson, Oak Point Associates, and John Schwanda, Owen Haskell Inc.

A total of 217 notices of the Planning Board workshop were sent to property owners within 500 feet of the site and the workshop agenda appeared in the *Portland Press Herald* on March 20 and March 21, 2017.

Waiver Request	**Applicable Standard**
Sidewalk waiver for Riggs Street and the public portion of Lomond Street. The application is proposing a sidewalk on one side of the street. Waiver supposed by Tom Errico, Traffic Engineer.	*Sec. 25-96. Required for nonresidential, two-family or multi-family development; exceptions.* Where a nonresidential, or two-family or multi-family development requiring site plan approval abuts any accepted street and a sidewalk with granite curbing satisfactory to the public works authority has not already been provided, a sidewalk constructed of bituminous concrete, portland cement concrete, brick or other paving material and granite curbing shall be provided along the entire street frontage of the lot. If either a sidewalk or curbing, but not both, shall exist at such location which is satisfactory to the

	public works authority, only a sidewalk or curbing, as the case may be, shall be provided. In either case, such sidewalk and curbing shall be constructed in accordance with the specifications and to the satisfaction of the public works authority at no cost to the city. In conjunction with major site plan review, the planning board, or with minor site plan review, the planning authority, may waive or modify the requirements contained herein upon a like finding and on the same terms and conditions as set forth in section 14-506(b) of this Code.
Public Street width for Local Street to allow a 31-foot width instead of the 24-foot width, and a 4-foot esplanade. Waiver supported by Traffic Engineer, Fire, and Parking in order to allow for vehicle parking on one side of the street and adequate emergency access.	*Technical Manual Figure I-1Local Street Cross Section* that illustrates 24-foot width for a local street, with 5-foot sidewalk and 6-foot esplanade.

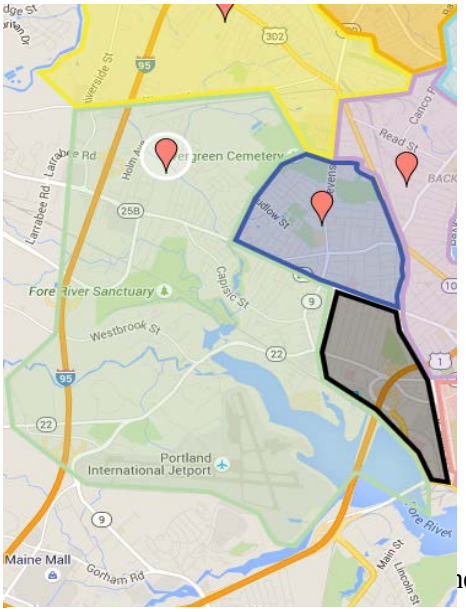
II. REQUIRED REVIEW

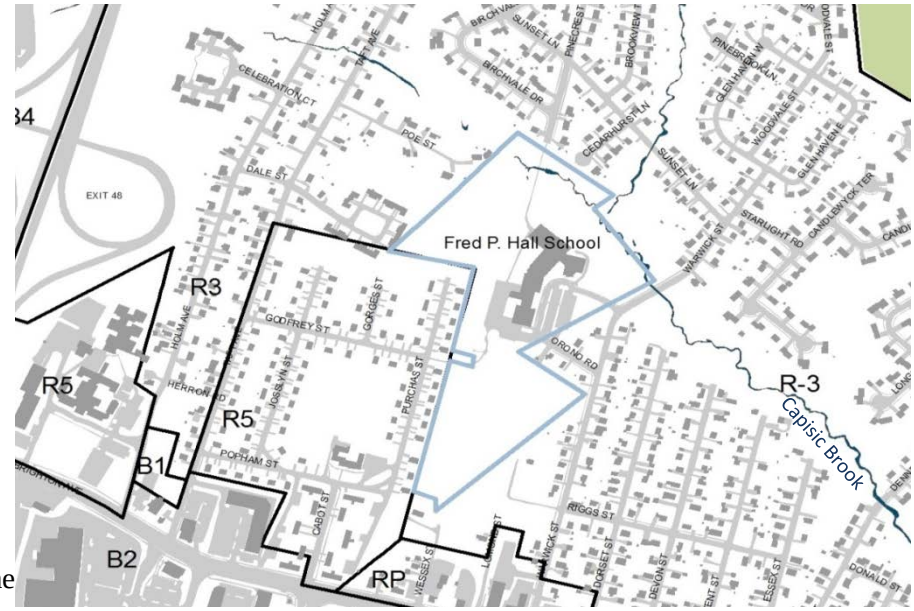
Applicant's Proposal	***Applicable Standards***
Level III Site Plan	Section 14-526
Level III Conditional Use- Instructional Use	Conditional Use in the R-3 Zone (Section 14-88) Conditional Section (Section 14-474)

III. CONTEXT & EXISTING CONDITIONS

The Fred P. Hall Elementary School was originally built in 1956, with the benefit of one major addition in 1967, and currently serves approximately 440 students and 70 staff on a 21.3 acre site north of Brighton Avenue near the City's western border. Other than parking lot reconfiguration projects in 1972 and 1990, the majority of the site has remained largely unchanged since its construction. Due to deficiency in adequate parking and site circulation, and the poor state of the existing building and site amenities, it was determined that instead of doing extensive site upgrades and renovations, it will be more cost effective to demolish the existing building and associated site amenities. Construction of a new building, playfields/playground areas, parking, and site circulation will meet the site's anticipated capacity and programmatic needs.

The school draws from a very large district that includes Nason's Corner, Rosemont, and Stroudwater (Figure 1). Most of the district actually falls south of Brighton Avenue, although its densest neighborhoods are north of Brighton in the area of the existing school. Residential neighborhoods surround the site on three sides, and the Capisic Brook borders the site to the north. The site lies in an R-3 zone (Figure 2).





Figures 1 and 2: Fred P. Hall School catchment area (in green) (left) and Hall School in neighborhood context (right)

areas, an extensive trail network, and 78 parking spaces (Figure 3). Many of these facilities, particularly the trail network, receive substantial community use. Vehicular access to the site is from Warwick Street via Orono Road. Pedestrians may access the site through trails from Godfrey Street, Riggs Street, or Pinecrest Street, as well as from sidewalks on Warwick Street and Orono Road. The developed portion of the site is very flat, with water draining down steep slopes to the Capisic Brook on the northern end of the site and to small, existing wetlands on the southern half of the site.

The plan below, Figure 4 depicts the major barriers to construction on the site, including these wetlands and steep slopes. In addition to these environmental constraints, there are existing large stands of mature trees on the site which both Oak Point Associates and City staff have identified as important natural resources. There are also two existing easements which cross the property that belong to Portland Water District and the City of Portland. Last and maybe most challenging, the applicant is proposing to develop the new school while the majority of the existing school facility remains open. This limits the building envelope and affects the siting of the new school building.

Figures 3 and 4: Hall School existing conditions (top) and existing site constraints (bottom)

IV. PROPOSED DEVELOPMENT

The project involves the demolition of the existing Fred P. Hall Elementary School and the construction of a new elementary school. The proposed school building will be a two-story building with a footprint of approximately 64,000 square feet and a floor area of approximately 85,000 square feet, with a capacity of 558 students. Major modifications to the existing site circulation are proposed, including segregating the existing site entrance from Warwick Street and constructing a new entrance from Lomond Street (via Riggs Street); a separated parent drop off/pick up areas, staff and visitor access will be constructed from Lomond Street, and a bus drop off/pick up loop access will be from Orono Road. A new parking area is proposed for staff and visitors: 100 spaces, including 4 handicapped accessible spaces. As part of the project, new playfields and playground areas are also proposed.

The school is proposing a larger cafeteria to reduce the required number of lunch seating times and to allow for increased staffing flexibility. Also, a larger (middle-school sized) gymnasium is proposed for school and community activities outside of normal school hours. A wall divider between the gymnasium and cafeteria is proposed that will be removed for school assemblies and athletic activities during school and non-school hours (most likely at night and on weekends). These types of activities on the site are not different from current conditions. As part of this project, the applicant is proposing community use of school facilities for after hours on their site. Under the zoning ordinance, these uses are part of the overall institutional use of the development.

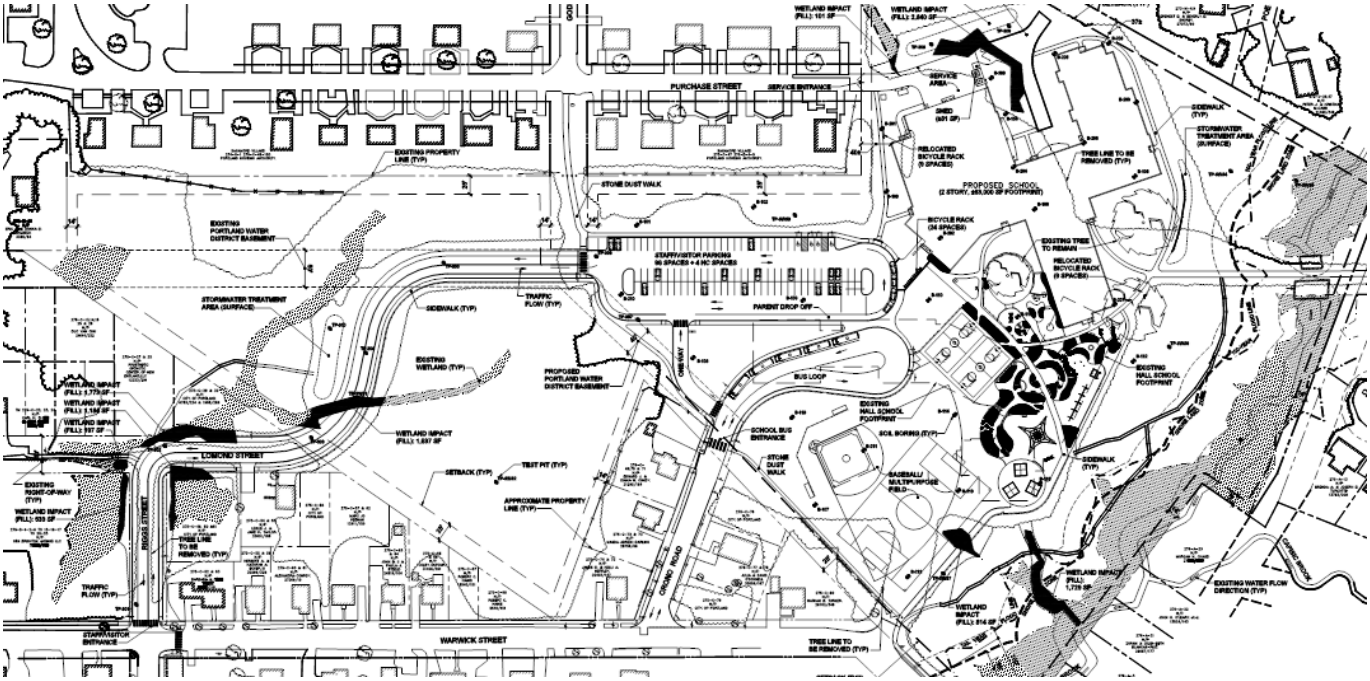


Figure5: Proposed Hall School Development

The applicant requests that the existing school be operational during much of the construction period, therefore the project be phased to minimize relocating school classrooms as much as possible. In order to accomplish this, the project will be constructed in two general phases.

Phase I will consist of demolishing the northwest wing of the existing building, installation of utilities (including relocation of the water, sewer and storm drain mains), construction of the proposed school building (north and west wings), and all development on Riggs and Lomond Streets and Orono Road. The kindergarten classrooms may need to be relocated to a portion of the Deering High School. Phase II will consist of demolishing the existing building and site amenities and constructing the remaining site amenities: parking lot, parent drop off/pick up area, bus loop, remaining stormwater treatment areas (along entrance drive and beneath the proposed playfields), and playfields and playground areas.

V. MAINE DEPATMENT OF EDUCATION (MDOE) SCHOOL CONSTRUCION PROCESS

The Maine Department of Education (MDOE) follows a 21-step process for review and approval of new school construction projects. Per this process, the applicant has already engaged in substantial work around selection of the Warwick Street property for a future elementary School. This work included analysis on the part of the City's Planning Division to identify potential alternative sites with sufficient acreage to accommodate new elementary school grounds. This analysis considered the current zoning, development status, natural resources, and location of properties over 10 acres within the Hall School catchment area, and found none readily suitable for a new school building, primarily due to the presence of existing development or uses, zoning restrictions, and environmental constraints. PPS/Facilities, with the support of the School Board and the Hall School Building Committee, have identified the existing Hall site as the preferred location for the future school. The project received approval from the Department of Education in January, 2016, and the project funding was approved by local referendum in April, 2016.

VI. PUBLIC COMMENT

As of the date of writing this report, no public comment has been submitted. The notices for the public hearing were sent to property owners within 500 feet and to the interested citizen's list. The legal ad appeared in the Portland Press Herald on March 20th and 21st editions. A neighborhood meeting was held on October 4, 2016 and minutes are included as Attachment P.

VII. RIGHT, TITLE AND INTEREST AND FINANCIAL/TECHNICAL CAPACITY

a. The owner of the property is City of Portland. The applicant has provided a copy of a quitclaim deed, recorded at the Cumberland County Registry of Deeds (Book 2324 Page 92), which demonstrates their right, title and interest in the property.

b. The estimated cost of the development is $29,700,000. Funding for the project will be provided by the State of Maine Major Capital Improvements Program. The project received approval from the Department of Education in January, 2016, and the project funding was approved by local referendum in April, 2016. Copies of the project budget sheet submitted to the State as part of their concept review/approval and correspondence from the City confirming approval of the local referendum are included in this section. The applicant has submitted copies of the project budget sheet submitted to the State as part of their approval and correspondence from the City confirming approval of the local referendum, as demonstration of their financial and technical capacity to complete the proposed development.

VIII. ZONING ASSESSMENT

This project is subject to conditional use review and a review of the dimensional standards. Staff review includes the following subsections:

A. Conditional Use Review

This project is considered a change of use of an institutional use in the R-3 zone and it is subject to the conditional use standards of Sections 14-118 and 14-474. The applicant has submitted an analysis of how the proposal meets the R-3 Conditional Use Standards (Attachment S) as follows:

Sec. 14-88. Conditional uses

The following uses shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses) and any special provisions, standards or requirements specified below:

(b) Institutional: Any of the following conditional uses provided that, notwithstanding section 14-474(a) (conditional uses) of this article, or any other provision of this Code, the Planning Board shall be substituted for the board of appeals as the reviewing authority:
1. Elementary, middle, and secondary school;
2. a. Long-term and extended care facilities; b. Intermediate care facility for thirteen (13) or more persons;
3. Places of assembly;

4. Hospital.
Such uses shall be subject to the following conditions and standards in addition to the provisions of section 14-474:

a. In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas; and

Staff Comments: The principle use will be accommodated on this one property; therefore, this standard does not apply. The principal institutional use is for an elementary school with a place of assembly (cafeteria and gymnasium) area for school and community activities.

b. The proposed use will not cause significant displacement or conversion of residential uses existing as of June 1, 1983, or thereafter; and

Staff Comments: The construction of the building and accompanying improvements will not cause the displacement or conversion of any residential units. The use of the site historically has been a school; thus, this standard is met.

c. In the case of a use or use expansion which constitutes a combination of the above-listed uses with capacity for concurrent operations, the applicable minimum lot sizes shall be cumulative; and

Staff Comments: The lot size for this property is approximately 21.2 acres. The minimum lot size in the R-3 zone for a school is two acres; therefore, this standard is being met.

d. Article V (site plan) sections 14-522 and 14-523 notwithstanding, in the case of places of assembly the proposed use shall be subject to the requirements of article V (site plan) of this chapter; and

Staff comment: The applicant has submitted a Level III site plan application which is being reviewed concurrently. The site plan is ready to be approved with conditions.

Sec. 14-474:
The following standards 14-474 apply to all conditional uses:

2. *Standards. The Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard is satisfied if it finds that:*

a. The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and

Staff comment: Since the site will continue to be used as an elementary school, the size and intensity of operation for the proposed project is anticipated to have the exact same effects and impacts as the

existing elementary school use. The type of traffic and hours of operation will remain the same. The existing school has a capacity of 440 students, and the proposed school will have a capacity of 558 students which will be a very small increase in the amount of traffic generated. The increase is minimal and it should not have an impact the surrounding neighborhood.

b. The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and

Staff comment: The proposal would not create harmful conditions.

c. The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

Staff comment: The design and operation of the proposed use is anticipated to have exact same effects/impacts as the existing elementary school use, as well as the surrounding uses. The proposed school, surface parking, and sport fields will not directly abut residential homes.

B. Dimensional Standards and Parking

The applicant is proposing construct a new elementary school, which is an institutional use. The property is located in a Residential R-3 zone which allows institutional use as conditional use. The school is proposing a larger cafeteria and larger gymnasium for school and community activities outside of normal school hours. A wall divider between the gymnasium and cafeteria is proposed that will be removed for school assemblies and athletic activities during school and non-school hours (most likely at night and on weekends). These types of activities on the site are not different from current conditions within the existing Hall School. As part of this project, the applicant is proposing community use of school facilities for after hours on their site. Under the zoning ordinance, these uses are part of the overall institutional use of the development. The project is meeting the dimensional standards of the zone.

Section 14-332 (d) of Division 21 Off-street Parking states:

Schools providing instruction for students up to and including those fifteen (15) years of age: One (1) parking space for each room used for purposes of instruction.

According, to the applicant there are forty classroom spaces, therefore the forty parking spaces are required. Based on the internal uses of the school, the applicant may need more parking spaces; the applicant is proposing 100 parking spaces.

IX. SITE PLAN STANDARDS (Section 14-526)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. Transportation Standards

A. Traffic Impacts

The new school will replace an existing facility, with enrollment expected to increase by a little more than 100 students. The existing Hall Elementary School currently provides for 440 students. The expanded new school will provide for a larger student population of 558. Because there will be some increase in traffic associated with these new students and the staff, a traffic study has been submitted as part of the site plan review. The study conducted a review of local high crash locations and identified necessary mitigation measures. The study concluded that the new school with the increased student population is expected to generate 72 new one-way trips during the AM peak hour study period; since the new school will generate fewer than 100 new one-way trips during peak hours the project will not require a Traffic Movement Permit. The site has the benefit of

controlled access at the Warwick Street/Brighton Avenue intersection. In terms of safety, the traffic study identified one high crash location within the study area. There are no accident patterns or trends evident that indicate any potential safety deficiency.

Tom Errico, Consultant Traffic Engineer, TY Lin, reviewed the contents of traffic impact study and offers the following recommendations:

I reviewed updated information and my comments are noted as follows.

- *The application notes that the Riggs Street/Warwick Street intersection will become a four-way STOP intersection. A traffic study has concluded that a four-way STOP condition is appropriate given levels of service and delay considerations only. The applicant shall conduct further evaluation according to warrant methods contained in the Manual on Uniform Traffic Control Devices, Federal Highway Administration. If the warrant evaluation determines that a four-way STOP condition is appropriate, the applicant should provide specific details on this recommendation, including STOP bar locations, crosswalk and signage requirements.*
- *A double yellow center line should be provided on Riggs Street/Lomond Street.*
- *The STOP sign located at the entrance to the parking lot from Lomond Street should be eliminated.*

B. Vehicular Access and Circulation

Generally, the street network surrounding the Hall School site is fairly fragmented, partly as a function of existing natural barriers in the neighborhood, such as the Capisic Brook, but also as a result of the form of the surrounding residential development, much of which was plotted and built in the 1950s and 1960s. Because of the lack of connectivity on the surrounding streets, access management is a general concern on the site. The existing vehicular access via Orono Road exhibits queuing problems during afternoon dismissal, which appears to be at least partly a function of the parking supply and design. There are also existing conflicts between vehicular, bus, and pedestrian movements.

The plans show the vehicular access from Warwick Street via Riggs Street, designed to improve existing capacity issues on Orono Road, as well as constructing separated bus drop off/pick up areas. A separated parent drop off/pick up areas, staff and visitor access will be constructed from Riggs Street (via Lomond Street) and a new bus drop off/pick up loop access will be from Orono Street. Oak Point had explored access from Purchas Street and Pinecrest Road as alternatives, however, both of these options have been deemed untenable due to the traffic impacts which would be endured on Sagamore Village and due to the difficult topography and infrastructure investment which would be necessary from Pinecrest. Most of the new driveway would lie on school property, but it would connect to the existing City street network via Lomond Street, an unimproved paper street, and Riggs Street, an existing accepted (but not improved) street. Bringing the street to City standards is also consistent with the City's policies for paper streets.

It should be noted that, in order for any access to be approved by the MDOE, it must be from an accepted City street. This means that approximately 200 feet of Riggs Street and 180 feet of Lomond Street would need to be improved to City standards and formally accepted by the City Council. The City standard for a local street cross section is 28-foot with a 6-foot sidewalk. The applicant is proposing a 36-foot wide street with sidewalk along one side of the street and no esplanade, which exceeds the City standards of a roadway width. On-street parking is proposed along one side of the street. City staff, including the Fire Department, Parking Division and Department of Public Works, reviewed the plans for Riggs and Lomond Streets and recommends a 31-foot wide street with a 4-foot esplanade, sidewalk on one side, and on-street parking. Mr. Errico has reviewed the plan and states:

The plans have been revised with a relocated sidewalk and therefore this comment has been addressed. I support a waiver for the provision of a sidewalk on both sides of Riggs Street and Lomond Street given that a safe and reasonable alternative on the opposite of the street is provided and that that pedestrian origin and destination patterns would generate use for the proposed sidewalk only. Lastly, the cross-section of the public section of Riggs Street and Lomond Street shall consist of two 12-foot lanes and a 7-foot shoulder area. A 4-foot esplanade should be provided separating the roadway and the sidewalk.

The City staff also support the street width of 31 feet for Lamond and Riggs, as it minimizes impacts on the adjacent wetlands, while allowing sufficient space for vehicle parking and emergency access.

Regarding the technical aspects of the vehicular circulation and street intersection, Mr. Errico has noted the following recommendations in his memo:

Many of the sidewalk handicap ramps do not meet City and ADA standards.
Status Update: The plans have been revised and I generally find conditions to be acceptable. Additional detail is needed at the Warwick Street/Riggs Street intersection, particularly as it relates to the potential for a four-way STOP control condition and STOP bar and crosswalk locations.

C. Bus Access

The site plan shows segregating the bus and visitor vehicular traffic. The plan has used geometry and directional flow to restrict movements from the Riggs Street/Lomond Street access drive into the bus loop. Mr. Errico has concerns about the traffic management during student pick up/ drop off time periods and has requested more information. The applicant addressed his concerns through a Transportation Demand Management Plan, below is Mr. Errico comment:

The applicant has submitted a Transportation Demand Management Plan and included in that document are details on pick-up and drop-off management. I find the details to be acceptable and therefore I have no further comment.

D. Pedestrian and Bicycle Access and Circulation

The site plan show pedestrian and bike access by trail from Purchas Street/Godfrey Street, Pinecrest Road, and Warwick Street. Tom Errico has reviewed the plan and recommends that the trail from Sagamore Village (Purchas and Godfrey Streets) be widened to ten (10) feet:

I would suggest that the stone dust path to Sagamore Village be paved to match existing conditions.
Status Update: The plans have been revised to indicate a paved path. The Shared Use Path shall meet minimum national standards and thus be 10-feet wide.

Sidewalks have been provided on one side of the access drives from Orono Road and from Riggs and Lomond Streets. A sidewalk is proposed on the north side of Riggs Street and the east side of Lomond Street, without an esplanade. The applicant has requested a waiver from providing sidewalks on both sides of the street. According to the applicant, "[e]liminating the additional sidewalk … reduces the impact to the freshwater wetlands on both sides of the streets, impacts to the existing wooded areas, and reduces the amount of temporary grading easements required from abutting landowners to install the proposed improvements. Further, sidewalks only exist on one side of the other streets in the vicinity of the site (Warwick Street, Riggs Street and Orono Road)". Mr. Errico has commented on this waiver of the sidewalk, please refer to Paragraph IX (1) B, Vehicular Access Circulation, above.

There is a sidewalk along one side of Warwick Street with a gap of approximately 300 feet between Orono Road and the proposed recreation facilities. Warwick is a school walking route in both directions of Hall School. Staff has recommended this gap be filled with a bituminous a bituminous sidewalk that is consistent with existing conditions. The Department of Public Works is committed to installing the sideawalk prior to the issuance of a certificate of occupancy, with the design and funding to be determined. Staff is including this as a condition of approval in the motions, based upon Tom Errico's review and coordination with DPW:

A sidewalk should be considered along the west side of Warwick Street north of Orono Road given likely pedestrian activity destined to the recreation facilities behind the school.

Status: The Department of Public Works is committed to completing the sidewalk along Warwick Street, which is a school walking route, prior to the issuance of the certificate of occupancy for the new school. The final sidewalk design and funding will be determined by the Department of Public Works.

E. Parking

The site plans depict 100 vehicular parking spaces (96 spaces plus 4 handicapped spaces) at the building's front. Per Division 20 of the City's land use ordinance, schools are required to provide one parking space per room used for purposes of instruction. According to the information on the plans, there will be 40 class rooms with 79 full time employees, therefore based on this information, 40 parking spaces are required by zoning.

As part of the project, the applicant is proposing to use the Hall School building for community use of school facilities after hours; assemblies are not anticipated to be held during normal school hours. The number of parking spaces required for the assembly area is 89 spaces. Below is the chart for the transportation requirements for the project that the applicant provided:

TRANSPORTATION REQUIREMENTS:

GENERAL INFORMATION	
PROPOSED NUMBER OF CLASS ROOMS	40
ASSEMBLY SPACE SIZE (GYM AND CAFETERIA)	11,056 SF
PROPOSED FULL TIME EQUIVALENT STAFF	79
SCHOOL CAPACITY	558 STUDENTS
REQUIRED PARKING CALCULATIONS	
NORMAL SCHOOL DAYS	40 SPACES (1 SPACE PER CLASSROOM)
ASSEMBLIES**	89 SPACES (1 SPACE PER 125 SF OF FLOOR AREA)
NUMBER OF SPACES REQUIRED	89 SPACES (GREATER OF SCHOOL DAYS AND ASSEMBLY SPACE)
**ASSEMBLIES ARE NOT ANTICIPATED TO BE HELD DURING NORMAL SCHOOL HOURS	
PROVIDED PARKING CALCULATIONS	
1 SPACE PER FULL TIME EQUIVALENT STAFF***	79 SPACES
VISITOR SPACES***	15 SPACES
ACCESSIBLE SPACES	4 SPACES
TOTAL NUMBER OF PARKING SPACES PROVIDED	98 SPACES
***STATE OF MAINE DEPARTMENT OF EDUCATION REQUIREMENT	
BICYCLE PARKING CALCULATIONS	
REQUIRED BICYCLE PARKING	20 SPACES (2 PER 10 PARKING SPACES)
PROVIDDED PARKING CALCULATION	34 SPACES (6% OF SCHOOL CAPACITY)

F. Construction Management Plan

The applicant requests that the existing school be operational during much of the construction period, therefore the project be phased to minimize relocating school classrooms as much as possible thus requiring that the project be constructed in two general phases. A construction management plan has been prepared and submitted. The plan shows how students and staff will access the site in a safe manner and the temporary classrooms. Mr. Errioco has reviewed the plans and wants to see more details:

> *A general plan and description has been provided for two phases of construction. Greater detail is required regarding specific parking and vehicle/pedestrian/bicycle circulation. The applicant should provide specifics on contractor parking and the number of trucks generated on a daily basis for each phase. This information shall be provided for review and approval prior to the issuance of any City permit.*

G. Transportation Demand Management

Because the proposal involves an institutional facility for more than 100 students, PPS is required and have submitted a transportation demand management (TDM) plan in accordance with the City's site plan standards under site plan review. According to the plan (Attachment L), the School is encouraging variety of transportation options for students and staff that include school buses, carpooling, walking, and biking. The applicant states that some of the students, as well as teachers, will be walking, biking, and commuting the site. The applicant has submitted a trip assignment model, prepared for all site trips to the proposed project site, see below:

Transportation Mode	AM Drop off (Percent)	PM Pick up (Percent)
Buses	49	43
Drop off/Pick up by vehicle	27	21
Walking	18	18
Bicycling	6	6
Afterschool Recreation Program at – 12 site (Pick up by vehicle or "Learning Works After School" Bus at 5:35)	-	12

Mr. Errico has reviewed and finds the TDM acceptable, refer to Paragraph IX (1)(C) Bus Access, above.

2. Environmental Quality Standards

A. Preservation of Significant Natural Features

Tree preservation plans has been submitted for final plan review. The plans generally retain existing tree cover on the site, including many of the site's valuable evergreen and deciduous tree stands. The plans also generally avoid major wetland impacts and attempt to retain the existing setback to the Capisic Brook. The surrounding wetlands, Capisic Brook and associated natural vegetation are key natural features and future outdoor classroom areas. According to the City's forestry consultant, this is a high-quality forest around this urban area and it is one of the best White Oak groves the City has outside Deering Oaks and Baxter Woods. Jeff Tarling, City Arborist, has been in a constant contact with the applicant and will oversee the tree clearing of the site. He has reviewed the most recent plans and finds them acceptable.

B. Landscaping and Landscape Preservation

A landscaping plan has been submitted for final plan review. Landscaping standards related to understory plantings and parking lots has be addressed on the plan. Mr. Tarling has reviewed the landscaping plan and offers the following recommendations:

a) Parking Lot tree island - The Hall School project is looking into adding amid block parking lot island to include 2 additional street trees and landscape treatment. The project is looking at maintaining the current level of parking spaces and may adjust the size of the lot to fit in the additional tree & landscape standard.

b) Parking lot curb edge - the curb edge will be a 'Cape Cod' or slope curb edge to facilitate snow plowing and clearing snow off the parking lot and sidewalk.

c) Additional landscape - Arborvitaes have been added near the school edge near Poe Street.

d) Fencing - It was determined that the existing school fence is on Portland Housing / Sagamore Village property and not part of the existing Hall School. Fencing on Hall School property should be removed or replaced if in poor condition. This will be an item addressed outside of the new Hall School project topic.

e) Tree requirements & landscape planting - Hall School project team, Portland Schools and City Arborist will review tree & landscape items to be planted as part of the project and 'extras' that might compliment but are not required as part of the project. Example - playground landscape would be considered as an 'extra', parking lot trees would be required.

C. Water Quality/Storm Water Management/Erosion Control

Given the size of the site and the anticipated area of disturbance, the project will be reviewed by Maine's Department of Environmental Protection under the State's Site Location of Development law, NRPA Tier 1 permit for wetland impacts, and Chapter 500 Stormwater Management Rules. All permit approvals shall be provided to the City upon receipt.

In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, Urban Impaired Steam and Flooding Standards. The project will result in an increase in impervious area of approximately 2.61 acres. As such, the project will be required to include specific stormwater management features for stormwater quality control and is required to control the rate or quantity of stormwater runoff from the site such that it does not increase from the pre-development condition to the post-development condition. The Applicant has proposed to utilize grassed underdrain soil filters, a sand filter, and tree box filters to provide stormwater treatment on the site. The proposed stormwater management system adequately controls stormwater runoff from the site.

The project is located within the Capisic Brook Watershed, which is identified as an Urban Impaired Stream by the Maine DEP. Section 5 of the City of Portland Technical Manual requires that all development within the Capisic Brook watershed, except single and two family homes, comply with the Urban Impaired Stream Standard pursuant to MaineDEP Chapter 500 Rules. The Applicant has provided stormwater treatment as described above. They have also calculated the applicable stormwater fee required for the project.

Lauren Swett, Consultant Engineer with Woodard and Curran, states that "*[t]he Applicant should consider increasing the size of the culvert located at the wetland crossing on Lomond Street. A 12-inch culvert is proposed, and it appears based on the stormwater model that in larger storm events the water elevation will be higher than the top of the pipe, and on the downstream end may be close to the road grade*".

3. Public Infrastructure and Community Safety Standards

A. Public Safety and Fire Prevention

Oak Point Associates has met with both the Fire Prevention Bureau and the Police Department to discuss emergency access to the site. The site plan shows an emergency lane from the northern end of Purchas Street at the rear of the school building. Captain Keith Gautreau of the Fire Prevention Bureau has indicated his satisfaction with the way in which emergency access is depicted in these plans and he agrees with the 31 foot width of pavement for Riggs and Lomond Streets.

Crime Prevention Through Environmental Design (CPTED) and site design to manage emergency access during events has been addressed on the final site plan review. According to the applicant,

> *The site has been laid out so that the majority of the public spaces are in the front of the building and enter through the main entrance which is visible from the parking lot, entrance drive, and bus loop. Also, administrative offices within the building have been located to maximize visibility of the parking areas from within the building.*
>
> *Gates have been provided at areas that are not designed for normal vehicular traffic (service entrance, fire department access points, site access directly from Warwick Street near the baseball field). Signage has also been included to prohibit parking in areas that would block their use by emergency vehicles (e.g. portions of the bus loop in front of the fire department access drive to the hard court). Surveillance cameras are proposed at the exterior of the building at all entrances. An access control system is proposed on exterior doors. All public access to the building will be through the secure main entrance doors, allowing administrative staff to have control over who enters the building.*
>
> *Areas not subject to normal public access have been gated to prohibit unauthorized vehicular access. The remaining public spaces (playground and baseball field areas) not fenced in and are clearly defined and easily accessible to the public both by car and via one of the several trails and pedestrian access points to the site, which are intended to promote use of the site by the public.*

B. Availability and Capacity of Public Utilities

There is a 50-foot "easement/right-of-way" housing a water main currently runs through the center of the site. Per Oak Point Associates, this "easement/right-of-way" belongs to the Portland Water District (PWD), and PWD has agreed that the water main will be relocated in association with the school construction project. There is also a sewer right-of-way located on the site, which contains both sewer and storm drain lines. Again, this will be relocated as a product of the site redevelopment. The applicant will need to submit confirmation of ability to serve sewer letters from DPS to the Planning Division.

4. Site Design Standards

A. Snow and Ice Loading

Snow and Ice Loading area is shown on the site plan. The school is aware that they will be responsible for snow removal on site.

B. Historic Resources
The project site is not located in a historic district; therefore, no review is required.

C. Exterior Lighting
The project design team has provided a photometric plan for staff review, Attachment N. The lighting fixture information is also provided in same attachment. Since the site is so large, there is not light levels trespass onto neighboring properties. The plan shows building mounted fixtures in the court yard and at the building entrances. The applicant is also proposing lighting poles at the streets and the surface parking lot. All of the proposed fixtures are full cut off and in compliance with City standards.

D. Signage and Wayfinding
A traffic signage and wayfinding plan has been submitted for review. Mr. Errico finds the plan acceptable.

E. Zoning Related Design Standards
The proposal is a R-3 zone and there are no design standards as part of the zone. Elevations and floor plans of the proposed building are included as Attachment Plan 53 to 55.

X. PROPOSED MOTIONS

A. CONDITIONAL USE
On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on March 28, 2017 for application #2017-027 (Conditional Use), relevant to Portland's Conditional Use Standards and other regulations, and the testimony presented at the Planning Board hearing:

> The Planning Board finds that the proposed conditional use for an institutional use at 23 Orono Road in the R-3 zone [**does/does not]** meet the standards of § 14-474 and the standards of §14-88 (c)(1) for the R-3 zone, subject to the following condition:

B. WAIVERS
The Planning Board **finds/does not find**, based upon the consulting transportation engineer's review *(Attachment 1),* that extraordinary conditions exist or undue hardship may result from strict compliance with the *Technical Manual* standard *(Section 25.96)* that all development shall provide sidewalk and curbing along all frontages. The planning board **waives/does not waive** the *Technical Manual* standard *(Section 25.96)* to allow a sidewalk on one side of Riggs Street and the public portion of Lomond Street; and

The Planning Board **finds/does not find**, based upon the consulting transportation engineer's review *(Attachment 1),* that extraordinary conditions exist or undue hardship may result from strict compliance with the *Technical Manual* standard *(Figure I-1 Local Street Cross Section)* that all development shall provide 24-foot width for a local street, with 5-foot sidewalk and 6-foot esplanade. The planning board **waives/does not waive** the *Technical Manual* standard *(Figure I-1 Local Street Cross Section)* to allow 31-foot street width with a 4-foot esplanade on Riggs Street and the public portion of Lomond Street in order to provide adequate space for on-street parking and emergency access.

C. DEVELOPMENT REVIEW
On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in Planning Board Report for the public hearing on March 28,2017 for application #2016-199 (Site Plan), relevant to the site plan regulations; and the testimony presented at the Planning Board hearing; the Planning Board finds that the plan [**is/is not]** in conformance with the site plan standards of the land use code, subject to the following conditions of approval that must be met prior to the issuance of a building permit, unless otherwise stated:

1. All permit (Maine DEP, NRPA Tier 1 and Site Location of Development) approvals shall be submitted to the City upon receipt; and

2. The Applicant shall consider increasing the size of the culvert located at the wetland crossing on Lomond Street; and

3. The applicant shall address the Traffic Engineer comments in his memorandum dated 03.23.2017, see below:
    a. The application notes that the Riggs Street/Warwick Street intersection will become a four-way STOP intersection. A traffic study has concluded that a four-way STOP condition is appropriate given levels of service and delay considerations only. The applicant shall conduct further evaluation according to warrant methods contained in the Manual on Uniform Traffic Control Devices, Federal Highway Administration. If the warrant evaluation determines that a four-way STOP condition is appropriate, the applicant should provide specific details on this recommendation, including STOP bar locations, crosswalk and signage requirements.
    b. A double yellow center line shall be provided on Riggs Street/Lomond Street.
    c. The STOP sign located at the entrance to the parking lot from Lomond Street shall be eliminated.
    d. The plans have been revised to indicate a paved path. The Shared Use Path shall meet minimum national standards and thus be 10-feet wide.
    e. The applicant shall provide a construction management plan that addresses the specifics on contractor parking and the number of trucks generated on a daily basis for each phase, as well as details on parking and vehicle/pedestrian/bicycle circulation, for review and approval by the Department of Public Works and Planning Division prior to the issuance of a building permit.

4. The applicant shall address the City Arborist comments in his memorandum dated 03.23.2017.

5. That the applicant shall submit confirmation of ability to serve sewer letters from Department of Public Services to the Planning Division prior to the issuance of a building permit; and

6. The developer/contractor/subcontractor must comply with conditions of the construction stormwater management plan and sediment and erosion control plan based on City standards and state guidelines. The owner/operator of the approved stormwater management system and all assigns shall comply with the conditions of Chapter 32 Stormwater including Article III, Post Construction Stormwater Management, which specifies the annual inspections and reporting requirements. A maintenance agreement for the stormwater drainage system, as attached, or in substantially the same form with any changes to be approved by Corporation Counsel, shall be submitted, signed, and recorded prior to the issuance of a building permit with a copy to the Department of Public Services; and

7. The Department of Public Works is committed to completing the sidewalk along Warwick Street, which is a school walking route, prior to the issuance of the certificate of occupancy for the new school. The final sidewalk design and funding will be determined by the Department of Public Works.

XI. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Traffic Engineer review (memo from Thomas Errico, 03.23.2017)
2. Department of Public Services review (memo from Lauren Swett, 03.07.2017)
3. City Arborist review (memo from Jeff Tarling, 03.23.2017)
4. Fire Department (memo from Keith Gautreau, 03.23.2017)

APPLICANT'S SUBMITTALS

A. 000_Response to Prelim Comments
B. 00_Transmittal Letter
C. 01_Cover
D. 02_Table of Contents
E. 03_TAB 1 - App & Checklist

F. 04_TAB 2 - Dvlpmnt Descrip & Land Use
G. 05_App A - Deeds & Prop Easements
H. 06_App B - State Approvals
I. 07_App C - Financial Capacity
J. 08_App D - Technical Ability
K. 09_App E - Transportation Info
L. 10_App F - TDM Plan
M. 11_App G - AOS Letters
N. 12_App H - Lighting Info
O. 13_App I - HVAC Equip Info
P. 14_Minutes - Public Informational Meeting – 100416
Q. 15_Stormwater Report
R. 16_Conditional Use Application
S. 17_ Conditional Use Cover Letter

PLANS

Plan1	01_C-001 Cover Sheet
Plan2	02_G002 List of Drawings, Maps, Legend, and Abbreviations
Plan3	03_G-101 Code Information
Plan4	04_G-102 Egress and Fire Rating First Floor Part Plan Wing A
Plan5	05_G-103 Egress and Fire Rating First Floor Part Plan Wing B
Plan6	06_G-104 Egress and Fire Rating First Floor Part Plan Wing C
Plan7	07_G-105 Egress and Fire Rating Second Floor Part Plan Wing D
Plan8	08_G-106 Egress and Fire Rating Second Floor Wing D-South End
Plan9	09_C001 Civil Notes, Legend, and Abbreviations
Plan10	10_CX101 Overall Existing Conditions Site Plan
Plan11	11_CO101 Overall Site Plan
Plan12	12_CP101 Phasing Plan
Plan13	13_CD101 North Removals Site Plan-Phase 1
Plan14	14_CD102 North Removals Site Plan-Phase 2
Plan15	15_CD103 South Removals Site Plan
Plan16	16_CD104 Tree Removals and Preservation Plan
Plan17	17_CS101 North Site Plan-Phase 1
Plan18	18_CS102 North Site Plan-Phase 2
Plan19	19_CS103 South Site Plan
Plan20	20_CM101 Pavement Marking, Signage and Circulation Plan
Plan21	21_CL101 North Layout Plan
Plan22	22_CL102 South Layout Plan
Plan23	23_CU101 North Utility Plan-Phase 1
Plan24	24_CU102 North Utility Plan-Phase 2
Plan25	25_CU103 South Utility Plan
Plan26	25-CP101
Plan27	26_CG101 North Grading Plan
Plan28	26-CP102
Plan29	27_CG102 South Grading Plan
Plan30	28_C-301 Access Road Profile and Cross Sections
Plan31	29_C-501 Erosion and Sedimentation Control Notes

Plan32	30_C-502 Erosion and Sedimentation Control Details
Plan33	31_C-503 Site Details-1
Plan34	32_C-504 Site Details-2
Plan35	33_C-505 Site Details-3
Plan36	34_C-506 Water Main Profile and Water Details
Plan37	35_C-507 Utility Details-1
Plan38	36_C-508 Utility Details-2
Plan39	37_C-509 Utility Details-3
Plan40	38_C-510 Utility Details-4
Plan41	39_LS101 North Landscape Plan
Plan42	40_LS102 South Landscape Plan
Plan43	41_L-502 Landscape Details-2
Plan44	42_AE001 First Floor Reference Plan
Plan45	43_AE002 Second Floor Reference Plan
Plan46	44_AE004 Keynotes
Plan47	45_AE101 First Floor Part Plan Wing A
Plan48	46_AE102 First Floor Part Plan Wing B
Plan49	47_AE103 First Floor Part Plan Wing C
Plan50	48_AE104 Second Floor Part Plan Wing D
Plan51	49_AE105 Second Floor Part Plan Wing D South End
Plan52	50_AE120 Roof Plan
Plan53	51_AE201 Building Elevations
Plan54	52_AE202 Building Elevations
Plan55	53_AE203 Building Elevations

Portland, Maine Yes. Life's good here.

Tuck O'Brien
City Planning Director, Planning Division

October 5, 2016

Oak Point Associates
Attention: Jonah DeWaters
231 Main Street
Biddeford, ME 04005

Doug Sherwood
Facilities Director
196 Allen Avenue
Portland Maine 04103

RE: Review Comments for Hall Elementary School

Project Name: Fred P. Hall Elementary School
Project ID: 2016-199
Project Address: 23 Orono Street **CBL**: 275 C048

Planner: Shukria Wiar

Dear Mr. DeWaters and Mr. Sherwood:

Thank you for submitting your site plan application for Preliminary Level III Site Plan Application for the proposed development located at 23 Orono Road. The project involves the demolition of the existing Fred P. Hall Elementary School and the construction of a new elementary school. This proposal is being reviewed as a Level III site plan subject to the Site Plan Ordinance, Article V of the Land Use Code provisions.

Please address the following staff comment and do not hesitate to contact me if you have any questions.

Site Plan Requirements **(City of Portland Land Use Code, Section 14-527)**
Please submit a revised site plan that includes the following information:

1. Per Section 13 of the City's Technical Manual, the Applicant is required to submit a Boundary Survey that has been stamped by a Maine Licensed Professional Surveyor.
   OPA Response: Stamped boundary survey is included in Appendix A of the Preliminary Site Application.

2. The location, dimensions and ownership of any proposed easements,
   OPA Response: Existing easements are shown on the boundary survey plan and sheets CX101 and CO101. Proposed easements are shown on CO101.

Site Plan Review **(City of Portland Land Use Code, Section 14-526)**
Please address the following preliminary site plan comments:

Transportation
a. Impact on Surrounding Street Systems and b. Access and Circulation

1. It is suggested that the sidewalk be located on the opposite side of Riggs Street/Lomond Street. The applicant should note if any technical standard waivers are required in terms of Riggs Street and Lomond Street cross-sectional elements.
   OPA Response: Sidewalk has been relocated. Waivers that are being requested included at the end of Tab 2 (Development Description and Land Use Ordinance Requirements).

2. The applicant should provide supporting information regarding the STOP sign control at the corner of the Riggs Street and Lomond Street. I would also suggest the applicant provide supporting documentation on the horizontal alignment of the roadway.
   OPA Response: STOP sign control has been deleted and CURVE warning signs have been added (see Sheet CM101). Horizontal alignment information typical cross sections for the Riggs/Lomond roadway and entrance drive have been included on sheet C-301.

3. All roadways and sidewalks should note dimensions.
   OPA Response: Dimensions and other pertinent layout information is indicated on sheets CL101 and CL102.

4. Many of the sidewalk handicap ramps do not meet City and ADA standards.
   OPA Response: Accessible cuts have been modified as necessary to conform to City and ADA standards. Details are shown on Sheet C-504.

5. The applicant should provide computations in meeting handicap parking supply requirements.
   OPA Response: Parking calculations are indicated on sheet CO101.

6. I have reviewed the trip generation analysis and concur that the project will generate less than 100 peak hour trips and thus does not require a MaineDOT Traffic Movement Permit.

7. I generally find the methods and contents of the traffic impact study to be acceptable. I would note that I continue to review details, specifically pedestrian conditions within the public right-of-way and will provide detailed comments in the future.

8. A detailed phasing/construction management plan shall be prepared that provides information on how students and staff will access the site in a safe manner.
   OPA Response: Phasing/construction management notes have been added to sheet C-001, an overall phasing plan has been added (sheet CP101), phase boundaries have been added to sheet CX101, and the plan sheets have been separated into phases for clarity.

   Vehicle turning templates for bus movements shall be provided for turning onto Orono Road and circulating through the bus loop.
   OPA Response: Turning templates for both bus and fire truck movement are indicated on sheet CM101

9. A sidewalk should be considered along the west side of Warwick Street north of Orono Road given likely pedestrian activity destined to the recreation facilities behind the school.
   OPA Response: A sidewalk along Orono Road would not be funded by the State, and is outside the scope of this project. However, interior walks have been included to provide adequate pedestrian circulation through the site. These walks are shown on sheets CO101, CS102, and CL101.

10. The applicant should provide information on roadway maintenance responsibilities along Riggs Street and Lomond Street that are outside school property. Coordination with DPW operations is required on this issue.
    OPA Response: The roadway will be maintained by DPW. The school (Douglas Sherwood, Facilities Coordinator) will coordinate any future maintenance with DPW as necessary.

11. I would suggest that the stone dust path to Sagamore Village be paved to match existing conditions.
    OPA Response: Path has been revised to be paved.

12. The applicant should provide a traffic management plan during student pick-up and drop-off time periods. This shall include how the bus drop-off area will be managed during non-school hours when it will likely be used by visitors to the recreation facilities.
    OPA Response: Transportation Demand Management plan has been included with this submission. Additional signs have been added where necessary to limit parking in areas that would impede use of the bus loop or access to the hard court by fire trucks during emergencies (see sheet CM101).

13. Please clarify the amount of parking spaces; proposing 94 or 96, both numbers are mentioned.
    OPA Response: 100 parking spaces are being proposed, including 4 accessible spaces. Parking space calculations are indicated on sheet CO101.

14. The walkway from Pinecrest Street will need to be paved and be 8' wide.
    OPA Response: This has been added to sheets CD102 and CS102

15. There needs to be a crosswalk on Warwick Street and Rigg Street; the site plan shows three when it is a four legged intersection.
    OPA Response: The crosswalks indicated are intended to connect the sidewalks at the intersection. There is no sidewalk on the south side of Riggs Street or the east side of Warwick Street, so crosswalks are unnecessary and not recommended by our traffic consultant at these locations. Because of this, a sidewalk on the southern leg of the intersection is not proposed and the existing crosswalk on the eastern leg of the intersection is proposed to be removed. It should also be noted that stop signs have been added at the intersection to create a 4-way stop. This serves to control the speed of traffic on Warwick Street and provides additional safety for pedestrians using the crosswalk.

16. The sidewalk network along the entrance from the Brighton Ave side looks very circuitous and doesn't connect directly to the existing crosswalk across Warwick Street from Riggs Street. This should be re-thought.
    OPA Response: the sidewalk has been relocated to the north side of the road to provide a more direct route from the crosswalk on Warwick Street into the site.

17. It's hard to tell how many bikes the bike racks shown will hold; the capacity should be at least double that at the existing school now. They are at/over capacity now.
    OPA Response: Existing bicycle rack capacity is indicated on sheet CX101. Proposed bicycle rack capacity is indicated on sheet CO101. 3 bicycle rack areas are proposed: one at the main entrance, one adjacent to the gym (near the service entrance) and one adjacent to the playground, with a total capacity of 42 bicycles, which exceeds the City requirement for the project (20 spaces).

    It would be very desirable to close the sidewalk gap along Warwick Street although not technically the school frontage.
    OPA Response: A sidewalk along Orono Road would not be funded by the State, and is outside the scope of this project. However, interior walks have been included to provide adequate pedestrian circulation through the site. These walks are shown on sheets CO101, CS102, and CL101

c. Public Transit Access – This project is not on an arterial way and therefore does not need to meet this standard. A waiver therefore is not required.

d. Transportation Demand Management (TDM) - a TDM plan is required of this large-scaled project.
OPA Response: Transportation Demand Management plan has been included with this submission.

<u>Environmental Quality</u>

a. Preservation of Significant Natural Features –

1. A tree cut plan has been submitted; please also provide a tree save plan that retains existing tree cover on the site, including many of the site's valuable evergreen and deciduous tree stands.
   OPA Response: trees to remain are indicated on sheet CD104. Trees to remain that are not located in wooded areas are also indicated on sheets CO101, CD101-2, and CS101-2

2. Tree Save / Limit of Work / areas - A formal 'tree save' work plan should be developed with the project. This would include limit of work marking and construction fence installation near the building site. "Tree Save / Project' measures would be part of the pre-construction meeting and built into the plan set. "Tree Save" areas should also limit the storage of materials, compaction by equipment and physical injury of trees and woodlands. The City Arborist should approve the designated tree save areas prior to construction. See: http://www.treesaregood.com/treecare/resources/AvoidingTreeDamage.pdf
   OPA Response: Trees to remain are indicated on sheet CD104. Trees to remain that are not located in wooded areas are also indicated on sheets CO101, CD101-2, and CS101-2. Construction and tree protection fence has been added to this sheet as well as requirements for work within tree protection areas.

b. *Landscaping and Landscaping Preservation –*

1. A waiver of the parking lot landscaping standard (Sec. 14-526 (b)2(b) has been submitted. The waiver criterion is as the following:

   Waiver: Where site constraints prevent implementation of all or a portion of required parking lot landscaping, as determined by the Reviewing Authority, the requirements may be all or partially waived and the applicant shall contribute an amount proportionate to the cost of required parking lot trees to the City of Portland Tree Fund.

   A contribution may be required.

   OPA Response: A parking lot of 100 cars would require 40 trees or 20 trees and 60 shrubs. A total of 11 new trees and 24 shrubs are proposed adjacent to and within the parking lot. There are 27 existing trees of 16" caliper or greater in the vicinity of the parking lot that are being preserved. When these existing trees that are being preserved are taken into consideration, there will be a total 38 trees and 24 shrubs in the vicinity of the parking lot, which exceeds the City's requirement for parking lot landscaping.

2. A specific landscaping plan has not been submitted but some landscaping is shown on the site plan. A landscaping plan will have to be submitted that includes the following:

   - Tree Preservation
   - Site Landscaping
   - Understory Landscaping
   - Street Tress

   OPA Response: See sheets LS101, LS102 and LS104.

3. Staff would recommend that the plant pallet contain mostly native plants to the extent possible. Designing in and planting the right tree for the site should be the priority vs the project budget. As with the East End Community School design, many of the trees were added after the initial project was completed and funded via other sources.

   OPA Response: Tree species were selected from the City's list

4. With this in mind, the City Arborist would not support or favor a street tree or parking lot tree waiver in the design. However, the project may select the priority tree & landscape areas to complete with the project.
OPA Response: As indicated in response b.1 (above), the parking lot landscaping requirement is being met using a combination of new tree plantings and maintaining the wooded area in the vicinity of the proposed parking lot. Regarding the request for a waiver on the street tree requirement, the proposed access road runs through a wooded area, and providing the required street trees would likely require impacts to the existing trees on either side of the road and/or require additional work outside of the right-of-way. Plantings shown on the landscaping plans are considered to be priority planning locations for the project.

5. Hall School Forest Management - The project should incorporate forest management activities to coincide with the project to improve the overall health of the remaining woodlands. This activity would use the wood and product values to complete the work without affecting the Hall School project funds. The goal would help keep the forest growth around the Hall School campus 'sustainable' and safe. The value of the surrounding woodlands to be used as an outdoor classroom and for exercise / fitness trails could be enhanced by forest management.
OPA Response: Any tree clearing on the project site is prohibited by federal regulations (Endangered Species Act requirements) between June 1 and July 31. The project does not include forest management (other than tree clearing indicated on the Drawings) within the contract, but it is the applicant's understanding that the City may want to undertake that work prior to the site being cleared. The applicant will discuss the work sequence and timing with the City and coordinate any selective tree clearing/forest management activities within the limit of work to coincide with the project requirements. Forest management and selective tree clearing activities on the site that the City would like to perform that are outside the limit of work are considered to be outside the scope of this project.

c. Water Quality, Storm Water Management and Erosion Control -

1. The application is preliminary and does not include details and stormwater calculations. Woodard Curran will perform a review of the Final Application upon receipt of those documents.

2. The Applicant has noted that they are working with the Maine DEP to obtain a NRPA Tier 1 permit for wetland impacts as well as a SLOD application. A Maine Construction General Permit Notice of Intent will be required for the project will also be required. All permit approvals should be provided to the City upon receipt
OPA Response: Anticipated permits that have been applied for by the applicant are indicated on sheet C-001. Copies of the permits will be provided to the City once they have been obtained.

3. In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, Urban Impaired Steam and Flooding Standards. We offer the following comments:

    a. Basic Standard: Plans, notes, and details should be provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, C of MaineDEP Chapter 500. Erosion control features are shown on the plans. Associated details and notes should be provided.
    OPA Response: Erosion control elements have been added to the plans and are indicated on sheets CD101-3 and CG101-2. Erosion and sediment control notes and details are indicated on sheets C-501 and C-502.

    b. General Standard: The project will result in an increase in impervious area of approximately 2.61acres. As such, the project will be required to include specific stormwater management

features for stormwater quality control. The plans show grassed underdrain soil filters, a sand filter, and tree box filters. Calculations and details for these features should be provided for review.
OPA Response: Calculations are indicated on the sheets WS103-4 in the attached stormwater report

c. Urban Impaired Stream Standard: The project is located within the Capisic Brook Watershed, which is identified as an Urban Impaired Stream by the Maine DEP. Section 5 of the City of Portland Technical Manual requires that all development within the Capisic Brook watershed, except single and two family homes, comply with the Urban Impaired Stream Standard pursuant to MaineDEP Chapter 500 Rules. To meet the Urban Impaired Stream standard, the Applicant must either pay a compensation fee or mitigate project impacts by treating, reducing, or eliminating an off-site or on-site pre-development impervious stormwater source. The Applicant is providing stormwater treatment features (as noted above). Calculations and design information should be provided to show conformance with the Urban Impaired Stream Standard.
OPA Response: The project proposes to pay a fee to the City's compensation fee utilization fund. Calculations for the fee are indicated on the sheet WS103 in the attached stormwater report.

d. Flooding Standard: The project will result in an increase in impervious area of approximately 2.61acres. As such, the project will be required to control the rate or quantity of stormwater runoff from the site such that it does not increase from the pre-development condition to the post-development condition. The Applicant should provide calculations that verify compliance with the Flooding Standard.
OPA Response: Post-development peak rates of runoff will not exceed pre-development rates. Calculations are included in the attached stormwater report (Appendices B and C).

4. The Stormwater Management Plan should include a stormwater inspection and maintenance plan developed in accordance with and in reference to MaineDEP Chapter 500 guidelines and Chapter 32 of the City of Portland Code of Ordinances.
OPA Response: Maintenance and inspection duties are outlined in the attached stormwater report (at the end of the body of the report and in Appendix A).

5. Final plans must be stamped by a professional engineer (Section 14-527, sub-section (f) of the City of Portland Land Use Ordinance).
OPA Response: final plans will be stamped.

6. The Applicant should verify that the following requirements for the Underground Storage Tank (UST) are being coordinated with the appropriate agencies:

   - The facility has a MaineDEP registration certificate for the existing active UST.
   - Per Section 11 of Chapter 691 Rules for Underground Oil Storage Facilities, the Applicant must submit a completed Notice of Intent to Remove an Underground Storage Tank Facility or Underground Product Piping application to the MaineDEP, and to the City Fire Department. The UST system removal must be supervised by a Maine Certified Underground Oil Storage Tank Installer and a Site Assessment must be performed in accordance with Appendix P of the Rules.

   OPA Response: Requirements have been added to sheets C-001 (notification requirements, note 7) and sheet CD102 (keynote 70).

7. All work within the City of Portland Right-of- Way shall be in conformance with all City of Portland Technical Standards. This should be reflected in the details that are provided in the final plans.
OPA Response: With the exception of the waivers requested, all work within the Right-of-Way is proposed to be in accordance with the City's standards.

Public Infrastructure and Community Safety

a. Consistency with Master Plans

b. Public Safety and Fire Prevention

1. Please address CPTED standards:
   The development shall incorporate the following public safety principles for Crime Prevention through Environmental Design (CPTED) into site design to enhance the security of public and private spaces and to reduce the potential for crime:

   (i) *Natural surveillance that promotes visibility of public spaces and areas.*
   OPA Response: The site has been laid out so that the majority of the public spaces are in the front of the building and enter through the main entrance which is visible from the parking lot, entrance drive, and bus loop. Also, administrative offices within the building have been located to maximize visibility of the parking areas from within the building.

   (ii) *Access control that promotes authorized and/or appropriate access to the site.*
   OPA Response: Gates have been provided at areas that are not designed for normal vehicular traffic (service entrance, fire department access points, site access directly from Warwick Street near the baseball field). Signage has also been included to prohibit parking in areas that would block their use by emergency vehicles (e.g. portions of the bus loop in front of the fire department access drive to the hard court). Surveillance cameras are proposed at the exterior of the building at all entrances. An access control system is proposed on exterior doors. All public access to the building will be through the secure main entrance doors, allowing administrative staff to have control over who enters the building.

   (iii) *Territorial reinforcement that promotes a sense of ownership and responsibility through environmental design.*
   OPA Response: Areas not subject to normal public access have been gated to prohibit unauthorized vehicular access. The remaining public spaces (playground and baseball field areas) not fenced in and are clearly defined and easily accessible to the public both by car and via one of the several trails and pedestrian access points to the site, which are intended to promote use of the site by the public.

c. Availability and Adequate Capacity of Public Utilities

1. The Applicant is proposing overhead electrical lines from Warwick Street onto Riggs Street, including the replacement of an existing service. The Applicant should comment on whether the utility will allow for these lines to be installed as underground services to eliminate the need for new utility poles and overhead electrical/communication lines.
   OPA Response: Discussions with CMP are ongoing, and it is possible that underground service may be allowed by CMP. Current plans indicate overhead service to abutters on Lomond Street. If underground service is permitted by CMP and approved by the abutters, a revised plan will be submitted showing the proposed routing.

2. The Applicant should provide verification of ability to serve from utility providers.
   OPA Response: Ability to serve letters have been included. We are working with Portland Water District on all water main work is in accordance with their requirements and approved by them prior to installation.

Site Design:

a. Snow and Ice Loading- Need to state how snow removal will be handled. Show snow storage on plans.
OPA Response: Snow storage locations have been added to sheets CS101-3.

b. Exterior Lighting – Submit lighting and photometric plan, as well as the catalogue cut sheets of the proposed lighting fixtures.
OPA Response: Lighting plans and information have been included.

c. Noise and Vibration – Submit cut sheets for HVAC system.
OPA Response: Because the project is being competitively bid, exact models for HVAC equipment cannot be provided. Cut sheets for typical equipment have been included.

d. Signage and Wayfinding – Submit a signage and wayfinding plans.
OPA Response: A signage plan has been included (sheet CM101).

e. Zoning Related Design Standards – Submit floor plans and elevations of the proposed building.
OPA Response: Floor Plans and elevations have been included.

Upon receipt of revised plans as requested above, the City of Portland will commence a final review. Note that the Planning Authority may request additional information during the continued review of the proposal according to applicable laws, ordinances and regulations. If you have any questions, feel free to contact me at 756-8083 or by email at **shukriaw@portlandmaine.gov.**

Sincerely,

Shukria Wiar
Planner

Att. B

OAK POINT ■ ASSOCIATES

February 1, 2017

Shukria Wiar, Planner
City of Portland
Department of Planning Division
389 Congress Street
4th Floor
Portland, ME 04103-3553

RE: Final Level III Site Plan Application
New Fred P. Hall Elementary School, 23 Orono Road
Portland, Maine

Dear Shukria:

Please find enclosed one (1) copy the Final Level III Site Application and supporting materials for the above referenced project as well as one full size (30"x42") set of the required drawings and one set of drawings reduced to 11"x17" (note that these drawings are not to scale due to the size of the full size sheets). This submission includes the following:

- Response to comments from the City's review of the Preliminary Site Application Submission
- Application package consisting of additional information requested (highlighted items in the package are indicate changes from the Preliminary Submission)
- Stormwater Report
- Revised Drawings

Thank you for taking the time to review the application package. If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Jonah DeWaters, PE, LEED AP
Civil Engineer

Enclosures

cc: Douglas Sherwood (w/enclosures)
Anita LaChance (w/o enclosures)

Att. C

LEVEL III SITE PLAN APPLICATION

State of Maine
Public School Project
23 Orono Road, Portland, Maine

Final Site Plan Application

New Fred P. Hall Elementary School

Prepared For:

City of Portland Planning Division
389 Congress Street
Portland, Maine

January 31, 2017

Prepared By:

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING

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Portland, Maine Yes. Life's good here.

Jeff Levine, AICP, Director
Planning & Urban Development Department

Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no Site Plan or Historic Preservation Applications can be reviewed until payment of appropriate application fees are ***paid in full*** to the Inspections Office, City of Portland Maine by method noted below:

☐ Within 24-48 hours, once my complete application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☐ Within 24-48 hours, once my application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☐ I intend to deliver a payment method through the U.S. Postal Service mail once my application paperwork has been electronically delivered.

_____ 08/29/16

Applicant Signature: Date:

_____ _____

I have provided digital copies and sent them on: Date:

NOTE: All electronic paperwork must be delivered to buildinginspections@portlandmaine.gov or by physical means i.e. a thumb drive or CD to the Inspections Office, City Hall, 3rd Floor, Room 315.

Level III – Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

Updated: October 6, 2015

PROJECT NAME: New Fred P. Hall Elementary School

PROPOSED DEVELOPMENT ADDRESS:

23 Orono Road

PROJECT DESCRIPTION:

Remove the existing Fred P. Hall Elementary School and associated site amenities and construct a new elementary school and associated site amenities

CHART/BLOCK/LOT: 275 C048 001

PRELIMINARY PLAN 8/29/16 (date)

FINAL PLAN _____ (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Anita LaChance Business Name, if applicable: City of Portland Address: 389 Congress Street, Room 208 City/State : Portland, ME Zip Code: 04101	**Applicant Contact Information** Work # (207) 874-8681 Home# Cell # Fax# (207) 874-8669 e-mail: arl@portlandmaine.gov
Owner – (if different from Applicant) Name: Address: City/State : Zip Code:	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Agent/ Representative Name: Jonah DeWaters, P.E. (Oak Point Associates) Address: 231 Main street City/State : Biddeford, ME Zip Code: 04005	**Agent/Representative Contact information** Work # (207) 283-0193 Cell # e-mail: jdewaters@oakpoint.com
Billing Information Name: Address: City/State : Zip Code:	**Billing Information** Work # Cell # Fax# e-mail:

Engineer Name: Jonah DeWaters, P.E. (Oak Point Associates) Address: 231 Main Street City/State : Biddeford, ME Zip Code: 04005	**Engineer Contact Information** Work # (207) 283-0193 Cell # Fax# (207) 283-4283 e-mail: jdewaters@oakpoint.com
Surveyor Name: John Schwanda, PLS (Owen Haskell, Inc) Address: 390 US Route 1 City/State : Falmouth, ME Zip Code: 04105	**Surveyor Contact Information** Work # (207) 774-0424 Cell # Fax# (207) 774-0511 e-mail: jschwanda@owenhaskell.com
Architect Name: Robert Tillotson, AIA (Oak Point Associates) Address: 231 Main Street City/State : Biddeford, ME Zip Code: 04005	**Architect Contact Information** Work # (207) 283-0193 Cell # Fax# (207) 283-4283 e-mail: rtillotson@oakpoint.com
Attorney Name: Address: City/State : Zip Code:	**Attorney Contact Information** Work # Cell # Fax# e-mail:

APPLICATION FEES:

Check all reviews that apply. (Payment may be made by Credit Card, Cash or Check payable to the City of Portland.)

Level III Development (check applicable reviews)

☐ Less than 50,000 sq. ft. ($500.00)
☑ 50,000 - 100,000 sq. ft. ($1,000)
☐ 100,000 – 200,000 sq. ft. ($2,000)
☐ 200,000 – 300,000 sq. ft. ($3,000)
☐ over 300,00 sq. ft. ($5,000)
☑ Parking lots over 11 spaces ($1,000)
☐ After-the-fact Review ($1,000.00 plus applicable application fee)

Plan Amendments (check applicable reviews)

☑ Planning Staff Review ($250)
☑ Planning Board Review ($500)

_____

The City invoices separately for the following:

- Notices ($.75 each)
- Legal Ad (% of total Ad)
- Planning Review ($40.00 hour)
- Legal Review ($75.00 hour)

Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.

Other Reviews (check applicable reviews)

☑ Traffic Movement ($1,000)
☑ Stormwater Quality ($250)
☐ Subdivisions ($500 + $25/lot)
# of Lots ___ x $25/lot = _____
☑ Site Location ($3,000, except for residential projects which shall be $200/lot)
# of Lots ___ x $200/lot = _____
☐ Other _____
☐ Change of Use
☐ Flood Plain
☐ Shoreland
☐ Design Review
☐ Housing Replacement
☐ Historic Preservation

APPLICATION SUBMISSION:

1. All site plans and written application materials must be submitted electronically on a CD or thumb drive with each plan and each document submitted as separate files. Naming conventions for the individual files can be found on the **Electronic Plan and Document Submittal** page of the City's website at http://me-portland.civicplus.com/764/Electronic-Plan-and-Document-Submittal

2. In addition, one (1) paper set of the plans (full size), one (1) paper set of plans (11 x 17), paper copy of written materials, and the application fee must be submitted to the Building Inspections Office to start the review process.

The application must be complete, including but not limited to the contact information, project data, application checklists, wastewater capacity, plan for fire department review, and applicant signature. The submissions shall include one (1) paper packet with folded plans containing the following materials:

1. **One (1) full size site plans** that must be **folded.**
2. One (1) copy of all written materials or as follows, unless otherwise noted:
   a. Application form that is completed and signed.
   b. Cover letter stating the nature of the project.
   c. All Written Submittals (Sec. 14-525 2. (c), including evidence of right, title and interest.
3. A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet.
4. Plans and maps based upon the boundary survey and containing the information found in the attached sample plan checklist.
5. One (1) set of plans reduced to 11 x 17.

Please refer to the application checklist (attached) for a detailed list of submission requirements.

APPLICANT SIGNATURE:

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	**Date:** 08/29/16

PROJECT DATA

The following information is required where applicable, in order to complete the application.

Total Area of Site	21.2	~~sq. ft.~~ Acres
Proposed Total Disturbed Area of the Site	+/- 10.4	~~sq. ft.~~ Acres
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
Impervious Surface Area		
Impervious Area (Total Existing)	2.37 Acres (2.32 Acres to be removed)	~~sq. ft.~~ Acres
Impervious Area (Total Proposed)	4.98 Acres (4.93 Acres to be built)	~~sq. ft.~~ Acres
Building Ground Floor Area and Total Floor Area		
Building Footprint (Total Existing)	+/- 55,000	sq. ft.
Building Footprint (Total Proposed)	+/- 64,000	sq. ft.
Building Floor Area (Total Existing)	+/- 55,000	sq. ft.
Building Floor Area (Total Proposed)	+/- 85,000	sq. ft.
Zoning		
Existing	R3	
Proposed, if applicable	Not Applicable	
Land Use		
Existing	Elementary School	
Proposed	Elementary School	
Residential, If applicable	Not Applicable	
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)		
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)		
Proposed Bedroom Mix	Not Applicable	
# of Efficiency Units (Total Proposed)		
# of One-Bedroom Units (Total Proposed)		
# of Two-Bedroom Units (Total Proposed)		
# of Three-Bedroom Units (Total Proposed)		
Parking Spaces		
# of Parking Spaces (Total Existing)	77 (63 used, 14 blocked off and used for playground space)	
# of Parking Spaces (Total Proposed)	98 (Includes Accessible Spaces)	
# of Handicapped Spaces (Total Proposed)	4	
Bicycle Parking Spaces		
# of Bicycle Spaces (Total Existing)	34	
# of Bicycle Spaces (Total Proposed)	32	
Estimated Cost of Project	+/- $29.7 million	

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
X		1	Completed Application form
N/A		1	Application fees
X		1	Written description of project
X		1	Evidence of right, title and interest
X		1	Evidence of state and/or federal approvals, if applicable
X		1	Written assessment of proposed project's compliance with applicable zoning requirements
X		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
X		1	Written requests for waivers from site plan or technical standards, if applicable.
X		1	Evidence of financial and technical capacity
X		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
X		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
X		Proposed grading and contours;	
X		Existing structures with distances from property line;	
X		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
X		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
X		Preliminary infrastructure improvements;	
X		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
X		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);	
X		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);	
X		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
X		Exterior building elevations.	

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
		1	* Completed Application form
		1	* Application fees
		1	* Written description of project
		1	* Evidence of right, title and interest
		1	* Evidence of state and/or federal permits
		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
		1	* Evidence of financial and technical capacity
		1	Construction Management Plan
		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
		1	Stormwater management plan and stormwater calculations
		1	Written summary of project's consistency with related city master plans
		1	Evidence of utility capacity to serve
		1	Written summary of solid waste generation and proposed management of solid waste
		1	A code summary referencing NFPA 1 and all Fire Department technical standards
		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Final Site Plans including the following:**
		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
		Existing and proposed structures on parcels abutting site;	
		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
		Location of all snow storage areas and/or a snow removal plan;	
		A traffic control plan as detailed in Section 1 of the Technical Manual;	
		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
		Location and proposed alteration to any watercourse;	
		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
		Proposed buffers and preservation measures for wetlands;	
		Existing soil conditions and location of test pits and test borings;	
		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
		Grading plan;	
		Ground water protection measures;	
		Existing and proposed sewer mains and connections;	

- Continued on next page -

		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

Development Description

Project Objective

This Site Plan Application package is for work associated with the demolition of the existing Fred P. Hall Elementary School and associated site amenities and the construction of a new elementary school and associated site amenities.

The site is located at 26 Orono Road. The work associated with this project will take place primarily on the Hall School site, which totals 21.2 acres. However, some work will take place within the Godfrey Street, Orono Road, Riggs Street and Lomond Street Right-of-Ways. The project will result in a total disturbance of approximately 10.65 acres (including 0.67 acres of disturbance within the Riggs Street and Lomond Street Right-of-Ways). This disturbance consists of the following:

- Creation of 3.50 acres of new developed area (including 0.33 acres of new development within the Riggs Street and Lomond Street Right-of-Ways)
- Removal of approximately 3.73 acres of existing impervious area (including 0.19 acres of impervious area within the Riggs Street and Lomond Street Right-of-Ways)
- Construction of approximately 5.11 acres of new impervious area (a net increase of 1.4 acres of impervious area).

Fred P. Hall Elementary School is a single story building with a footprint of approximately 55,000 square feet and has a capacity of approximately 440 students. It was originally constructed in 1957, with a classroom and gym addition in 1967. Other than parking lot reconfiguration projects in 1972 and 1990, the majority of the site has remained largely unchanged since its construction. Due to lack of adequate parking and site circulation and the poor condition of the existing building and site amenities, it has been determined that in lieu of performing substantial site upgrades and renovations it will be more cost effective to demolish the existing building and associated site amenities and construct a new building, playfields/playground areas, parking and site circulation that will meet the site's anticipated capacity and programmatic needs.

Existing Facilities

As indicated on Drawings CX101 and CD101-CD103 the site consists of the existing school building and associated site amenities, a baseball field to the west and a large playground area to the south. Parking and site circulation (including bus/parent pick up and drop off areas) are located on the east side of the school. The existing site has 63 parking spaces (including 3 accessible spaces). An additional 14 space parking area is located on the south side of the building and separates the building from the playground. This lot has been blocked off and is not used for parking, instead being used as part of the playground area. Vehicular access to the site is via a one-way entrance from Warwick Street. The only vehicular exit

from the site is located at the end of Orono Road, which is a two-way street (the site exit onto Orono Road is one way).

Proposed Facilities

The proposed school building will be located on the west side of the existing school, in the approximate location of the existing baseball field. It will be a two-story building with a footprint of approximately 63,000 square feet and a floor area of approximately 85,000 square feet, with a capacity of 558 students. Major modifications to the existing site circulation are proposed, including abandoning the existing site entrance from Warwick Street and constructing a new entrance from Lomond Street (via Riggs Street) as well as constructing separated parent and bus drop off/pick up areas. A new parking area is proposed that will have adequate parking for staff and visitors (100 spaces, including 4 accessible spaces). New playfields and playground areas are also proposed, as well as outdoor learning and classroom vegetable garden areas (which are still under design development).

It should be noted that, because this is primarily a State-funded project, the majority of site features indicated have been designed in accordance with the State's written requirements for elementary schools. The rest of the items shown, such as portions of the playground and additional stormwater treatment, are being funded using local (City of Portland) funds as approved by the city's residents during a referendum in April, 2016.

Existing/Proposed Utility Connections

Existing utilities can be seen on sheets CX101 and CD101-CD103. Proposed utilities can be seen on sheets CU101-CU104.

Water service (potable and fire protection) to the existing school is via an 8" connection to a 20" water main that crosses through the middle of the site, from the end of Wessex Street on the south to the end of Pinecrest Road on the north. This 20" main will be removed/abandoned on the northern half of the site (portions of it are proposed to be removed where it conflicts with the proposed building and utility infrastructure). As directed by Portland Water District, a new 12" cross connection is proposed between the existing 8" water main in Purchas Street and the 8" main in Warwick Street. This cross connection will be connected to the remaining portion of the existing 20" main near the end of Godfrey Street. This cross connection will run east across the site from the intersection of Purchas Street and Godfrey Street to the end of Orono Road, then beneath Orono Road to Warwick Street. The existing 2" water line in Orono Road will be removed and the existing water service connections will be connected to the new line. Domestic and fire protection service for the proposed building will be run from the end of the 8" main in Purchas Street. This main is slated to be upgraded by Portland Water District under a separate project which will run concurrent to the first phase of the school construction project.

Sanitary sewer service for the existing building is provided via a connection to a 10" diameter main that runs through the site from Purchas Street to Pinecrest Road. This main will be relocated around the west side of the proposed building and proposed sanitary sewer service for the building will be via this relocated line.

An existing 30" to 33" diameter storm drain line also crosses through the site, running generally parallel to the existing sanitary sewer main from the end of Purchas Street toward Pinecrest Road, and outlets into Capisic Brook approximately 160 feet south of the end of Pinecrest Road. This line will be relocated around the west side of the proposed building, but the existing outlet into Capisic Brook will be maintained.

Electric and communications service for the existing building is via overhead lines that run onto the site from the end of Purchas Street and continue overhead onto the site to a utility pole located on the south side of the baseball field. From there, communications service is overhead to the building, while electric service is underground to a transformer on the northwest side of the building, then underground to the building. Electric and communications service to the proposed building will use the existing overhead service to the utility pole at the end of Purchas Street before running underground to the new building.

The existing building is heated with oil, which is stored in an 8,000 gallon underground fuel oil tank on the western side of the building, near the library. This oil tank is proposed to be removed as part of the building demolition, and the new building will utilize an existing natural gas main that terminates at the north end of Purchas Street. This line will be extended from its end to the new building.

Phasing/Construction Plan

The design and permitting period is expected to extend to late winter/early spring, 2017. In addition to construction the new school and associated site amenities, the it has been requested that the project be phased to minimize relocating school classrooms as much as possible, thus requiring that the existing school be operational during much of the construction period. In order to accomplish this, the project will be constructed in two general phases:

Phase I (May/June 2017-June 2018): Demolish the northwest wing of the existing building (for the duration of Phase I, kindergarten classrooms may need to be relocated to a portion of Deering High School, with a portion being renovated to accommodate them and keep them separated from the rest of the High School population), perform water main demolition/installation, relocate existing sanitary sewer and storm drain mains, construct new building (including utility service connections), site amenities on the north and west sides of the proposed building, and all development on Riggs Street, Lomond Street, and Orono Road.

Phase I Construction Timeline	Spring 2017- Late Spring 2018
• Contract award	Winter/Spring 2017
• Install erosion control, strip existing turf, clear wooded areas, and general site demolition	Spring/Summer 2017
• Building Footings/envelope and Utilities	Spring/Summer 2017
• Sitework in Orono Road	Spring/Summer 2017
• Sitework in Riggs Street/Lomond Street Right-of-Way	Summer 2017-Spring 2018
• Sitework for portion of entrance drive south of existing playground	Summer 2017-Spring 2018
• Site Development on north and west sides of proposed building	Summer 2017-Spring 2018
• Stormwater treatment areas (entrance drive, north and west side of proposed building)	Summer/Fall 2017
• Stabilize Site (winter)	Winter 2017
• Building construction	Summer 2017-Early Summer 2018

Phase II (June 2018-August 2018): Demolish existing building and site amenities and construct remaining site amenities, including access drive from Lomond Street, parking lot and parent drop off/pick up area, bus loop, remaining stormwater treatment areas (along entrance drive and beneath the proposed playfields), playfields and playground areas.

Phase II Construction Timeline	Late Spring 2017- Late Summer 2018
• Demolish existing building and general site demolition	Late Spring/Summer 2018

• Construct Parking Lot, entrance drive and other site appurtenances	Summer/Fall 2018
• Construct stormwater treatment areas	Summer/Fall 2018
• Stabilize site (permanent)	Summer/Fall 2018
• Project Complete	Late Summer/Fall 2018

Waivers Requested

We are requesting the following waivers from the City's Ordinance requirements and Design Requirements:

1. *Code Section 14-90, item p: Places of assembly not on an arterial or collector road (9,000 ft^2 maximum area permitted)*

   A waiver of the maximum floor area for places of assembly for sites not on an arterial or collector road is requested to allow for a proposed floor area of 11,056 ft^2. The School has requested an expanded cafeteria to reduce the required number of lunch seatings and allow for increased staffing flexibility. Also, an expanded (middle-school sized) gymnasium was requested to be used for community activities outside of normal school hours. Between these items, the total assembly space (gymnasium and cafeteria) will exceed the maximum space permitted for the development. It is anticipated that these spaces will be used during non-school hours for assemblies and athletic activities, most likely at night and on weekends. The general type of activities on the site will not differ from current conditions.

2. *Code Section 14-498, item (b).8; and Section 14-526, item (a).c.1, Sidewalks*

   A waiver of the requirement to provide sidewalks and esplanades on both sides of the street is requested for the proposed road development on portions of Riggs Street and Lomond Street. A sidewalk is proposed on the south side of Riggs Street and the west side of Lomond Street, and no esplanades are proposed. Eliminating the additional sidewalk and esplanades reduces the impact to the freshwater wetlands on both sides of the streets, impacts to the existing wooded areas, and reduces the amount of temporary grading easements required from abutting landowners to install the proposed improvements. Further, sidewalks only exist on one side of the other streets in the vicinity of the site (Warwick Street, Riggs Street and Orono Road).

3. *Code Section 14-526, item (b).1: Preservation of Significant Natural Features*

   A waiver of the requirement to avoid all impacts to significant natural features on the site is requested. While the site has been designed to limit the impact to existing natural features while still providing the necessary programmatic elements, the development will result in some impacts to non-significant wetlands, primarily on the western side of the site and the proposed entrance drive from Warwick Street. These wetland impacts will require an Individual Natural Resources Protection Act Individual Permit (Tier I, freshwater wetland impacts less than 14,999 ft^2). This permit will be applied for as part of the design process and obtained prior to awarding the construction contract in spring 2017.

4. *Code Section 14-526, item (b).2.b.ii: Parking Lot Landscaping*

Proposed Landscaping is shown on sheets LS101, LS102 and LS104. A waiver of the requirement to provide two trees (or one tree and three shrubs) for every five parking spaces is requested. State Department of Education standards do not provide funding for landscaping in parking areas to meet the City's requirements and additional funding for parking lot landscaping exceeding the state requirements was not included in the locally funded portion of the project. However, the following steps have been taking to provide landscaping/shade in the immediate vicinity of the proposed parking lot:

- Maintain existing wooded area/buffer on the west side of the parking lot (along Sagamore Village property line).
- Provide landscaped islands at each end of the center row of parking spaces (constructing additional islands would require expansion of the parking lot, which could adversely impact the existing large trees in the wooded area mentioned above).
- Provide a large landscaped area along the east side of the parking lot.
- Maintain as much of the existing wooded area on the south side of the proposed parking lot as possible.

5. *Code Section 14-526, item (b).2.b.iii: Street Trees*

Proposed Landscaping is shown on sheets LS101, LS102 and LS104. A waiver of the requirement to provide street trees along the portion of the project within the right-of-way is requested. Due to the width of the existing right-of-way on Riggs Street and Lomond Street, there is not sufficient space to provide street trees without acquiring additional property from abutting landowners or planting the trees on their property. However, majority of the proposed road improvements will occur in areas that are already wooded on both sides of the right-of-way. Further, an esplanade will be provided once the road development crosses onto the site and enough space is available (see waiver request 2, above).

Zoning Requirements

Zoning and transportation requirements are summarized below and indicated on sheet CO101.

Zone: R-3

Existing/Proposed Use: Elementary School (Conditional Use in R-3 Zone)

Dimensional Requirements

Item	Required	Provided
Lot Size	2 Acres	21.2 Acres
Street Frontage	50 Feet	246 Feet (Along Warwick Street)
Front Yard Setback	25 Feet	+/- 400 Feet
Rear Yard Setback	25 Feet	+/- 38 Feet
Side Yard Setback (2 story)	14 Feet	+/- 34 Feet
Lot Coverage	35%	23%
Lot Width	65 Feet	+/- 713 Feet
Structure Height	35 Feet	32 Feet
Maximum Floor area for places of assembly*	9,000 ft^2	11,056 ft^2

**A waiver will be requested for the maximum assembly space area (see project narrative)*

Transportation Requirements

General Information

Proposed Number of classrooms	40	
Assembly Space Size (gym and Cafeteria)	11,056	ft^2
Proposed Full Time Equivalent Staff	79	
School Capacity	558	Students

Required Parking Calculations

Normal School Days	40	Spaces (1 Space per Classroom)
Assemblies**	89	Spaces (1 Space per 125 ft^2 of Floor Area)
Number of Spaces Required	**89**	**Spaces (Greater of School Days and Assembly Space)**

***Assemblies are not anticipated to be held during held during normal school hours*

Provided Parking Calculations

1 Space Per Full Time Equivalent Staff***	85	Spaces
Visitor Spaces***	15	Spaces
Total Number of Parking Spaces Provided	**100**	**Spaces (including 4 ADA Compliant Spaces)**

****State Department of Education Requirement*

Bicycle Parking Calculations

Required Bicycle Parking	20	Spaces (2 per 10 parking spaces)
Provided Bicycle Parking	42	Spaces

Appendix A – Right, Title and Interest and Existing and Proposed Easements

This section includes the following:

- A Boundary/Right-of-Way Plan for the site, Riggs Street, a portion of Lomond Street, Orono Road, and Warwick Street at the Orono Road intersection. This plan also depicts the existing water and sewer easements that pass through the site.
- A copy of the deed for the site.
- A copy of the applicable easement documentation.

SAGAMORE VILLAGE

N 13°56'35" E
369.43'

CHAIN LINK FENCE

0.55'
0.10'
IPF

50' SEWER EASEMENT

BASEBALL FIELD

EDGE OF TREE CANOPY

BENCH

INV.IN=60.7 12"PVC
INV.OUT=60.6 12"PVC

273-J-26,47
N/F
PETER J. & KRISTINA McCABB
21480/346

1-1/4"IPF

CONCRETE MON. HELD FOR LINE

276-A-6
272-N-19
N/F
GEORGE H. & ANNE MARIE IRISH RICHARDSON
26298/69

WETLAND E

CRIT CHAMBER
NO PIPES OBSERVED
WATER=50.31
BOTTOM (SILTY)=48.86'

RIM=54.28
UNABLE TO OPEN
INV. IN (6"=46.28
CL CHAN (10")=41.53

RIM=58.62
INV=47.9 (BOTTOM?)
INVYOUT (6" OR 10")=50.53
WATER=50.29

RIM=60.75
INV.IN=51.4
INV.OUT=51.3

30' SEWER EASEMENT

30"RCP
INV.IN=44.01

6'x44' OVAL CMP
INV.=42.99

SMH RIM=53.64
CL INV.=38.6

PINECREST ROAD

GRAVEL

GRANITE BLOCKS

6'x44' OVAL CMP
INV.=42.17

SMH
RIM=46.98
UNABLE TO OPEN

276-A-16
N/F
KELLY J. FAROUMAR
11106/28

S 55°18'29" E
630.32'

CAPISIC BROOK

CITY HOME SEWER RIGHT OF WAY

SEE NOTE 10

CEDARHURST LANE

276-A-13
N/F
BRENDA A. & JOSEPH E. TURCOTTE
13793/208

MONS HELD

MH UNABLE TO OPEN

S 45°34'54" E
68.40'

78.39'
S 48°38'25" W

REMAINS OF MON. FOUND HORIZONTAL

IPF

276-A-23
N/F
MORGAN N. CHASE
27805/269

276-A-22
N/F
JOHN H. O'LEARY et.al.
13524/143

276-A-21
N/F
ZORAM & JULIE-BETH BLANCAS-RUIZ
28657/177

276-A-3
N/F
CAROLYN J. GALLANT
12733/163

276-A-19
N/F
DONALD E. & ARLIN L. KENT
8365/268

435.42'
S 36°45'28" E

248.25' PLAN REF. 1 HELD

S 57°51'10" W

5/8"IRF HELD

HEADWALL INV.=51.36

HEADWALL INV.=56.47

RIPRAP

ESS(10")

ESD(30")

ESD(12")

ESS(6")

WETLAND F

BRIDGE

TRAIL

GRAVEL

PAVED

EW

VGC

CONC

RIM=62.88
CL CHAN.=48.98
INV OUT=48.79
WEIR ELEV=50.26
INV OUT=48.79

RIM=65.30 (BURIED)
CL CHAN.=57.76

EXISTING WATER (20"CI)

BURIED MANHOLE

CHAIN LINK FENCE

RAILROAD TIES (PLAY COURSE)

RIM=65.32 (BURIED)
CL CHAN.=49.20
INV. IN (12" PLAS)=56.90
INV. IN (6" DROP, ROOF)=58.24±
INV. IN (8" DROP, ROOF)=58.67±

HYD.

S 76°34'10" E
99.07'

N 76°34'10" W
98.00'

GODFREY ST.
NOT ACCEPTED

N 13°52'05" E
50.00'

50' WIDE
PORTLAND WATER DISTRICT RIGHT OF WAY
938/136
PLAN BOOK 12 PAGE 24

WATER BELL

SWING

PLAY STRUCTURES

BASKETBALL HOOPS

RIM=64.78
INV.=57.5
INV.=57.4
INV.=57.6

RIM=63.99
INV. IN=58.2
INV. OUT=59.3

TIMBERS

BOLLARDS

BURIED OIL TANK

THRES.=67.39

THRES.=67.41

THRES.=67.29

THRES.=67.34

THRES.=67.54

LOT AREA =
924,691 S.F.
21.2 ACRES

HALL SCHOOL

TRANS. Ø9.3 ON CONC. PAD

THRES.=67.64

THRES.=67.56

FFE=67.36

FFE=67.08

D/H

L/S

SHRUBS

BIKE RACKS

FLAG POLE

POST

PLANTER

GRATE

GRANITE BENCHES

PAVEMENT

PAVED WALK

RIM=64.76
INV.IN=60.4
INV.IN=60.3
INV.OUT=60.1

RIM=63.62
INV.IN=59.7
INV.OUT=59.6

DO NOT ENTER

TBM SPIKE IN LP#13.2
ELEV.=67.16

DUMPSTER ENCLOSURE

RIM=62.79
UNABLE TO OPEN

EDGE OF WOODS (TYPICAL)

#13.1

#13.2

#13.3

275-C-76
N/F
CITY OF PORTLAND

RAISED BEDS

275-C-77 & 78
N/F
JULIA & DAVID O'DONNELL
30659/167

275-C-80
N/F
NATHAN B. TURNER
29703/349

275-C-79
N/F
CITY OF PORTLAND

275-C-74 & 75
N/F
JAMES E. & KELLI A. HEFFLEY
20403/147

275-C-72 & 73
N/F
MAGDA ADRIEN-DARLING
28755/66

275-C-69,70 & 71
N/F
EDWARD J. & DIANA W. CUNDY
31295/184

275-C-67 & 68
N/F
ROBERT C. HAINS
8540/151

275-C-65 & 66
N/F
COLBY DUFOUR
31426/201

275-C-63 64
N/F
E. II & LA J. EELE
9/104

ORONO ROAD PAVED 50' WIDE

WIRE FENCE

STONE FENCE

CHAIN LINK FENCE

2 WAY TRAFFIC
NO PARKING SIGN

NO PARKING SIGN

NO SCHOOL ACCESS SIGN

STOP SIGN

CB RIM=63.91
TOP OF HOOD
INV.OUT= 60.21

RIM=64.68
INV.IN=61.4
HOOD=61.0

MH RIM=65.00
INV.IN=59.6 6"
INV.IN=58.7 8"
INV.IN=59.4
INV.OUT=58.6 8"

RIM=63.57
BOT-HOOD=60.4

S 60°39'57" W
167.38'

S 55°40'33" E
346.00'

N65°40'33" W
72.88'

445.00'

111.57'

N34°19'14" E
100.00'

23.40'

S55°40'33"E

80.00'

N34°19'27" E
100.00'

N65°40'33" W
80.00'

25.73'

S55°40'33"E

N13°52'59"E
106.72'

BURIED CB
RIM=60.49

1"IPF HELD

5/8"IRF

RIM=61.87

RIM=60.54

#1

#2

#3

#10

#11

#12

MH RIM=65.29
CL INV.=54.39
(A) INV. IN=55.29
(B) INV. IN=57.09

WARWICK STREET PAVED – PUBLIC 50' WIDE

BIKER

DRIVE

WALK

SS

W

MON.

BOLT 0.08'

CIRF 0.31'

TBM FRONT BONNETT BOLT HYDRANT ELEV.=67.15

Legend:

- MONUMENT FOUND
- IRON PIPE OR ROD FOUND
- WATER VALVE
- HYDRANT
- UTILITY POLE
- LIGHT POLE
- MANHOLE
- CATCH BASIN
- SIGN
- DECIDUOUS TREE
- CONIFEROUS TREE
- FENCE
- CURB
- OHW — OVERHEAD WIRES
- UGE — UNDERGROUND ELECTRIC
- EW — EXISTING WATER LINE
- ESS — EXISTING SANITARY SEWER
- ESD — EXISTING STORM DRAIN
- 65 — 1' CONTOUR

Utility Note:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

Certification

OWEN HASKELL, INC. CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

STATE OF MAINE
JOHN C. SCHWANDA
NO. 1252
PROFESSIONAL LAND SURVEYOR

1-10-2015
DATE

JOHN C. SCHWANDA, PLS #1252

SCALE : 1" = 40'

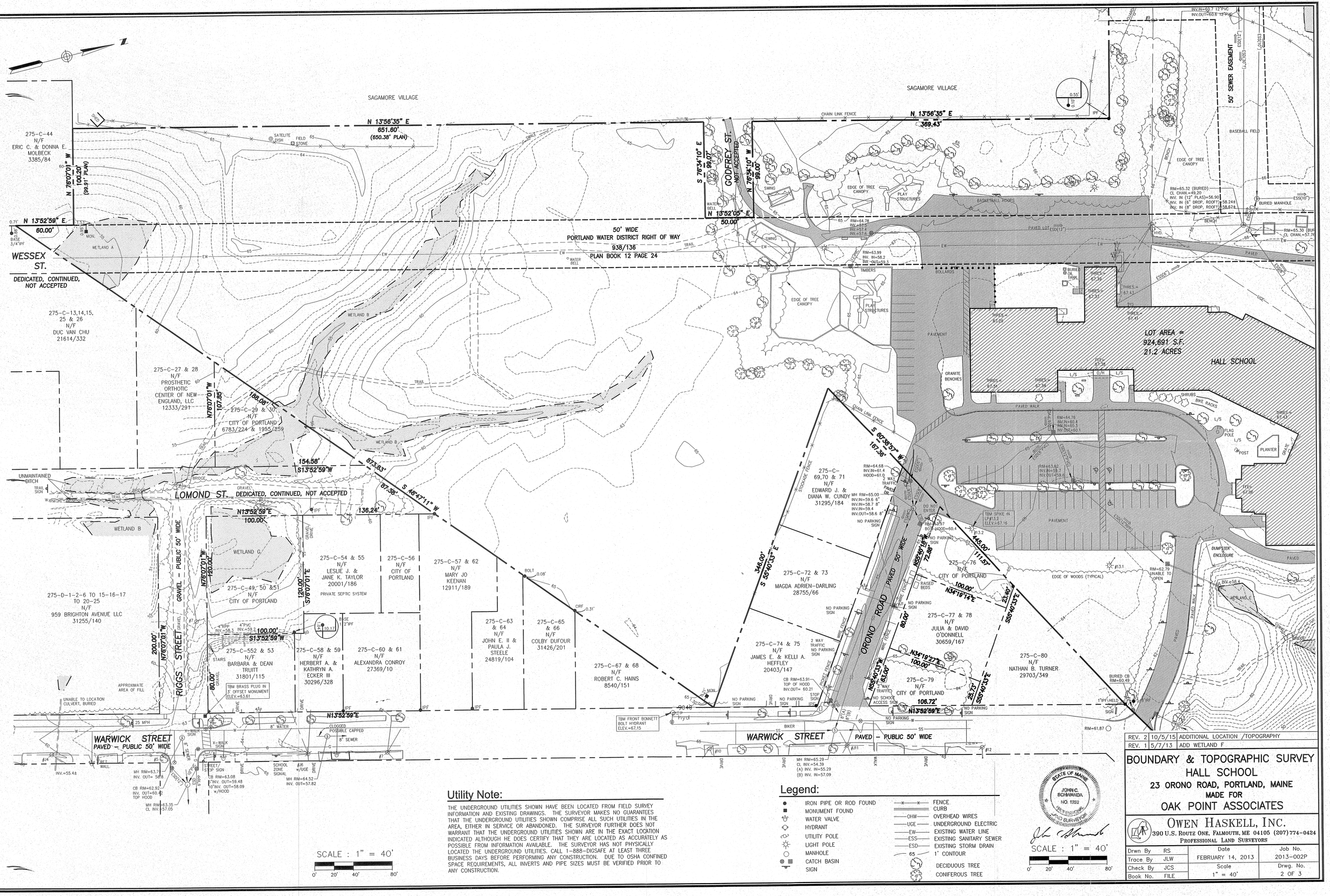
0' 20' 40' 80'

REV.	DATE	DESCRIPTION
REV. 2	10/5/15	ADDITIONAL LOCATION/TOPOGRAPHY
REV. 1	5/7/13	ADD WETLAND F

BOUNDARY & TOPOGRAPHIC SURVEY
HALL SCHOOL
23 ORONO ROAD, PORTLAND, MAINE
MADE FOR
OAK POINT ASSOCIATES

OWEN HASKELL, INC.
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207) 774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	RS	Date	Job No.
Trace By	JLW	FEBRUARY 14, 2013	2013-002P
Check By	JCS	Scale	Drwg. No.
Book No.	FILE	1" = 40'	1 OF 3



Utility Note:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

SCALE : 1" = 40'

0' 20' 40' 80'

Legend:

- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- WATER VALVE
- HYDRANT
- UTILITY POLE
- LIGHT POLE
- MANHOLE
- CATCH BASIN
- SIGN
- FENCE
- CURB
- OHW — OVERHEAD WIRES
- UGE — UNDERGROUND ELECTRIC
- EW — EXISTING WATER LINE
- ESS — EXISTING SANITARY SEWER
- ESD — EXISTING STORM DRAIN
- 65 — 1' CONTOUR
- DECIDUOUS TREE
- CONIFEROUS TREE

STATE OF MAINE
JOHN C. SCHWANDA
NO. 1282
REGISTERED LAND SURVEYOR

SCALE : 1" = 40'

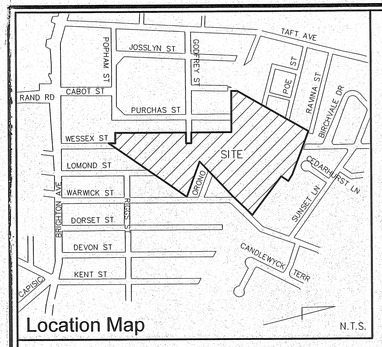
0' 20' 40' 80'

REV.		
REV. 2	10/5/15	ADDITIONAL LOCATION /TOPOGRAPHY
REV. 1	5/7/13	ADD WETLAND F

BOUNDARY & TOPOGRAPHIC SURVEY
HALL SCHOOL
23 ORONO ROAD, PORTLAND, MAINE
MADE FOR
OAK POINT ASSOCIATES

OWEN HASKELL, INC.
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207)774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By RS	Date FEBRUARY 14, 2013	Job No. 2013-002P
Trace By JLW		
Check By JCS	Scale 1" = 40'	Drwg. No. 2 OF 3
Book No. FILE		



GORGES ST.
50' WIDE
(NOT BUILT TO END)

N 14°32'35" E
47.84'
(52.42' PLAN)

273-D-5
N/F
DALE COURT
CONDOMINIUM

WETLAND D

KERVIN ST.
NOT BUILT

273-M-4,9
N/F
ERENEST E. & BEVERLY E.
SHOREY
27073/60

N 43°23'41" E
763.32'

POE ST.
NOT BUILT

273-J-26,47
N/F
PETER J. & KRISTINA
McCABB
21480/346

N 76°03'29" W
375.61'

WETLAND C

(BURIED)
SMH RIM=65.37
CL CHAN.=54.87

DMH RIM=64.89
CL CHAN.=52.72

CB RIM=66.18
INV.IN=60.6 12"
CL INV.=50.2

SMH RIM=66.31
INV.IN=53.9
INV.OUT=55.8

CB RIM=64.88
INV.IN=60.7 12"PVC
INV.OUT=60.6 12"PVC

50' SEWER EASEMENT

SAGAMORE VILLAGE

N 13°56'35" E
369.43'

CHAIN LINK FENCE

BASEBALL FIELD

EDGE OF TREE CANOPY

BENCH

RIM=65.32 (BURIED)
CL CHAN.=49.20
INV. IN (12" PLAS)=56.90
INV. IN (6" DROP, ROOF?)=58.24±
INV. IN (8" DROP, ROOF?)=58.62±

BURIED MANHOLE

RAILROAD TIES
(PLAY COURSE)

30' SEWER EASEMENT

RIM=65.30 (BURIED)
CL CHAN.=57.76

EXISTING WATER (20"CI)

RIM=62.88
CL CHAN.=48.98
WEIR ELEV.=50.38
INV OUT=48.79

GRIT CHAMBER
NO PIPES OBSERVED
WATER=50.31
BOTTOM (SILTY)=48.86

RIM=58.62
INV=47.6 (BOTTOM?)
INV/OUT (8" OR 10")=50.52
WATER=50.29

RIM=54.28
UNABLE TO OPEN
INV. IN (6")=46.28
CL CHAN (10")=49.53

RIM=60.75±
INV.IN=51.4
INV.OUT=51.3

INV=44.01

6"x44" OVAL CMP
INV.=42.99

276-A-6
272-N-19
N/F
GEORGE H. &
ANNE MARIE
IRISH
RICHARDSON
26298/69

SMH RIM=53.64
CL INV.=38.6

PINECREST ROAD

6"x44" OVAL CMP
INV.=42.7

SMH RIM=46.98
UNABLE TO OPEN

276-A-16
N/F
KELLY J.
FARQUHAR
11106/28

S 55°19'29" E
430.32'

CAPISIC BROOK

SEE NOTE 10

CITY HOME SEWER RIGHT OF WAY

CEDARHURST LANE

WETLAND E

276-A-13
N/F
BRENDA A. & JOSEPH E.
TURCOTTE
13793/208

MON HELD

MH
UNABLE TO OPEN

S 43°36'34" E
88.40'

S 45°39'25" W
78.39'

REMAINS OF MON.
FOUND HORIZONTAL

276-A-23
N/F
MORGAN N. CHASE
27805/269

N 76°34'10" W
99.00'

SWING

EDGE OF TREE CANOPY

PLAY STRUCTURES

BASKETBALL HOOPS

RIM=64.78
INV.=57.3
INV.=57.1
INV.=57.6

PAVED LOT

ESS(12")

RIM=63.99
INV. IN=58.2
INV. OUT=59.3

TIMBERS

BOLLARDS

BURIED OIL TANK

THRES.=67.39

THRES.=67.41

THRES.=67.37

THRES.=67.09

THRES.=67.64

LOT AREA =
924,691 S.F.
21.2 ACRES

HALL SCHOOL

PAVEMENT

GRANITE BENCHES

FFE=67.38

THRES.=67.14

THRES.=67.44

L/S

O/H

SHRUBS

BIKE RACKS

PAVED WALK

RIM=64.76
INV.IN=60.4
INV.IN=60.1
INV.OUT=60.1

FLAG POLE

POST

PLANTER

GRATE

THRES.=67.43

THRES.=67.50

RIM=63.82
INV.IN=59.7
INV.OUT=59.6

FFE=67.88

THRES.=67.41

MEADWAY
INV.=61.36

CHAIN LINK FENCE

S 60°38'57" W
167.56'

275-C-
69,70 & 71
N/F
EDWARD J. &
DIANA W. CUNDY
31295/184

RIM=64.68
INV.IN=61.4
HOOD=61.0

MH RIM=65.00
INV.IN=59.6 6"
INV.IN=58.7 8"
INV.IN=59.4
INV.OUT=58.6 8"

2 WAY TRAFFIC

DO NOT ENTER

NO PARKING SIGN

RIM=63.97
BOTTOM=60.4

TBM SPIKE IN
UP#13.2
ELEV.=67.16

#13.2

#13.1

S 55°40'33" E
346.00'

275-C-72 & 73
N/F
MAGDA ADRIEN-DARLING
28755/66

N65°49'19"E
72.88'

45.00'

111.57'

275-C-76
N/F
CITY OF PORTLAND

N34°19'14"E
100.00'

25.40'

S 40°03'32" E

275-C-77 & 78

ROAD PAVED 50' WIDE

EDGE OF WOODS (TYPICAL)

RAISED BEDS

DUMPSTER ENCLOSURE

PAVED

INV.=58.4

WETLAND E

BRIDGE

SIDE WALK

RIM=62.78
UNABLE TO OPEN

SCALE : 1" = 40'

0' 20' 40' 80'

Plan References:

1. "SAGAMORE VILLAGE OWNER: – UNITED STATES OF AMERICA CITY OF PORTLAND CUMBERLAND COUNTY,MAINE SEPTEMBER 28, 1948 NEW ENGLAND SURVEY SERVICES INC." RECORDED IN PLAN BOOK 34 PAGES 34 AND 38.

2. "PLAN OF GLENWOOD DEERING MAINE WOOD, HARMON & CO. MAY 1895 JORDAN & RICHARDSON" RECORDED IN PLAN BOOK 8 PAGE 17.

3. "PLAN OF LOTS IN SUNSET HEIGHTS SEC. A OWNED BY CHARLES KAATZ FEBRUARY 1960 SURVEY BY – CARL E. EMERY" RECORDED IN PLAN BOOK 52 PAGE 53.

4. "REVISION SUNSET HEIGHTS SECTION "C" PORTLAND, MAINE MADE FOR SUN REALTY CO. AUG. 1976 ROBERT P. TITCOMB INC." RECORDED IN PLAN BOOK 114 PAGE 60.

5. "PORTLAND GARDENS IN CITY OF PORTLAND, MAINE OWNED BY J. W. WILBUR JULY 1ST 1912 A.L. ELIOT, CE" RECORDED IN PLAN BOOK 12 PAGE 23.

6. "SUBDIVISION PLAN – SITE PLAN DALE COURT QUALITY DEVELOPMENT CO. 5/10/85 HERBERT P. GRAY" RECORDED IN PLAN BOOK 149 PAGE 22.

7. "HOLM AVENUE & TAFT AVENUE (DALE ST. TO ROBIN ST.) STREET LINE RETRACEMENT PLAN NOVEMBER 2003 CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING SECTION" FILED WITH THE CITY AS 992/15.

8. "RAND ROAD SIDELINE SURVEY FROM PORTLAND TERMINAL RAILROAD TO BRIGHTON AVE. AND A PORTION OF BRIGHTON AVE. NOV. 13, 2003 CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING SECTION" FILED WITH THE CITY AS 882/10.

9. CITY ENGINEERING DEPARTMENT BLUE SHEETS FOR BRIGHTON AVENUE, WARWICK STREET, ORONO STREET, SUNSET LANE, CEDARHURST LANE PINECREST ROAD, PURCHAS STREET AND GODFREY STREET.

10. "CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS WEST SIDE INTERCEPTOR SYSTEM CITY HOME BRANCH RIGHT OF WAY JUNE 9, 1937" FILED WITH THE CITY AS 579/5.

11. "EXISTING CONDITIONS PLAN AT HALL SCHOOL, ORONO ROAD, PORTLAND, MAINE MADE FOR PORTLAND PARKS & RECREATION DEPARTMENT" DATED MAY 13, 1999 BY OWEN HASKELL, INC.

Notes:

1. OWNER OF RECORD: CITY OF PORTLAND, PORTLAND PUBLIC SCHOOLS, 196 ALLEN AVENUE, PORTLAND, MAINE 04103 CUMBERLAND COUNTY REGISTRYOF DEEDS BOOK 2324 PAGE 92.

2. LOCUS IS SHOWN AS PORTLAND PROPERTY MAP 276 BLOCK A LOT 2 AND MAP 275 BLOCK C LOTS 48, 76 AND 101.

3. BEARINGS ARE BASED ON GRID NORTH NAD83. CITY COORDINATES FOR MONUMENT AT NORTHWEST CORNER OF RIGGS STREET AND WARWICK STREET AND MONUMENT AT SOUTHEAST CORNER OF HALL SCHOOL PROPERTY USED.

4. ELEVATIONS ARE BASED ON CITY DATUM. BENCH MARK: 3' OFFSET MONUMENT AT RIGGS AND WARWICK STREET, ELEVATION 63.61 ESTABLISHED BY LEVEL RUN FROM CITY 3' OFFSET MONUMENT OPPOSITE ESSEX STREET ELEVATION 61.39 MAY 1999, PRIOR TO MONUMENT BEING CUT DOWN.

5. WARWICK STREET AND OTHER NEARBY STREETS ESTABLISHED BASED ON MARKERS OR TIES SHOWN ON CITY ENGINEERING DEPARTMENT PLANS.

6. LOTS ON PLAN REFERENCE 2, ALONG ORONO ROAD, WARWICK STREET, LEMOND STREET AND WESSEX S.REET ESTABLISH BY PLAN DIMENSIONS FIT TO 3' OFFSET MONUMENT AT RIGGS STREET AND WARWICK STREET AND IRON PIPE FOUND AT ANGLE IN WARWICK STREET NEAR SCHOOL ENTRANCE.

7. LINES ALONG PORTLAND HOUSING AUTHORITY, SAGAMORE VILLAGE, ESTABLISHED BY DIMENSIONS ON PLAN REFERENCE 1 AS FIXED ON CITY TIES TO ESTABLISH PURCHAS AND GODREY STREETS.

8. SEVERAL CONCRETE MONUMENTS, APPARENTLY SET FOR THE U.S. GOVERNMENT, WERE FOUND NEAR THE PERIMETER OF THIS LOT. THE EASTERLY LINE OF THIS LOT, FROM WARWICK STREET TO AND ALONG THE SEWER EASEMENT, WAS HELD ON THE MONUMENTS FOUND, WHICH MATCHED THE DIMENSIONS ON PLAN REFERENCE 1.

9. LINE ALONG PORTLAND GARDENS (PLAN REF. 5) AND DALE COURT CONDOMINIUM (PLAN REF. 6) BASED ON PLAN REF. 5 DIMENSIONS AS TIED TO MARKERS FOUND ON TRAFT STREET AS SHOWN ON PLAN REF. 7.

10. THE U.S. GOVERNMENT APPARENTLY TOOK UP TO THE WEST SIDE OF THE SEWER EASEMENT NEAR THE END OF CEDARHURST AND PINECREST. THE LOTS ON THE PLANS IN THOSE AREAS DO NOT GO TO THE WEST SIDE OF THE SEWER EASEMENT. THIS LEAVES A GAP, POSSIBLY OWNED BY THE DEVELOPER OF THOSE LOTS.

11. PORTLAND PROPERTY MAP 276 SHOW LOTS D–1, D–3, AND E–4 WHICH ARE LISTED AS OWNED BY PORTLAND HOUSING AUTHORITY. THOSE LOTS ARE SHOWN AS PART OF THE HALL SCHOOL PROPERTY BECAUSE THEY ARE INCLUDED IN THE DEED TO THE CITY OF PORTLAND AND NOT INCLUDED IN THE DEED TO THE PORTLAND HOUSING AUTHORITY.

12. THE SEWER EASEMENT ACROSS THIS PROPERTY IS SHOWN AS PER CITY PLANS. HOWEVER, THE CITY CAN NOT HAVE AN EASEMENT OVER ITS OWN PROPERTY.

13. SURVEY PERFORMED UNDER CONDITIONS OF SNOW AND ICE.

14. THE WETLAND AREAS SHOWN ARE PRELIMINARY UNTIL FIELD VERIFICATION IN THE SPRING OF 2013 BY STATEWIDE SURVEYS, INC.

REV. 2	10/5/15	ADDITIONAL LOCATION/TOPOGRAPHY
REV. 1	5/7/13	ADD WETLAND F

BOUNDARY & TOPOGRAPHIC SURVEY
HALL SCHOOL
23 ORONO ROAD, PORTLAND, MAINE
MADE FOR
OAK POINT ASSOCIATES

STATE OF MAINE
JOHN C. SCHMANDA
NO. 1252
PROFESSIONAL LAND SURVEYOR

OWEN HASKELL, INC.
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207)774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	RS	Date	Job No.
Trace By	JLW	FEBRUARY 14, 2013	2013–002P
Check By	JCS	Scale	Drwg. No.
Book No.	FILE	1" = 40'	3 OF 3

Cumberland County Register of Deeds Current datetime: 8/28/2015 12:57:47 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Town	Book/Vlm/Page	File Date
16491	DEED	PORTLAND	02324/92	11/05/1956

Street	Street Name	Description

Grantor	Grantee	Street	Property Description
USA	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

92

92

92

United States to Portland City of --- Q C

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS: That the UNITED STATES OF AMERICA acting by and through the Secretary of Health, Education, and Welfare by the Regional Director of the Department of Health, Education, and Welfare, Region I, under and pursuant to the powers and authorities contained in the Federal Property and Administrative Services Act of 1949 (63 Stat. 377) as amended, Reorganization Plan No. 1 of 1953 as approved and made effective by Public Law 13, 83rd Congress, 1st Session and Department of Health, Education, and Welfare Delegation 8-1 (20 F.R. 8835) for and in consideration of the observance and performance by the City of Portland of the considerations, covenants, conditions and restrictions hereinafter contained and other good and valuable consideration receipt of which is hereby acknowledged does hereby remise, release, bargain, sell and convey and forever quitclaim unto the said City of Portland, its successors and assigns, forever all its right, title and interest subject to the covenants, reservations, restrictions, conditions and exceptions hereinafter set forth in and to the following described property situate in the County of Cumberland, State of Maine, to wit:

A certain parcel of land situated in the City of Portland, County of Cumberland and the State of Maine, being more particularly bounded and described as follows:

> Beginning at a point at the end of the Northwesterly side of Wessex Street 416.26' from the corner of Brighton Avenue thence Northeasterly by continuation of Westerly line of Wessex Street a distance of 61.74' to corner of land now or formerly of Armeida M. Martelle; thence by Martelle land N 62°-34'-30" W a distance of 99.91' to a point; thence N 27°-29'-30" E by boundary of Sagamore Village a distance of 650.38' to Southwesterly side of Godfrey Street; thence Easterly by said line of Godfrey Street a distance of 99.06' to Westerly side of Portland Water District Right of Way; thence Northerly by said Right of Way 50.0' to Northerly side of Godfrey Street; thence by Northerly side of Godfrey Street 99.00'; thence N 27°-29'-30" E a distance of 369.43' to a point; thence N 62°-30'-30" W a distance of 375.61' to the Easterly side of Gorges Street; thence by the Easterly side of Gorges Street 52.42' to land now or formerly a portion of Portland Gardens Subdivision; thence N 56°-44'-20" E a distance of 757.75' to the Southwesterly side of Ravina Street, thence Southeasterly by the line of Ravina Street 3.77' to an angle; thence S 41°-43' E a distance of 432.07' by the Southwest side of the West side Interceptor Sewer Right of Way to an angle; thence S 30°-00' E by said side of Sewer Right of Way 68.39' to land now or formerly of Claire Malloy; thence S 62°-14'-45" W a distance of 78.39' to a point; thence continuing by the Malloy land S 25°-09'-00" E, a distance of 444.60' to the Northwesterly side of Warwick Street; thence by said line of Warwick Street S 71°-23'-30" W a distance of 246.25' to an angle; thence by the Westerly side of Warwick Street a distance of 01.37' to land now or formerly of Glenwood Subdivision; thence by land of

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Glenwood Subdivision S 74°-21' W a distance of 443.66' to a point; thence S 42°-06' E a distance of 346.0' to the Westerly side of Warwick Street, thence by land now or formerly Glenwood Subdivision S 62°-19'-20" W a distance of 873.50' to the point of beginning, totalling 926,395 square feet more or less, the same comprising lots numbered 92,93,94,95,96 as shown on Plan Number 17036 of Sagamore Village, City of Portland, Cumberland County, Maine, by New England Survey Service of 73 Tremont Street, Boston, Massachusetts - July 27, 1954, recorded in Cumberland County Registry of Deeds Plan Book 34, pages 34-38.

The above described premises are transferred subject to all easements and rights of way of record, including a right-of-way fifty (50) feet in width taken by the Portland Water District in accordance with Declaration of Taking, dated October 19, 1914, and filed October 20, 1914 in the office of the County Commissioners for the County of Cumberland and in the Cumberland County Registry of Deeds in Book 938, Page 136. A Plan of said taking was also filed in Plan Book 12, Page 24, in said Registry, reference being made to said Declaration of Taking and said Plan for a more detailed description of said-right-of-way.

Said property transferred hereby was declared surplus and was assigned to the Department of Health, Education, and Welfare for disposal for educational purposes pursuant to the provisions of the aforementioned Federal Property and Administrative Services Act of 1949 and of applicable rules, regulations and orders.

This deed is executed and delivered to the said City of Portland, its successors and assigns, without covenants or warranties, either express or implied.

TO HAVE AND TO HOLD the foregoing described premises with all privileges and appurtenances thereto belonging, except any property excepted above, and any rights reserved above, and under and subject to the covenants, reservations, conditions and restrictions set forth in this instrument, to the said City of Portland, its successors and assigns, to their own use and benoof, forever, AND the said City of Portland has certified and by the acceptance of this quitclaim deed agrees for the City of Portland, its successors and assigns, as follows:

1. That for a period of twenty (20) years from the date of this deed the above described property herein conveyed, shall be utilized continuously for educational purposes in accordance with the proposed

program and plan as set forth in the application of the City of Portland dated September 10, 1954, and supplement dated May 15, 1956, and attachments referred to therein and for no other purpose.

2. That during the aforesaid period of twenty (20) years, the City of Portland will resell, lease, mortgage, or encumber, or otherwise dispose of the above described property or any part thereof or interest therein only as the Department of Health, Education, and Welfare or its successor in function in accordance with its existing regulations, may authorize in writing.

3. That one year from the date of this deed and annually thereafter for the aforesaid period of twenty (20) years unless the Department of Health, Education, and Welfare or its successor in function otherwise directs, the City of Portland will file with the Department of Health, Education, and Welfare or its successor in function reports on the operation and maintenance of the above described property and will furnish, as requested, such other pertinent data evidencing continuous use of the property for the purpose specified in the above identified application.

In the event of a breach of any of the conditions set forth above whether caused by the legal or other inability of said City of Portland, its successors or assigns, to perform any of the obligations herein set forth, all right, title, and interest in and to the above described property shall, at its option revert to and become the property of the UNITED STATES OF AMERICA, which shall have an immediate right of entry thereon, and the City of Portland, its successors or assigns, shall forefeit all right, title, and interest in and to the above described property and in any and all of the tenements, hereditaments, and appurtenances thereunto belonging; PROVIDED HOWEVER, that the failure of the Department of Health, Education, and Welfare, or its successor in function, to insist in any one or more instances upon complete performance of any of the said conditions shall not be construed as a waiver or a relinquishment of the future performance of any such conditions, but the City of Portland's obligations with respect to such future performance shall continue in full force and effect; PROVIDED FURTHER that in the event the UNITED STATES OF AMERICA fails to exercise its option to re-enter the premises for any such

breach of said conditions within twenty-one (21) years from the date of this conveyance, the conditions set forth above together with all rights of the UNITED STATES OF AMERICA to re-enter as in this paragraph provided, shall, as of that date, terminate and be extinguished.

In the event title to the above described premises is reverted to the UNITED STATES OF AMERICA for noncompliance or voluntarily reconveyed in lieu of reverter, the City of Portland at the option of the Department of Health, Education, and Welfare or its successor in function, shall be responsible and shall be required to reimburse the UNITED STATES OF AMERICA for the decreased value of the above described property not due to reasonable wear and tear, acts of God, and alterations and conversions made by the City of Portland to adapt the property to the educational use for which the property was acquired. The UNITED STATES OF AMERICA shall, in addition thereto, be reimbursed for such damages including such costs as may be incurred in recovering title to or possession of the above described property, as it may sustain as a result of the noncompliance.

The City of Portland may secure abrogation of the conditions numbered 1, 2, and 3 herein by:

a. Obtaining the consent of the Department of Health, Education, and Welfare, or its successor in function: and

b. Payment to the UNITED STATES OF AMERICA of the public benefit allowance granted to the City of Portland of 100 per cent from the current market value of Five Thousand Two Hundred and Twenty-Five Dollars ($5,225) less a credit at the rate of five (5) per cent for each twelve (12) months during which the property has been utilized in accordance with the purposes specified in the above identified application.

The City of Portland by the acceptance of this deed, covenants and agrees, for itself, its successors and assigns, that the United States of America shall have the right during any period of emergency declared by the President of the United States or by the Congress of the United States to the full unrestricted possession, control and use of the property hereby conveyed, or of any portion thereof, including any additions or improvements thereto made subsequent to this conveyance. Prior to the expiration or termination of the period of restricted use by the transferee, such use may be either exclusive or non-exclusive and shall not impose any obligation

upon the Government to pay rent or any other fees or charges during the period of emergency, except that the Government shall (i) bear the entire cost of maintenance of such portion of the property used by it exclusively or over which it may have exclusive possession or control, (ii) pay the fair share, commensurate with the use, of the cost of maintenance of such of the property as it may use non-exclusively or over which it may have non-exclusive possession or control, (iii) pay a fair rental for the use of improvements or additions to the premises made by the City of Portland without Government aid, and (iv) be responsible for any damage to the property caused by its use, reasonable wear and tear and acts of God and the common enemy excepted.

This instrument is intended to take effect as a sealed instrument.

IN WITNESS WHEREOF, the UNITED STATES OF AMERICA, acting by and through the Secretary of Health, Education, and Welfare has caused these presents to be signed in its name by Lawrence J. Bresnahan, Regional Director, Region I, Department of Health, Education, and Welfare this 25th day of October 1956.

UNITED STATES OF AMERICA
Acting by and through the
Secretary of Health, Education, and Welfare

By Lawrence J. Bresnahan
LAWRENCE J. BRESNAHAN
Regional Director, Region I
Department of Health, Education, and Welfare

WITNESSES:

Joel Cohen

Barbara M. Heard

ACKNOWLEDGMENT

COMMONWEALTH OF MASSACHUSETTS)
COUNTY OF SUFFOLK)

Before me a Notary Public in and for the Commonwealth of Massachusetts then and there personally appeared Lawrence J. Bresnahan duly empowered, authorized and delegated by the Secretary of Health, Education, and Welfare pursuant to a Delegation of Authority, who signed the foregoing instrument in behalf of the UNITED STATES OF AMERICA and acknowledged the same to be his free act and deed in his said capacity and the free act and deed of said UNITED STATES OF AMERICA.

Philip E. O'Brien
Notary Public

Aug. 30, 1963
My Commission Expires

PHILIP E. O'BRIEN
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS

ACCEPTANCE

I, Julian H. Orr, City Manager of the City of Portland having been duly authorized by Resolution of the City Council of the City of Portland to take whatever action may be necessary to accept title to the property described in this deed for and on behalf of the City of Portland, do hereby accept this deed on behalf of the City of Portland and agree to all the terms, covenants, reservations, restrictions and conditions contained herein.

WITNESSES:

M. Jane Young

Robert W. Crossman

Julian H. Orr
City Manager
City of Portland, Maine

ACKNOWLEDGMENT OF ACCEPTANCE

State of Maine
County of Cumberland, ss November 2, 1956

Personally appeared the above-named Julian H. Orr, City Manager, and acknowledged the foregoing to be his free act and deed in his said capacity.

Before me.

Patricia E. Mullen
Notary Public

Commission Expires Oct. 17, 1957

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE NOV 5 1956
Received at 12 H 15 M P M. and recorded in
BOOK 2324 PAGE 92 Robert W. Crossman Register

Cumberland County Register of Deeds Current datetime: 6/28/2016 7:57:50 AM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	File Date	Rec Time	Type Desc.
6660	10/20/1914	3:00PM	MISCELLANEOUS

# of Pgs.	Book/Page	Doc. Status
4	00938/136	Verified/Certified

Town

NOL

Grantor	Grantee	Street	Property Description
PORTLAND WATER DISTRICT			

References

Book/Vlm/Page	Description	Recorded year

State of Maine. Cumberland, ss. Oct. 20th, 1914. Then personally appeared the above named John S. Jumper and acknowledged the foregoing instrument to be his free act and deed, before me,

Seth P. H. Carr

Justice of the Peace.

Received October 20, 1914, at 11h 50m A. M. and recorded according to the original

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Lowell to ✓ Rosenberg Assignment

KNOW ALL MEN BY THESE PRESENTS, that I, Anna F. Lowell of South Portland Maine, owner of and Mortgagee named in a certain mortgage given by Lynn Buckley of said South Portland to me to secure the sum of eighteen hundred dollars dated July 16, A. D. 1906, and recorded in Cumberland County Registry of Deeds, Book 778, Page 326, in consideration of one dollar and other valuable considerations paid by Samuel Rosenberg of Portland in said County the receipt whereof is hereby acknowledged, do hereby sell, assign, transfer and convey unto the said Samuel Rosenberg the said mortgage deed, the note, debt and claim thereby secured, and all my right, title and interest, by virtue of said mortgage, in and to the real estate therein described.

TO HAVE AND TO HOLD the same to the said Samuel Rosenberg and his heirs and assigns to their own use and behoof forever, subject, nevertheless to the conditions therein contained and to redemption according to but without recourse to me in any event.

IN WITNESS WHEREOF, I the said Anna F. Lowell have hereunto set my hand and seal this fifteenth day of July A. D. 1907.

Signed, sealed and delivered in presence of

K. A. Foley Anna F. Lowell Seal

State of Maine. Cumberland, ss. July 15, 1907. Then personally appeared the above named Anna F. Lowell and acknowledged the foregoing instrument to be her free act and deed.

Before me, Clarence A. Vincent

Justice of the Peace.

Received October 20, 1914, at 2h 10m P. M. and recorded according to the original

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Portland Water Dist. Certificate

"The PORTLAND WATER DISTRICT, a public municipal corporation created and existing under the provisions of Chapter 433 of the Private and Special Laws of Maine, approved March 27, 1907, entitled "An Act to Incorporate the Portland Water District" Hereby finds and declares it necessary for said Portland Water District to take and hold for the purposes of its incorporation by eminent domain as for public uses, the lands and interests therein hereinafter described, for laying and maintaining aqueducts and other structures for taking, distributing, discharging and disposing of water and for rights of way or roadways, to its sources of supply, dams, power stations, reservoirs, mains, aqueducts and other structures, and said Portland Water District

Hereby takes for the aforesaid purposes of its incorporation by the exercise of the right of eminent domain as for public uses and by virtue of the power and authority conferred by said Act, and under the franchises acquired from the Portland Water Company and Standish Water & Construction Company, the private lands and interests therein hereinafter described and shown on plan to be filed herewith in the office of the County Commissioners of Cumberland County and recorded herewith in the Registry of Deeds, in said Cumberland County, which said plans show the location of all lands or interests therein so taken with an appropriate description and the names of the owners thereof where known.

The following is a description of the location line of the parcels of land hereby taken.

PORTLAND WATER DISTRICT, TWENTY INCH MAIN, RIGHT OF WAY LOCATION.

Beginning at a point in land of Clinton Mosher situated in the City of Portland, County of Cumberland and State of Maine, said point being near the location of the Mountain Division of the Maine Central Railroad, and at Station 715 + 95 as shown on the "Plan of the Sebago Pipe Line" (otherwise known as the 42" main of the Portland Water District) which plan is duly recorded in Cumberland Registry of Deeds, Plan Book 12, Page 27; thence north 36 degrees and 5 minutes East over land of Clinton Mosher one hundred and thirty-four (134) feet, more or less, to station 1 + 34 and land of Daniel Dole Heirs; thence same course across land of the heirs of Daniel Dole two hundred and sixty-one (261) feet, more or less, to station 3 + 95 and location of the said Mountain Division of the Maine Central Railroad now of the Portland Terminal Company; thence across land of the Portland Terminal Company sixty-six (66) feet, more or less, to station 4+61 and land of Portland Lighting & Power Company; thence across land of the Portland Lighting & Power Co. thirty (30) feet, more or less, to station 4 + 91 and land of Lindon W. Lowell; thence across land of Lindon W. Lowell three hundred and thirty-one feet, more or less, to station 8 + 22 and to land of Hugh Little; thence across land of Hugh Little sixty (60) feet, more or less, to station 8 + 82 and to location of Webb Street; thence on the same course through Webb Street and thirteen (13) feet southerly of the northerly side line thereof to station 14 + 49.55; thence North fifty-four (54) degrees seven (7) minutes East to station 15 + 04.25; thence north thirty-six (36) degrees and five (5) minutes East to station 26 + 01.4; said station being on the westerly side line of Brighton Avenue and thirteen (13) feet southerly of the northerly side line of Webb Street; thence North five (5) degrees and twenty-eight (28) minutes West across Brighton Avenue to station 26 + 77 and to location of Wessex Street; thence north twenty-eight (28) degrees and forty-five (45) minutes East and parallel to and sixteen (16) feet northerly of the southerly side line of Wessex Street to station 31 + 52.8 and to land of Levia Valente; thence on the same course across lands of Levia Valente about nine hundred and fifty-one (951) feet to station 41 + 04 and land of Charles Barber; thence across land of Charles Barber six hundred and eighty-eight (688) feet, more or less, to

station 47 + 92 and land of Michella A. Carter; thence across land of Michella A. Carter about eleven hundred and seventy-eight (1178) feet to station 59 + 70 and land of Elizabeth M. Marshall or owners unknown; thence across land of Elizabeth M. Marshall about eighty (80) feet to station 60 + 50 and to land of the heirs of John F. Proctor; thence across land of the heirs of John F. Proctor, or owners unknown, about six hundred and eighty-five (685) feet to station 67 + 35 and to land of Trustees of Evergreen Cemetery; thence on the same course of North twenty-eight degrees (28) forty-five (45) minutes East to station 67 + 45; said location being across land owned by the Trustees of Evergreen Cemetery; thence North eleven (11) degrees one (1) minute East across land of said Trustees of Evergreen Cemetery to station 69 + 98 and to location of the Worcester & Nashua Division of the Boston & Maine Railroad, now of the Portland Terminal Co.; thence on the same course across land of the Portland Terminal Co. about sixty-six (66) feet to station 70 + 64 and to land of Rachel A. Oldfield and land of Lyman W. Hanson; thence on the same course across land of Rachel A. Oldfield and Lyman W. Hanson about four hundred and fifty (450) feet to Warren Avenue.

The above location from the forty-two inch main to Webb Street is forty (40) feet in width, the location line being thirteen (13) feet southerly of the northerly side line of said location; through Webb Street and Wessex Street the location follows the limits of the Streets.

The location from station 31 + 52.8 to Warren Avenue is fifty (50) feet in width. The location line being sixteen (16) feet northerly of the southerly side line of said location. The location description of said twenty inch main, as above described, is further shown on a plan to be recorded herewith marked.

"Portland Water District Twenty inch Main Right of Way Plan"

Scale 1 inch 200 feet.

and signed by the Trustees of the Portland Water District, which plan, as required by law, is made a part of the aforesaid taking in exercising the rights of eminent domain as aforesaid. On this plan is shown the location of all lands so taken, the position and width of the right of way and the names of the owners thereof, if known, together with the points at which the above described location line crosses property lines of the several different owners. These points of crossing are designated by figures called stations that indicate the distances in lengths of one hundred (100) feet and fractions thereof from the starting point on the 42" main. The names of the owners of private lands so taken are shown on said plan.

The aforesaid description and plans of the locations of the lands taken are to be filed in the office of the County Commissioners of Cumberland County and recorded in the Registry of Deeds in said Cumberland County in accordance with the provisions of said Chapter 433 of the Private and Special Laws of the State of Maine, Approved March 27, 1907, for the purpose of exercising the aforesaid rights of eminent domain.

Dated at Portland, Maine, this nineteenth day of October, A. D. 1914.

Portland Water District, by William L. Blake
Albert D. Boyd
Lindsay B. Griffin
R. E. O'Brien
Wm. H. McDonald Trustees.

Received October 20, 1914, at 3h P. M. and recorded according to the original

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Munjoy Land Co. to Portland Water Dist. Warranty

KNOW ALL MEN BY THESE PRESENTS, that Munjoy Land Company a corporation duly organized and existing under the laws of the State of Maine, in consideration of one dollar and other considerations paid by Portland Water District, a Public Municipal Corporation also created and existing under the laws of said State, the receipt whereof it does hereby acknowledge, does hereby give,grant, bargain, sell and convey unto the said Portland Water District, its successors and assigns forever all and singular the real estate belonging to the said Munjoy Land Company wherever situated and more particularly described as follows:

(1) Two lots of land situated in the City of Portland, County of Cumberland and State of Maine, on the northeasterly side of Montreal Street and being lots numbered 83 and 84, as described on Marshall's Plan, recorded in said Cumberland Registry Plan Book 1, Page 41, and being a portion of the premises conveyed to George P. Wescott by warranty deed from the Merchant's National Bank October 14, 1886, and recorded in said Cumberland Registry of Deeds, Book 545, Page 311.

(2) A certain lot of land situated in Portland aforesaid on Munjoy Hill, and bounded and described as follows, viz: Commencing at the land formerly of the Portland Water Company on the southerly side of Walnut Street; thence easterly by said Walnut Street to the Easterm Promenade, being 292.13 feet more or less;thence southerly by said Eastern Promenade one hundred and eighty-two feet, more or less, to Montreal Street; thence westerly by said Montreal Street three hundred and fifty-three (353) feet, more or less, to the land formerly of Daniel K. Reed; thence northerly by the land formerly of said Reed and the land formerly of said Portland Water Company one hundred and seventy-two feet (172), more or less, to the place of commencement, containing fifty-five thousand six hundred and ninety one feet (55,691), more or less, being the same premises conveyed to said Munjoy Land Company by Quit-claim deed of Alexander B. Stephenson dated Jan. 3, 1896, and recorded in said Cumberland Registry of Deeds, Book 631, Page 201.

(3) A certain lot or parcel of land, situated in said City of Portland in that part thereof known as East Deering and bounded and described as follows,to wit Beginning at a stake at the southwesterly corner of a lot of land fronting on Main Street and now or formerly belonging to G. M. Leighton; thence southwesterly on a course that shall be at right angles to Main Street four hundred and fifty (450) feet; thence southerly about sixty-three (63) feet to a proposed street fifty (50) feet wide and called Water Street and extending westerly along the bank of Back Cove; thence easterly at right angles to last course and by said Water Street about one hundred and forty-eight (148) feet to another proposed street

Cumberland County Register of Deeds Current datetime: 6/28/2016 7:58:30 AM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	File Date	Rec Time	Type Desc.
139	10/20/1914	4:16PM	PLANS

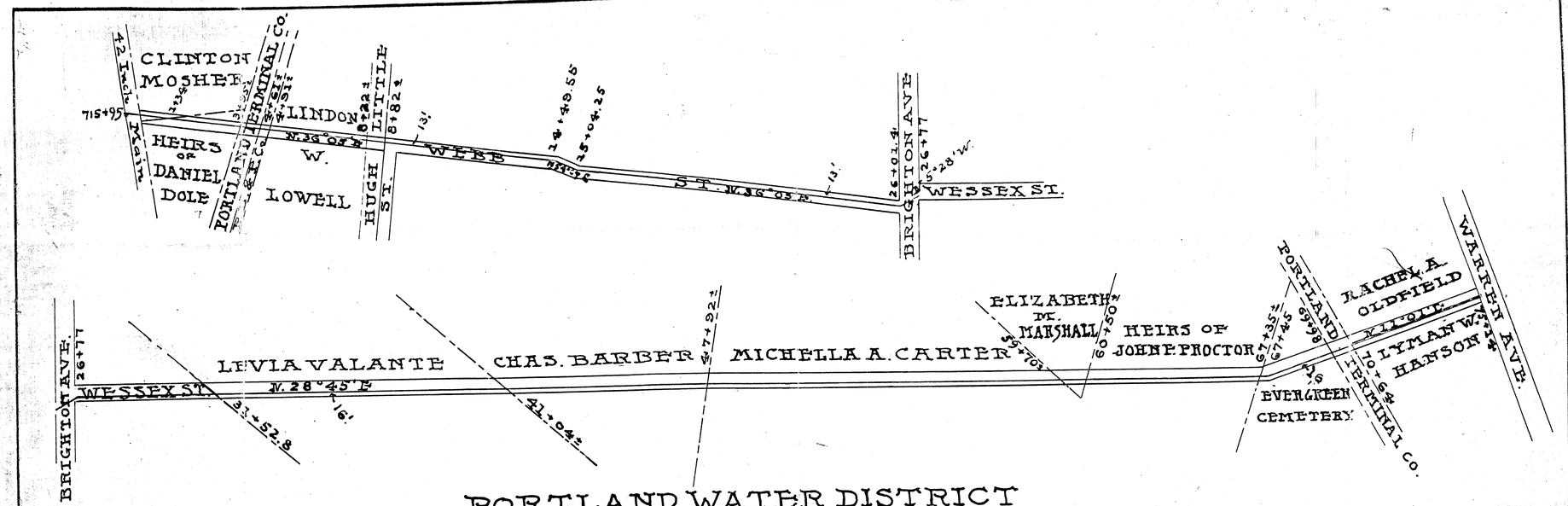
Comments	Book/Page	Doc. Status
	00012/24	Verified/Certified

Town
PORTLAND

Map	Street	Street	Property Description
PLAN OF PORTLAND WATER DISTRICT RIGHT OF WAY	PORTLAND WATER DISTRICT , MOSHER CLINTON, MAXFIELD MARY A, DOLE DANIEL, CHENERY DANIEL D, DOLE DANIEL, PORTLAND TERMINAL CO , PORTLAND LIGHTING & POWER CO , LOWELL LINDON W, LITTLE HUGH, VALANTE LEVIA, BARBER CHARLES, CARTER MICHELLA A, MARSHALL ELIZABETH M, PROCTOR JOHN, EVERGREEN CEMETERY , OLDFIELD RACHEL A, HANSON LYMAN, WEBB ST , HUGH ST , BRIGHTON AVE , WESSEX ST , WARREN AVE		

References

Book/Vlm/Page	Description	Recorded year



PORTLAND WATER DISTRICT

TWENTY INCH MAIN RIGHT-OF-WAY PLAN

SCALE: 1 INCH = 200 FEET

SHOWING LANDS IN PORTLAND BELONGING TO CLINTON MOSHER – MARY A. MAXFIELD, DANIEL DOLE JR., & DANIEL D. CHENERY, TRUSTEES OF THE ESTATE OF DANIEL DOLE - PORTLAND TERMINAL CO. – PORTLAND LIGHTING & POWER CO. LINDON W. LOWELL - HUGH LITTLE - LEVIA VALANTE - CHARLES BARBER - MICHELLA A. CARTER - ELIZABETH M. MARSHALL - HEIRS OF JOHN PROCTOR OR OWNERS UNKNOWN - TRUSTEES OF EVERGREEN CEMETERY - RACHEL A. OLDFIELD - & LYMAN W. HANSON. TAKEN BY THE PORTLAND WATER DISTRICT BY EMINENT DOMAIN BY VOTE OF ITS TRUSTEES OCTOBER 5th 1914 A.D. SAID PLAN BEING FILED IN THE OFFICE OF THE COMMISSIONERS OF CUMBERLAND COUNTY AND RECORDED IN THE REGISTRY OF SAID COUNTY OF CUMBERLAND IN THE EXERCISE OF SAID RIGHT OF EMINENT DOMAIN

PORTLAND WATER DISTRICT

By William H. Dobbin
Wm. H. Dobbin
Wm. D. Boyd.
Lindsay B. Griffin
Richard E. O'Brien
Wm. F. McDonald
} TRUSTEES

Percy H. Richardson, C.E.

CUMBERLAND S.S. REGISTRY OF DEEDS
RECEIVED October 20, 1914 AT 2 P.M.
RECORDED IN BOOK 712 PAGE 24
ATTEST Frank L. Clark REGISTER

24

EAS FILE COPY, IRVINE, CA
12,184.25
27
EP-12

PLAN BOOK #12 PAGE #24

Appendix B – State Approvals

The project has received both Site Plan Approval (October, 2015) and Concept Approval (January, 2016) from the State of Maine as required by their Major Capital Improvements Program.

This project is subject to the following State permits, which will be received prior to awarding the construction contract for the project in Spring, 2017:

- Maine DEP Site Location of Development Permit
- Natural Resources Protection Act Individual Permit (Tier I Freshwater Wetland Alteration of 5,000 ft^2 - 9,999 ft^2)

Appendix C – Financial Capacity

The estimated cost for this project is approximately $29.7 million.

Funding for the project will be provided by the State of Maine Major Capital Improvements Program. The project received concept approval from the Department of Education in January, 2016, and the project funding was approved by local referendum in April, 2016. Copies of the project budget sheet submitted to the State as part of their concept review/approval and correspondence from the City confirming approval of the local referendum are included in this section.

Order 145-15/16
Motion to Postpone to 2/17/2016: 9-0 on 2/1/2016
Passage: 9-0 on 2/17/2016 Effective 2/27/2016

ETHAN K. STRIMLING (MAYOR)
BELINDA S. RAY (1)
SPENCER R. THIBODEAU (2)
EDWARD J. SUSLOVIC (3)
JUSTIN COSTA (4)

CITY OF PORTLAND
IN THE CITY COUNCIL

DAVID H. BRENERMAN (5)
JILL C. DUSON (A/L)
JON HINCK (A/L)
NICHOLAS M. MAVODONES, JR (A/L)

ORDER SUBMITTING ELEMENTARY SCHOOL CONSTRUCTION PROJECT BOND ORDER TO REFERENDUM

WHEREAS, contemporaneously herewith the City Council adopted an order authorizing the design, construction, furnishing and equipping of a new elementary school to replace Hall Elementary School with total project costs in the aggregate not to exceed $29,720,456 (the "Project"), and further authorizing issuance of the City's bonds in an amount not to exceed $29,720,456 to finance the costs of the Project (the "School Order") and

WHEREAS, Article VII, Section 16 of the City Charter and 20 M.R.S.A. §15904 require that the School Order be submitted to the voters of the City following a public hearing;

WHEREAS, the City Council held a public hearing on the School Order at its regular meeting held February 1, 2016;

NOW, THEREFORE, BY THE CITY COUNCIL OF THE CITY OF PORTLAND BE IT HEREBY ORDERED:

THAT the City Council hereby submits to the legal voters of the City of Portland in accordance with Article VII, Section 16 of the City Charter and 20-A M.R.S.A. §15904, a proposition for the enactment of the School Order substantially in the form attached hereto as Exhibit A.

THAT the referendum questions be submitted to the voters at a special municipal election to be held on April 5, 2016, for the purpose of voting for or against the enactment of such School Order and the authorization of the project and the financing provided for therein.

THAT the City Manager, Director of Finance and Clerk be and hereby are authorized and directed to undertake all action necessary or appropriate to place said School Order before the voters at such election.

Exhibit A

Question __: Shall the Order entitled "ORDER APPROVING ELEMENTARY SCHOOL CONSTRUCTION PROJECT WITH TOTAL PROJECT COSTS NOT TO EXCEED $29,720,456 AND AUTHORIZING GENERAL OBLIGATION BONDS IN AN AMOUNT NOT TO EXCEED $29,720,456 THEREFORE", with provisions for early redemption as set forth in said Order be Approved?

(a) Project Location. The new elementary school and related improvements will be located at and near 23 Orono Road, Portland, Maine.

(b) State/Local and Non-State-Funded (Local Only) Portion of the New Elementary School. The project budget for the new elementary school and related improvement includes $28,329,971 of state/local costs and $1,390,485 of non-state-funded (local only) costs.

(c) Responsibility for Bond Payments. The City is responsible for the local share of the annual principal and interest payments for the new elementary school and related improvements included in the total cost of education appropriated pursuant to 20-A M.R.S.A. §15690(1), if any, and for the annual principal and interest payments for the non-state-funded (local only) portion of the new elementary school construction project.

(d) Additional Operating Costs. The estimated amount of the additional operating costs of the new elementary school and related improvements following completion of construction is $_____ for the first year and $_____ for the second year. The entire additional operating costs of the new elementary school during its first two years shall be borne by the City.

FINANCIAL STATEMENT PURSUANT TO 30-A M.R.S. § 5772(2-A)

The undersigned Director of Finance of the City of Portland hereby provides the following statement as required by 30-A MRSA §5772(2-A).

A. City Debt:

1.	Bonds outstanding and unpaid:	$_____
2.	Bonds authorized but unissued:	_____
3.	Bonds to be issued if the Order is approved:	$29,720,456

B. Costs:

The anticipated average interest rate on the proposed bonds is 4.00%. The actual interest rate will be determined at the time the bonds are sold. Assuming level principal payments over a twenty (20) year term, the estimated cost of the new bonds is:

Bond Principal:	$29,720,456
Estimated Interest Cost:	$13,268,564
Total Estimated Debt Service:	$42,989,020

C. Validity:

The foregoing represents an estimate of costs associated with the financing and the actual costs may differ due to changes in term and maturities of the bonds and market conditions. Under Maine law, the validity of the bonds and the voters' ratification of the bonds will not be affected by any errors in the foregoing estimates and the ratification of the voters is conclusive and the validity of the bonds is not affected by reason of any variance of actual costs or total debt service from the estimates provided above.

By:_____
Brendan T. O'Connell
Director of Finance

Hall School Referendum
April 5th, 2016

Refresh

District/Precinct	Voters Voted	Registered Voters	Percent Percentage
1-1	112	4947	2.26%
1-2	38	5701	0.67%
1-3	110	913	12.05%
2-1	255	6533	3.90%
2-2		4992	
3-1	432	5897	7.33%
3-2	426	4798	8.88%
4-1	276	6382	4.32%
4-2	90	3980	2.26%
5-1	145	3759	3.86%
5-2	228	6219	3.67%
CP	93	0	0.00%
City Wide Totals	2205	54121	4.07%

Katherine L Jones
City Clerk

City of Portland, Maine
Hall School Referendum Election

	Response	# of Votes	% of Votes
Municipal Referendum			
Question No. 1	**Yes**	**1922**	**87.17%**
Referendum Question	**No**	**283**	**12.83%**
Approval of Elementary School Construction Project			

Election Summary / Referendum Questions

Apr 05, 2016 Hall School Referendum Election

D-P 1-1

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	96	0	0	96
		No	16	0	0	16
		Total for Municipal Q# 1	112	0	0	112
		Precinct Total	112	0	0	112

D-P 1-2

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	32	0	0	32
		No	6	0	0	6
		Total for Municipal Q# 1	38	0	0	38
		Precinct Total	38	0	0	38

D-P 1-3

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	100	0	0	100
		No	10	0	0	10
		Total for Municipal Q# 1	110	0	0	110
		Precinct Total	110	0	0	110

D-P 2-1

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	233	0	0	233
		No	22	0	0	22
		Total for Municipal Q# 1	255	0	0	255
		Precinct Total	255	0	0	255

D-P 2-2

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes		0	0	
		No		0	0	
		Total for Municipal Q# 1		0	0	
		Precinct Total		0	0	

Election Summary / Referendum Questions

Apr 05, 2016 Hall School Referendum Election

D-P 3-1

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	403	0	0	403
		No	29	0	0	29
		Total for Municipal Q# 1	432	0	0	432
		Precinct Total	432	0	0	432

D-P 3-2

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	381	0	0	381
		No	45	0	0	45
		Total for Municipal Q# 1	426	0	0	426
		Precinct Total	426	0	0	426

D-P 4-1

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	232	0	0	232
		No	44	0	0	44
		Total for Municipal Q# 1	276	0	0	276
		Precinct Total	276	0	0	276

D-P 4-2

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	71	0	0	71
		No	19	0	0	19
		Total for Municipal Q# 1	90	0	0	90
		Precinct Total	90	0	0	90

D-P 5-1

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	134	0	0	134
		No	11	0	0	11
		Total for Municipal Q# 1	145	0	0	145
		Precinct Total	145	0	0	145

Election Summary / Referendum Questions

Apr 05, 2016 Hall School Referendum Election

D-P 5-2

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	160	0	0	160
		No	68	0	0	68
		Total for Municipal Q# 1	228	0	0	228
		Precinct Total	228	0	0	228

D-P CP

Question:	Question Description:		Votes	Aux	Unread	Grand Total
Municipal Q# 1	Approval of Elementary School Construction Project	Yes	80	0	0	80
		No	13	0	0	13
		Total for Municipal Q# 1	93	0	0	93
		Precinct Total	93	0	0	93

Yes	1,922	0	0	1,922
No	283	0	0	283
Citywide Total	2,205	0	0	2,205

State of Maine
Department of Education
Division of School Facilities Services

Major Capital School Construction
Project Budget

Portland Public Schools
Hall Elementary School
Grades Pre-K through 5, Capacity: 558 Students

Oak Point Associates
Concept Approval
January 13, 2015

		State/Local	Local Only & Other Funding	Total
A	**CONSTRUCTION**			
1	Construction Estimate	$22,091,000	$1,077,000	$23,168,000
		$0	$0	$0
	Subtotal	**$22,091,000**	**$1,077,000**	**$23,168,000**
B	**ADMINISTRATIVE COSTS & RESERVES**			
2	Land Purchase and Related Costs	$1,150	$0	$1,150
3	Moveable Equipment	$1,461,960	$16,740	$1,478,700
4	Advertising and Legal	$167,257	$65,000	$232,257
5	Percent for Art	$50,000	$0	$50,000
6	Project Reserves	$75,000	$35,000	$110,000
7	Project Contingency	$2,209,100	$107,700	$2,316,800
	Subtotal	**$3,964,467**	**$224,440**	**$4,188,907**
C	**FEES AND SERVICES**			
8	Architect / Engineer Basic Services	$1,502,188	$73,236	$1,575,424
9	Architect / Engineer Additional Services	$54,000	$0	$54,000
10	Architect / Engineer Reimbursables	$63,845	$0	$63,845
11	Site Selection	$15,225	$0	$15,225
12	Permitting & Approvals	$213,105	$0	$213,105
13	Survey and Soils	$71,760	$0	$71,760
14	Construction Testing	$25,000	$0	$25,000
15	Project Coordination	$76,281	$3,719	$80,000
16	Clerk of the Works	$167,056	$8,144	$175,200
17	Commissioning	$80,944	$3,946	$84,890
18	Other Professional Services	$5,100	$0	$5,100
	Subtotal	**$2,274,504**	**$89,045**	**$2,363,549**
D	**TOTAL PROJECT COST**	**$28,329,971**	**$1,390,485**	**$29,720,456**
E	**Other Funding Sources**	**$0**	**$0**	**$0**
F	**Maximum Bond Amounts**	**$28,329,971**	**$1,390,485**	**$29,720,456**

State of Maine
Department of Education
School Facilities Services

Concept Approval Budget
Major Capital Improvement Program
Project Budget Workbook

Portland Public Schools
Hall Elementary School
Grades Pre-K through 5, Capacity: 558 Students

Oak Point Associates
Concept Approval
January 13, 2015

A. CONSTRUCTION

Line #	*Line Item Description*	*State / Local*	*Local Only*	*Other Funding*	*Total*	*Vendor/Descriptions/Information*
		95.35%	*4.65%*			
1	**New Construction**					
1.1A	New Construction	$16,244,000	$0	$0	$16,244,000	81,220sf x $200/sf
1.1B	Local Options					
1	Security Upgrades (Hardware)	$0	$45,000	$0	$45,000	
2	Additional playground equipment	$0	$42,000	$0	$42,000	Lump sum request for additional equipment
3	Operable partitions	$0	$32,500	$0	$32,500	
4	SOD on Athletic Field	$0	$32,000	$0	$32,000	
5	Rehabilitation of Orono Road	$0	$27,000	$0	$27,000	
6	Middle School Size Gym	$0	$455,000	$0	$455,000	2,275sf additional space x $200/sf
7	Additional Cafeteria Square Footage	$0	$279,000	$0	$279,000	1,395sf additional space x $200/sf
8	Stormwater treatment improvements	$0	$164,500	$0	$164,500	
1.1B	Demolition					
1	Partial removal of rear classrooms	$75,000	$0	$0	$75,000	
2	Remaining building demolition	$325,000	$0	$0	$325,000	
1.1C	Temporary services for the existing Hall School	$75,000	$0	$0	$75,000	Wall enclosure/utilities/temporary facilities
1.1D	Site Work	$2,370,000	$0	$0	$2,370,000	
1.1E	Mat Foundation	$815,000	$0	$0	$815,000	
1.1F	On Site Utilities	$1,666,000	$0	$0	$1,666,000	
1.1G	Off Site Improvements	$521,000	$0	$0	$521,000	
	Subtotal	$22,091,000	$1,077,000	$0	$23,168,000	
1.2	Other					
1	XYZ	$0	$0	$0	$0	
	Subtotal	$0	$0	$0	$0	
Line 1 Totals		**$22,091,000**	**$1,077,000**	**$0**	**$23,168,000**	
A. CONSTRUCTION TOTAL		**$22,091,000**	**$1,077,000**	**$0**	**$23,168,000**	

B ADMINISTRATIVE COSTS & RESERVES

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
2	**Land Purchase and Related Costs**					
2.1	Purchase Price	$0	$0	$0	$0	
2.2	Appraisals	$1,150	$0	$0	$1,150	Two appraisals of Hains property
2.3	Survey	$0	$0	$0	$0	
2.4	Title Insurance	$0	$0	$0	$0	
2.6	Other	$0	$0	$0	$0	
Line 2 Totals		**$1,150**	**$0**	**$0**	**$1,150**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
3	**Moveable Equipment**					
3.1	Equipment	$974,640	$16,740	$0	$991,380	6% of line 1.1A, and 1.1B item 7
3.2	Technology	$487,320	$0	$0	$487,320	3% of line 1.1A
3.3	E-Rate	$0	$0	$0	$0	
3.4	Design	$0	$0	$0	$0	
Line 3 Totals		**$1,461,960**	**$16,740**	**$0**	**$1,478,700**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
4	**Advertising, Legal, & Insurance**					
4.1	Advertisements					
a	Newspaper Advertisements	$15,000	$0	$0	$15,000	prequalifications, bids, clerk, commissioning agent
b	Printing and Mailing	$0	$0	$0	$0	
	Subtotal	$15,000	$0	$0	$15,000	
4.2	Legal					
a	Referendum	$0	$0	$0	$0	Completed by in-house legal, no expense
b	Bond Anticipation Notes (BAN)	$0	$65,000	$0	$65,000	
c	Bond Sale		$0	$0	$0	
i	Advisory Fees ($1.00 per $1,000)	$29,000	$0	$0	$29,000	
ii	Printing Official Statement (Bonds)	$3,000	$0	$0	$3,000	
iii	pdf POS and OS	$800	$0	$0	$800	
iv	i-deal prospecturs (Bonds)	$1,500	$0	$0	$1,500	
v	Computer	$250	$0	$0	$250	
i	Postage to Bidders	$300	$0	$0	$300	
ii	Moody's Rating (scale)	$25,000	$0	$0	$25,000	
iii	S&P Rating (scale)	$23,000	$0	$0	$23,000	
iv	Paying Agent (scale)	$2,000	$0	$0	$2,000	
v	Bond Counsel ($1.25 per $1,000)	$36,250	$0	$0	$36,250	
d	Contract Review	$0	$0	$0	$0	Completed by in-house legal, no expense
e	Miscellaneous Legal Exp (list)	$0	$0	$0	$0	Completed by in-house legal, no expense
	Subtotal	$121,100	$65,000	$0	$186,100	
4.3	Insurance					
a	Builders Risk	$15,000	$0	$0	$15,000	Estimated-Awaiting proposal from Insurance Carrier
	Subtotal	$15,000	$0	$0	$15,000	
4.4	Referendum					
a	Warden	$2,112	$0	$0	$2,112	
b	Ward Clerk	$2,112	$0	$0	$2,112	

c	Deputy registrar	$2,112	$0	$0	$2,112	
d	Election Clerks	$6,221	$0	$0	$6,221	
e	Custodian	$1,200	$0	$0	$1,200	
f	City Staff	$1,350	$0	$0	$1,350	
g	Space rental	$250	$0	$0	$250	
h	Printing and Mailing	$800	$0	$0	$800	
	Subtotal	$16,157	$0	$0	$16,157	
Line 4 Totals		**$167,257**	**$65,000**	**$0**	$232,257	

Line #	*Line Item Description*	*State / Local*	*Local Only*	*Other Funding*	*Total*	*Vendor/Descriptions/Information*
5	**Percent for Art**	***All costs associated the Percent for Art project cannot exceed $50,000.***				
5.1	All installation costs related to the Percent for Art Project	$50,000		$0	$50,000	
Line 5 Totals		**$50,000**	**$0**	**$0**	$50,000	

Line #	*Line Item Description*	*State / Local*	*Local Only*	*Other Funding*	*Total*	*Vendor/Descriptions/Information*
6	**Project Reserves**					
6.1	Kindergarten relocation to Deering High	$75,000	$0	$0	$75,000	
6.2	LEED Certification	$0	$35,000	$0	$35,000	
6.3		$0		$0	$0	
Line 6 Totals		**$75,000**	**$35,000**	**$0**	$110,000	

Line #	*Line Item Description*	*State / Local*	*Local Only*	*Other Funding*	*Total*	*Vendor/Descriptions/Information*
7	**Project Contingency**					
7.1	5% Construction Contingency	$1,104,550	$53,850	$0	$1,158,400	
7.2	5% Construction Bid Contingency	$1,104,550	$53,850	$0	$1,158,400	
Line 7 Totals		**$2,209,100**	**$107,700**	**$0**	$2,316,800	

B	**ADMINISTRATIVE COSTS AND RESERVE TOTAL**	**$3,964,467**	**$224,440**	**$0**	**$4,188,907**

C. FEES AND SERVICES

Line #	*Line Item Description*	*State / Local*	*Local Only*	*Other Funding*	*Total*	*Vendor/Descriptions/Information*
8	**Architect / Engineer Basic Services**	***Budgeted amount must reflect contract agreements***				
	Concept Design Contract					
8.1	Space Allocation	$17,500	$0	$0	$17,500	Supplemental Agreement #1
8.2	Site Development	$70,000	$0	$0	$70,000	Supplemental Agreement #1
8.3	Building Design	$52,500	$0	$0	$52,500	Supplemental Agreement #1
8.4	Concept Design	$36,000	$0	$0	$36,000	Supplemental Agreement #1
	Full Services Contract					
8.5	Construction Documents, Bidding and Administration	$1,326,188	$73,236	$0	$1,399,424	

Line 8 Totals	**$1,502,188**	**$73,236**	**$0**	**$1,575,424**

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
9	**Architect / Engineer Additional Services**	*Budgeted amounts must reflect contract agreements*				
9.1	New vs Reno Analysis	$0	$0	$0	$0	New vs Reno requirements waived due to previous work
9.2	Facility Program Review					
9.2A	Alternative Site Analysis	$6,500	$0	$0	$6,500	Concept Design Contract
9.2B	Demographics Study	$3,500	$0	$0	$3,500	Concept Design Contract
9.3	Measured Drawings of Existing	$4,500	$0	$0	$4,500	Concept Design Contract
9.4	Site Approval	$39,500	$0	$0	$39,500	Concept Design Contract
Line 9 Totals		**$54,000**	**$0**	**$0**	**$54,000**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
10	**Architect / Engineer Reimbursables**	*Budgeted amounts must reflect contract agreements*				
10.1	Bid Printing	$25,000	$0	$0	$25,000	Contractor construction sets, plan rooms, BGS, DOE
10.2	Reproductions for Submissions/Meetings	$3,300	$0	$0	$3,300	
10.3	Postage and Shipping-Concept Design	$250	$0	$0	$250	
10.4	Mileage & Tolls	$1,750	$0	$0	$1,750	
10.5	State Fire Marshall Office - ADA and Construction Permit	$2,500	$0	$0	$2,500	Includes documents for submission
10.6	Demographics and Mapping	$6,545	$0	$0	$6,545	Davis Demographics, Concept Contract
10.7	Reproductions-Permit Applications	$2,500	$0	$0	$2,500	
10.8	Reproductions-Construction Period	$18,000	$0	$0	$18,000	Printing of submittals and associated documents
10.9	Postage and Shipping-Construction Period	$4,000	$0	$0	$4,000	
Line 10 Totals		**$63,845**	**$0**	**$0**	**$63,845**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
11	**Site Selection**					
11.1	Environmental Site Assessment					
11.1A	Phase 1 Site Assessment	$2,200	$0	$0	$2,200	MAI Environmental, Concept Contract
11.1B	Phase 2 Site Assessment	$5,055	$0	$0	$5,055	MAI Environmental, Supplemental Agreement 1
11.2	Vernal Pool Assessment	$0	$0	$0	$0	Completed under previous project
11.3	Traffic Study	$2,970	$0	$0	$2,970	Maine Traffic Resources, Concept Contract
11.4	Traffic Study-Counts	$1,500	$0	$0	$1,500	Maine Traffic Resources, Alternate Entrance Analysis
11.5	Archaeological Study	$0	$0	$0	$0	Not required
11.6	Wetland Studies	$0	$0	$0	$0	Completed under previous project
11.7	Soil Survey	$3,500	$0	$0	$3,500	Statewide Surveys
11.8	Other	$0	$0	$0	$0	
Line 11 Totals		**$15,225**	**$0**	**$0**	**$15,225**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
12	**Permitting and Approvals**	*State permits are allowable State/Local costs and local permits and approvals are Local Only costs*				
12.1	Traffic Permitting					
a	Traffic Study/Design Assistance	$18,205	$0	$0	$18,205	Maine Traffic Resources
	Subtotal	**$18,205**	**$0**	**$0**	$18,205	
12.2	Environmental Permitting					
a	Site Law (SLODA) Application Fee	$10,000	$0	$0	$10,000	
b	MDES General Construction Permit - app fee	$250	$0	$0	$250	
c	Air Emissions General Permit - app fee	$150	$0	$0	$150	
d	NRPA Permit By Rule - application	$1,000	$0	$0	$1,000	Statewide Surveys
e	NRPA Wetland Alteration - application fee	$2,500	$0	$0	$2,500	Statewide Surveys
f	In Lieu Fee Wetland Compensation	$50,000	$0	$0	$50,000	Estimated based on 11,000 sf wetland fill
g	In Lieu Fee Urban Impaired Stream	$50,000	$0	$0	$50,000	Estimated based on impervious area
	Subtotal	**$113,900**	**$0**	**$0**	$113,900	
12.3	Other (list)					
a	Central Maine Power	$35,000	$0	$0	$35,000	
b	Telephone	$4,000	$0	$0	$4,000	
c	Cable TV	$4,000	$0	$0	$4,000	
d	Water Service Connection, inspection	$10,000	$0	$0	$10,000	
e	UNITIL Connection Fee	$28,000	$0	$0	$28,000	
	Subtotal	**$81,000**	**$0**	**$0**	$81,000	
Line 12 Totals		**$213,105**	**$0**	**$0**	**$213,105**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
13	**Survey and Soils**					
13.1	Boundary Survey	$0	$0	$0	$0	Completed under previous project
13.2	Topographic Survey	$14,870	$0	$0	$14,870	Owen Haskell
13.3	Geotech - Test Pits and Borings	$10,890	$0	$0	$10,890	S.W. Cole, Concept Contract
13.4	Topographic Survey-Water line installation	$2,000	$0	$0	$2,000	Relocation of existing water main
13.5	Geotech-Construction Documents	$44,000	$0	$0	$44,000	
13.6	Other	$0	$0	$0	$0	
Line 13 Totals		**$71,760**	**$0**	**$0**	**$71,760**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
14	**Construction Testing**					
14.1	Construction Testing	$25,000	$0	$0	$25,000	
14.2	Other	$0	$0	$0	$0	
Line 14 Totals		**$25,000**	**$0**	**$0**	**$25,000**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
15	**Project Coordination**					
15.1	Project Coordinator	$76,281	$3,719	$0	$80,000	
15.2		$0	$0	$0	$0	
Line 15 Totals		**$76,281**	**$3,719**	**$0**	**$80,000**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
16	**Clerk of the Works**					
16.1	Clerk of the Works	$167,056	$8,144	$0	$175,200	
16.2		$0	$0	$0	$0	
Line 16 Totals		**$167,056**	**$8,144**	**$0**	**$175,200**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
17	**Commissioning**					
17.1	Commissioning Agent	$80,944	$3,946	$0	$84,890	
17.2		$0	$0	$0	$0	
Line 17 Totals		**$80,944**	**$3,946**	**$0**	**$84,890**	

Line #	Line Item Description	State / Local	Local Only	Other Funding	Total	Vendor/Descriptions/Information
18	**Other Professional Services** *Miscellaneous owner contracts*					
18.1	Enrollment Projections	$5,100	$0	$0	$5,100	Davis Demographics and Planning
18.2		$0	$0	$0	$0	
18.3		$0	$0	$0	$0	
Line 18 Totals		**$5,100**	**$0**	**$0**	**$5,100**	

C	**FEES AND SERVICES TOTAL**	**$2,274,504**	**$89,045**	**$0**	**$2,363,549**
D	**TOTAL PROJECT COST**	**$28,329,971**	**$1,390,485**	**$0**	**$29,720,456**

Appendix D – Technical Ability

Oak Point Associates has been involved in many State of Maine design and construction projects over the past several years, including:

- New Academic Building, York County Community College (Wells, Maine)
- Armed Forces Reserve Center, Maine Army National Guard (Brunswick, Maine)
- Ready Bay Addition, Maine Army National Guard (Waterville, Maine)
- Building 9 Addition and Alteration, Maine Air National Guard (South Portland, Maine)
- Construct Cottages, Department of the Navy (Great Pond, Maine)
- Repair Range, Bangor Training Site, Maine Army National Guard (Bangor, Maine)
- Repair Range, Gardiner Training Site, Maine Army National Guard (Gardiner, Maine)
- Hall-Dale Elementary School (Hallowell, Maine)
- Lincolnville Central School (Lincolnville, Maine)
- General Permitting, Funtown/Splashtown USA (Saco, Maine)
- Falmouth Elementary School/Athletic Field Complex/Woodchip Boiler Plant (Falmouth, Maine)
- Mount View School (Thorndike, Maine)

In addition, Oak Point Associates provided Municipal and MDEP permitting for the following projects:

- New Academic Building, York County Community College (Wells, Maine)
- Update existing Site Location of Development Permit, Maine Air National Guard (Bangor, Maine)
- Running Track, Maine Air National Guard (Bangor, Maine)
- Add to and Alter Fire, Crash and Rescue Station, Maine Air National Guard (Bangor, Maine)
- New Maintenance Hangar and Renovation of Building 493, Maine Air National Guard (Bangor, Maine)
- Armed Forces Reserve Center, Maine Army National Guard (Brunswick, Maine)
- Hall-Dale Elementary School (Hallowell, Maine)
- Lincolnville Central School (Lincolnville, Maine)
- Mitchell School (Waterville, Maine)
- Innovation Center, University of Maine (Orono, Maine)
- Gosnell Residence (Kennebunkport, Maine)
- General Permitting, Funtown/Splashtown USA (Saco, Maine)
- Mount View School (Thorndike, Maine)
- Falmouth Elementary School/Athletic Field Complex/Woodchip Boiler Plant (Falmouth, Maine)

Following are qualifications for Oak Point Associates' staff and other consultants involved with this project.

Jonah DeWaters, PE

Civil Engineer, LEED AP BD+C

Jonah DeWaters is a civil engineer with 11 years of experience in the engineering field in areas such as preliminary site inspection, surveying, conceptual design, site and drainage design, permitting, construction document preparation, construction cost estimation, construction administration and construction observation.

REGISTRATION & CERTIFICATION

- Professional Engineer: Maine
- LEED BD+C Accredited Professional

EDUCATION

- Bachelor of Science, Civil Engineering, University of New Hampshire

PROFESSIONAL ORGANIZATIONS

- Member, American Society of Civil Engineers (ASCE)

EXPERIENCE

New Academic Building, York County Community College, Wells, ME – Civil Engineer/Site Designer for a project consisting of a new academic building, parking lots, and associated site and stormwater infrastructure at the existing York County Community College campus in Wells. In addition to creating the construction documents and providing substantial construction administration assistance, the project also involved substantial environmental and municipal permitting, including interfacing with abutting landowners and construction within the public right-of-way and improvements to emergency vehicle access to the site.

Buildings for our Future, Portland Public Schools, Portland, ME – Civil Engineer/Site Designer for the development of conceptual designs and cost estimates for a multiphase project that involved performing significant renovations to Reiche Community School, Longfellow Elementary School, Presumpscot Elementary School and Harrison Lyseth Elementary School as well as the construction of a new Fred P. Hall School. The project aimed to increase equity at the schools, and the site portion focused on improving site circulation and parking, providing adequate outdoor play/learning spaces, and improving accessibility. Public outreach was a vital part of this project, and design charrettes were held as part of the information gathering phase of project at each of the schools with parents/members of the public and stakeholders (staff members, other users of the buildings, and maintenance personnel). Comments and concerns brought up at these meetings were incorporated into the development of the conceptual designs. These meetings were repeated at the end of the project so they would also have a chance to review the final designs.

Environmental Permitting, Maine Air National Guard, Bangor, ME - Civil Engineer/designer for multiphase permitting project that involved conducting a base-wide survey of all construction activities between 2004 and 2013 to update the base's existing Site Location of Development Application. This resulted in the preparation of four separate amendments to the existing Site Location of Development permit Air National Guard base in Bangor, including permitting for a new aircraft hangar facility, fire station, running track and training area. Permitting involved using innovative strategies to integrate stormwater treatment systems into existing areas to meet State requirements with minimal disturbance to the surrounding area, as three of the four permits were for facilities that had already been constructed or were currently under construction.

Armed Forces Readiness Center, Maine Army National Guard, Brunswick, ME - Civil Engineer/design assistant for project that involved the design and construction of a new sustainable 60,000 square foot training facility for multiple National Guard Units and associated training areas. The design included the integration of the building and site features into a site that bordered an existing Marine Corps Reserve Center building and had numerous environmental and physical constraints,

including a nearby significant vernal pool, high groundwater table, perched wetlands uphill of the site, and high bedrock elevations.

Road and Intersection Improvements, Naval Station Newport, Newport, RI - Civil Engineer/design assistant for project that involved the reconstruction and upgrade of a main entrance to the base in an environmental sensitive industrial area. The project required both re-designing the intersection to provide more efficient traffic flow as well as conducting drainage studies to alleviate existing drainage problems and the area as well as stormwater treatment and drainage design in accordance with Low-Impact Development standards and State regulations.

Falmouth Public Schools Sidewalk Construction and Intersection Improvements, Falmouth, ME – Civil Engineer/design assistant for a project that involved construction of approximately 3,250 linear feet of sidewalk along a heavily trafficked road in Falmouth to provide access from the neighboring houses to the school campus and intersection improvements at a nearby intersection. The design included significant improvements to the existing drainage along the road including the addition of catch basins and curb inlets to replace an existing open drainage system. The project required a Natural Resources Protection Act permit to address wetland impacts, a Site Location of Development Permit Amendment, including the creation of stormwater treatment systems to meet State requirements for stormwater as well as significant coordination and design review with utility companies, the U.S. Postal Service, by the town's Planning and Public Works Departments, Maine DEP, and the School Department.

Falmouth Elementary School and Athletic Fields, Falmouth, ME – Civil Engineer/Design Assistant for multi-year, multi-phase project including the complete redevelopment of an existing school campus and the construction of a 139,000 sf elementary school, including parking, circulation, community connectivity, athletic fields, and a wood-chip boiler plant. Site development constraints necessitated the use of innovative use of stormwater treatment methods to meet State requirements for stormwater runoff. Services included site selection and design, environmental permitting, creation of bidding documents, and construction administration.

Administration Facility, Moosehorn National Wildlife Refuge, Baring, ME – Civil Engineer/Design Assistant for construction of a new administration facility and associated structures, including parking, emergency generator enclosures, storm drainage, traffic circulation improvements, and utility layout including on-site wastewater disposal.

Bishop's Rock Landscaping Improvements, Naval Station Newport, Newport, RI – Civil Engineer/Design Assistant for Pavilion construction, shoreline protection, utility and drainage improvements and landscaping. Project included removal of existing riprap on 1,000 linear feet of exposed shoreline and replacement with 2- to 4-ton quarry stone for shoreline protection. Project design required careful management of existing soils due to presence of naturally occurring arsenic.

Visitor Facility Renovation, Access Road and Site Improvements, Great Swamp National Wildlife Refuge, Harding Township, New Jersey – Civil Engineer/Design

Assistant: Complete site design and permitting for a phased project involving the conversion of a historic farmhouse and grounds to a visitor facility. Civil/site work included a new on-site water source and supply system, upgrades to the on-site septic system, hard surfaced and reinforced turf parking areas, and a quarter mile access road with innovative stormwater treatment methods.

Water Park Expansion, Funtown/Splashtown USA, Saco, ME – Civil Engineer/ Design Assistant: Extensive storm drainage system design and analysis necessary to obtain state environmental permitting for a water park expansion that included two new water slides and additional seating/lounging areas. Project included careful selection and design of stormwater treatment in order to maximize usable space within the project boundary.

Parking Lot Expansion and Arcade Construction, Funtown/Splashtown USA, Saco, ME – Civil Engineer/Design Assistant: Site design and environmental permitting for the expansion/redevelopment of an existing parking lot and the construction of a new arcade building. Project included careful selection and design of stormwater treatment in order to maximize space for parking within the project boundary.

Mount View School, Thorndike, ME – Civil Engineer/Design Assistant: Extensive storm drainage design and analysis required for a state site location of development permit for a 180,000 sf Pre-K–12 school on a 70-acre site. Key site elements include track, soccer, baseball and softball fields, 400 parking spaces, and drop-off areas for 20 school buses.

Building Renovations, Torrey Hall and Science Building, University of Maine at Machias, Machias, ME – Civil Engineer/Design Assistant: Drainage system repairs and modifications as well as accessible entrance designs implemented as part of a substantial renovation for two buildings on the University campus.

Graduate Center Renovations, Stodder Hall, University of Maine, Orono, ME – Civil Engineer/Design Assistant: Site design including accessible entrances and parking areas as well as storm water treatment areas implemented as part of extensive renovations to the Stodder Hall graduate center.

Wastewater Treatment Design, Green Lake National Fish Hatchery, Ellsworth, ME – Design Assistant for design of a 3,300 square foot, 10,000 GPM treatment building with associated vehicular drives, underground utilities, process piping, flow diversion structures, solids storage tank, and redevelopment of existing sedimentation ponds. Design required maintaining gravity flow through the system, collection of wastewater flow from various locations, and innovative phasing to maintain flow during construction.

Robert C. Tillotson, AIA, PE

President, LEED AP

Robert Tillotson, Founder and President of Oak Point Associates, maintains a distinguished résumé of successful projects and satisfied clients. As both a Maine Licensed Architect and an Engineer, he has led the firm on multi-disciplined projects for federal agencies such as the U.S. General Services Administration, U.S. Navy, U.S. Coast Guard Academy, and U.S. Department of the Interior- Fish & Wildlife Service, as well as universities and schools, state agencies, municipalities, and the private sector.

REGISTRATION & CERTIFICATION

- Registered Architect: Maine, Vermont
- Professional Engineer: Maine, New Hampshire
- LEED Accredited Professional, USGBC

EDUCATION

- Bachelor of Science, Civil Engineering, University of New Hampshire
- Post Graduate Studies: University of New Hampshire; Southern NH University
- Harvard Graduate School of Education: Learning Environments for Tomorrow: Next Practices for Architects and Educators
- "Sustainable Architecture" Studies: Neocon–Chicago, Toronto, Baltimore; AIA National Convention–San Diego, Boston, San Francisco; "Green Build"–Portland, Oregon; Denver, Boston, Chicago
- Harvard University Graduate School of Design: Office Design, Public School Planning & Design, Dormitory Design, Theater Design
- International Architecture Studies: Architects Abroad - Italy, France, Spain

PROFESSIONAL ORGANIZATIONS

- AIA Committee on Architecture for Education
- American Institute of Architects
- Industry Advisory Board for College of Engineering and Physical Science at the University of New Hampshire

AWARDS

2010 AIA Committee on Architecture for Education Citation
University of Maine Foster Center for Student Innovation, Orono, Maine
-1 of only 10 projects to receive nationally

EXPERIENCE

Camden-Rockport Middle School, Camden, ME – Principal-in-charge and Architect for development of a facility study and campus master plan for Camden-Rockport Middle School (CRMS), with the goal of identifying the suitability of the CRMS site as an ongoing middle school campus. The project involved three major components: a facility assessment, a program analysis, and the development of building and site concepts (including phasing strategies and estimates of probable construction cost) for the school.

Falmouth Elementary School, Falmouth, ME – Principal-in-charge and Architect of a new, 140,000 sf, $46,250,000 Pre-K to 5 elementary school. The new facility has two gymnasiums, kitchen facilities, music rooms, and features roof gardens and on-site renewable energy sources. Led Oak Point Associates' integrated design efforts.

Buildings For Our Future, Portland Public Schools, Portland, ME - Principal-in-charge and Architect for planning, schematic design, estimating and scheduling of renovations, additions and new construction at five elementary schools.

Jefferson Village School, Jefferson, ME – Principal-in-charge and Architect for a new 58,000 sf, Pre-K–8 school facility. The building features a new gymnasium, cafeteria, commercial kitchen, science facilities, and educational spaces. A biomass boiler and solar hot water system provide heat for the facility and supplement water demand.

Chelsea Elementary School, Chelsea, ME – Principal-in-charge and Architect for new 60,000 sf Pre-K to 8 school. Construction was completed in 2011. This project is registered with USGBC and LEED Silver certification is anticipated.

Ellsworth Elementary/Middle School, Ellsworth, ME – Principal-in-charge and Architect. Ellsworth's two elementary schools were consolidated into one school addition to the renovated middle school. The 47,000 square foot renovation and 100,000 square foot addition provide renovated classrooms and science labs for the middle school students and new classrooms for the elementary students.

Vinalhaven School, Vinalhaven, ME – Principal-in-charge and senior designer of a 57,000 sf K-12 school, located on an island 15 miles off the coast of Maine. Led Oak Point Associates' integrated design efforts.

Hall-Dale Elementary School, Hallowell, ME – Principal-in-charge and Architect for a 57,000 sf elementary (K-5) school.

Mt. View School, Thorndike, ME – Principal-in-charge and Architect for a new 180,000 sf, $40.2 million, Pre-K to 12 school for the eleven-town SAD #3.

AWARDS (Continued)

AIA Maine Design Awards 2010: Merit Award
University of Maine Foster Center for Student Innovation, Orono, Maine

AIA New Hampshire IDID 2008 Excellence in Sustainable Design and Development Awards: Merit Award
University of Maine Foster Center for Student Innovation, Orono, Maine

2008 Education Design Showcase: Grand Prize Winner/College and University
University of Maine Foster Center for Student Innovation, Orono, Maine

2008 Learning By Design Citation of Excellence Award: College/University "Green" School Building
University of Maine Foster Center for Student Innovation, Orono, Maine

American School & University Architectural Portfolio 2007: Outstanding Buildings/Elementary Schools
Hall-Dale Elementary School, Hallowell, Maine

American School & University Educational Interiors Showcase 2006: Common Areas/Outstanding Projects
Lincolnville Central School, Lincolnville, Maine

AIA Maine Design Awards 2006: Honor Award
Design Studio, Biddeford, Maine

Learning By Design and the National School Boards Association 2004: Citation Award Interior Design
Vinalhaven School, Vinalhaven, Maine

American School & University 2004 Architectural Portfolio: Specialized Facility/Outstanding Buildings
Vinalhaven School, Vinalhaven, Maine

Foster Center for Student Innovation, University of Maine, Orono, ME – Principal-in-charge and Architect for the design of an innovation center to provide an environment that fosters innovation and entrepreneurship leading toward the establishment of a new knowledge-based business venture. In order for the University to obtain LEED Certification of the building, the use of sustainable materials, building systems, and construction practices were maximized.

Lincolnville Central School, Lincolnville, ME – Principal-in-charge and Architect for a 48,000 sf K-8 school. Program included classrooms, science lab, art and music rooms, a library, offices, administration area, gymnasium with locker rooms, a cafeteria, auditorium and commercial kitchen.

Collins Center for the Arts, Orono, ME – Principal-in-charge for additions and renovations to the Collins Center for the Arts including a new entry pavilion, fly tower, lobby, ticketing, stage, and back of house systems including winching, lighting, sound, projections, and fully ADA-compliant seating and stage access.

Regional Training Institute (RTI), New Hampshire Army National Guard, Pembroke, NH – Principal-in-charge for an interdisciplinary team tasked with designing a new sustainable 55,590 sf educational facility and associated 48,500 sf barracks. The site design employed low impact development principles (LID) to incorporate vehicular and pedestrian access and outdoor training requirements on a site with environmentally sensitive characteristics.

Armed Forces Reserve Center, Maine Army National Guard, Brunswick, ME – Principal-in-charge for an interdisciplinary team tasked with designing a new sustainable 60,000 sf training facility for multiple National Guard Units. The design required the integration of the building and associated training areas into a site with an existing Naval facility and numerous environmental constraints.

Waterfront Support Facility, Portsmouth Naval Shipyard, Kittery, ME – Principal-in-charge. The Waterfront Support Facility is a combination of submarine repair administration, logistics, worker training gathering and task allocation, and parts receipt storage and distribution. Since this new facility is intended to occupy the same location as the existing facility, phasing and the integration of multiple personnel and material movements during construction was a key to assuring that repair efficiency was not compromised.

Security Forces Facility, Barnes Air National Guard Base, Westfield, MA – Principal-in-charge of a new 11,500 sf office and training facility. This two-story building includes offices, classrooms, a combat simulator, and locker rooms. The brick, glass, and metal panel facade creates a sophisticated, modern statement while complementing the existing base architecture.

Sachuest Point National Wildlife Refuge Visitor Center, Newport, RI – Principal-in-charge for the renovation of a 5,500 sf facility. The design solution incorporated the client's program requirements and created a dynamic new image for the facility that welcomes and encourages public visitation. Highlights of the design are expanded exhibit spaces, improved circulation, a new multipurpose room, and "green" building materials.

Tyler G. Barter, AIA

Maine Licensed Architect, LEED AP BD+C

Mr. Barter's responsibilities include project management for pre-design, schematic design, design development, construction documents, construction cost estimating, bidding and negotiations, construction administration, and LEED administration.

REGISTRATION & CERTIFICATION

- Registered Architect: Maine, New Hampshire
- LEED Accredited Professional, BD+C (Building Design and Construction)

EDUCATION

- Bachelor of Architecture, Wentworth Institute of Technology
- Associates in Applied Science, Wentworth Institute of Technology
- Architectural Studies Abroad, France, Wentworth Institute of Technology

PROFESSIONAL ORGANIZATIONS

- National Council of Architectural Registration Boards (NCARB)
- American Instititute of Architects (AIA)
- USGBC

EXPERIENCE

Buildings for our Future, Portland Public Schools, Portland, ME – Project Architect for planning, schematic design, estimating and scheduling of renovations, additions and new construction at five elementary schools.

Camden-Rockport Middle School, Camden, ME - Project Manager for development of a facility assessment of the existing Camden-Rockport Middle School (CRMS) and the evaluation of the CRMS site as an ongoing middle school campus. The project involved three major components: a facility assessment, a program analysis, and the development of building and site concepts (including phasing strategies and estimates of probable construction cost) for the school. Responsibilities included managing engineering disciplines while developing the facilities assessment, meeting with administration and staff to develop educational needs, development of concept plans and overall project budget. Information was also presented at numerous public forums and to various Town Leadership.

Falmouth Elementary School, Falmouth, ME – Job Captain and LEED Administrator for a new, 140,000 sf, $46,250,000 Pre-K to 5 elementary school. The facility has two gymnasiums, kitchen facilities, music rooms, and features roof gardens and on-site renewable energy sources. Responsibilities included preparation of construction documents, coordination of building systems, and construction administration.

Falmouth Public Schools Wood Chip Boiler Plant, Falmouth, ME – Project Manager for a 3,000 sf, $1,500,000 central heating plant. This building provides energy efficient heat for the district's existing high school and new elementary school. A 7-million BTU/hour wood-fired boiler supplies hot water for both buildings' heating systems. Responsibilities include preparation of construction documents, cost estimating, and construction administration.

Jefferson Village School, Jefferson, ME – Job Captain and LEED Administrator for a new 58,000 sf, Pre-K–8 school facility. The building features a new gymnasium, cafeteria, commercial kitchen, science facilities, and educational spaces. A biomass boiler and solar hot water system provide heat for the facility and supplement water demand. Responsibilities included preparation of construction documents, coordination of building systems, cost estimating, and construction administration.

Mount View School, Thorndike, ME – Job Captain for the new 180,000 sf, $39,600,000 Pre-K to 12 school for the eleven-town SAD #3. The new facility has two gymnasiums, auditorium, science rooms, kitchen facilities, music and band rooms, and classroom space. Responsibilities include preparation of construction documents, coordination of building systems, and construction administration.

Lamoine Consolidated School Renovations and Upgrades, Lamoine, ME – Project Manager and Project Architect for ADA upgrades, roof reinforcements, front entry canopy addition and interior modifications.

University of New England, Leonard Hall Renovation, Biddeford, ME **–** Project Manager for the renovation of Leonard Hall, a single story, approximately 5,000 square foot structure that was converted from classroom space and offices into a 300-seat-capacity, state-of-the-art learning lab facility for the College of Osteopathy, which can be adapted to host a variety of different academic and social functions.

Foster Center for Student Innovation, University of Maine, Orono, ME – Project Manager for a new 6,000 square foot educational building which houses seminar space, a conference room and open office space.

Armed Forces Reserve Center, Maine Army National Guard , Brunswick, ME - Architect and project manager for construction period services for a new 60,000 sf training facility for multiple Units of the Maine Army National Guard. The three story building includes a two story lobby space, assembly hall, unit offices, unit storage spaces and two arms vaults. Responsibilities included concept planning, estimating, development of construction documents and managing the LEED certification process.

Norris Cotton Federal Building, Manchester, ME – Construction Cost Estimator, responsible for the preparation and coordination of the project's Estimate of Probable Costs.

Allison Towne DiMatteo, RLA

Maine Licensed Landscape Architect, LEED AP BD+C

Ms. DiMatteo is a Licensed Landscape Architect with experience in site inventory and analysis, conceptual design, preparation of construction and planning documents, construction observation and project management. She has been the landscape architect for school projects in numerous communities, and is particularly interested in the integrated design of outdoor play and learning environments. Ms. DiMatteo has experience in the facilitation of public meetings and design charrettes.

REGISTRATION & CERTIFICATION

- Registered Landscape Architect: Maine, New Hampshire
- LEED AP BD+C Accredited Professional

EDUCATION

- Bachelor of Arts, Wellesley College
- Master of Landscape Architecture, Harvard University

PROFESSIONAL ORGANIZATIONS

- Advisory Board Member: Architalx
- Board Member: Saco Bay Lacrosse

AWARDS

AIA Maine Design Awards 2010: Merit Award
University of Maine Foster Center for Student Innovation, Orono, Maine

AIA New Hampshire IDID 2008 Excellence in Sustainable Design and Development Awards: Merit Award
University of Maine Foster Center for Student Innovation, Orono, Maine

EXPERIENCE

Camden-Rockport Middle School, Camden, ME – Landscape Architect for development of a facility study and campus master plan for Camden-Rockport Middle School (CRMS), with the goal of identifying the suitability of the CRMS site as an ongoing middle school campus. The project involved three major components: a facility assessment, a program analysis, and the development of building and site concepts (including phasing strategies and estimates of probable construction cost) for the school.

Buildings for our Future, Portland Public Schools, Portland, ME **-** Landscape Architect for the Buildings for Our Future initiative, which seeks to modernize five of Portland's mainland elementary schools. Led the public outreach part of the project, including multiple staff and public forums at each school, as well as focus groups and telephone polling. Acted as moderator and project manager for the School Capacity Task Force, which considered overcrowding at the schools, and potential district boundary shifts in support of balanced capacity.

Ellsworth Elementary School, Ellsworth, ME – Landscape architect for a consolidated PreK-Grade 8 school which included 47,000 sf of renovation and 100,000 sf of new construction on a 34 acre existing school site. The project involved reorganizing site circulation and athletic fields to accommodate the increased staff and student population and the new building addition, as well as new parking areas, playgrounds and athletic fields. Sustainable features included a vegetated roof, porous asphalt paving, passive solar building orientation, locally sourced materials, and bioretention areas. The project included site selection, master planning, design development, construction documents and construction administration.

Jefferson Village School, Jefferson, ME – Landscape architect for a new Pre-K through Grade 8 school. The new school was built adjacent to the existing school on town athletic fields. Work included master planning and design of new athletic fields (soccer, baseball, softball), playground design, landscape and hardscape design.

Chelsea School, Chelsea, ME – Landscape architect for a new Pre-K through Grade 8 school. The new school was built adjacent to the existing school on town-owned land. Work included parking and circulation design, expansion of existing athletic fields (soccer, baseball, softball), playground design, landscape and hardscape design.

Mount View School, Thorndike, ME – Landscape architect for a regional, ±185,000 sf Pre-K through Grade 12 school in Central Maine. Scope of work included site selection and design of the school site, including conceptual road and parking lot design, athletic fields, playground, exterior terraces, and landscaping.

Foster Center for Student Innovation, University of Maine, Orono, ME – Landscape architect responsible for building placement and site design for a 5,000 sf building on a two acre site at the University of Maine. The property consists of a hillside oak grove at the campus center, and a wetland area that utilizes all flat portions of the site. Because of limited area, the building is accessed from parking on an adjacent site by way of a reclaimed wood and plastic composite boardwalk. The building was sited to take advantage of the site's solar orientation and to minimize earthwork and clearing of trees.

Bishop's Rock Park, Naval Station Newport, Newport, RI – Project manager and landscape architect for the redevelopment of an existing 5-acre parcel of land at Coddington Point, Naval Station Newport. The project involved developing construction documents and environmental permitting support, as well as construction administration, for a new park and picnic area on Narragansett Bay. The park includes a gravel access road and parking areas, a new picnic shelter, a jogging trail, new site lighting, landscaping, and picnic "pods". The work also included a new granite revetment for the perimeter of the site, which projects out into the bay and is exposed to extreme weather.

Oxbow National Wildlife Refuge Visitor Contact Station and Parking Area, Harvard, MA – Landscape architect for a passive recreational site along the Nashua River, on land formerly part of the U.S. Army Fort Devens Military Installation. The project involved design of a recreation facility that included an educational building, information kiosks, toilet facilities, parking lots, an accessible river overlook, a kayak and canoe launch, a trail system, and an amphitheater. The design incorporated many sustainable features including porous concrete pavement, porous unit paving, vegetated roofs, and composting toilets. The project included concept development, construction documents, environmental permitting, and construction administration.

Defense Highway Improvements, Naval Station Newport, Newport, RI – Landscape architect for a project entailing aesthetic, drainage and traffic safety improvements to a 1/4-mile long stretch of Defense Highway from Gate 17 to Chandler Street. Gate 17 is the commercial gate at Naval Station Newport, and the major entrance into the Coddington Cove district. Because the base is the "front porch" of the U.S. Navy, being one of the premiere training campuses for naval officers, the image of the base on arrival at the main gates is of great importance. Site improvements include new pavement and curbing, sidewalks, a stone dust jogging path, site lighting, site furnishings, landscaping, ornamental retaining walls and railings, and storm drainage improvements that employ Low Impact Development (LID) principles. Oak Point Associates is providing concept design, illustrative rendering, design development, cost estimating, permitting and construction documentation services.

North Dam Mill Redevelopment, Biddeford, ME – Project manager for a project involving the redevelopment of a former textile mill in the heart of Biddeford, Maine. The site is on the Saco River, and included three connected mill buildings with a total of 370,000 square feet of mixed-use space development. The scope of work included concept design and municipal permitting for vehicular and pedestrian site circulation, accessibility and exterior gathering spaces.

Jacques L. Gagnon, Jr., PE

Associate Civil Engineer, LEED AP

Mr. Gagnon is a civil engineer with over 30 years of site engineering design, permitting, and construction observation experience. Projects include institutional, educational, commercial, and recreational facilities.

REGISTRATION & CERTIFICATION

- Professional Engineer: Maine, Massachusetts, New Hampshire, Connecticut, Vermont, Rhode Island
- LEED Accredited Professional, USGBC

EDUCATION

- Bachelor of Science, Civil Engineering, University of New Hampshire

EXPERIENCE

Falmouth Public Schools Sidewalk Construction and Intersection Improvements, Falmouth, ME – This project consisted of constructing approximately 3,250 linear feet of sidewalk along Woodville Road and constructing a turning lane on Woodville Road at the intersection of Falmouth Road. The design included conversion of an open ditch and culvert system to a closed subsurface system with catch basins and curb inlets. Key features included in the project were drainage design, coordination with utility companies and the U.S. Postal Service, and design review by the town's Planning and Public Works Departments, Maine DEP, and the School Department. A Natural Resources Protection Act permit was obtained to address wetland area impacts.

Falmouth Elementary School, Falmouth, ME **–** Project consists of design and permitting for a 140,000 sf elementary school on the existing middle school/high school campus. Services included Renovation vs. New analysis, site search and selection, budget development, permitting, bidding documents, and construction administration.

Mount View School, Thorndike, ME – Site selection and site design for a 180,000 sf Pre-K–12 school on a 70 acre site. Permits obtained include local site plan review, state site location of development, engineered wastewater disposal and public water supply. Key site elements include track, soccer, baseball and softball fields, 400 parking spaces, and drop-off areas for 20 school buses. The building and site design was integral to effectively utilize a sloping site while maintaining a proper cut/fill balance.

Landscape Site and Security Improvements, John F. Kennedy Federal Building, Boston, MA – The project included the replacement of existing curbing, sidewalks, landscaping, and installation of security improvements for the low-rise entrance of the building. Granite-clad security walls were integrated as landscape features to provide an aesthetically pleasing solution to increase security. Vehicle barriers were also installed to control access to the site. Project Engineer/Project Manager.

New Building for APHIS and FDA, U.S. Border Station, Highgate Springs, VT – Civil engineer for the design of a new 6,000 square foot building located at the U.S. Border Station on Interstate 89, Highgate Springs, Vermont. The design included sewer pump station design and extension of existing water supply system.

Alterations and Building Upgrades, Norris Cotton Federal Building, Manchester, NH – Site work improvements included perimeter security bollards, granite entrance stairs, cast-in-place concrete planters, and granite plaza alterations to accommodate new entrance vestibule.

Business Park Development, Route 1, Saco, ME – Prepared conceptual layout, topographic survey, boundary survey, and design of a 15 lot commercial subdivision on 64 acres. Permit applications were completed for City of Saco Subdivision and Maine DEP Site Location of Development.

Land Port of Entry, Madawaska, ME – Project Engineer for feasibility study and program development study for the replacement of the existing Land Port of Entry in Madawaska with one that satisfies DHS, GSA, traffic, security and community criteria including hardened structures, blast mitigation, stand by utility services, future expansion and site and building security.

Perimeter Security Upgrades, Concord, NH – The project included security code review, identification of required improvements, design of vehicle barriers, security walls and bollards. Public street re-configuration to increase security was also included. Topographic survey, design, construction contract documents and shop drawing review services were provided.

Vinalhaven School, Vinalhaven, ME – Civil engineer for the design of a new 57,000 sf K-12 school located on Vinalhaven Island in Penobscot Bay. Scope of project was to design a facility that would house Vinalhaven Island's entire school district as well as its superintendent's office. The use of local materials and energy-efficient building systems were incorporated wherever possible in an effort to reduce costs. The community was included in every phase of the design and construction process to ensure that the facility (the largest building ever built in the area) would provide not only superior educational space, but would also be used year-round by the public.

Hall-Dale Elementary School, Hallowell, ME – Civil engineer for a 57,000 sf elementary school (Pre K-5). Site work included extensive earthwork and rock cuts (17,000 cubic yards of rock cut), sewer pump station design, state highway improvements, and water main.

Fayette Central School, Fayette, ME – Services included the programming and design of a 16,000 sf elementary school. The existing 8,000 sf school was renovated and expanded to provide additional classrooms, kitchen, gym, and parking. Site investigations consisted of topographic surveys, soils investigations and utility research. Site design included vehicle and pedestrian circulation, playground areas, electric, telephone, sewer and water system upgrades, and site grading and landscaping.

Repairs to Wastewater Treatment Plant, Highgate Springs, VT – A feasibility study was conducted to determine if it would be feasible to replace an aging, oversized treatment plant with an onsite septic system. The study included a solution to manage agricultural and domestic wastes separately, estimates, permitting research, and coordination with state and federal agencies.

Feasibility Study, U.S. Border Patrol Station and U.S. Border Patrol Headquarters, Houlton, ME – Feasibility and program development for expansion and replacement of existing Border Patrol station and sector headquarters facilities. Researched into local economic conditions, evaluated existing facilities, and assessed tenant needs and goals. A financial analysis including estimates of probable costs and various financing and delivery options was prepared. Six alternatives were evaluated and a preferred alternate selected.

Paul J. Miller, PE, PLS

Senior Civil Engineer

Mr. Miller has over 30 years of experience in the engineering field and is familiar with all aspects of civil design, from preliminary site inspection, survey and permitting to preparation of final documents and construction inspection.

REGISTRATION & CERTIFICATION

- Professional Engineer: Maine, New Hampshire, Vermont, New York, New Jersey, Rhode Island
- Professional Surveyor: Maine
- Licensed Forester: Maine

EDUCATION

- Bachelor of Science, Forest Engineering, University of Maine

EXPERIENCE

Foster Center for Student Innovation, University of Maine, Orono, ME – Civil Engineer for an innovation center that provides an environment that fosters innovation and entrepreneurship leading toward the establishment of a new knowledge-based business venture. In order for the University to obtain LEED Certification of the building, the use of sustainable materials, building systems, and construction practices were maximized.

Defense Highway Improvements, Gate 17 and Defense Highway/Anderson Ave. Intersection Improvements, Naval Station Newport, Newport, RI - Civil/site design and permitting for project involving reconstruction and upgrade of main truck route onto the Base and problematic, heavily trafficked intersection in the environmentally sensitive Coddington Cove industrial area. Included reconfiguring intersection to better accommodate truck movements, soils/geotechnical analysis for retaining wall, pavement and bioretention area design, and detailed drainage study to alleviate a long standing drainage problem. Required design in accordance with CRMC standards and EISA/LID policy and extensive provisions for managing existing soils due to naturally occurring arsenic on a Navy Installation Restoration site.

Administration Building/Visitor Contact Station, Ohio River Islands National Wildlife Refuge, Williamstown, West Virginia – Complete site design and permitting for a 6,000 square foot Refuge Visitor Center/Administrative Building, including three distinct functional areas, facilities for an estimated 50 visitors per day, separate staff and maintenance areas, and vehicular maneuvering areas to accommodate large buses. Project required identification and preparation of applications for all required permits, including well permits, underground injection control permit for geothermal injection well, on-site wastewater disposal system permit, DOT access and utility permits, and stormwater permits for both construction and post-construction stormwater management.

Kindergarten Addition, George J. Mitchell School, Waterville, ME – Complete site design and permitting for a 13,000 sf school addition including layout, grading, drainage, utility extensions, playground design, landscaping, and erosion control. Required permits included local planning board and Natural Resource Protection Act approvals.

Maine Army National Guard, Ready Bay Addition – 11TH CST WMD Readiness Center, Waterville, Maine – Civil/Site design and permitting for 5400 square foot garage addition, including expanded maneuvering area with drive through bays, reconfigured security fencing and access control, extended utilities, grading, drainage and erosion control on a steep site. Required State and local permitting and low impact development techniques to minimize disturbance to adjacent natural areas.

Visitor Facility Renovation, Access Road and Site Improvements, Great Swamp National Wildlife Refuge, Harding Township, New Jersey (2008) – Complete site design and permitting for a phased project involving the conversion of a historic farmhouse and grounds to a visitor facility for the popular Great Swamp NWR, situated less than an hour from metropolitan New York City. Civil/site work included a new on-site water source and supply system, upgrades to the on-site septic system, hard surfaced and reinforced turf parking areas, and a quarter mile access road with innovative stormwater treatment methods. Intensive permitting effort involved analysis of alternatives and low impact design to minimize disturbance to protected natural resources on a highly regulated site located partially within the Passiac River flood plain.

Replace Squadron Operations Facilities, New Hampshire Air National Guard, Newington, New Hampshire - Civil/site design and permitting for a 28,000 square foot building and site improvements on a previously developed, uncontrolled fill, airport site. Project involved unique siting requirements due to existing airfield operations, extensive earthwork to improve foundation soils, and effective / aesthetic stormwater design for quantity, quality and volume control in accordance with State requirements. Included accelerated design and permitting schedule and incorporation of bid options to ensure a viable project would be funded.

Construct Cottages at Great Pond Outdoor Adventure Center, Hancock County, Maine - Civil/site design and permitting for expansion to popular recreational area involving 7 new cottages with associated site improvements, roadway and utility construction, and on-site septic and public water supply wells. Included detailed survey, geotechnical analysis, and design to optimize cottage siting in accordance with State requirements and in an effort to minimize impacts to the environmentally sensitive area near the shore of Great Pond, including avoiding impacts to significant trees, huge boulders, and water resources.

Penquis Training and Education Center, Eastern Maine Technical College, Dover-Foxcroft, ME – Conversion of an existing elementary school to an adult education center, with associated site upgrade and parking lot expansion. Project required maximum utilization of the existing site with a design to satisfy nearby neighbors and the local Planning Board. Included an efficient parking layout with a reduction in pavement adjacent to the building and full use of on-site materials to reduce costs. Estimated site construction cost: $100,000

Lincolnville Central School, Lincolnville, ME – Site analysis, design, permitting and development of construction documents and costs for a new K-8 school involving reconstruction on an existing congested site. Project involved analysis of various sites to determine feasibility and costs of proposed construction, wetland delineation and geotechnical analysis, and site layout to preserve significant existing trees and other vegetation. Site design and permitting included on-site water supply and wastewater disposal, erosion control and stormwater management. Stormwater best management practices were employed to remove 80-percent total suspended solids in an effort to protect Norton Pond, a waterbody most at risk from new development.

Maine Traffic Resources
25 Vine Street Gardiner, ME 04345
(207) 582-5252 FAX (207) 582-1677
mainetrafficresources.com

DIANE WIGMORE MORABITO, P.E. PTOE

EDUCATION

B.S. in Civil Engineering
University of Massachusetts, Amherst 1980

M.S. in Civil Engineering
University of Massachusetts, Amherst 1983

Federal Highway Administration Short Courses in Transportation Engineering
1981 – 2006

AFFILIATIONS

Current Director of the Transportation Professional Certification Board Inc.

Institute of Transportation Engineers
Past President of New England Section
Past President of Maine Chapter
New England Distinguished Service Award 2004

Tau Beta Pi, National Engineering Honor Society

EXPERIENCE

Maine Traffic Resources – *Gardiner, Maine* ***2006 to present***

As President, Ms. Morabito is responsible for the technical and administrative management of the firm's transportation planning projects, including traffic, design and parking studies. At Maine Traffic Resources she has completed such studies as:

- Traffic signal design for new installations in Portland, Augusta, Oxford and Falmouth and for modifications in Falmouth, Augusta and Gorham.
- Traffic permitting for projects including:
  - Hannaford Stores at Cony Circle in Augusta and on Route 26 in Gray
  - The Hathaway Creative Center in Waterville
  - Wing Farm Business Park in Bath/West Bath
  - Oxford Casino
  - New Goodwill stores in Windham, Ellsworth, Rockland & Augusta
  - New schools in Brewer, Farmington, Falmouth and Ellsworth
  - Saco Island Redevelopment
  - St. Joseph's College in Standish
  - Poland Spring Plants and Spring Sources
- School modifications/expansions for several schools including those in Jefferson, Chelsea, Waterville, Berwick and Rockport.
- Temporary Traffic Control Plans for numerous intersections for gas pipeline installations in Central Maine, for utility work in Augusta and Newcastle, and bridge work in Acadia National Park.
- The Portland Road Traffic Management Update Study for Kennebunk.

- Traffic engineering services to Wright-Pierce Engineers for sidewalk/bikeway projects in Kittery, Damariscotta, Dixfield, Bath and Standish.
- Master planning services for Saint Joseph's College campus in Standish, New Hampshire Army National Guard Military Reservation Master Plan, Falmouth school campus and Oceanview Development in Falmouth.
- Traffic review services for several municipalities including Kennebunk, Gorham, Belfast, Saco and Rockland.

Casey & Godfrey Engineers, Gardiner, Maine ***Founding Partner*** ***1986 - 2006***

Maine Department of Transportation, Augusta ***Acting Division Head*** ***1981 - 1986***

REGISTRATION

Professional Engineer Maine # 5077, New Hampshire # 9585, Professional Traffic Operations Engineer # 571

Owen Haskell, Inc.

OWEN HASKELL, INC., founded in 1964, is a privately owned Maine corporation specializing in all types of land surveying and is one of New England's largest full-service surveying companies. Over the years, we acquired the personnel and records of three land surveying firms. The largest firm acquired was H.I. & E.C. Jordan, Surveyors, a Portland, Maine based firm, which had been providing survey services to clients throughout Northern New England since 1873.

With more than 100 years of experience, we are able to provide quality surveying services for all types of engineering and design projects. This includes highways, bridges, airports, pipelines, transmission lines, paper mills, industrial and commercial developments, and a full spectrum of services to waterfront developments, pier facilities and related rehabilitation projects, as well as photo and geodetic control. We can provide a full range of surveying services, including boundary, land title, topographic, hydrographic, and geodetic control, as well as in-house GPS (Global Positioning System) services.

We provide a wide variety of surveying and support services to the engineering and environmental communities.

We currently have three survey crews on staff and each crew has been properly equipped, including being able to provide backup for equipment failures. Our in-house Leica GPS equipment includes both 1200 receivers for control surveys and Pathfinder PRO XR receivers for data collection and sub-meter location and mapping.

Our AutoCAD and Carlson Survey software enable us to provide detailed site condition plans to our clients on electronic medium. Computer systems are continually updated and refined in order to meet our clients' needs in the most efficient manner and to support all aspects of the engineering field.

With financial support and encouragement, our employees are urged to take every opportunity available to learn the latest technology by attending seminars and classes. Owen Haskell, Inc. firmly believes that in today's environment, employees need every advantage possible in order to make a company successful.

Our Mission:

Owen Haskell, Inc. has been in the surveying business for over 40 years and has built a reputation on providing a quality product at a fair price, and is dedicated to fulfilling the objectives of a wide range of projects. We take pride in our ability to respond quickly and effectively to our client's needs, and have a proven reputation for providing quality, client-oriented services.

Owen Haskell, Inc.

Professional Land Surveyors

John C. Schwanda, PLS

Principal

EDUCATION

Bachelor of Science/Forestry
University of Maine

ACTIVE REGISTRATIONS

Professional Land Surveyor	Maine #1252
Professional Land Surveyor	New Hampshire #826
Professional Land Surveyor	Massachusetts #31322
Professional Land Surveyor	Connecticut #70004
Professional Forester	Maine #881

PROFESSIONAL EXPERIENCE

Owen Haskell, Inc – 1985 to Present
Principal

Mr. Schwanda has over 35 years of experience in this field. He serves as project manager and performs and supervises all phases of boundary, topographic, engineering and construction surveys.

PROFESSIONAL MEMBERSHIP

Maine Society of Land Surveyors (MSLS)
National Society of Professional Surveyors (NSPS)

Project Experience

John C. Schwanda, PLS

CSO Project Portland, ME	Engineering Survey- Dorothy, DiBiase and Hicks Street Woodard & Curran, Inc. Barry Sheff 207-774-2112 Review right of way information, supervise field survey, performed computations to make determination of right of way lines, supervise plan preparation.
Hall School Portland, ME	Boundary and Topographic Survey for School Redesign Oak Point Associates, Jacques Gagnon 207-283-0193 Surveyor of record. Performed record research, field reconnaissance of boundary and control points, supervised field work, computations to make boundary line determinations, supervision of plan preparation.
Mercy Hospital Portland, ME	ALTA/ACSM Land Title Survey Preti Flaherty Beliveau & Pachios, LLP, 207-791-3000 Surveyor of record for boundary surveys at sites on Spring and Winter Streets in Portland and Park Road, Westbrook.
Portland Public Library Portland, ME	Existing Conditions/Boundary Survey Scott Simons Architects, Stephen Fraser 207-772-4656 Surveyor of record. Deed and plan research, computations to make boundary line determination, supervision of plan preparation.
Seaside Rehabilitation & Healthcare Center Portland, ME	Boundary, Topographic and As-Built Surveys First Atlantic Healthcare, Craig Coffin 207-874-2700 Surveyor of record. Deed and plan research, computations to make boundary line determination, supervision of plan preparation.
Long Creek Watershed Project South Portland, ME	Engineering and Topographic Survey for storm drain and culvert improvements - Philbrick Road - South Portland, ME Gorrill-Palmer, Al Palmer 207-657-6910

Owen Haskell, Inc.

Professional Land Surveyors

Ellen C. Brewer, PLS

Project Manager

EDUCATION

B.S. Natural Resources/Soil & Water Conservation
University of Maine, Orono

A.S. Civil Engineering Technology
Vermont Technical College

ACTIVE REGISTRATIONS

Professional Land Surveyor Maine #2367

PROFESSIONAL EXPERIENCE

Owen Haskell, Inc – 1995 to Present
Director of Field Operations

Mrs. Brewer has over 25 years of experience in the surveying field. Her duties and responsibilities include scheduling and assisting field crews with computations and problem solving; researching and obtaining information from utility companies and municipalities and interfacing with field crews, clients and management to assure surveys are completed in a timely manner.

PROFESSIONAL MEMBERSHIP

Maine Society of Land Surveyors (MSLS)
National Society of Professional Surveyors (NSPS)

Project Experience

Ellen C. Brewer, PLS

Hall School- Portland, ME	Boundary and Topographic Survey for School Redesign Oak Point Associates, Jacques Gagnon 207-283-0193 Responsible for coordinating surveying needs between client, school and other environmental professionals. Coordinate access to the project site. Manage survey crews. Deed and plan research at the City and County. Assist in boundary computations.
Midtown- Portland, ME Subdivision	Boundary & Topographic Survey for 8 Lot Amended Fay, Spoffard & Thorndike, William Hoffman 207-775-1121 Manage survey crews. Research with the City. Compilation of plans, lot and easement calculations as well as composing of legal descriptions.
Long Creek Watershed Project South Portland, ME	Topographic and Property Survey for storm drain improvements - Maine Mall Plaza - Maine Mall Road South Portland, ME Fay, Spoffard & Thorndike, Joe Laverriere 207-775-1221
Mercy Hospital Fore River Campus Portland, ME	ALTA/ACSM Land Title Survey Preti Flaherty Beliveau & Pachios, LLP, 207-791-3000 Manage survey crews. Interface with client, attorneys and Title Company. Deed and plan research at the City and County. Boundary and easement computations, plotting and interpretation of Title documents.
CSO Project Portland, ME	Engineering survey Commonwealth, West Commonwealth and Belfort Streets Woodard & Curran, Inc. Barry Sheff 207-774-2112 Manage survey crews and field data. Deed and plan research with the City and utility companies. Research horizontal and vertical control of record.
CSO Project Portland, ME	Engineering survey College Street Woodard & Curran, Barry Sheff 1-800-426-4262 Manage survey crews and field data. Research horizontal and vertical control. Deed and plan research with the City and utility companies. Right of way computations.

STATEWIDE SURVEYS INC
SOIL SCIENTISTS & LAND SURVEYORS
35 Eastman Road Cape Elizabeth, ME 04107
E-mail:statewidesurveys@maine.rr.com
Phone/Fax: 207 767 4200

DALE A. BREWER

President

EDUCATION

1987 B.S. Natural Resources
1984 A.S. Plant & Soil Tech

REGISTRATIONS/AFFILIATIONS

Certified Soil Scientist (*CSS #304*)
Professional Land Surveyor (*PLS #2348*)
USACE Wetland Delineator
Maine Assoc of Professional Soil Scientists-*MAPSS*
Maine Assoc of Wetland Scientists-*MAWS*
Maine Society of Land Surveyors-*MSLS*

WETLANDS

Mr. Brewer has over twenty five (*25*) years of experience with wetland projects. He completed the *USACE* Wetland Delineator course in 1994. He has extensive experiences working with wetland delineations, classifications, function & value assessments, mitigation and monitoring of estuarine and palustrine wetland projects from Maine to New Jersey. Dale has worked on hundreds of projects ranging from small residential lots to large projects with thousands of acres and miles of roads for wind power generation, natural gas conveyance and electrical power transmission corridors. He has also prepared environmental permits at the local, state and federal levels for projects with jurisdictional impacts.

SOILS

Mr. Brewer was certified as a Maine Certified Soil Scientist (*CSS*) in 1992. He has completed high-intensity soil mapping for small residential subdivisions to large scale soil mapping in the North Maine Woods for Forest/Paper Companies. He has also completed soil surveys for long linear wind power and transmission line construction projects in addition to subdivisions under the jurisdiction of the Site Location of Development Act. Dale was employed by the U.S.D.A. Soil Conservation Service (*now the NRCS*) working with agricultural cooperators reducing soil erosion, drainage structures, soils mapping and soil fertility while in college. He has been working with soils since youth having grown up on a large certified seed potato farm.

LAND SURVEYING

Mr. Brewer is also a licensed Professional Land Surveyor (*PLS*) in the State of Maine. He has been conventional land surveying since the early 1980's. Mr. Brewer has also been using *GPS* technology since the 1990's on projects from Maine to New Jersey. He is experienced with both survey grade (*centimeter*) and mapping (*sub-meter*) grade *GPS* technology. He has completed many Survey grade *GPS* surveys using both Static and/or Real-Time Kinematic (*RTK*) techniques in New England. Dale has used the entire line of Trimble Pathfinder *GPS* units since their inception in the early 1990's. He also routinely uses conventional equipment for land surveying projects. Dale has worked on hundreds of surveying projects ranging from residential lots, forestlands, landfills, Super-Fund hazardous materials (*Haz-Mat*) sites, route surveys, construction and hydrographic surveys.

OTHER

Mr. Brewer was certified as an O.S.H.A. Certified Hazardous Waste worker in 1991. Dale has completed environmental work at small sites to major land fills and Super-Fund Hazardous Materials sites in the northeast. He has completed wetland delineations, soil testing, water monitoring and land surveying at these sites.

Dale also completed training in Storm-water Practices Design in 1998 from the Maine Nonpoint Source Training & Resource Center.

PREVIOUS EMPLOYMENT/EXPERIENCE

2004-Present — STATEWIDE SURVEYS, INC *Cape Elizabeth, ME*

President - Responsible for daily business tasks in addition to fieldwork and project management. Specific focus on wetlands and high-intensity soil surveys on large land parcels. Typical projects include: wetland delineations/mapping, wetland functional assessments, vernal pool surveys, soil classifications, soil mapping and land surveying using both conventional and *GPS* methodologies.

2003-2004 — **Sebago Technics, Inc** *Westbrook, ME*

Director of Soil Science – Responsible: for leadership of the soil science and environmental departments, establishing new standard operating procedures for soil and wetland projects and completing fieldwork on a number of large wetland and soil surveys. Additional tasks included wetland delineations and mapping with functions & values assessments of the Fall Brook corridor for the City of Portland's flood studies.

2001-2003 **Framatome-ANP** ***Portland, ME (formerly Duke Engineering, presently Devine Tarbell & Associates)***
Soil Scientist/Wetland Scientist - Responsible for completing: wetland delineations, classifications, function & value assessments and mitigation monitoring studies. Other duties included: high-intensity soil mapping for electrical substations and natural gas compressor stations, utility corridors and route surveys, also assisted with *RTE* surveys and *GPS* control surveys.

2000-2001 **S.W. Cole Engineering, Inc** ***Gray, ME***
Soil Scientist/Wetland Scientist – Responsible for completing soil surveys ranging from remote locations in the North Maine Woods to residential and commercial properties in urban areas. Other projects included: geo-technical studies, wetland delineations, soil fertility and functional & value assessments.

1988-2000 **Owen Haskell, Inc** ***Portland, ME***
Soil Scientist/Wetland Scientist/GPS Specialist – Lead wetland scientist responsible for completing: soil and wetland surveys for residential and commercial subdivision projects. Additional assignments included: boundary, topographic, *GPS* photo-control, construction, engineering and hydrographic surveys using conventional survey methods or *GPS*.

1984-1987 **USDA Soil Conservation Service** ***Orono, Houlton, ME***
Technician/Planner/Work-Study Student – Assisted with: construction surveys, erosion calculations, control structure designs, watershed delineations and long term plans in the Houlton field office. Work-study student employed by the USDA SCS State Office in Orono, Maine assisting with data entry, laboratory research, and field studies in Penobscot County.

S.W.COLE ENGINEERING, INC.

Our Clients Make Better Decisions
From the Ground Up.

Timothy J. Boyce, P.E.
Vice President,
Engineering Services
Senior Geotechnical Engineer

Education:
B.S., Civil Engineering, University of Washington

Graduate Courses, University of Washington

Registrations:
Professional Engineer,
Maine and New Hampshire

Certifications:
40-Hour OSHA Hazardous Waste Site Worker

ICC Special Inspector, Reinforced Concrete, Prestressed Concrete and Structural Masonry

Troxler Nuclear Densometer Certification

Military Experience:
Commander, Civil Engineer Corps, U. S. Navy Reserve (Retired)
Construction Management, Contingency Construction and Facilities Management, 1995-2015

P-3 Orion Flight Crew, U.S. Navy and U.S. Navy Reserve, 1983-1995

Born and raised in Indianapolis, Indiana, Tim Boyce enlisted in the United States Navy in 1983 where he completed four years of active military service, before enrolling in the civil engineering program at the University of Washington. Tim continued his military service in the U.S. Navy Reserve while attending college, eventually accepting a commission as a U.S. Naval Officer in 1995. Clients appreciate Tim's service-oriented, solution-focused, win-win approach and ability to take on projects large and small.

Tim has over 21 years of geotechnical engineering experience in Maine, New Hampshire, Massachusetts, Oregon and Washington. He joined S. W. Cole Engineering, Inc. in April 1999, was promoted to Senior Geotechnical Engineer in 2007 and Vice President of Engineering Services in 2014. His responsibilities include business development, client cultivation, engineering management, contracting, project management, site characterization, geotechnical engineering, recruiting and development of engineers, technicians and scientists.

Tim's experience includes developing and conducting geotechnical investigations, design analyses for foundations, ground improvement, soft ground, pavement design, stability of earth slopes and retaining walls, evaluation of shoring systems for excavation support, dewatering, underground utilities, geotechnical instrumentation and geotechnical monitoring of construction activities. He has worked on numerous commercial and public infrastructure projects throughout New England and the Pacific Northwest.

Tim's service as a Civil Engineer Corps Officer with the U.S. Navy includes assignments in the Naval Construction Force and the Naval Facilities Engineering Command from 1995 to 2015. Tim was recalled to active service in support of the 2007 troop surge in Iraq and 2010 troop surge in Afghanistan serving 15 months in the Southwest Asia Combat Zone.

Tim serves on the S.W.COLE's Board of Directors and is currently President-Elect of the Maine chapter of the American Council of Engineering Companies (ACEC).

S.W.COLE ENGINEERING, INC.

Our Clients Make Better Decisions
From the Ground Up.

Providing Earth-Related Services For Over 35 Years

COMPANY OVERVIEW

S. W. Cole Engineering, Inc. (S.W.COLE) was established in 1979 in Bangor, Maine to provide geotechnical engineering, geology, environmental consulting and construction quality assurance testing services. In addition to our corporate office, our firm includes three branch offices in Maine, two in New Hampshire and two in Vermont to more effectively provide services to our clients throughout northern New England.

ABOUT OUR FIRM

S.W.COLE provides services in the following major areas: geotechnical engineering, construction materials testing, geo-environmental services and ecological consulting. We are a team of more than 80 engineers, scientists and technicians which annually provides services on more than 1,800 projects. Our three decades of experience has allowed us to work with a wide variety of complex geologic and subsurface conditions throughout New England. We have had the opportunity to work with a varied clientele, including architectural and engineering firms, contractors, healthcare providers, educational and governmental agencies, and commercial, industrial and individual clients. Our engineers, geologists and construction materials technicians take a hands-on approach and understand the impact of subsurface conditions on construction budgets and schedules. Eight regional offices give us the ability to utilize the knowledge and experience of all our professionals with ease as well as the flexibility to schedule services in a responsive manner.

As a geotechnical engineering, geosciences consulting and construction materials testing firm, S.W.COLE serves our clients' needs with a multi-disciplined staff of professional engineers and scientists as well as laboratory and field testing services. We are known for bringing creative, practical alternatives to difficult challenges for more than 35 years, and our clients have come to rely on our professional expertise and our ability to provide service both reliably and promptly.

EXPERIENCE WITH EDUCATION PROJECTS

S. W. Cole Engineering, Inc. has provided construction materials testing as well as geotechnical engineering, geothermal heating and cooling, special inspections and environmental services on hundreds of public and private elementary, middle and high schools in northern New England. We have also worked on college and university projects as well as preparatory academies. We are familiar with the particular challenges of working with educational facilities and with the many players involved. A partial listing of representative project experience follows this page.

S.W.COLE ENGINEERING, INC.

Our Clients Make Better Decisions
From the Ground Up.

Selected Education Project Experience

Geotechnical Engineering Services

- New Elementary School and Athletic Fields, Lewiston
- Proposed New Gymnasium, Waynflete, Portland
- Weatherbee and McGraw Schools Improvements, Hampden
- New Fred P. Hall Elementary School, Portland
- Foxcroft Academy Addition, Dover-Foxcroft
- New Dining Hall, Kents Hill School, Readfield
- High School Addition, Old Town, Maine

Construction Materials Testing and Special Inspections Services

- Lake Region High School and Vocational Center Additions and Renovations, Naples
- Corinth Elementary School, Corinth
- Moody School Building Addition, Hinckley
- Wentworth Intermediate School, Scarborough
- Woolwich Central School, Woolwich
- Waterville High School Renovations, Waterville
- Northern Penobscot Technical Region III School Addition, Lincoln
- Longfellow School Improvements, Brunswick

Multiple Services

- Harriet Beecher Stowe Elementary School, Brunswick
- Chelsea Elementary School, Chelsea
- New High School, South Portland
- New High School and Technical Center, Sanford
- High School Additions and Renovations, Freeport
- Ocean Avenue School, Portland
- New Elementary School, Jefferson
- New Dormitory, Hyde School, Bath
- New Elementary School, Caribou
- High School Additions and Renovations, Brewer
- New Hampden Academy Building, Hampden
- Mt. Blue High School Renovations and Expansion Project, Farmington

Harriet Beecher Stowe Elementary School, Brunswick, Maine

Appendix E – Transportation Information

This section includes the following:

- Bicycle/Pedestrian access information requested by the City as a result of the Pre-Application meeting in May, 2016
- A Traffic Impact Study performed by Maine Traffic Resources in June, 2016

Hall School Bicycle/Pedestrian Access Breakdown

Data Below is existing usage based on interviews with Hall School Staff in Fall, 2015 and Spring, 2016.
Percentages are not anticipated to change after construction is completed

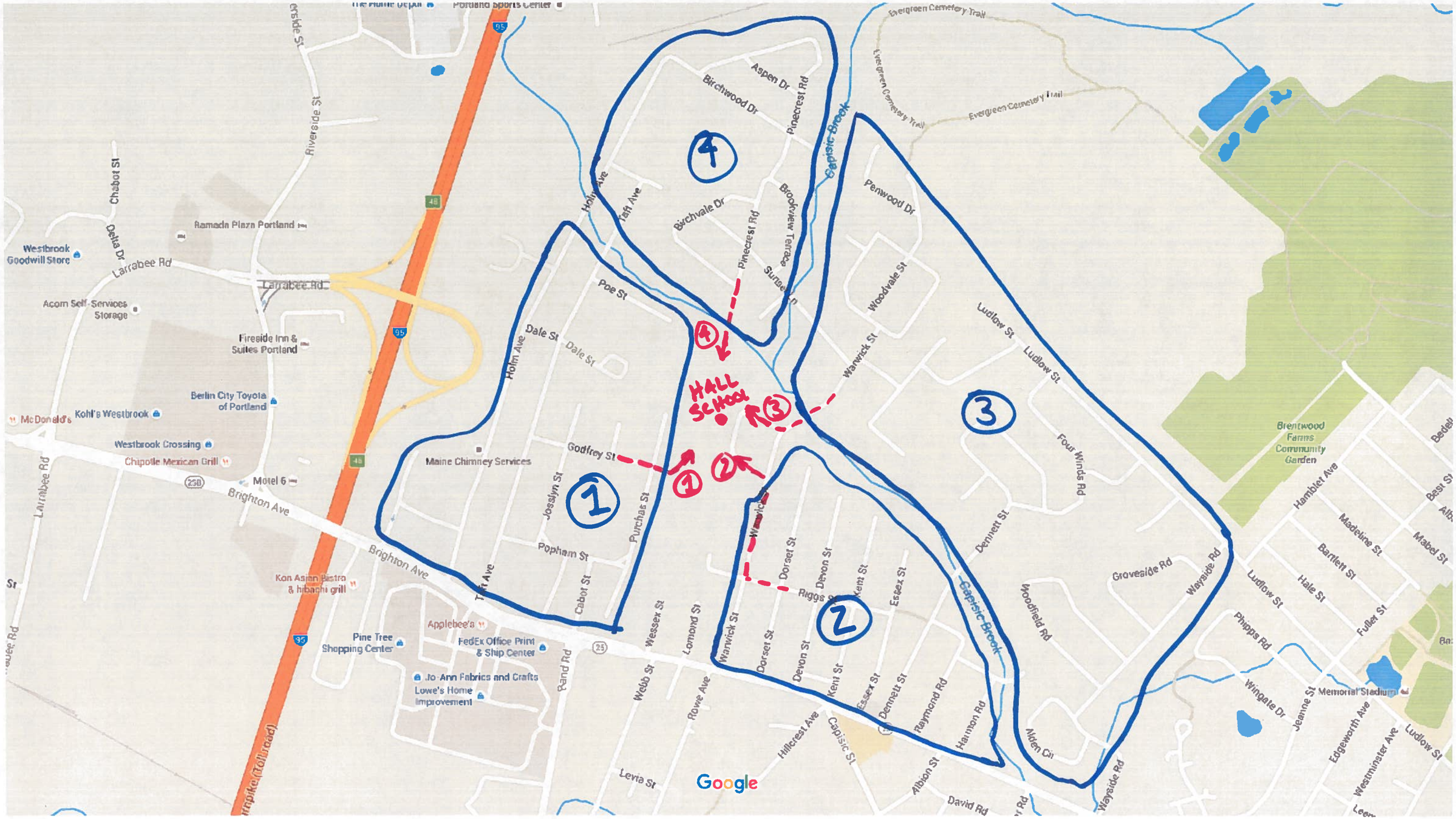
Bicycle Access		
Access Point/Area (see plans)	Percentage of Bicycling	Percentage of Total Population*
1 - Sagamore Village/Godfrey Street	10%	0.60%
2 - Orono Road (Warwick Street South)	75%	4.50%
3 - Warwick Street North	7.5%	0.45%
4 - Pinecrest Road	7.5%	0.45%

*6% of total population rides bicycle to school

Pedestrain Access		
Access Point/Area (see plans)	Percentage of Pedestrians	Percentage of Total Population**
1 - Sagamore Village/Godfrey Street	65%	11.70%
2 - Orono Road (Warwick Street South)	20%	3.60%
3 - Warwick Street North	7.5%	1.35%
4 - Pinecrest Road	7.5%	1.35%

**18% of total population walks to school

Google Maps Hall School - Bicycle and Pedestrian Access - June, 2016



HALL SCHOOL
BICYCLE/PEDESTRIAN ACCESS POINTS
JUNE, 2016

↑ N

TRAFFIC IMPACT STUDY
FRED P. HALL ELEMENTARY SCHOOL
Portland, Maine

June 21, 2016

Prepared for:

Oak Point Associates
231 Main Street
Biddeford, ME 04005

Prepared by:

Maine
Traffic
Resources

25 Vine Street Gardiner, ME 04345
(207) 582-5252 FAX (207) 582-1677
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Introduction

The purpose of this study is to assess the traffic impacts of the proposed expansion/replacement of the Fred P. Hall Elementary School on Orono Road in Portland, Maine. The site is located on the westerly side of Orono Road, off of Warwick Street, as shown on the map in Figure 1. Access to the site is proposed to be provided by the existing Orono Road exit, which will become entrance only for parent drop-offs destined from the north and an entrance/exit for buses. In addition, a full movement drive is proposed from Riggs Street, along an extension of Lomond Street. A copy of the current site plan is including in the appendix for reference.

The existing Hall Elementary School currently provides for 440 students. The expanded new school will provide for a larger student population of 558. The proposed school is expected to be ready for occupancy in fall 2018. For this reason, 2018 was used as the study year for traffic analysis purposes.

Existing Traffic Volumes

Turning movement counts were conducted by Maine Traffic Resources at the Warwick Street intersections of Orono Road, Brighton Avenue and Riggs Street. The Orono Road count was conducted on November 3, 2015 from 8:00 – 9:00 AM. The Brighton Avenue count was conducted on April 18, 2016 during the AM peak hour period, with the peak hour occurring from 7:45 – 8:45 AM. The Riggs Street count was conducted on June 14, 2016 and the peak hour occurred from 7:45 – 8:45 AM. The count summaries are included in the appendix of this report. The counts were factored, as necessary, using published MaineDOT group mean factors to peak school conditions. The results are expected to be representative of peak school volumes in mid-June or early September. The existing 2016 volumes for both the AM and PM peak hour are shown in Figure 2.

Existing average annual daily traffic (AADT) data for the vicinity of the school campus was obtained from "Traffic Volume Counts, 2014, 2009 and 2006 Annual Reports", published by the Maine Department of Transportation (MaineDOT). The data is summarized below:

	Average Annual Daily Traffic					
Location	2002	2005	2007	2009	2010	2013
Brighton Avenue, NW/O Devon Street	29,170	24,600	---	---	25,280	25,220
Brighton Avenue, NW/O Capisic Street	---	---	---	27,100	---	---
Brighton Avenue, SE/O Kent Street	---	19,590	22,150	19,190	21,500	19,250
Warwick Street, N/O Brighton Avenue	2,730	---	---	---	---	---

As can be seen in the preceding table, traffic volumes on Brighton Avenue in the vicinity of Warwick Street decreased over the long term period 2002 to 2013. Volumes have remained fairly steady over the more recent period 2005 to 2013. To be conservative, a 1% growth rate was used to project 2015 volumes to base 2016 conditions. The existing 2016 volumes were also factored to base 2018 conditions using the same 1% growth rate.

The City of Portland identified one other development project which is expected to impact traffic volumes in the study area, which needs to be considered in the traffic analysis. The Town of Westbrook is reviewing a large development, the Dirigo Plaza mixed-use commercial development. Trip assignments were obtained from the Traffic Impact Study completed by Vanasse & Associates, Inc. dated February 2016 and amended May 2016. Based on the TIS, the development is projected to send approximately 20 % of their total trips to and from the intersection of Brighton Avenue and Warwick Street during the PM peak hour. Trip assignments for the AM peak hour were not provided so MTR applied the same 20 % and assigned them similarly to the study intersections. The resulting 2018 no-build volumes, assuming 1% annual growth, and the including the trips to and from Dirigo Plaza, are shown in Figure 3. Since the school access points will be relocated, the existing school trips were relocated to the new accesses based upon the travel patterns recorded during the traffic counts. The 2018 no-build volumes, with the relocated school driveway trips, are shown in Figure 4.

Trip Generation

The number of trips generated by the existing and proposed expanded school was estimated using the Institute of Transportation Engineers (ITE) "Trip Generation, 9th Edition", the newest edition, as well as measured field rates. The 7th edition is currently being used by the Maine Department of Transportation (MaineDOT) for traffic permitting purposes but the 9th edition provides higher rates for schools which more accurately predict trip-ends for schools in Maine. The trips were estimated using land use code (LUCs) 520 – Elementary School on the basis of 440 (existing) and 558 (proposed) students. The results for the AM and PM peak hours are summarized in the following table:

ITE Trip Generation (one-way trip-ends)

Time Period	Existing School	Proposed School	Increase
Weekday	568	720	152
AM Peak Hour	198	251	53
Entering	109	138	29
Exiting	89	113	24

Time Period	Existing School	Proposed School	Increase
PM Peak Hour – School	123	156	33
Entering	55	70	15
Exiting	68	86	18

As can be seen above, the increase in trip generation for the expanded school with an enlarged student population is expected to be 53 one-way trips during the AM peak hour period and 33 trips during the PM peak hour, based upon the most recent ITE data. Trip generation counts were conducted at the existing school during the AM peak hour to compare to ITE rates. The measured rate was 0.61 trips per student during the AM peak hour compared to the 0.45 ITE rate. As a result, the higher measured trip rate was used to estimate trips for the proposed school expansion and to determine the associated increase in trips from existing conditions. The results are shown in the table:

Measured Trip Generation (one-way trip-ends)

Time Period	Measured School	Proposed School	Increase
AM Peak Hour	268	340	72
Entering	143	180	37
Exiting	125	160	35

As shown above, utilizing the field measured rate results in a greater trip increase from the existing school to the proposed expanded school. Based upon this measured rate, the proposed new school will generate 340 AM peak hour trips, a 72 trip increase from the existing 268 trips. To be conservative, the higher 72 trip increase (as opposed to ITE 53 trip increase) was used for the analysis. The trips were assigned to and from the school based on the patterns recorded during the turning movement counts. The trip assignments are shown in Figure 5 for the AM peak hour analysis period. The resulting build volumes with the new school fully occupied are shown in Figure 6.

Given that new trip generation will be fewer than 100 peak hour trips, as demonstrated by both ITE and the field measured rate, the project should not require a Traffic Movement Permit (TMP). In addition, a project will generally not have significant impact off-site unless it generates in excess of 25 to 35 lane hour trips. Based upon the trip assignments, the school expansion will generate only 20 new lane hour trips. Given this, the study area for City of Portland approval includes the signalized intersection of Warwick Street and Brighton Avenue as well as the unsignalized intersection of Warwick Street and Riggs Street. The intersection of Warwick Street and Orono Road was not analyzed in terms of capacity. The new school project will significantly reduce trips at that intersection since many existing trips will be relocated to the new Riggs Street access point, thus improving the level of service and dismissing the need for the intersection to be analyzed in terms of capacity.

Capacity Analysis

Traffic operations are evaluated in terms of level of service (LOS). Level of service is a qualitative measure that describes operations by letter designation. The levels range from A - very little delay to F - extreme delays. Level of service "D" is generally considered acceptable in urban locations while LOS "E" is generally considered the capacity of a facility and the minimum tolerable level. The level of service for signalized intersections is based upon average control delay per vehicle, as defined in the following tables excerpted from the 2010 "Highway Capacity Manual":

Signalized Intersection Level of Service

LOS	Control Delay per Vehicle
A	< = 10.0 seconds
B	> 10.0 and <= 20.0
C	> 20.0 and <= 35.0
D	> 35.0 and <= 55.0
E	> 55.0 and <= 80.0
F	> 80.0

The level of service for unsignalized intersections is based upon average control delay per vehicle for each minor, opposed movement, as defined in the following table:

Unsignalized Intersection Level of Service

LOS	Delay Range
A	< = 10.0 seconds
B	> 10.0 and <= 15.0
C	> 15.0 and <= 25.0
D	> 25.0 and <= 35.0
E	> 35.0 and <= 50.0
F	> 50.0

Signalized Intersection Analysis

The level of service was calculated using Synchro 7 for the signalized intersection of Brighton Avenue, Warwick Street and Rowe Avenue for existing 2016 and projected 2018 volumes, with and without the new expanded school. The results are provided in the appendix and are summarized in the following table with the level of service followed by the delay, in seconds, in parentheses:

Brighton Avenue, Warwick Street and Rowe Avenue
AM Peak Hour Levels of Service

Approach/Movement	2016 Existing	2018 No-Build	2018 Build
Eastbound Brighton Avenue Overall	B (16.2)	B (17.5)	C (21.1)
Westbound Brighton Avenue Overall	B (11.8)	B (12.3)	B (13.0)
Northbound Rowe Avenue Overall	C (31.8)	C (32.3)	C (32.9)
Southbound Warwick Avenue	C (32.4)	C (33.1)	C (34.9)
Overall Intersection	**B (16.2)**	**B (17.0)**	**B (19.4)**

As can be seen above, the signalized intersection is currently operating at LOS "B" overall during the AM peak hour, with all movements at a level of service "C" or better. The same levels of service are expected under both 2018 no-build and build volumes. The overall intersection only demonstrates a minor (2.4 second) increase in delay from no-build to build volumes, showing that the new expanded Hall School will not have any significant impact on operations at this signalized intersection or hence, off-site.

Unsignalized Intersection Analysis

The level of service was calculated for the unsignalized intersection of Warwick Street and Riggs Street for existing 2016 and projected 2018 volumes, with and without the expanded new school. The results are provided in the appendix and are summarized below with the level of service followed by the delay, in seconds, in parentheses:

Warwick Street and Riggs Street
AM Peak Hour Levels of Service

Approach/Movement	2016 Existing	2018 No-Build	2018 Build
Eastbound Riggs Street Overall	A (9.4)	A (9.4)	B (12.8)
Westbound Riggs Street Overall	A (9.9)	A (9.9)	B (12.7)
Northbound Warwick Street Overall	A (0.0)	A (0.0)	A (5.2)
Southbound Warwick Street Overall	A (1.0)	A (1.0)	A (0.0)
Overall Intersection	**A (1.7)**	**A (1.7)**	**A (8.0)**

As can be seen in the preceding table, the unsignalized intersection is currently operating at LOS "A" overall and will remain such under projected 2018 no-build conditions. With the addition of the school access drive, the intersection will remains at LOS "A" overall during the AM peak hour. Eastbound and westbound Riggs Streets will operate at LOS "B" under full build conditions which would be expected given the added volumes.

Safety Analysis

Accident Review

The Maine Department of Transportation uses two criteria to determine high crash locations (HCLs). The first is the critical rate factor (CRF), which is a measure of the accident rate. A CRF greater than one indicates a location which has a higher than expected accident rate. The expected rate is calculated as a statewide average of similar facilities.

The second criterion, which must also be met, is based upon the number of accidents that occur at a particular location. Eight or more accidents must occur over the three-year study period for the location to be considered a high crash location. The CRF and number of accidents are summarized by location for the most recent three-year period, 2013 to 2015, below:

Warwick Street Location Description	# of Acc.	CRF
Between Brighton Avenue and Glen Haven Road	0	0.00
Brighton Avenue Location Description	**# of Acc.**	**CRF**
Intersection of Capisic Street	9	0.29
Between Capisic Street and Devon Street	1	0.18
Intersection of Devon Street	2	0.38
Between Devon Street and Dorset Street	5	0.77
Intersection of Dorset Street	2	0.38
Between Dorset Street and Warwick Street	3	0.46
Intersection of Warwick Street	19	0.58
Between Rowe Avenue and Lomond Street	**8**	**1.79**
Intersection of Terrace Avenue	1	0.11
Between Terrace Avenue and Webb Street	2	0.44
Intersection of Wessex Street	1	0.11
Between Wessex Street and 0.07 miles west	3	0.58
Between Wessex Street and Intersection of Cabot and Rand	1	0.17
Intersection of Cabot Street and Rand Road	17	0.51

As can be seen on the previous page, there is one high crash location within the vicinity of the Hall School on Brighton Avenue, the link between the intersection of Rowe Avenue and Lomond Street. Individual accident reports were obtained and a collision diagram was prepared to determine if there are any accident patterns or trends evident that may indicate a correctable safety deficiency. The diagram is included in the appendix and is evaluated below:

Between Rowe Avenue and Lomond Street

The link between Rowe Avenue and Lomond Street has 8 accidents and a CRF of 1.79. Four of the accidents were rear-end collisions, two eastbound on Brighton Avenue and two westbound. Three of those rear-ends were caused by slippery road conditions due to snow. Two accidents were sideswipes, one due to an improper lane change and another caused by a vehicle avoiding an opposing vehicle in their lane. One accident occurred when an eastbound bicyclist swerved to avoid a pothole and hit a vehicle. The final accident occurred when a vehicle traveling westbound on Brighton Avenue attempted to take a left-turn from the right travel lane, failing to yield to the vehicle in the left travel lane. There is no pattern of accidents that indicates any potential safety deficiencies.

Driveway Sight Distance

One of the most important safety factors to consider for a project is sight distance from the access drives. This sight distance is measured ten feet back from the edge of travel way at a driver's eye height of 3.5 feet to an object height of 4.25 feet. Maine Traffic Resources recommends a minimum sight distance of 250 feet for the posted 25 mile per hour speed limit zone on Warwick Street. The City of Portland ordinance requires a lesser 200 feet for the posted 25 mile per hour speed limit.

Sight distance was measured from the proposed school drive at Riggs Street and from the existing Orono Road drive. From Riggs Street, sight distance to the left was approximately 250 feet, but a vehicle parked on the side of the road during the time of the site visit, obscured sight distance further. Without the parked car, sight distance would exceed 300 feet. Sight distance to the right was obscured by some shrubbery around the existing 25 mph speed limit sign. With removal of the shrubbery sight distance would be more than adequate, exceeding 300 feet. Sight distance from Orono Road to the left extends to the bend in Warwick Street, approximately 325 feet. To the right, sight distance exceeds 300 feet.

To summarize, MTR recommends 250 feet of sight distance be provided to assure safety for the school. For that reason MTR recommends the shrubbery around the speed limit sign be trimmed (and maintained). In addition, "No Parking" signs should be added

on the west side of Warwick Street to the north and south of Riggs Street in the immediate vicinity of Riggs Street, to assure sight distance is adequate at all times. The recommended "No Parking" zones, approximately 150' and 170' in length, for Warwick Street are shown on a sketch in the appendix. It is also important to note that no landscaping or signage should be located within the sight triangle along the property frontage which could obscure the sight distances in the future from Riggs Street.

Pedestrian Facilities

Based on data provided from the school, 18% of the students walk to school and 6% of them ride a bicycle. Given the current high numbers of both pedestrians and bicyclers to and from the school, MTR reviewed the study area intersections in regards to pedestrian facilities. The intersection of Brighton Avenue and Warwick Street is properly equipped with pedestrian features including countdown pedestrian signals, truncated domes and curb ramps. The intersection provides a crosswalk on Warwick Street from the sidewalk on Brighton Avenue to the sidewalk that travels the entire length of the west side of Warwick Street to the school. The intersection also provides crosswalks across Rowe Avenue and Brighton Avenue with pedestrian signals to provide safe access to Warwick Street.

The intersection of Warwick Street and Riggs Street also provides for pedestrian access. A crosswalk is located on the westbound Riggs Street approach, which has truncated domes and curb ramps. The southbound Warwick Street approach also has a striped crosswalk with truncated domes and curb ramps, as well as pedestrian signage. Additionally, it is recommended that a crosswalk be provided across the Riggs Street school access point to provide for crossing from the north side of Warwick Street to the south.

In addition, the site plan prepared by Oak Point Associates was reviewed in terms of pedestrian accommodations on the school site. Oak Point provides a sidewalk along the entire westerly side of Lomond Street and Riggs Street from the school entrance to Warwick Street. A sidewalk is also provided to Warwick Street, north of Orono Road, to serve students destined to and from the north. In addition, there are proposed sidewalks on site that will connect to the trails to Pinecrest Road and Godfrey Street, as well as along the perimeter of the parking lot and along the entire bus loop. Lastly, crosswalks are provided where these sidewalks cross access ways.

School Zone Signage

Information regarding the existing school zone signage, provided by Oak Point Associates, is summarized below:

- +/- 350 feet south of Riggs Street, on southbound side, facing Brighton Ave
- +/-90-100 feet north of the Riggs Street Intersection (on northbound side, facing Brighton Ave)
- +/-300 feet north of the Warwick St entrance to the school, at the end of the bridge crossing Capisic Brook (on southbound side, facing away from the school, toward Sunset Ln).

The Manual on Uniform Traffic Control Devices (MUTCD), 2009 edition, states that the start of a school speed limit zone (S5-1) should be 200 feet in advance of the school grounds. The signs currently located approximately 350 feet south of Riggs Street and approximately 300 feet north of the Orono Road entrance are adequate as is. The sign located north of the Riggs Street intersection, most likely initially set to alert drivers arriving from Riggs Street, should be relocated due to the relocated access point. MTR recommends this sign be relocated to the westbound Riggs Street approach, at least 200 feet prior to Warwick Street, to alert drivers arriving from the Riggs Street neighborhoods of the school zone.

SUMMARY

The new school, serving an increased student population, is expected to generate 72 new one-way trips during the AM peak hour study period, based upon the measured trip generation rates (as opposed to the lesser ITE rates). Given that the new school will generate fewer than 100 new one-way trips during peak hours the project will not require a Traffic Movement Permit.

In terms of capacity, the intersection of Brighton Avenue and Warwick Street will operate at LOS "B" overall during the AM peak hour. The intersection of Warwick Street and Riggs Street will operate at LOS "A" overall. With the project generating a maximum of 20 new lane hour trips and given the good levels of service, there are no capacity concerns.

In terms of safety, one high crash location was identified within the study area. There are no accident patterns or trends evident that indicate any potential safety deficiency.

Sight distance from Riggs Street is currently obscured by shrubbery to the right and could be limited by potential on-street parking. MTR recommends the shrubbery be cut back and that "No Parking" signs be installed to the left and right of the Riggs Street school access point, creating 150' and 170' no parking zones, to maintain good sight distance at all times. Sight distance from Orono Road is adequate to both the right and left.

The area provides adequate pedestrian facilities to allow for safe and efficient travel for pedestrians traveling to and from the school. In terms of site pedestrian safety, MTR recommends a new crosswalk be provided across Riggs Street (school access drive).

In regards to signage for the school, two of the three existing school speed zone signs are located in acceptable locations. The sign currently located to the north of the Riggs Street intersection no longer serves its intended purpose to alert Riggs Street drivers of the school zone. For this reason, this sign should be relocated to the westbound Riggs Street approach, at least 200 feet in advance of Warwick Street.

Figure 1

Site Location Map

Fred P Hall School

Portland, Maine

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

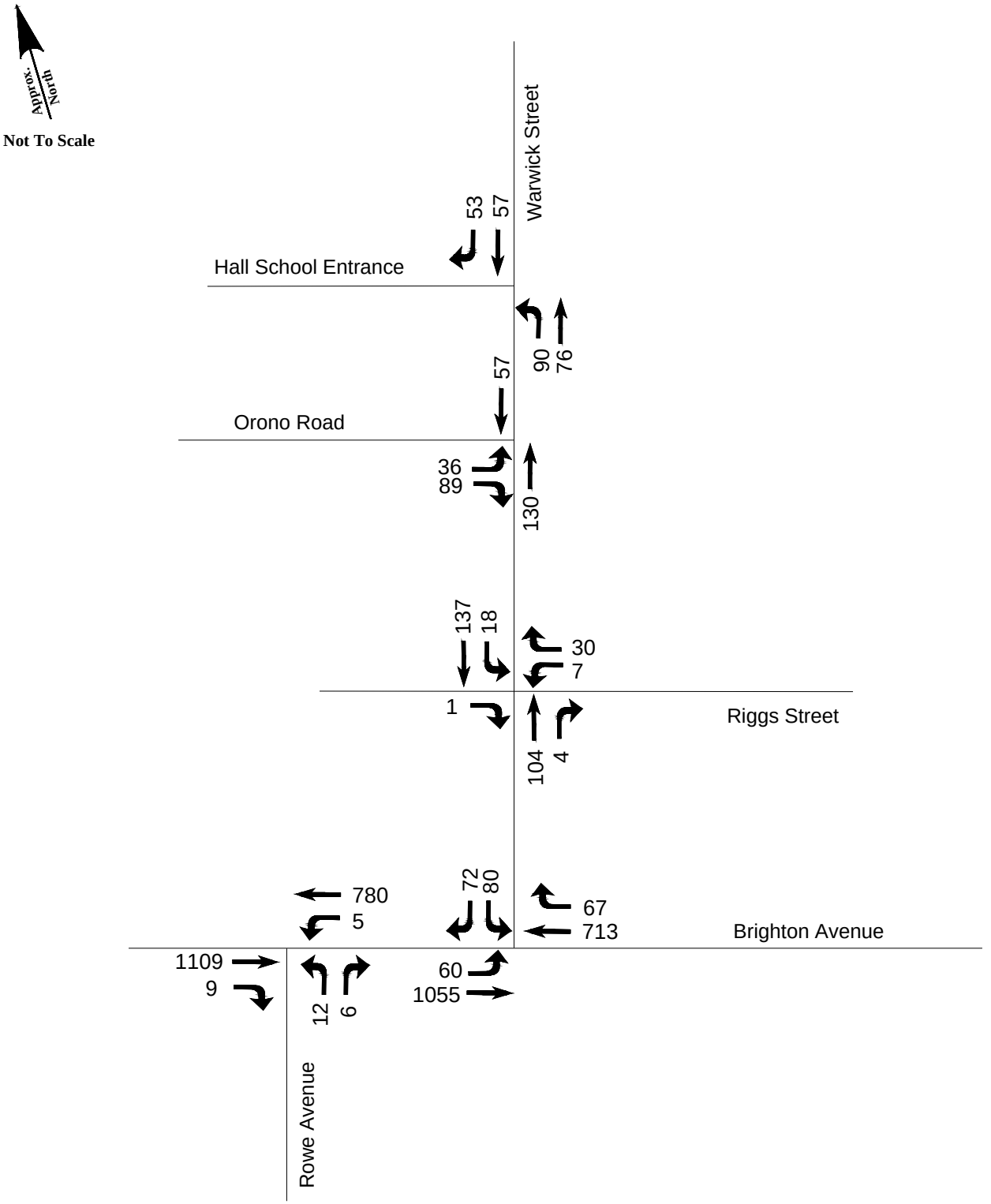

Figure 2

2016 Existing Peak Hour Volumes

Fred P. Hall School Expansion

Portland, Maine

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

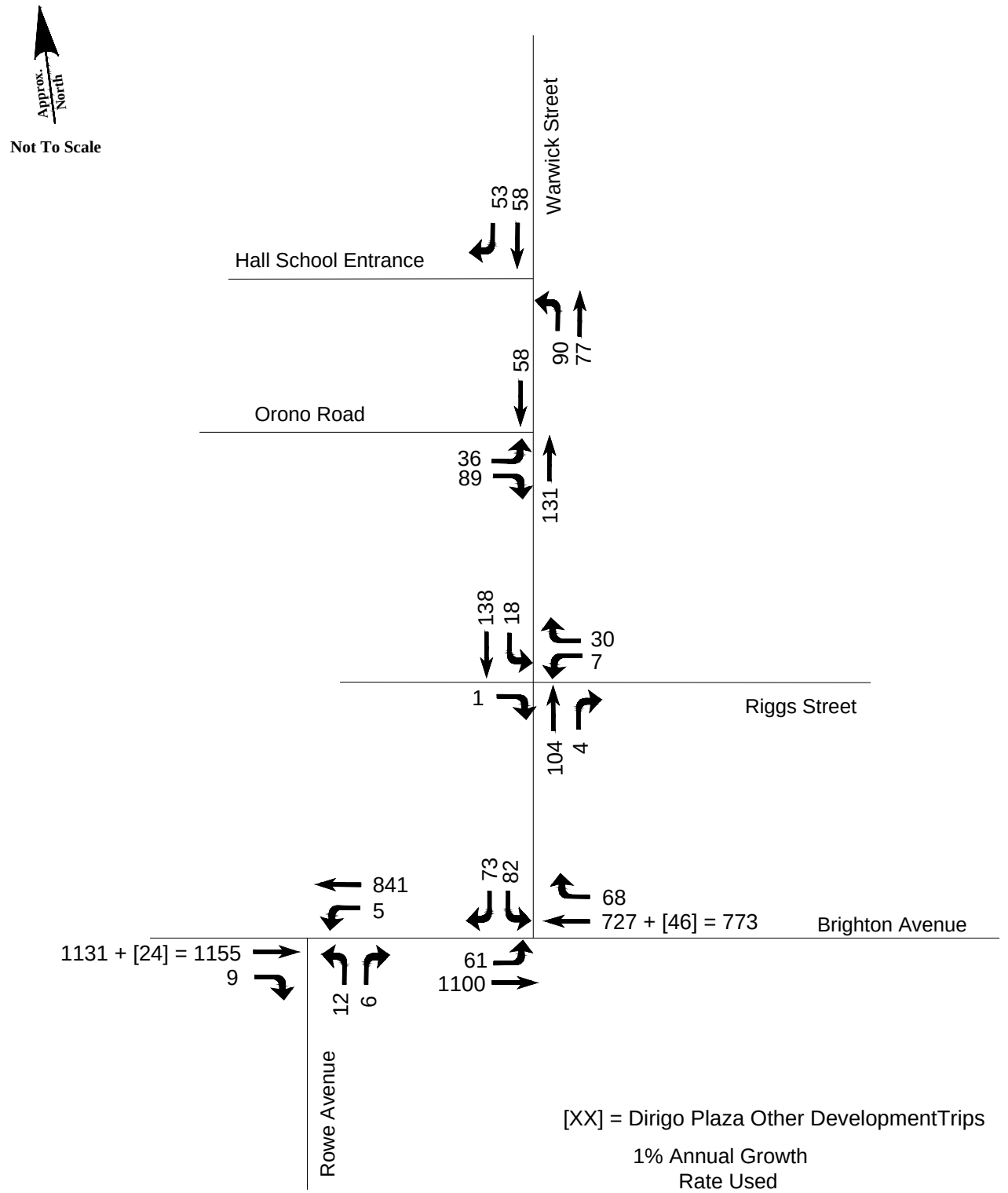

Figure 3

2018 No-Build Peak Hour Volumes
Fred P. Hall School Expansion
Portland, Maine

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

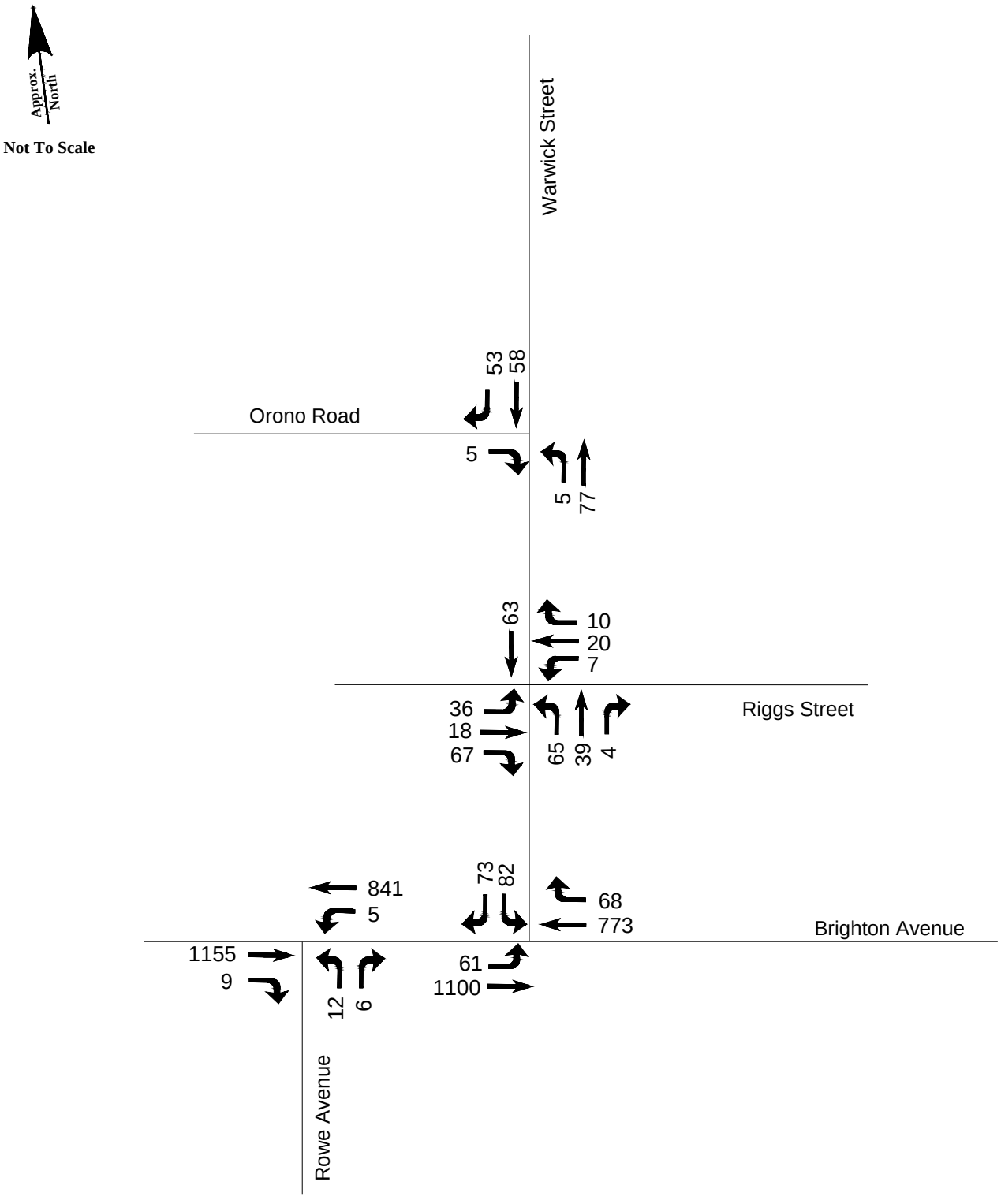

Figure 4

Relocated No-Build Volumes

Fred P. Hall School Expansion

Portland, Maine

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

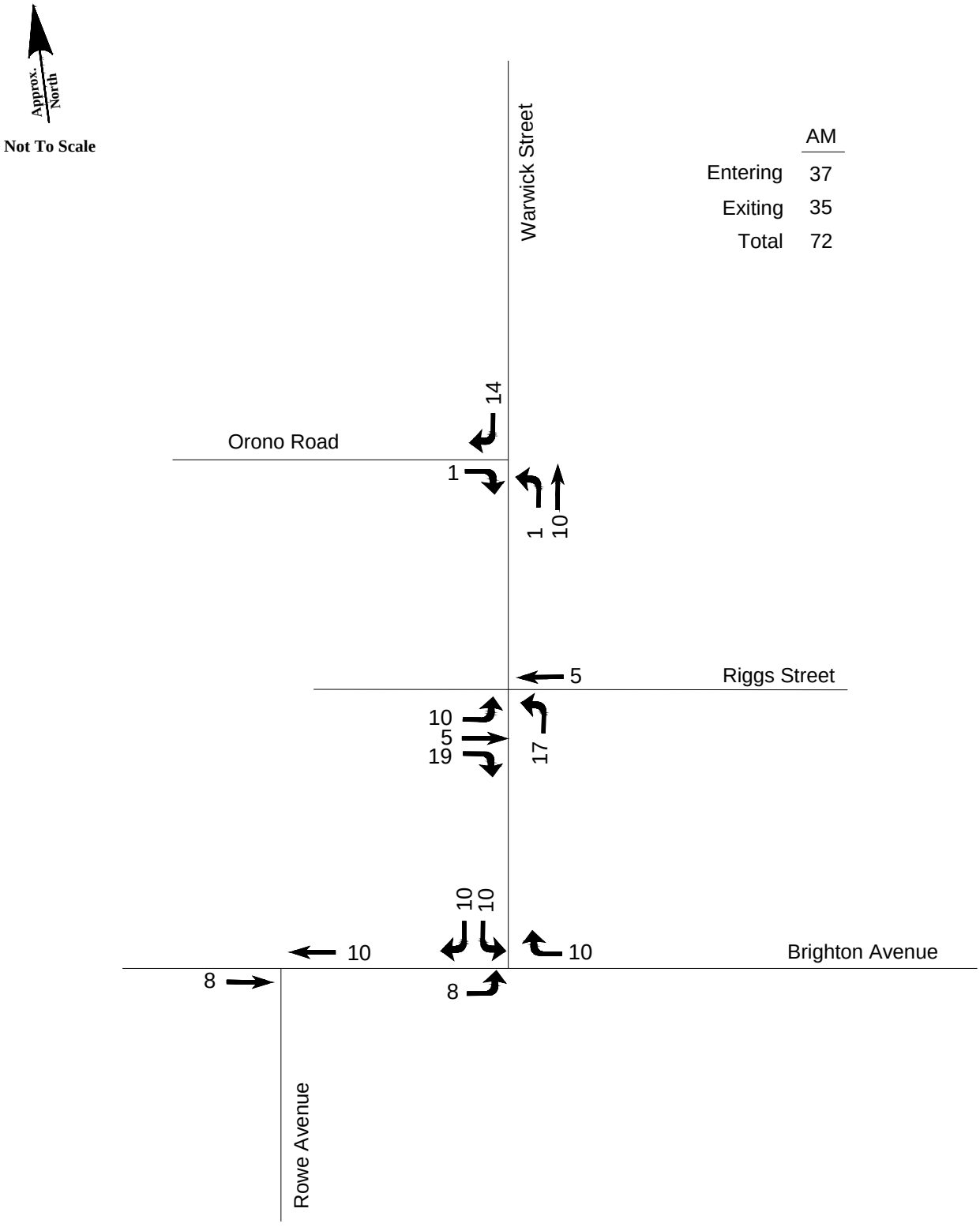

Figure 5

AM Peak Hour Trip Assignments
Fred P. Hall School Expansion
Portland, Maine

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

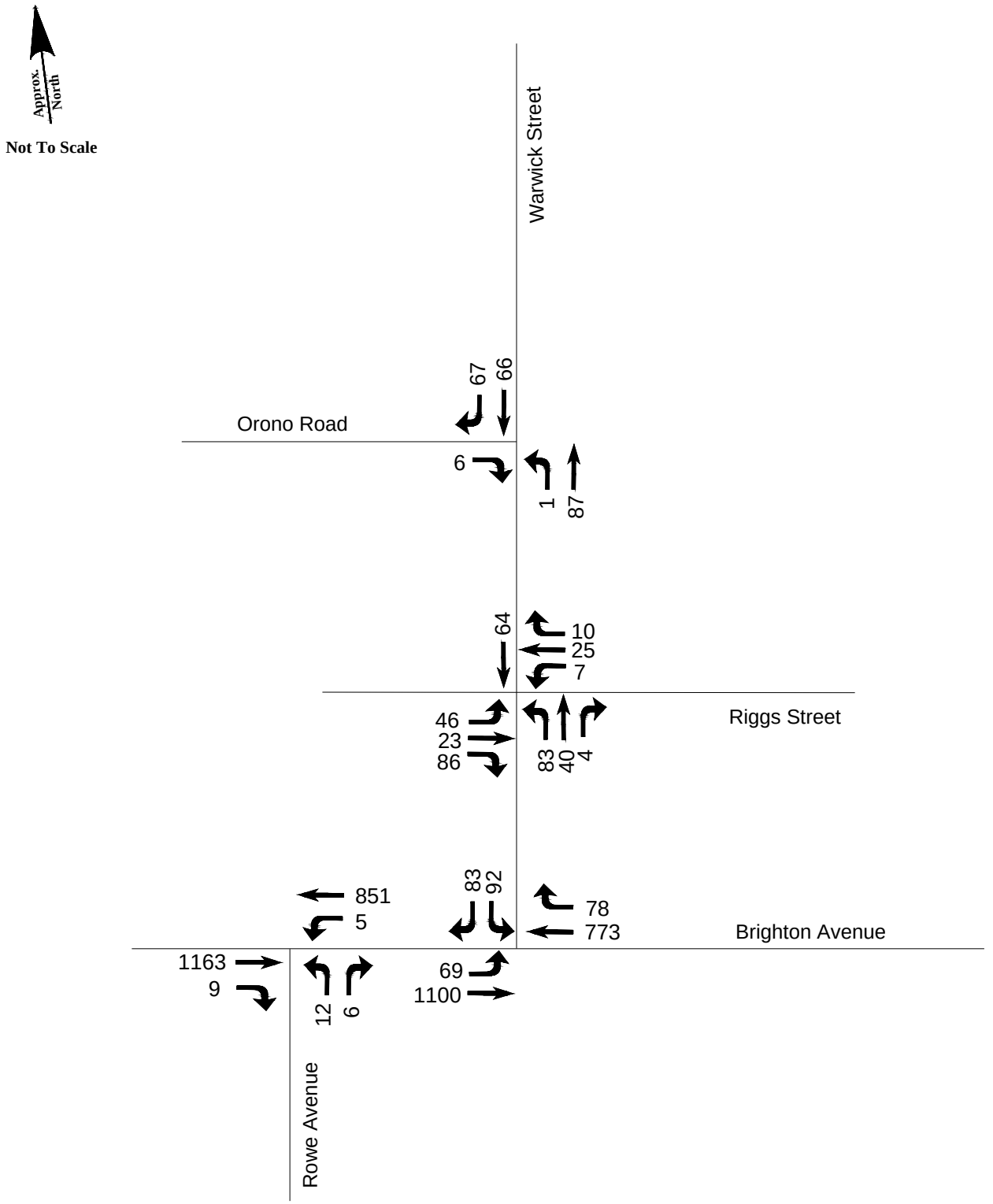

Figure 6

2018 AM Peak Hour Build Volumes
Fred P. Hall School Expansion
Portland, Maine

Maine Traffic Resources
25 Vine Street
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04345
tel: (207) 582-5252
fax: (207) 582-1677

APPENDIX

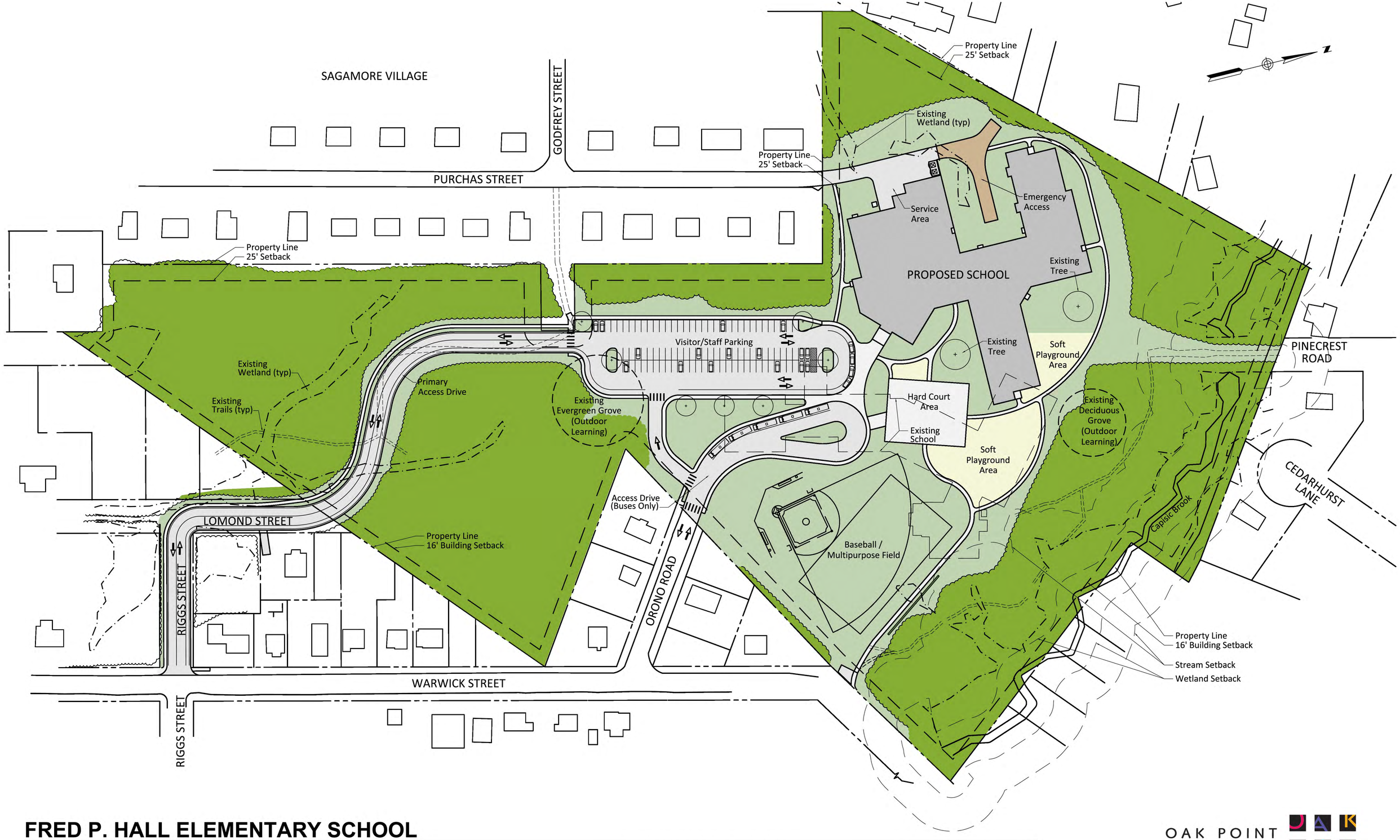
Hall School Site Plan

Turning Movement Counts

Capacity Analysis

Accident Data

Collision Diagram



FRED P. HALL ELEMENTARY SCHOOL

Portland, Maine

Schematic Site Plan

1"=60' 60' 30' 0 60' 120'

OAK POINT ASSOCIATES

ARCHITECTURE ■ ENGINEERING ■ PLANNING

Maine Traffic Resources
25 Vine Street
Gardiner, ME 04345
mainetrafficresources.com

Title: Fred P Hall School AM
Town: Portland, Maine
Counter: NLS
Weather: Sunny

File Name : PortlandHallSchoolAM
Site Code : 00000001
Start Date : 11/4/2015
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks

	Warwick Street From North					From East					Warwick Street From South					Orono Road Exit From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
08:00 AM	11	21	0	0	32	0	0	0	0	0	0	3	14	0	17	6	0	4	0	10	59
08:15 AM	23	14	0	0	37	0	0	0	0	0	0	5	44	0	49	26	0	13	0	39	125
08:30 AM	17	8	0	0	25	0	0	0	0	0	0	2	28	0	30	51	0	16	0	67	122
08:45 AM	2	11	0	0	13	0	0	0	0	0	0	7	4	0	11	6	0	3	0	9	33
Total	53	54	0	0	107	0	0	0	0	0	0	17	90	0	107	89	0	36	0	125	339
Grand Total	53	54	0	0	107	0	0	0	0	0	0	17	90	0	107	89	0	36	0	125	339
Apprch %	49.5	50.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	15.9	84.1	0.0		71.2	0.0	28.8	0.0		
Total %	15.6	15.9	0.0	0.0	31.6	0.0	0.0	0.0	0.0	0.0	0.0	5.0	26.5	0.0	31.6	26.3	0.0	10.6	0.0	36.9	

	Warwick Street From North					From East					Warwick Street From South					Orono Road Exit From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 08:00 AM to 08:45 AM - Peak 1 of 1																					
Intersection	08:00 AM																				
Volume	53	54	0	0	107	0	0	0	0	0	0	17	90	0	107	89	0	36	0	125	339
Percent	49.5	50.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	15.9	84.1	0.0		71.2	0.0	28.8	0.0		
08:15 Volume	23	14	0	0	37	0	0	0	0	0	0	5	44	0	49	26	0	13	0	39	125
Peak Factor																					0.678
High Int.	08:15 AM					7:45:00 AM					08:15 AM					08:30 AM					
Volume	23	14	0	0	37	0	0	0	0	0	0	5	44	0	49	51	0	16	0	67	
Peak Factor		57			0.723							18			0.546					0.466	

To 1st Week in September
Group I → 0.96/0.91 = 1.055

Maine Traffic Resources
25 Vine Street
Gardiner, ME 04345
mainetrafficresources.com

Title: Brighton, Warwick, Rowe AM
Town: Portland, Maine
Counter: NLS
Weather: Sunny

File Name : PortlandBrightonWarwickAM
Site Code : 00014111
Start Date : 5/18/2016
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

	Warwick Street From North					Brighton Avenue From East					Rowe Avenue From South					Brighton Avenue From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	7	0	4	3	14	0	133	0	0	133	1	0	3	2	6	0	222	3	0	225	378
07:15 AM	16	0	11	1	28	2	169	0	1	172	8	0	0	2	10	1	261	6	0	268	478
07:30 AM	16	0	11	1	28	3	188	1	0	192	4	0	3	0	7	0	306	11	0	317	544
07:45 AM	11	0	13	1	25	10	220	1	0	231	4	0	2	1	7	0	309	11	0	320	583
Total	50	0	39	6	95	15	710	2	1	728	17	0	8	5	30	1	1098	31	0	1130	1983
08:00 AM	13	0	15	0	28	21	188	2	0	211	0	0	4	0	4	3	287	11	0	301	544
08:15 AM	25	0	18	0	43	23	154	0	0	177	2	0	3	2	7	1	279	21	0	301	528
08:30 AM	26	0	31	0	57	18	193	0	0	211	1	0	3	2	6	2	272	16	0	290	564
08:45 AM	8	0	16	2	26	5	178	3	0	186	3	0	2	1	6	3	217	12	0	232	450
Total	72	0	80	2	154	67	713	5	0	785	6	0	12	5	23	9	1055	60	0	1124	2086
Grand Total	122	0	119	8	249	82	1423	7	1	1513	23	0	20	10	53	10	2153	91	0	2254	4069
Apprch %	49.0	0.0	47.8	3.2		5.4	94.1	0.5	0.1		43.4	0.0	37.7	18.9		0.4	95.5	4.0	0.0		
Total %	3.0	0.0	2.9	0.2	6.1	2.0	35.0	0.2	0.0	37.2	0.6	0.0	0.5	0.2	1.3	0.2	52.9	2.2	0.0	55.4	

	Warwick Street From North					Brighton Avenue From East					Rowe Avenue From South					Brighton Avenue From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Intersection	07:45 AM																				
Volume	75	0	77	1	153	72	755	3	0	830	7	0	12	5	24	6	1147	59	0	1212	2219
Percent	49.0	0.0	50.3	0.7		8.7	91.0	0.4	0.0		29.2	0.0	50.0	20.8		0.5	94.6	4.9	0.0		
07:45 Volume	11	0	13	1	25	10	220	1	0	231	4	0	2	1	7	0	309	11	0	320	583
Peak Factor																					0.952
High Int.	08:30 AM					07:45 AM					07:45 AM					07:45 AM					
Volume	26	0	31	0	57	10	220	1	0	231	4	0	2	1	7	0	309	11	0	320	
Peak Factor					0.671					0.898					0.857					0.947	

To 1st Week in September

Group I → 0.91/0.91 = 1.00

Maine Traffic Resources
25 Vine Street
Gardiner, ME 04345
mainetrafficresources.com

Title: Warwick St & Riggs St AM
Town: Portland, Maine
Counter: NLS
Weather: Cloudy

File Name : PortlandWarwickRiggsAM
Site Code : 00000001
Start Date : 6/14/2016
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

	Warwick Street From North					Riggs Street From East					Warwick Street From South					Riggs Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:45 AM	0	35	6	1	42	7	0	2	0	9	0	21	0	0	21	1	0	0	0	1	73
Total	0	35	6	1	42	7	0	2	0	9	0	21	0	0	21	1	0	0	0	1	73
08:00 AM	0	25	4	3	32	7	0	3	0	10	2	30	0	0	32	0	0	0	0	0	74
08:15 AM	0	38	4	11	53	10	0	0	0	10	1	36	0	0	37	0	0	0	3	3	103
08:30 AM	0	56	7	1	64	9	0	4	0	13	0	25	0	0	25	1	0	0	1	2	104
08:45 AM	0	18	3	0	21	4	0	0	0	4	1	13	0	0	14	0	0	0	0	0	39
Total	0	137	18	15	170	30	0	7	0	37	4	104	0	0	108	1	0	0	4	5	320
09:00 AM	0	12	0	0	12	2	0	3	0	5	2	4	0	0	6	0	0	0	1	1	24
Grand Total	0	184	24	16	224	39	0	12	0	51	6	129	0	0	135	2	0	0	5	7	417
Apprch %	0.0	82.1	10.7	7.1		76.5	0.0	23.5	0.0		4.4	95.6	0.0	0.0		28.6	0.0	0.0	71.4		
Total %	0.0	44.1	5.8	3.8	53.7	9.4	0.0	2.9	0.0	12.2	1.4	30.9	0.0	0.0	32.4	0.5	0.0	0.0	1.2	1.7	

	Warwick Street From North					Riggs Street From East					Warwick Street From South					Riggs Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 07:45 AM to 09:00 AM - Peak 1 of 1																					
Intersection	07:45 AM																				
Volume	0	154	21	16	191	33	0	9	0	42	3	112	0	0	115	2	0	0	4	6	354
Percent	0.0	80.6	11.0	8.4		78.6	0.0	21.4	0.0		2.6	97.4	0.0	0.0		33.3	0.0	0.0	66.7		
08:30 Volume	0	56	7	1	64	9	0	4	0	13	0	25	0	0	25	1	0	0	1	2	104
Peak Factor																					0.851
High Int.	08:30 AM					08:30 AM					08:15 AM					08:15 AM					
Volume	0	56	7	1	64	9	0	4	0	13	1	36	0	0	37	0	0	0	3	3	
Peak Factor					0.746					0.808					0.777					0.500	

To 1st Week in September
Group I → 0.90/0.91
No factor needed

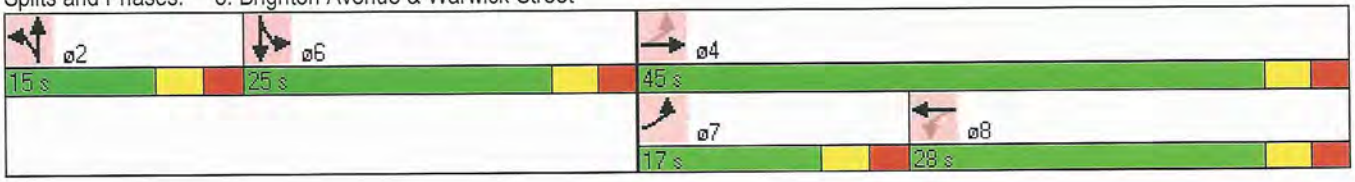
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1055	9	5	713	67	12	0	6	80	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99			0.99	
Frt		0.999			0.987			0.955			0.936	
Flt Protected		0.997						0.968			0.974	
Satd. Flow (prot)	0	3525	0	0	3459	0	0	1745	0	0	1670	0
Flt Permitted		0.847			0.947			0.968			0.974	
Satd. Flow (perm)	0	2995	0	0	3276	0	0	1738	0	0	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			11			7			50	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		75			1330			316			628	
Travel Time (s)		2.0			36.3			8.6			17.1	
Confl. Peds. (#/hr)							5		5	2		2
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.85	0.85	0.85	0.70	0.70	0.70
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	3%	3%	3%
Adj. Flow (vph)	63	1111	9	6	792	74	14	0	7	114	0	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1183	0	0	872	0	0	21	0	0	217	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			-10			-65	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			Perm			Split			Split		
Protected Phases	7	4			8		2	2		6	6	
Permitted Phases	4			8								
Detector Phase	7	4		8	8		2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.5	21.5		21.5	21.5		21.5	21.5		21.5	21.5	
Total Split (s)	17.0	45.0	0.0	28.0	28.0	0.0	15.0	15.0	0.0	25.0	25.0	0.0
Total Split (%)	20.0%	52.9%	0.0%	32.9%	32.9%	0.0%	17.6%	17.6%	0.0%	29.4%	29.4%	0.0%
Maximum Green (s)	11.5	39.5		22.5	22.5		9.5	9.5		19.5	19.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	None	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)		38.9			38.9			6.3			12.8	
Actuated g/C Ratio		0.52			0.52			0.08			0.17	
v/c Ratio		0.76			0.51			0.14			0.66	
Control Delay		19.3			13.6			28.9			32.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		19.3			13.6			28.9			32.2	
LOS		B			B			C			C	
Approach Delay		19.3			13.6			28.9			32.2	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 74.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 18.4 Intersection LOS: B
Intersection Capacity Utilization 76.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Brighton Avenue & Warwick Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	60	1055	9	5	713	67	12	0	6	80	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.95			0.94	
Flt Protected		1.00			1.00			0.97			0.97	
Satd. Flow (prot)		3526			3459			1745			1671	
Flt Permitted		0.85			0.95			0.97			0.97	
Satd. Flow (perm)		2995			3275			1745			1671	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90	0.85	0.85	0.85	0.70	0.70	0.70
Adj. Flow (vph)	63	1111	9	6	792	74	14	0	7	114	0	103
RTOR Reduction (vph)	0	0	0	0	5	0	0	6	0	0	41	0
Lane Group Flow (vph)	0	1183	0	0	867	0	0	15	0	0	176	0
Confl. Peds. (#/hr)							5		5	2		2
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	3%	3%	3%
Turn Type	pm+pt			Perm			Split			Split		
Protected Phases	7	4			8		2	2		6	6	
Permitted Phases	4			8								
Actuated Green, G (s)		38.9			38.9			6.3			12.8	
Effective Green, g (s)		38.9			38.9			6.3			12.8	
Actuated g/C Ratio		0.52			0.52			0.08			0.17	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1564			1710			148			287	
v/s Ratio Prot								c0.01			c0.11	
v/s Ratio Perm		c0.39			0.26							
v/c Ratio		0.76			0.51			0.10			0.61	
Uniform Delay, d1		14.1			11.6			31.5			28.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.1			0.2			0.3			3.8	
Delay (s)		16.2			11.8			31.8			32.4	
Level of Service		B			B			C			C	
Approach Delay (s)		16.2			11.8			31.8			32.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

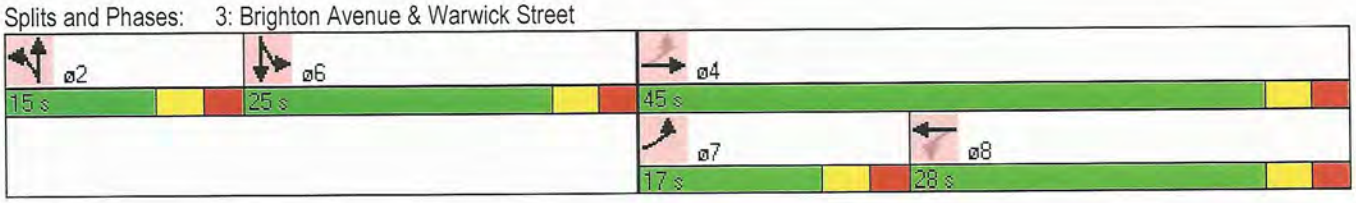
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	1100	9	5	773	68	12	0	6	82	0	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99			0.99	
Frt		0.999			0.988			0.955			0.936	
Flt Protected		0.997						0.968			0.974	
Satd. Flow (prot)	0	3525	0	0	3463	0	0	1745	0	0	1670	0
Flt Permitted		0.836			0.947			0.968			0.974	
Satd. Flow (perm)	0	2956	0	0	3279	0	0	1738	0	0	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			10			7			49	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		75			1330			316			628	
Travel Time (s)		2.0			36.3			8.6			17.1	
Confl. Peds. (#/hr)							5		5	2		2
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.85	0.85	0.85	0.70	0.70	0.70
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	3%	3%	3%
Adj. Flow (vph)	64	1158	9	6	859	76	14	0	7	117	0	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1231	0	0	941	0	0	21	0	0	221	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			-10			-65	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			Perm			Split			Split		
Protected Phases	7	4			8		2	2		6	6	
Permitted Phases	4			8								
Detector Phase	7	4		8	8		2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.5	21.5		21.5	21.5		21.5	21.5		21.5	21.5	
Total Split (s)	17.0	45.0	0.0	28.0	28.0	0.0	15.0	15.0	0.0	25.0	25.0	0.0
Total Split (%)	20.0%	52.9%	0.0%	32.9%	32.9%	0.0%	17.6%	17.6%	0.0%	29.4%	29.4%	0.0%
Maximum Green (s)	11.5	39.5		22.5	22.5		9.5	9.5		19.5	19.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	None	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)		39.7			39.7			6.3			13.1	
Actuated g/C Ratio		0.53			0.53			0.08			0.17	
v/c Ratio		0.79			0.55			0.14			0.67	
Control Delay		20.9			14.2			29.1			33.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.9			14.2			29.1			33.0	
LOS		C			B			C			C	
Approach Delay		20.9			14.2			29.1			33.0	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 75.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 80.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Brighton Avenue & Warwick Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	1100	9	5	773	68	12	0	6	82	0	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.95			0.94	
Flt Protected		1.00			1.00			0.97			0.97	
Satd. Flow (prot)		3526			3461			1745			1671	
Flt Permitted		0.84			0.95			0.97			0.97	
Satd. Flow (perm)		2955			3278			1745			1671	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90	0.85	0.85	0.85	0.70	0.70	0.70
Adj. Flow (vph)	64	1158	9	6	859	76	14	0	7	117	0	104
RTOR Reduction (vph)	0	0	0	0	5	0	0	6	0	0	41	0
Lane Group Flow (vph)	0	1231	0	0	936	0	0	15	0	0	180	0
Confl. Peds. (#/hr)							5		5	2		2
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	3%	3%	3%
Turn Type	pm+pt			Perm			Split			Split		
Protected Phases	7	4			8		2	2		6	6	
Permitted Phases	4			8								
Actuated Green, G (s)		39.7			39.7			6.3			13.1	
Effective Green, g (s)		39.7			39.7			6.3			13.1	
Actuated g/C Ratio		0.53			0.53			0.08			0.17	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1552			1721			145			290	
v/s Ratio Prot								c0.01			c0.11	
v/s Ratio Perm		c0.42			0.29							
v/c Ratio		0.79			0.54			0.10			0.62	
Uniform Delay, d1		14.6			11.9			32.0			29.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.9			0.4			0.3			4.1	
Delay (s)		17.5			12.3			32.3			33.1	
Level of Service		B			B			C			C	
Approach Delay (s)		17.5			12.3			32.3			33.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	16.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

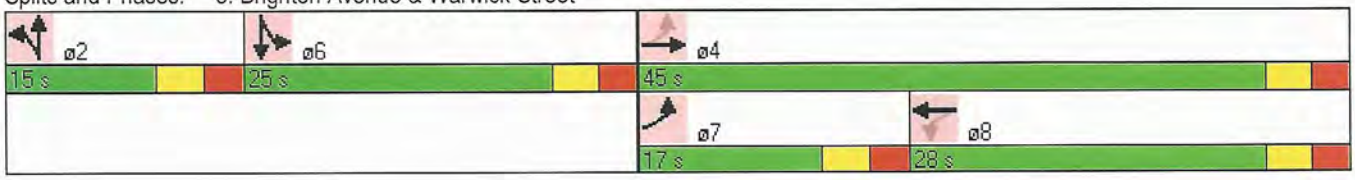
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1100	9	5	773	78	12	0	6	92	0	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99			0.99	
Frt		0.999			0.986			0.955			0.936	
Flt Protected		0.997						0.968			0.974	
Satd. Flow (prot)	0	3525	0	0	3456	0	0	1745	0	0	1670	0
Flt Permitted		0.794			0.947			0.968			0.974	
Satd. Flow (perm)	0	2807	0	0	3273	0	0	1738	0	0	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			12			7			50	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		75			1330			316			628	
Travel Time (s)		2.0			36.3			8.6			17.1	
Confl. Peds. (#/hr)							5		5	2		2
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.85	0.85	0.85	0.70	0.70	0.70
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	3%	3%	3%
Adj. Flow (vph)	73	1158	9	6	859	87	14	0	7	131	0	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1240	0	0	952	0	0	21	0	0	250	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			-10			-65	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt			Perm			Split			Split		
Protected Phases	7	4			8		2	2		6	6	
Permitted Phases	4			8								
Detector Phase	7	4		8	8		2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.5	21.5		21.5	21.5		21.5	21.5		21.5	21.5	
Total Split (s)	17.0	45.0	0.0	28.0	28.0	0.0	15.0	15.0	0.0	25.0	25.0	0.0
Total Split (%)	20.0%	52.9%	0.0%	32.9%	32.9%	0.0%	17.6%	17.6%	0.0%	29.4%	29.4%	0.0%
Maximum Green (s)	11.5	39.5		22.5	22.5		9.5	9.5		19.5	19.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.5	5.5	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		None	None	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)		39.7			39.7			6.3			14.2	
Actuated g/C Ratio		0.52			0.52			0.08			0.19	
v/c Ratio		0.85			0.56			0.14			0.72	
Control Delay		24.8			14.8			29.4			35.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		24.8			14.8			29.4			35.3	
LOS		C			B			C			D	
Approach Delay		24.8			14.8			29.4			35.3	
Approach LOS		C			B			C			D	

Intersection Summary

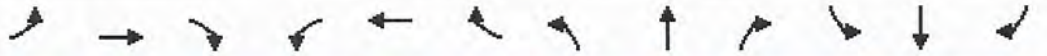
Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 76.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 81.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Brighton Avenue & Warwick Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1100	9	5	773	78	12	0	6	92	0	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5			5.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.99			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.95			0.94	
Flt Protected		1.00			1.00			0.97			0.97	
Satd. Flow (prot)		3525			3456			1745			1670	
Flt Permitted		0.79			0.95			0.97			0.97	
Satd. Flow (perm)		2808			3272			1745			1670	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90	0.85	0.85	0.85	0.70	0.70	0.70
Adj. Flow (vph)	73	1158	9	6	859	87	14	0	7	131	0	119
RTOR Reduction (vph)	0	0	0	0	6	0	0	6	0	0	41	0
Lane Group Flow (vph)	0	1240	0	0	946	0	0	15	0	0	209	0
Confl. Peds. (#/hr)							5		5	2		2
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	3%	3%	3%
Turn Type	pm+pt			Perm			Split			Split		
Protected Phases	7	4			8		2	2		6	6	
Permitted Phases	4			8								
Actuated Green, G (s)		39.7			39.7			6.3			14.2	
Effective Green, g (s)		39.7			39.7			6.3			14.2	
Actuated g/C Ratio		0.52			0.52			0.08			0.19	
Clearance Time (s)		5.5			5.5			5.5			5.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1453			1694			143			309	
v/s Ratio Prot								c0.01			c0.13	
v/s Ratio Perm		c0.44			0.29							
v/c Ratio		0.85			0.56			0.10			0.68	
Uniform Delay, d1		16.0			12.6			32.6			29.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.1			0.4			0.3			5.8	
Delay (s)		21.1			13.0			32.9			34.9	
Level of Service		C			B			C			C	
Approach Delay (s)		21.1			13.0			32.9			34.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	16.5
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



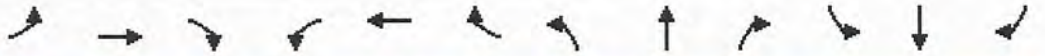
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	0	0	1	7	0	30	0	104	4	18	137	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.865			0.891			0.995				
Flt Protected					0.991						0.994	
Satd. Flow (prot)	0	1644	0	0	1645	0	0	1835	0	0	1834	0
Flt Permitted					0.991						0.994	
Satd. Flow (perm)	0	1644	0	0	1645	0	0	1835	0	0	1834	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		259			578			628			410	
Travel Time (s)		7.1			15.8			17.1			11.2	
Confl. Peds. (#/hr)	4		4	7		7	15		15	15		15
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	0	0	1	9	0	38	0	139	5	24	183	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	47	0	0	144	0	0	207	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	1	7	0	30	0	104	4	18	137	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	1	9	0	38	0	139	5	24	183	0
Pedestrians		15			15			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								628				
pX, platoon unblocked												
vC, conflicting volume	432	405	205	395	402	163	198			159		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	432	405	205	395	402	163	198			159		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	96	100			98		
cM capacity (veh/h)	489	516	826	536	515	865	1352			1397		

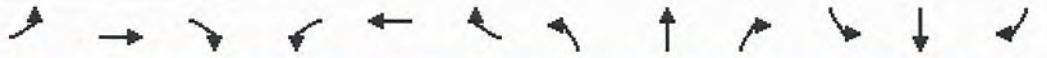
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	46	144	207
Volume Left	0	9	0	24
Volume Right	1	38	5	0
cSH	826	775	1352	1397
Volume to Capacity	0.00	0.06	0.00	0.02
Queue Length 95th (ft)	0	5	0	1
Control Delay (s)	9.4	9.9	0.0	1.0
Lane LOS	A	A		A
Approach Delay (s)	9.4	9.9	0.0	1.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	0	0	1	7	0	30	0	104	4	18	138	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.865			0.891			0.995				
Flt Protected					0.991						0.994	
Satd. Flow (prot)	0	1644	0	0	1645	0	0	1835	0	0	1834	0
Flt Permitted					0.991						0.994	
Satd. Flow (perm)	0	1644	0	0	1645	0	0	1835	0	0	1834	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		259			578			628			410	
Travel Time (s)		7.1			15.8			17.1			11.2	
Confl. Peds. (#/hr)	7		7	4		4	15		15	15		15
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	0	0	1	9	0	38	0	139	5	24	184	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	47	0	0	144	0	0	208	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	0	1	7	0	30	0	104	4	18	138	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	1	9	0	38	0	139	5	24	184	0
Pedestrians		15			15			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								628				
pX, platoon unblocked												
vC, conflicting volume	433	406	206	397	403	163	199			159		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	433	406	206	397	403	163	199			159		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	96	100			98		
cM capacity (veh/h)	488	515	824	535	514	865	1350			1397		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	46	144	208
Volume Left	0	9	0	24
Volume Right	1	38	5	0
cSH	824	775	1350	1397
Volume to Capacity	0.00	0.06	0.00	0.02
Queue Length 95th (ft)	0	5	0	1
Control Delay (s)	9.4	9.9	0.0	1.0
Lane LOS	A	A		A
Approach Delay (s)	9.4	9.9	0.0	1.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	46	23	86	7	25	10	83	40	4	0	64	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.925			0.969			0.996				
Flt Protected		0.985			0.991			0.968				
Satd. Flow (prot)	0	1731	0	0	1789	0	0	1778	0	0	1845	0
Flt Permitted		0.985			0.991			0.968				
Satd. Flow (perm)	0	1731	0	0	1789	0	0	1778	0	0	1845	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		259			578			628			410	
Travel Time (s)		7.1			15.8			17.1			11.2	
Confl. Peds. (#/hr)	4		4	7		7	15		15	15		15
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	58	29	108	9	31	13	111	53	5	0	85	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	0	0	52	0	0	169	0	0	85	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	46	23	86	7	25	10	83	40	4	0	64	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	58	29	108	9	31	12	111	53	5	0	85	0
Pedestrians		15			15			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								628				
pX, platoon unblocked												
vC, conflicting volume	413	395	107	507	393	78	100			74		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	413	395	107	507	393	78	100			74		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	94	88	98	94	99	92			100		
cM capacity (veh/h)	472	491	935	366	490	965	1467			1501		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	194	52	169	85
Volume Left	58	9	111	0
Volume Right	108	12	5	0
cSH	656	522	1467	1501
Volume to Capacity	0.30	0.10	0.08	0.00
Queue Length 95th (ft)	31	8	6	0
Control Delay (s)	12.8	12.7	5.2	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.8	12.7	5.2	0.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	36.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Brighton

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: **0025X**	Start Node: **13042**	Start Offset: **0**	☐ Exclude First Node
	End Node: **13054**	End Offset: **0**	☐ Exclude Last Node
Route: **0025E**	Start Node: **13054**	Start Offset: **0**	☑ Exclude First Node
	End Node: **13133**	End Offset: **0**	☑ Exclude Last Node

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary I

Nodes

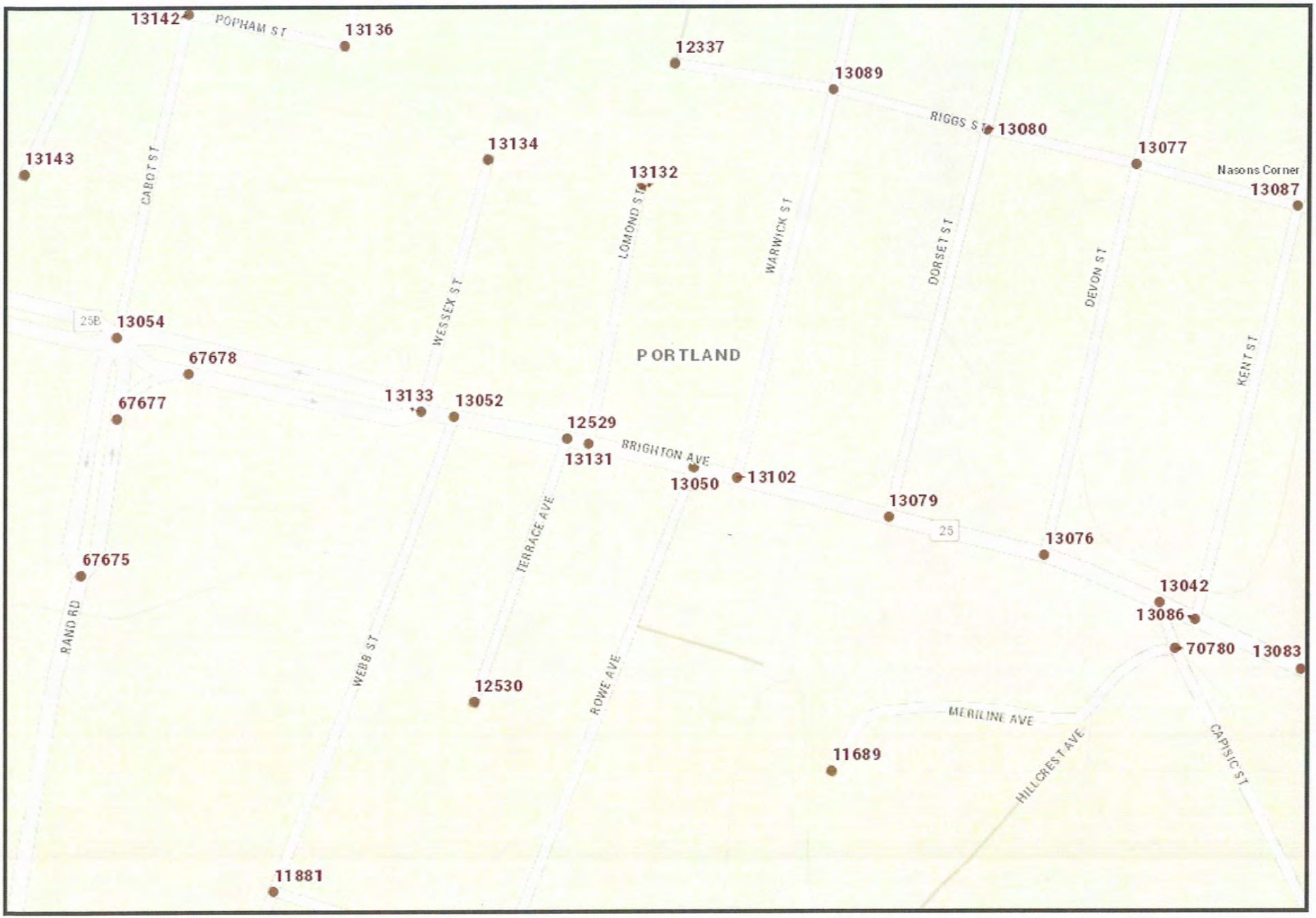
Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
P13042	0025X - 2.70	Int of BRIGHTON AV CAPISIC ST	9	9	0	0	0	1	8	11.1	9.873	0.30	1.04	0.29
												Statewide Crash Rate:	0.67	
13076	0025X - 2.74	Int of BRIGHTON AV DEVON ST	2	2	0	0	0	1	1	50.0	4.943	0.13	0.34	0.38
												Statewide Crash Rate:	0.13	
13079	0025X - 2.79	Int of BRIGHTON AV DORSET ST	2	2	0	0	0	1	1	50.0	4.947	0.13	0.34	0.38
												Statewide Crash Rate:	0.13	
P13102	0025X - 2.84	Int of BRIGHTON AV WARWICK ST	9	19	0	0	1	3	15	21.1	10.469	0.60	1.03	0.58
												Statewide Crash Rate:	0.67	
A13050	0025X - 2.85	Int of BRIGHTON AV, ROWE AV	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.13	
A13131	0025X - 2.88	Int of BRIGHTON AV LOMOND ST	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.13	
P12529	0025X - 2.89	Int of BRIGHTON AV TERRACE AV	2	1	0	0	0	0	1	0.0	10.100	0.03	0.28	0.11
												Statewide Crash Rate:	0.13	
13052	0025X - 2.92	Int of BRIGHTON AV WEBB ST	2	0	0	0	0	0	0	0.0	5.207	0.00	0.33	0.00
												Statewide Crash Rate:	0.13	
13133	0025X - 2.93	Int of BRIGHTON AV WESSEX ST	2	1	0	0	0	0	1	0.0	10.303	0.03	0.28	0.11
												Statewide Crash Rate:	0.13	
P13054	0025X - 3.02	Int of BRIGHTON AV CABOT ST RAND RD	9	17	0	0	0	4	13	23.5	10.655	0.53	1.03	0.51
												Statewide Crash Rate:	0.67	
A67678	0025E - 2.67	Int of BRIGHTON AV RD INV 3209763	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.13	
Study Years:	3.00	**NODE TOTALS:**		51	0	0	1	10	40	21.6	66.497	0.26	0.49	0.52

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
13042	13076	3139393	0 - 0.04	0025X - 2.70	0.04	2	1	0	0	0	0	1	0.0	0.00391	85.25	467.65	0.18
Int of BRIGHTON AV	CAPISIC ST			ST RTE 25											Statewide Crash Rate: 185.94		
13076	13079	3119844	0 - 0.05	0025X - 2.74	0.05	2	5	0	1	0	2	2	60.0	0.00489	341.02	441.93	0.77
Int of BRIGHTON AV	DEVON ST			ST RTE 25											Statewide Crash Rate: 185.94		
13079	13102	3119200	0 - 0.05	0025X - 2.79	0.05	2	3	0	0	0	0	3	0.0	0.00489	204.61	441.93	0.46
Int of BRIGHTON AV	DORSET ST			ST RTE 25											Statewide Crash Rate: 185.94		
13050	13102	3131552	0 - 0.01	0025X - 2.84	0.01	2	0	0	0	0	0	0	0.0	0.00098	0.00	663.12	0.00
Int of BRIGHTON AV,	ROWE AV			ST RTE 25											Statewide Crash Rate: 185.94		
13050	13131	3131553	0 - 0.03	0025X - 2.85	0.03	2	8	0	0	2	3	3	62.5	0.00296	900.10	502.28	1.79
Int of BRIGHTON AV,	ROWE AV			ST RTE 25											Statewide Crash Rate: 185.94		
12529	13131	3120019	0 - 0.01	0025X - 2.88	0.01	2	0	0	0	0	0	0	0.0	0.00099	0.00	662.52	0.00
Int of BRIGHTON AV	TERRACE AV			ST RTE 25											Statewide Crash Rate: 185.94		
12529	13052	3130457	0 - 0.03	0025X - 2.89	0.03	2	2	0	0	0	0	2	0.0	0.00308	216.80	497.46	0.44
Int of BRIGHTON AV	TERRACE AV			ST RTE 25											Statewide Crash Rate: 185.94		
13052	13133	3123711	0 - 0.01	0025X - 2.92	0.01	2	0	0	0	0	0	0	0.0	0.00103	0.00	656.78	0.00
Int of BRIGHTON AV	WEBB ST			ST RTE 25											Statewide Crash Rate: 185.94		
13054	13133	3139185	0 - 0.09	0025X - 2.93	0.09	2	1	0	0	0	1	0	100.0	0.00454	73.39	450.17	0.16
Int of BRIGHTON AV	CABOT ST RAND RD			ST RTE 25											Statewide Crash Rate: 185.94		
13054	67678	3416044	0 - 0.02	0025E - 2.65	0.02	2	0	0	0	0	0	0	0.0	0.00070	0.00	715.20	0.00
Int of BRIGHTON AV	CABOT ST RAND RD			ST RTE 25E											Statewide Crash Rate: 185.94		
67678	13133	3416045	0 - 0.07	0025E - 2.67	0.07	2	3	0	0	0	2	1	66.7	0.00361	276.78	477.20	0.58
Int of BRIGHTON AV	RD INV 3209763			ST RTE 25E											Statewide Crash Rate: 185.94		
Study Years:	3.00			**Section Totals:**	0.41		23	0	1	2	8	12	47.8	0.03157	242.85	294.80	0.82
				Grand Totals:	0.41		74	0	1	3	18	52	29.7	0.03157	781.35	416.44	1.88

BRIGHTON



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0.07 Miles

1 inch = 0.05 miles

Date: 5/6/2016
Time: 9:35:47 AM

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Warwick

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 0560768	Start Node: 13106	Start Offset: 0	☐ Exclude First Node
	End Node: 13102	End Offset: 0	☑ Exclude Last Node

Crash Summary I

Nodes

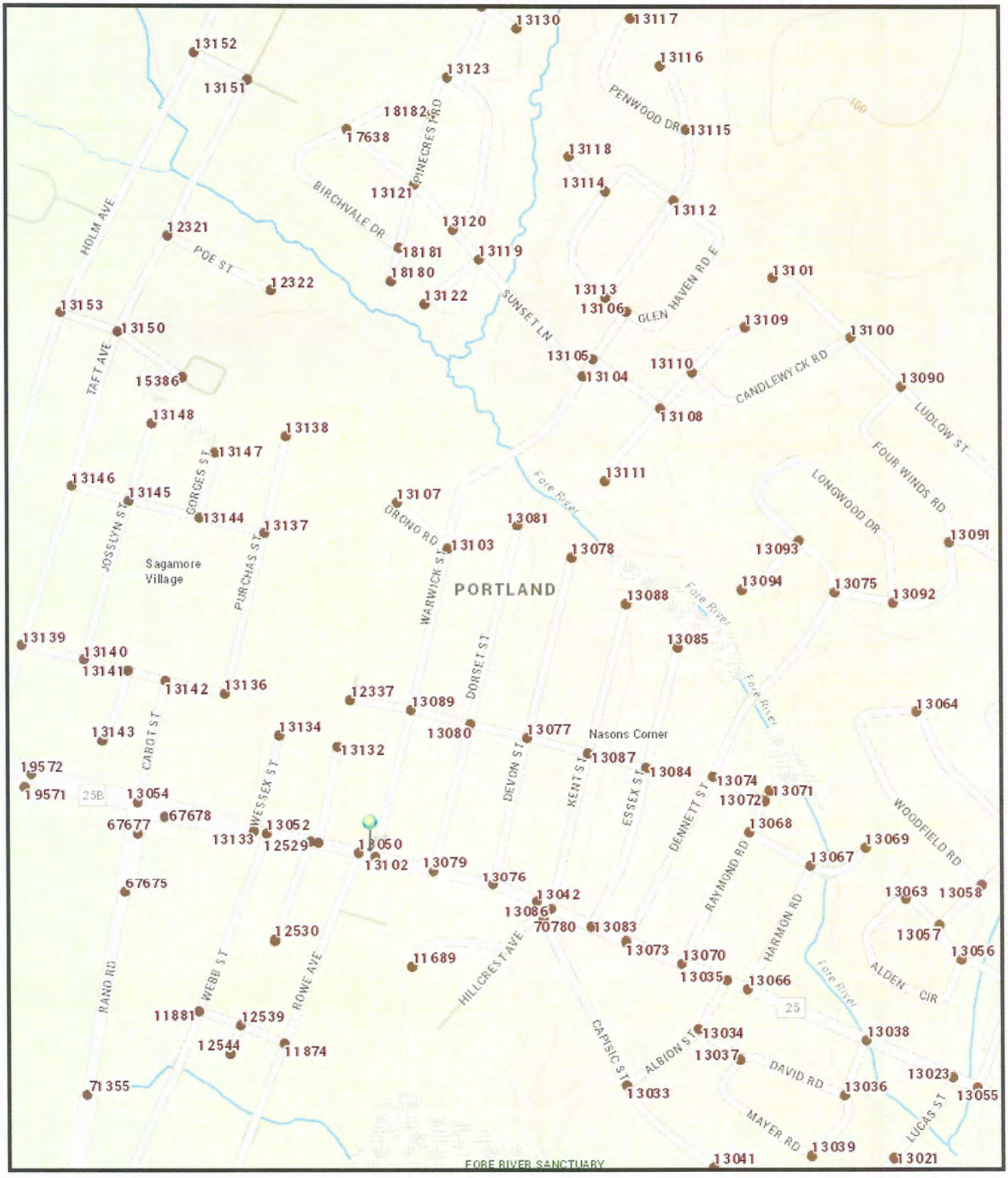
Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
13106	0560768 - 0	0503520 POR,GLENHAVEN RD,WARWICK ST.	2	0	0	0	0	0	0	0.0	0.248	0.00 Statewide Crash Rate: 0.14	0.59	0.00
13105	0560768 - 0.04	0503519 POR,WARWICK ST,STARLITE RD.	2	0	0	0	0	0	0	0.0	0.974	0.00 Statewide Crash Rate: 0.14	0.53	0.00
13104	0560768 - 0.05	0503518 POR,WARWICK ST,SUNSET LA.	2	0	0	0	0	0	0	0.0	1.328	0.00 Statewide Crash Rate: 0.14	0.50	0.00
13103	0560768 - 0.24	0503517 POR,WARWICK ST,ORONO RD.	2	0	0	0	0	0	0	0.0	1.338	0.00 Statewide Crash Rate: 0.14	0.50	0.00
13089	0560768 - 0.37	0503503 POR,WARWICK,RIGGS ST.	2	0	0	0	0	0	0	0.0	1.191	0.00 Statewide Crash Rate: 0.14	0.51	0.00
Study Years: 3.00		NODE TOTALS:		0	0	0	0	0	0	0.0	5.079	0.00	0.35	0.00

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
13105	13106	187753	0 - 0.04	0560768 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00009	0.00	1613.50	0.00
0503519 POR,WARWICK ST,STARLITE RD.				RD INV 05 60768											Statewide Crash Rate: 383.99		
13104	13105	187751	0 - 0.01	0560768 - 0.04	0.01	2	0	0	0	0	0	0	0.0	0.00010	0.00	1622.05	0.00
0503518 POR,WARWICK ST,SUNSET LA.				RD INV 05 60768											Statewide Crash Rate: 383.99		
13103	13104	187749	0 - 0.19	0560768 - 0.05	0.19	2	0	0	0	0	0	0	0.0	0.00224	0.00	925.29	0.00
0503517 POR,WARWICK ST,ORONO RD.				RD INV 05 60768											Statewide Crash Rate: 383.99		
13089	13103	187736	0 - 0.13	0560768 - 0.24	0.13	2	0	0	0	0	0	0	0.0	0.00166	0.00	998.26	0.00
0503503 POR,WARWICK,RIGGS ST.				RD INV 05 60768											Statewide Crash Rate: 383.99		
13089	13102	187735	0 - 0.11	0560768 - 0.37	0.11	2	0	0	0	0	0	0	0.0	0.00116	0.00	1095.72	0.00
0503503 POR,WARWICK,RIGGS ST.				RD INV 05 60768											Statewide Crash Rate: 383.99		
Study Years: 3.00				Section Totals:	0.48		0	0	0	0	0	0	0.0	0.00525	0.00	754.32	0.00
				Grand Totals:	0.48		0	0	0	0	0	0	0.0	0.00525	0.00	901.62	0.00

WARWICK



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.1 Miles

1 inch = 0.13 miles

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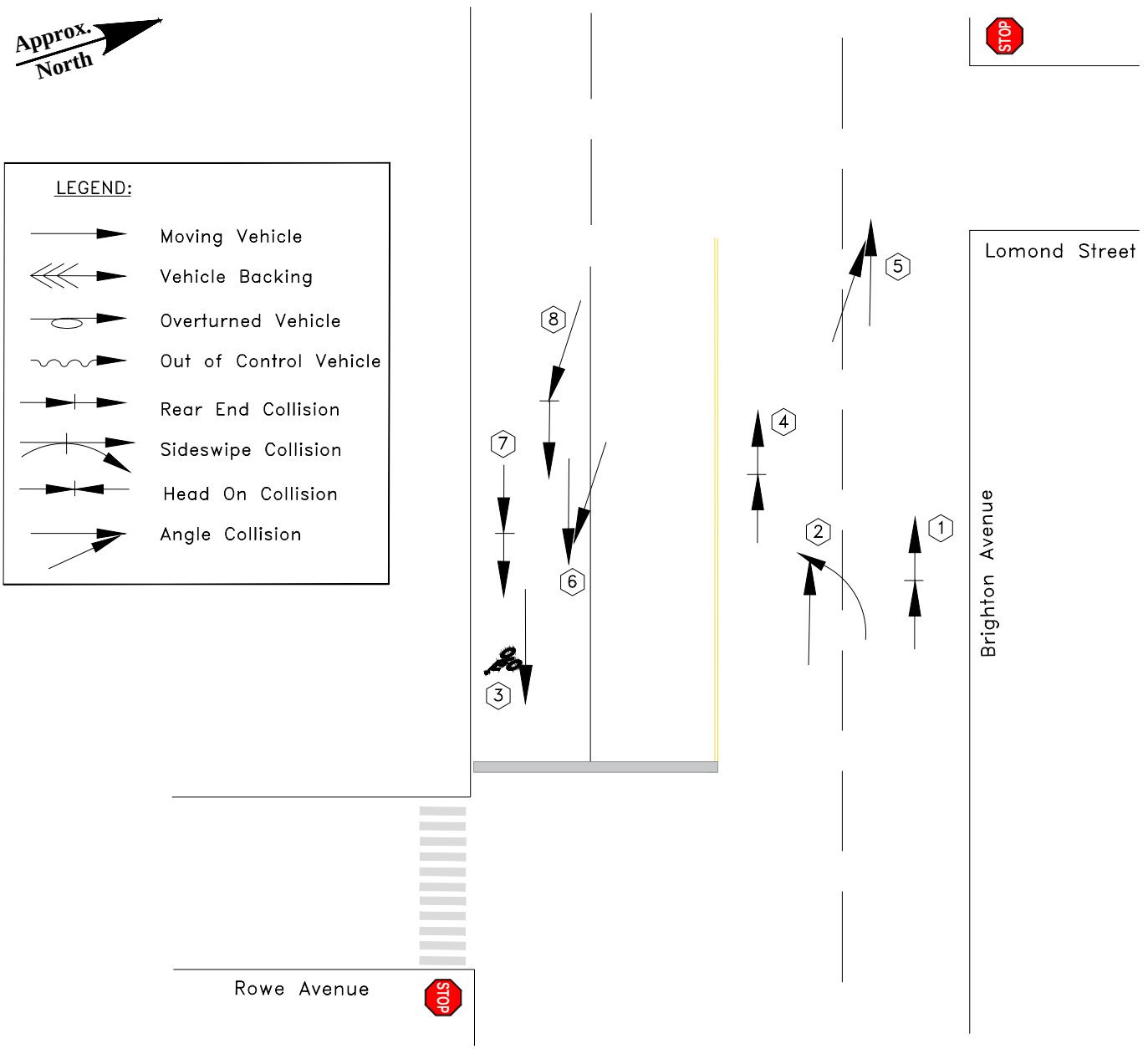
Time: 9:40:24 AM



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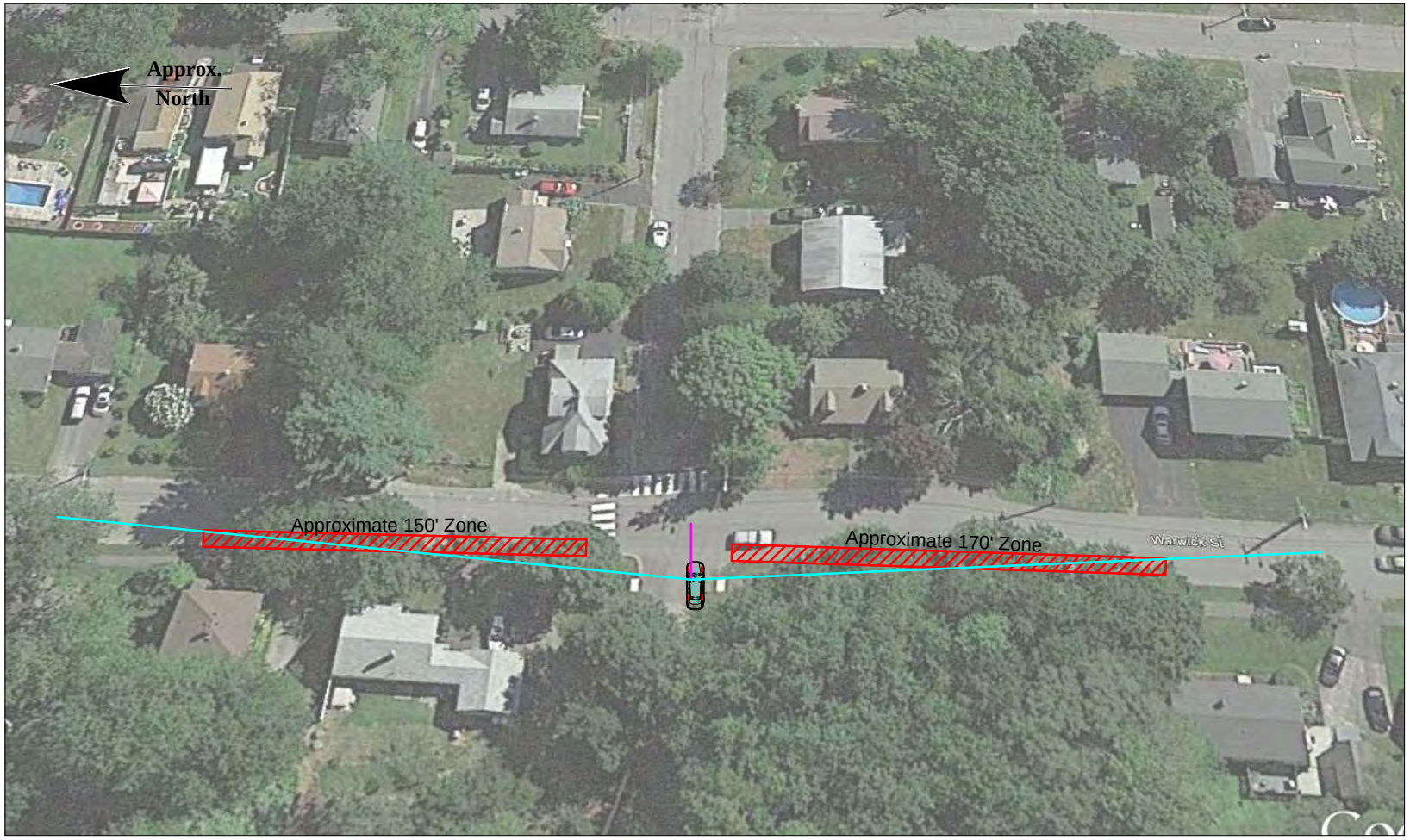
1	01/16/13	06:58	REAR END – IN TRAFFIC – SNOW	13–000187
2	02/23/13	16:21	LEFT–TURN ACROSS TWO LANES – FAILURE TO YIELD	13–00658
3	07/02/13	15:50	BICYCLE SWERVED INTO TRAVEL LANE TO AVOID POTHOLE	13–001881
4	07/09/13	16:30	REAR END – IN TRAFFIC	13–001930
5	10/24/13	12:50	SIDESWIPE – SWERVED TO AVOID OPPOSING VEHICLE	13–003004
6	05/17/14	15:30	SIDESWIPE – IMPROPER LANE CHANGE	14–001509
7	01/24/15	13:52	REAR END – SLUSH ON WINDSHIELD AND ROADWAY	15–000312
8	01/28/15	10:39	REAR END – SNOW – SLIPPERY CONDITIONS	15–000346

Portland, Maine
Collision Diagram: 2013-2015
MDOT Link # 13050 - 13131

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677



Recommended "No Parking" Zone

Fred P Hall Elementary

Portland, Maine

Recommended "NO PARKING" Zone

250' of Sight Distance from Riggs Street

22' Setback from Centerline

Maine Traffic Resources

25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

Appendix F – Transportation Demand Management Plan

TRANSPORTATION DEMAND MANAGEMENT PLAN

State of Maine
Public School Project
23 Orono Road, Portland, Maine

New Fred P. Hall Elementary School

Prepared For:

City of Portland Planning Division
389 Congress Street
Portland, Maine

January 20, 2017

Prepared By:

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING

Table of Contents

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TRANSPORTATION DEMAND MANAGEMENT	PAGE 7
PLANS	APPENDIX A

Narrative

The project site is located at 23 Orono Road. It is accessed via Warwick Street and is approximately 1/4 mile north of Brighton Avenue. The intent of this project is to replace the existing Fred P. Hall Elementary School (grades K-5), which has a capacity of approximately of 440 students, with a new elementary school (grades Pre K-5) with a proposed capacity of approximately 558 students. Major revisions to the existing on-site circulation and access points from Warwick Street are also proposed, including relocation of the main entrances to the site for school bus and vehicular traffic. The intent of this Transportation Demand Management Plan is to discuss the existing traffic and circulation-related problems present on the site and the proposed modifications that aim to alleviate them, and to discuss strategies for reducing the amount of vehicular traffic on the site.

Existing Conditions

Type and location of access points for the existing site are shown on the Existing Site Circulation Plan in Appendix A. With the exception of staff and a few visitors, the majority of the building occupants are students that either take the bus to school, are dropped off by car, walk or ride their bicycle. School bus and vehicular traffic currently access the site via a one-way entrance from Warwick Street. The only vehicular exit from the site is located at the end of Orono Road, which is a two-way street (the site exit onto Orono Road is one way). School bus transportation is offered to students living more than one mile from the school (1/2 mile for kindergarten students) and students that must cross high traffic roads such as Brighton Avenue and other obstacles determined by the School Department to be a hazard to the safety of students walking to and from school.

Due to the site's suburban location in a residential neighborhood, there are several pedestrian/bicycle connections that are frequently used by students to access the site from the surrounding neighborhoods. These include the following (breakdown of the percentages of students that use each of the linkages is attached in Appendix A):

- Sidewalks along Orono Road and Warwick Street that connect internally to sidewalks leading to the building entrance.
- A stonedust path that leads from the end of Pinecrest Road to the southeast corner of the building.
- A partially paved pathway leading from the end of Godfrey Street at its intersection with Purchas Street to the existing playground.

A city bus stop (METRO) is located at the intersection of Warwick Street and Brighton Avenue, approximately 1/4 mile from the site (the nearest sheltered bus stop is located 1/5 miles west of this bus stop at the intersection of Brighton Avenue and Rand Road). Existing sidewalks on Warwick Street and crosswalks at the Brighton Avenue/Warwick Street intersection provide pedestrian pathways from

the bus stop to the school. There is currently no incentive for car pooling or using alternative transportation, and showers and dedicated changing facilities are not present in the existing school.

The existing 68-space parking lot does not provide sufficient parking for all staff members, forcing some to park in areas not intended for vehicle parking, such as along the side of the entrance drive and at the site exit onto Orono Road.

Proposed Site

The type and location of access points for the proposed site are shown on the Proposed Site Circulation Plan in Appendix A. While the capacity of the proposed school will increase from 440 to 558, the percentages of students that take the bus, walk, bike, and are picked up/dropped off by car are anticipated to remain the same. From a transportation standpoint, the primary objectives of the proposed site layout are to separate the school bus and vehicular pick up/drop off lanes, provide adequate parking for staff and visitors, and prevent congestion during morning drop off and afternoon pick up.

In order to accomplish this, the site circulation will be modified so that school bus access will be from Orono Road, while all other traffic will utilize a new access road approximately 675 feet south of Orono Road that enters the site from Warwick Street via redeveloped sections of Riggs Street and Lomond Street. This access road leads to a 100-space parking area and dedicated vehicle drop off/pick up lane.

The proposed locations of the vehicle (parent) and bus drop off loop will provide direct student access to the main entrance (in the existing layout one must cross through the bus loop to get to the main entrance). This will substantially increase student safety and reduce/eliminate the necessity for staff members to escort students from the vehicles to the building entrance.

The proposed parking lot has been designed in accordance with State of Maine Department of Education (DOE) requirements to provide adequate parking for all of the staff (85 full-time equivalent staff members) as well as providing 15 visitor spaces. Routing the vehicle drop off/pick up lane around the perimeter of the parking lot increases the queuing space within it from 210 feet to 515 feet.

The majority of vehicles approach the site from the south (via Brighton Avenue). School signage and a 4-way stop at the Riggs Street/Warwick Street intersection are proposed to direct them to access the site via the entrance drive on Lomond Street (the 4-way stop also functions to slow traffic speeds on Warwick Street). However, a one-way lane has been proposed that provides a connection between Orono Road bus entrance and the parking lot. This will allow vehicles entering the site from Orono Road to gain access to the parking lot and the parent drop off lane without entering the bus loop.

All existing pedestrian connection points to the site will be maintained, and a new sidewalk will be constructed along the side of the new access drive and on the redeveloped portions of Riggs Street and

Lomond Street. Further, interior walkways have been located to provide direct access through the site from Purchas Street to Warwick Street. Bicycle racks have been provided at three locations (to accommodate a total of 42 bicycles): one at the main entrance, one adjacent to the gym (near the service entrance at the end of Purchas Street), and one adjacent to the playground.

On Site Traffic Management

Existing Drop Off and Pick Up Procedures

With the exception of morning student drop off and afternoon pick up, there is very little traffic entering and exiting the site. The procedures for drop off and pick up were observed several times between 2014 and 2016 and are summarized below:

AM Drop-Off

Staff typically arrives between 7:30 and 8:30, and the parking lot fills up quickly. School officially begins at 9:00 (a warning bell rings at 8:50 to alert students that the day is about to start), and the school provides supervision on the playground starting at 8:30. Other than staff vehicles parked in areas not designated for parking (due to inadequate on site parking), morning drop off is well-organized and generally does not present any traffic flow problems on the site. Transportation modes to the site are as follows:

- Buses arrive on the site at different times between 8:30 and 8:50. They drop off students at the main entrance within the dedicated bus loop and exit the site once the students have been dropped off. On occasion, there is more than one bus on the site at a time, but all buses do not drop off students simultaneously. A total of 6 buses bring the students to the school.
- Bicycles and pedestrians arrive sporadically on the site. Depending on the weather and time of arrival, students either stay on the playground until 8:50 or go directly into the school.
- Students being dropped off by car are met by staff members at the parent drop-off lane and escorted into the school by staff members (students must cross the bus drop off area to enter the school). Drivers are discouraged from exiting their cars when dropping off students, which significantly reduces congestion.

PM Pick-Up

School ends at 3:30. While some staff members leave the site at this time, the majority of staff does not exit the site until after the students have been dismissed.

- A total of 5 buses and one van pick up students at the end of the day, and they arrive on site just prior to school ending. A staff member at the school entrance notifies the main office which buses are present, and the main office coordinates dismissal of students to those buses. Generally, all or nearly all of the buses and the van are present on the site at once during PM pick up.
- Once school vehicles have exited the site, students being picked up by car or walking/riding their bicycles are dismissed. Current policy requires that all students be dismissed directly to a parent/guardian. Because of this, parents/guardians typically arrive on the site slightly before 3:30 and congregate on the playground until students are dismissed. Those that have driven park their vehicle anywhere it is possible to park safely, regardless of whether the space is designated for parking or not. Because of the lack of adequate parking and queuing space, this

creates significant congestion on the site and can obstruct the site exit and Orono Road. There are times where both legally and illegally parked vehicles prevent buses and other cars from safely exiting the site.

Proposed Drop Off and Pick Up Procedures

The procedures for AM drop off and PM pick up will generally remain the same as they are for the existing school. The proposed site circulation configuration alleviates existing on-site traffic flow/congestion problems as follows:

- The length of the entrance drive reduces the possibility of cars backing up into the public streets even when the queuing length is exceeded.
- A widened paved shoulder on the south (outgoing) side of the entrance drive that serves as an informal bicycle lane also provides additional temporary parking during PM pick up, when parents/guardians must park their cars and go to the school to get their student. Even with cars parked on this shoulder, there will still be adequate space for two-way traffic on the entrance drive.
- Adequate parking for both staff and visitors will reduce the amount of queuing space required during PM pick up, as there will be parking spaces available in the parking lot.
- The one-way connector drive between the Orono Road entrance/exit provides a way for cars to access the parking lot and parent drop off lane without entering the bus loop if they enter the site from Orono Road.
- Separating the bus loop from the rest of the site circulation also reduces the possibility of parked cars blocking the buses from exiting or entering the site from Orono Road.

Use of the Site by Emergency Vehicles and After-Hours Use

All roadways on the site have been designed to accommodate emergency vehicles, including the connection between the bus loop and the parking lot.

In the bus loop, signage will be provided at the entrance that will serve to limit use by vehicles other than buses during normal school hours. Outside of school hours, it is anticipated that vehicles will park in the bus loop due to its proximity to the playground and main entrance. Due to after school activities that require bus transportation, additional signage is proposed to prohibit parking within the bus loading area (southeast side of the bus loop) at all times.

In addition to the parking lot and use of portions of the bus loop, the widened shoulder on the entrance drive can provide informal parking during events and when the capacity of the bus loop and parking lot are exceeded. The entrance drive has been designed to be wide enough to accommodate two-way traffic even when vehicles are parked in this paved shoulder.

At the request of the City of Portland Fire Department, a curb cut and short driveway have been provided to allow emergency vehicles to drive from the bus loop onto the playground hardcourt. This access point will be gated to prevent unauthorized vehicular access. The bus loop has been designed so that emergency vehicles can pass through it even with cars parked on one side, and the access point to the hardcourt will be signed to prohibit parking.

Transportation Demand Management

Transportation Demand Management Coordinator

The person responsible for administrating and coordinating the School's Transportation Demand Management Plan will be:

Craig Worth, Executive Director of Operations (or qualified designee)
worthc@portlandschools.org
Phone: 207-874-8113
Fax: 207-874-8107

Employee and Customer Survey

The school staff, which consists generally of teachers, administrative support, and custodians/maintenance personnel, primarily arrives at the site using their personal vehicles. There are currently no incentives for using alternate transportation methods.

Multimodal transportation surveys and observations performed between 2013 and 2015 revealed the following breakdown in how children arrive and depart the site (proposed percentages are anticipated to be the same as the current conditions):

Transportation Mode	AM Drop off (Percent)	PM Pick up (Percent)
Buses	49	43
Drop off/Pick up by vehicle	27	21
Walking*	18	18
Bicycling*	6	6
Afterschool Recreation Program at site (Pick up by vehicle or "Learning Works After School" Bus at 5:35)	-	12

*A breakdown on how the site is accessed by pedestrians and bicyclists is attached in Appendix A

Parking and Trip Reduction Targets

Vehicle parking calculations are indicated on sheet CO101 of the Site Approval Application and summarized below:

<u>City of Portland Requirements for Vehicle Parking</u>
Normal School Days: 40 spaces (40 classrooms @ 1 space per classroom)
Assemblies (not held during school hours): 83 spaces (10,320 ft^2 @ 1 space per 125 ft^2 of floor area)
Total Spaces Required per City of Portland Requirements: 83 spaces

State of Maine Department of Education (DOE) Requirements for Vehicle Parking
Staff Parking: 85 (one space per full-time equivalent staff member)
Visitor Parking: 15
Total Spaces Required by State of Maine DOE Requirements: 100 spaces

The proposed parking lot will have 100 spaces to meet the DOE's requirements, which slightly exceeds the City's requirements. Bicycle parking is proposed at the main entrance, on the southwest corner of the building near the end of Purchas Street, and on the northeast corner of the building adjacent to the playground. The total number of bicycle parking spaces proposed is 42, which is more than double the City's requirement of 20 spaces (two spaces per 10 vehicle parking spaces) and exceeds the number of existing spaces on the site (36 spaces).

Parking reduction targets

No formal trip reduction targets have been set at this time. However, The Portland Public Schools will continue to encourage students to walk or ride bicycles to school and employees will be encouraged to carpool to use other means of alternative transportation.

Education

The Portland Public Schools will work with Portland Trails, the Bicycle Coalition of Maine, GO Maine Rideshare, representatives from other schools with successful "walking school bus" programs, the METRO and other alternative transportation groups. To make sure staff, students and parents are aware of the alternative transportation options available, information on the programs will be made available in the main office, shared with families and posted in the school where appropriate.

Monitoring

The TDM coordinator shall monitor the effectiveness of the site's TDM plan and conduct follow-up surveys annually and observe transportation movements on the site. The TDM plan will be updated as necessary to ensure it remains effective at reducing the number of vehicles on the site. A sample observation log sheet is below:

Sample Transportation Demand Management Plan Survey and Observation Log

Student Transportation Observations – AM Drop off

Date:

Weather:

Transportation Mode	AM Drop off (Number)	AM Drop off (Percent)
Buses		
Drop off/Pick up by vehicle		
Walking		
Bicycling		
Total:		100%

Student Transportation Observations – PM Pick Up

Date:

Weather:

Transportation Mode	PM Pick up (Number)	PM Pick up (Percent)
Buses		
Drop off/Pick up by vehicle		
Walking		
Bicycling		
Afterschool Recreation Program at site (Pick up by vehicle)		
Afterschool Recreation Program at site (Pick up by bus)		
Total:		100%

Staff Transportation

Date of survey:

Transportation Mode	Survey Results (Number)	Survey Results (Percent)
Personal Vehicle		
Carpool		
City Bus/Dropped off at Site		
Walk		
Bicycle		
Total:		100%

Project-Specific Transportation Demand Management Standards

Infrastructure

The site has been designed to both meet the needs of the building occupants and promote access to the site using alternative transportation methods. This includes the following:

- Providing school bus service for students living more than one mile from the school (1/2 mile for Kindergarten students) and students that must cross high traffic roads such as Brighton Avenue and other obstacles determined by the school to be a hazard to the safety of students walking to school.
- Providing informal bicycle access to and from the site to Warwick Street via the new access road, a sidewalk from Warwick Street through the playground, and a paved sidewalk from the north side of the building to Pinecrest Road.
- Providing access to public transportation via ADA compliant sidewalks leading from the main entrance of the building to the public bus stop at the intersection of Warwick Street and Brighton Avenue, approximately 1/4 mile from the site. While this is not a sheltered bus stop, there are ADA compliant sidewalks extending to the nearest sheltered bus stop at the intersection of Brighton Avenue and Rand Road (approximately 1/5 mile west of the Brighton Avenue/Warwick Street intersection).
- Making public transit information (bus schedules) available in the main office and/or providing information about where electronic versions of the bus schedules can be found online.
- Maintaining formal pedestrian/bicycle connections to the surrounding neighborhoods. All of these connections are ADA-compliant.
- Providing 42 bicycle parking spaces, which is more than double the minimum City requirement for the site (20 spaces).
- Providing dedicated changing and shower facilities inside the building.

Incentives

The Portland Public Schools current has no incentive programs to reduce vehicle trips. However, they are working with outside groups to establish successful alternative transportation programs and distribute information about the existence of these programs once they are established.

Appendix A – Plans

Hall School Bicycle/Pedestrian Access Breakdown

Data below is existing usage based on interviews with Hall School Staff in Fall, 2015 and Spring, 2016.
Percentages are not anticipated to change after construction is completed

Bicycle Access		
Access Point/Area (see plans)	Percentage of Bicycling	Percentage of Total Population*
1 - Sagamore Village/Godfrey Street	10%	0.60%
2 - Orono Road (Warwick Street South)	75%	4.50%
3 - Warwick Street North	7.5%	0.45%
4 - Pinecrest Road	7.5%	0.45%

*6% of total population rides bicycle to school

Pedestrian Access		
Access Point/Area (see plans)	Percentage of Pedestrians	Percentage of Total Population**
1 - Sagamore Village/Godfrey Street	65%	11.70%
2 - Orono Road (Warwick Street South)	20%	3.60%
3 - Warwick Street North	7.5%	1.35%
4 - Pinecrest Road	7.5%	1.35%

**18% of total population walks to school

FRED P. HALL ELEMENTARY SCHOOL PROJECT

PEDESTRIAN ACCESS POINTS

Portland, Maine

January 20, 2017

GRID NORTH (NAD83)

GRAPHIC SCALE

250' 125' 0 250' 500'

1"=500'

CHECK GRAPHIC SCALE BEFORE USING

OAK POINT ASSOCIATES

ARCHITECTURE ■ ENGINEERING ■ PLANNING

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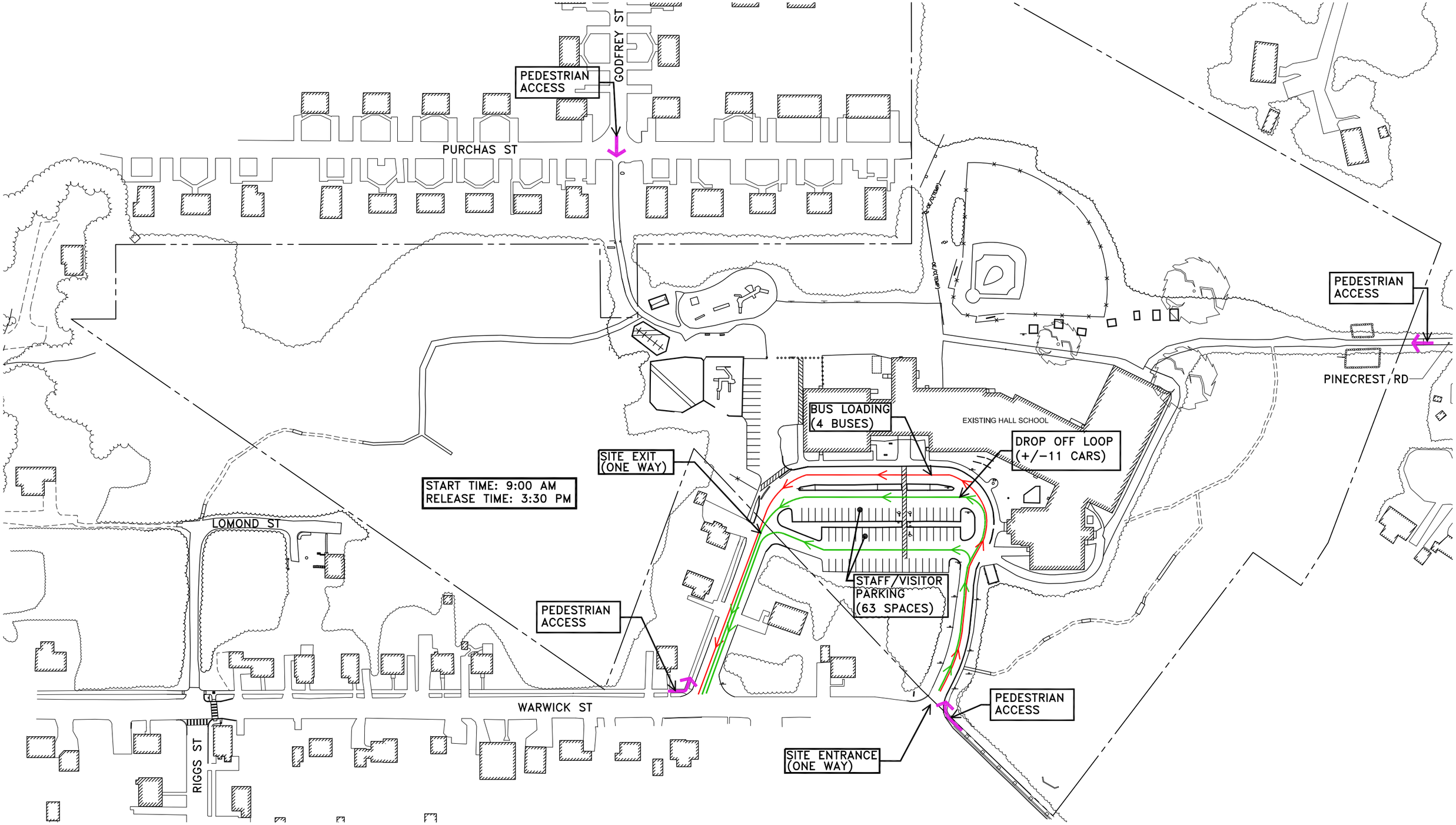

FRED P. HALL ELEMENTARY SCHOOL PROJECT

EXISTING CIRCULATION PLAN

Portland, Maine

January 20, 2017

GRID NORTH (NAD83)

GRAPHIC SCALE
60' 30' 0 60' 120'
1"=120'
CHECK GRAPHIC SCALE BEFORE USING

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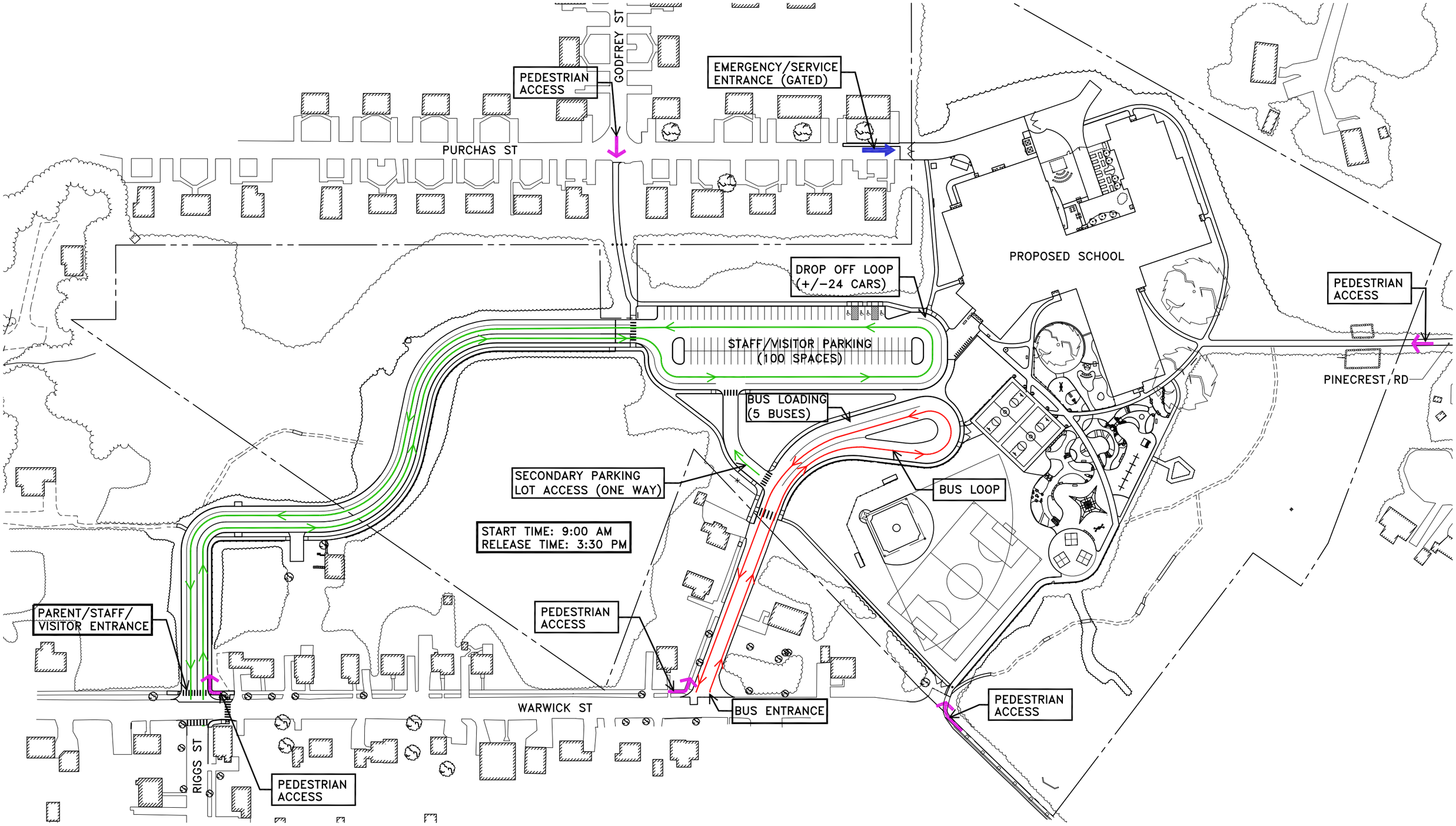
OAK POINT ASSOCIATES

ARCHITECTURE ■ ENGINEERING ■ PLANNING



FRED P. HALL ELEMENTARY SCHOOL PROJECT

PROPOSED CIRCULATION PLAN

Portland, Maine

January 20, 2017

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GRID NORTH (NAD83)

GRAPHIC SCALE

60' 30' 0 60' 120'

1"=120'

CHECK GRAPHIC SCALE BEFORE USING

OAK POINT ASSOCIATES

ARCHITECTURE ■ ENGINEERING ■ PLANNING

Appendix G – Utility Ability to Serve Letters

September 10, 2015

RE: Capacity to Handle Wastewater Flows from 23 Orono Road – Proposed Hall Elementary School

Dear Ms. LaChance:

The Department of Public Services, which includes the Water Resource Division, have reviewed and determined that the downstream sewers from 23 Orono Road has the capacity to convey the additional estimated 3,860 gallons per day of wastewater which will be generated from the new Hall School.

If the City can be of further assistance, please call 874-8850 or 400-6695.

Sincerely,
CITY OF PORTLAND

David Margolis-Pineo

David Margolis-Pineo
Deputy City Engineer

Anticipated Wastewater Flows from the Proposed Hall School, 23 Orono Road

555 students @ 10 gallons per student = 5,550 gpd
100 staff/visitors @ 12 gallons per person = 1,200 gpd
Current water usage from existing records = (2,890 gpd) Based on a 170 day school yr.

Net Increase = 3,860 gpd

CC: Jeffrey Levine, Director, Department of Planning and Urban Development, City of Portland
Barbara Barhydt, Development Review Services Mgr., Dep't. of Planning and Urban Development, City of Portland
Nell Donaldson, Department of Planning and Urban Development, City of Portland
Shukria Wiar, Planner, Department of Planning and Urban Development, City of Portland
Nancy Gallinaro, Water Resources Manager
Benjamin N. Pearson, E.I., Industrial Pretreatment Coordinator, City of Portland
John Emerson, Wastewater Coordinator, City of Portland

Portland Water District
FROM SEBAGO LAKE TO CASCO BAY

September 9, 2015

Oak Point Associates
231 Main Street
Biddeford, ME 04005

Attn: Jonah DeWaters, P.E.
Re: Hall Elementary School; 23 Orono Road, Portland
Ability to Serve with PWD Water

Dear Mr. DeWaters:

The Portland Water District has received your request for an Ability to Serve determination for the noted site submitted on August 10, 2015. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter.

Conditions of Service

The following conditions of service apply:

- It is the District's understanding that the existing Hall Elementary School will be demolished with a new school to be constructed on the same site. The existing school will remain in service until the new school is completed. Due to the proposed location of the new school, the existing 20-inch water main through the site must be terminated. On September 25, 2013, District Staff met with Oak Point Associates and the Portland School Department to discuss options to move forward with abandonment of the 20-inch water main. In order to retain redundancy and keep all of the Districts customers in service, new water main extensions will be required. The work items outlined in the Meeting Minutes provided by Oak Point Associates from the September 25th meeting are still acceptable to the District.

- Water District approval of water infrastructure plans will be required for the project prior to construction. As your project progresses, we advise that you submit any preliminary design plans to MEANS for review of the water main and water service line configuration. We will work with you to ensure that the design meets our current standards.

Existing Site Service

According to District records, the project site does currently have existing water service. An 8-inch diameter cast iron, cement lined fire service line with two 2-inch diameter copper domestic service lines tapped off it are located as shown on the attached water service cards. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of these services.

225 DOUGLASS STREET P.O. BOX 3553 PORTLAND, MAINE 04104-3553
PHONE: 207.774.5961 FAX: 207.761.8307 WEB: WWW.PWD.ORG

Water System Characteristics

According to District records, there is a 20-inch diameter cast iron water main which runs cross-country through the school's property and a public fire hydrant located within the school parcel. Recent flow data is not available in this area. The most recent static pressure reading was 80 psi on 8/20/2015

Public Fire Protection

You have not indicated whether this project will include the installation of new public hydrants to be accepted into the District water system. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

Glissen Havu, E.I.
Design Engineer

Appendix H – Exterior Lighting Plan and Product Information

KIM LIGHTING

LTRA

Round Aluminum Tapered Pole

revision 10/8/15 • kl_ltra_spec.pdf

Type:
Job:
Catalog number:

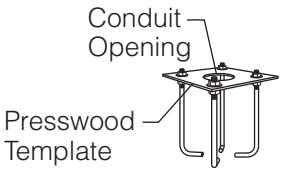
Pole	/ Mounting	/ Structural Luminiare Option	/ Finish

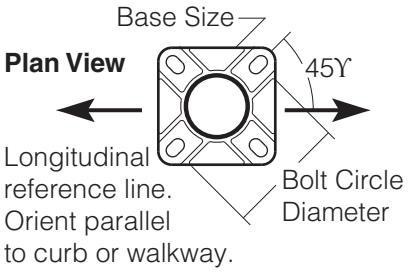
See page 2 | See page 3

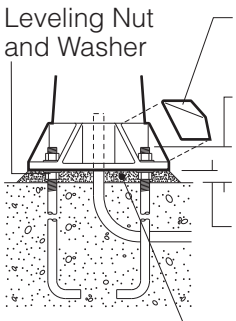
Approvals:

Date:

Specifications



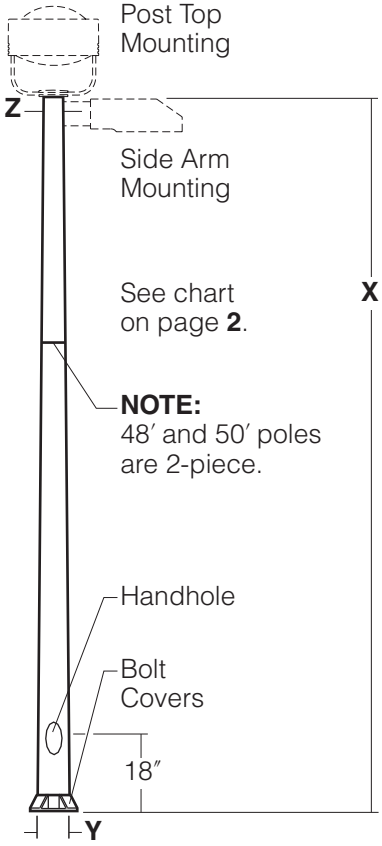




Base Detail

Grout **must** be packed under pole base to insure full contact with footing and prevent loosening of leveling nuts.

Provide a channel through the grout for drainage from the pole interior.



Pole Construction: Tapered by spinning and coldworking a seamless one-piece extruded tube of aluminum alloy 6063-T4. After tapering, shaft is welded to a cast aluminum anchor base of alloy A356, heat-treated to T-6 temper, and rotary sand finished. Poles above 39′ include a flush field joint approximately 26½′ above base, with both sections taper spun.

Bolt Covers: Cast aluminum anchor bolt covers included.

Pole Cap: A flush-sided cast aluminum pole cap is provided for side arm mounted luminaires.

Handhole: Reinforced handhole with a gasketed cover and grounding provisions provided, 18″ up from base. Cover mounts flush.

Anchor Bolts: Four galvanized anchor bolts provided, complete with eight nuts, eight flat washers, and a presswood template.

Vibration Dampener: Poles 20′ and above include a mechanically fastened internal pendulum vibration dampener.

Strength: Poles will withstand wind loads as listed in chart (see page **2**) when luminaires are mounted per fixture installation instructions.

Finish: Standard thermoset polyester powder coat paint over titanated zirconium conversion coating. Standard colors are Black, Dark Bronze, Light Gray, Stealth Gray™, Platinum Silver, and White. Custom colors are available.

CAUTION: Installation of poles without luminaire(s) will compromise pole strength. Any accessories attached to pole, or other modifications will compromise pole strength and may result in pole failure.

Maintenance: A regularly scheduled maintenance program must be established to insure the protective paint coating is intact, corrosion or structural damage has not occurred, and anchor bolt nuts are tight. Failure to do so could lead to pole collapse and serious personal injury.

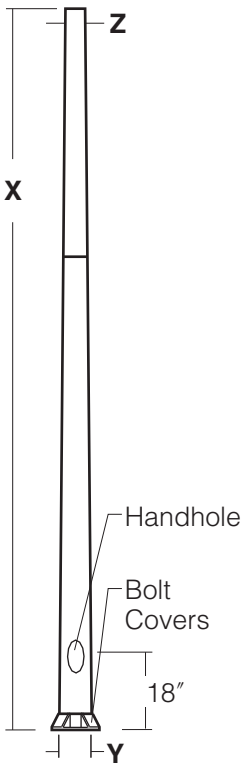
Certification: Certified UL 1598 in accordance with Article 410 of ANSI NFPA 70, National Electrical Code. Complies with the CSA standard. **Note:** If a UL or CSA label is required, a request must be made at time of order.

HUBBELL LIGHTING, INC.

© 2015 KIM LIGHTING • 16555 EAST GALE AVENUE, CITY OF INDUSTRY, CA 91745-1788 • TEL: 626/968-5666 • FAX: 626/968-5716

Standard Features

NOTE: All allowable pole and fixture EPAs are derived from the AASHTO standard. Responsibility lies with the specifier for correct pole selection based on local codes and standards for the job location. (See page **4**).



Pole

Pole Catalog Number	X	Y	Z	Allowable Pole EPA (Wind Map Steady Wind) 85	90	100	110	120	130	140	150
☐ **LTRA16-6156**	16′	6″ x .156	4″	21.80	19.36	17.93	14.70	12.26	10.30	8.67	7.36
☐ **LTRA16-6188**	16′	6″ x .188	4″	26.32	23.38	21.64	17.77	14.83	12.49	10.56	9.01
☐ **LTRA20-5156**	20′	5″ x .156	3″	9.67	8.51	7.98	6.45	5.30	4.42	3.73	3.18
☐ **LTRA20-5188**	20′	5″ x .188	3″	12.01	10.59	9.89	8.03	6.63	5.55	4.70	4.03
☐ **LTRA20-6156**	20′	6″ x .156	4″	15.75	13.94	12.96	10.58	8.77	7.30	6.04	5.03
☐ **LTRA20-6188**	20′	6″ x .188	4″	19.23	17.04	15.82	12.94	10.76	8.99	7.50	6.30
☐ **LTRA25-6156**	25′	6″ x .156	4″	10.73	9.44	8.85	7.15	5.88	4.79	3.84	3.06
☐ **LTRA25-6188**	25′	6″ x .188	4″	13.39	11.82	11.04	8.96	7.39	6.08	4.95	4.03
☐ **LTRA25-7156**	25′	7″ x .156	4″	16.32	14.43	13.44	10.95	8.85	7.19	5.88	4.81
☐ **LTRA25-8156**	25′	8″ x .156	4½″	22.70	20.13	18.60	14.90	12.10	9.90	8.17	6.77
☐ **LTRA30-7156**	30′	7″ x .156	4″	11.90	10.47	9.81	7.93	6.26	4.93	3.87	3.02
☐ **LTRA30-8156**	30′	8″ x .156	4½″	17.06	15.09	13.96	11.00	8.75	6.99	5.60	4.48
☐ **LTRA30-8188**	30′	8″ x .188	4½″	21.03	18.62	17.31	13.69	11.01	8.92	7.26	5.92
☐ **LTRA30-8250**	30′	8″ x .250	4½″	28.43	25.23	23.30	18.72	15.23	12.52	10.36	8.63
☐ **LTRA35-8156**	35′	8″ x .156	4½″	13.01	11.45	10.63	8.17	6.30	4.84	3.69	2.75
☐ **LTRA35-8188**	35′	8″ x .188	4½″	16.30	14.38	13.33	10.40	8.17	6.44	5.06	3.95
☐ **LTRA35-8250**	35′	8″ x .250	4½″	22.44	19.86	18.37	14.57	11.68	9.42	7.64	6.20
☐ **LTRA35-10188**	35′	10″ x .188	6″	28.03	24.51	22.20	17.56	14.03	11.29	9.11	7.35
☐ **LTRA39-8188**	39′	8″ x .188	4½″	13.29	11.68	10.85	8.28	6.33	4.81	3.60	2.63
☐ **LTRA39-8250**	39′	8″ x .250	4½″	18.68	16.49	15.28	11.94	9.40	7.43	5.86	4.60
☐ **LTRA39-10188**	39′	10″ x .188	6″	23.51	20.43	18.40	14.33	11.23	8.82	6.91	5.37
☐ **LTRA39-10250**	39′	10″ x .250	6″	32.23	28.20	25.56	20.25	16.20	13.06	10.56	8.55
☐ **LTRA48-10250**	48′	10″ x .250	6″	22.78	19.65	17.59	13.46	10.31	7.87	5.93	4.36
☐ **LTRA50-10250**	50′	10″ x .250	6″	15.85	13.44	9.65	6.85	4.72	3.07	1.75	---

48′ and 50′ poles are 2-piece assemblies

Anchor Base and Bolt Detail

Pole Height	Y Pole Diameter	Bolt Circle DIA	Anchor Bolt Projection	Anchor Bolts Size	Base Size	Conduit Opening
20′	5″	9½″	3¼″	¾″ x 30″ + 4″	9.¼″ sq.	4½″ DIA
16′-25′	6″	9½″	3¼″	¾″ x 30″ + 4″	10.¼″ sq.	5″ DIA
25′ - 30′	7″	11″	3½″	1″ x 36″ + 4″	10.¾″ sq.	6½″ DIA
25′ - 39′	8″	11½″	3½″	1″ x 36″ + 4″	11.⅝″ sq.	7½″ DIA
35′ - 48′	10″	14¾″	4¾″	1″ x 48″ + 4″	14.½″ sq.	9½″ DIA
50′	10″	14¾″	4¾″	1¼″ x 42″ + 6″	14.½″ sq.	9½″ DIA

Standard Features

Mounting

Plan Views: Flush Mount! | Side Arm

Mounting[1]: ☐ **FM** ☐ **A** ☐ **SA** ☐ **B** ☐ **SB** ☐ **L** ☐ **SL** ☐ **T** ☐ **ST** ☐ **Y** ☐ **SY** ☐ **C** ☐ **SC**

NOTE: Allowable Pole EPA for jobsite wind conditions must be equal to or greater than fixture mount EPA. Please refer to Kim luminaire catalog for specific fixture.

[1]See luminaire drilling requirements in luminaire catalog.)

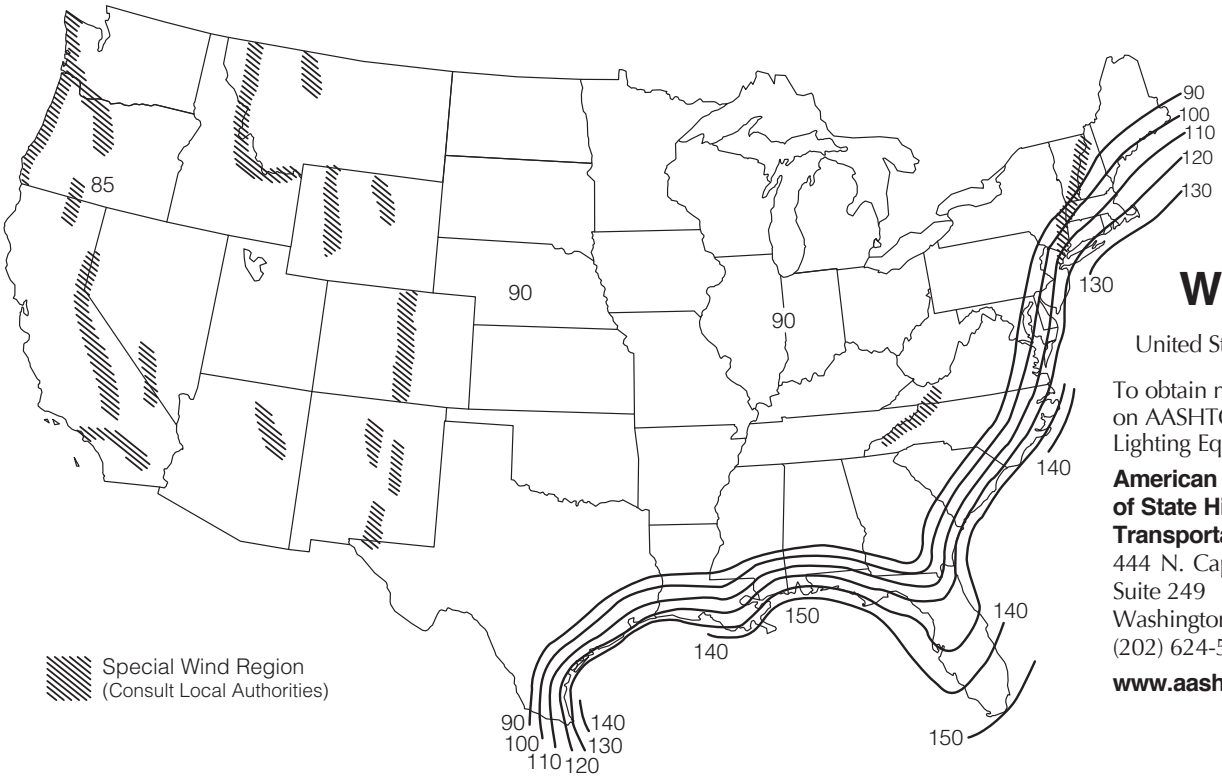
Structural Luminaires *Only* - Examples

☐ **TS**:Single Tension for small and large Structural - LTRA20-5156B-TS
☐ **TD**:Double Tension for small and large Structural - LTRA20-5156B-TD
☐ **TR**:Truss for small and large Structural - LTRA20-5156B-TR
☐ **XTS**:Single Tension for 1000W Structural - LTRA20-5156B-XTS
☐ **XTD**:Double Tension for 1000W Structural - LTRA20-5156B-XTD
☐ **XTR**:Truss for 1000W Structural - LTRA20-5156B-XTR

Finish
Standard thermoset polyester powder coat paint over titanated zirconium conversion coating.π

Color:	Black	Dark Bronze	Light Gray	Stealth Gray™	Platinum Silver	White	Custom Color[2]
Cat. No.:	☐ **BL**	☐ **DB**	☐ **LG**	☐ **SG**	☐ **PS**	☐ **WH**	☐ **CC**

[2]Custom color subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description:_____



Wind Map

United States and Canada

To obtain more information on AASHTO Standards for Lighting Equipment contact:

American Association of State Highway and Transportation Officials:
444 N. Capitol Street, NW, Suite 249
Washington, DC 20001
(202) 624-5800

www.aashto.org

NOTES:

- Values are based on 50 year mean recurrence interval 30′ above grade.
- Hawaii has an **105 mph** wind velocity.
- Puerto Rico has a **125 mph** wind velocity.
- Caution must be exercised in determining wind velocities in special wind areas such as:

  Mountainous Regions

  Areas surrounding the Great Lakes or other large bodies of water or open land.

  Areas subject to extreme wind conditions, such as hurricanes, typhoons, cyclones, and tornadoes.

  Areas adjacent to airports.

  Any specific area with a known or suspected abnormally high intermittent wind condition caused by geography, adjacent structures, or other specific local conditions that may not be recorded in National Weather Service records.
- Allowable pole EPA for jobsite wind conditions must be equal to or greater than fixture EPA. Responsibility lies with the specifier for correct pole selection based on AASHTO wind map and job location.
- The Wind Map is intended only as a general guide. Always consult local authorities to determine maximum wind velocities, gusting and unique wind conditions for each specific application.
- **CAUTION:** Wind speeds and listed EPAs are for ground mounted installations. Poles mounted on structures (such as bridges and buildings) must consider vibration and coefficient of height factors beyond this general guide. Consult AASHTO standards.
- Extreme Wind Events: Hurricanes, Typhoons, Cyclones, or Tornadoes expose poles to flying debris, wind shear, and other unpredictable aerodynamic forces not indicated by the wind velocity ratings.
- Pole Strength Limited Warranty: Standard, unmodified Kim lighting Poles installed as recommended, undamaged by corrosion, or lack of maintenance, shall withstand steady wind conditions as provided on page **2** (Allowable Pole EPA). Installation of poles without luminaires, or attachment of any unauthorized accessories to poles shall void this warranty.

2" LED Downlight Open & Wall Wash

D2LED

120V or 277V
High Output

DATE: TYPE:

FIRM NAME:

PROJECT:

Architektūr

Ceiling Cutout: 2 7/8"
Ceiling Thickness 1/2"-1 1/4"
For conversion to millimeters, multiply inches by 25.4
Not to Scale

APPLICATIONS:

Architektūr D2LED Series is a 2" specification grade LED downlight that combines superior brightness control with energy savings and low maintenance costs. Suitable for a variety of commercial, retail, and institutional applications with ambient temperatures up to 35°C (9L) or 25°C (12L) during operation with free airflow around the fixture.

J-TUBE ASSEMBLY:

Utilizing Prescolite's revolutionary J-Tube design and optimal thermal management, the D2LED eliminates the need for a traditional downlight housing. The J-Tube assembly combines the traditional J-Box and driver electronics into a compact form that can be accessed from below the ceiling plane. These features allow the D2LED to ship as a single unit which can be completely wired and installed from below the ceiling plane. It can also be easily removed from below the ceiling if servicing or an upgrade to new technology is ever required.

REFLECTOR:

High purity spun aluminum self-flanged reflector with iridescence suppressed Alzak anodized finish. Also available with Prescolite's American Matte finish (MFC).

Factory configurable optics provide 25°, 35°, or 45° optical distribution options for a variety of applications. A novel Wall Wash optical system is also available to provide an unequalled wall wash optical distribution from the same small aperture.

LED LIGHT ENGINE:

High output Xicato XSM LED Module (IP66 rated). Color consistency held to less than 2 SDCMs for fixture to fixture and over-time color consistency. Secured to an extruded aluminum heat sink for excellent thermal management providing optimal life and lumen maintenance (minimum 50,000 hours at 70% lumen maintenance).

LED DRIVER:

Energy efficient electronic constant current driver with 50,000 hour minimum anticipated life. Meets UL Class 2, FCC 47CFR Part 15, Class B compliant, inherent short-circuit protection, self limited, overload protected.

DIMMING:

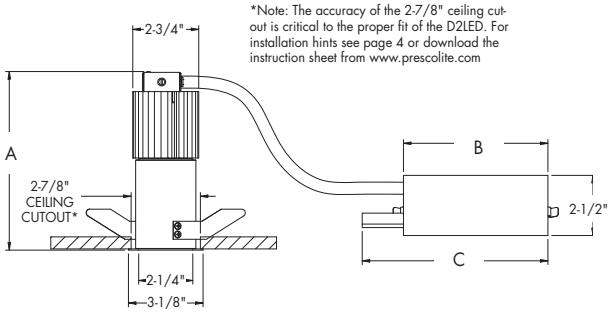
Comes standard with 0-10V dimming capability. Flicker-free dimming to 10%. For sizing control systems, the 0-10V control circuit will draw up to 1 mA. Also available with 0-10V to below 1%, Lutron Ecosystem to 1%, and Leading Edge to 10%.

CERTIFICATIONS:

CSA C/US certified to UL1598. Suitable for wet locations. Non–IC rated and 2IN/2OUT through branch wiring. For connection to flexible conduit only.

WARRANTY:

5 Year Warranty. Go to www.prescolite.com for full details.



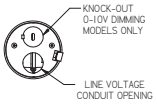
*Note: The accuracy of the 2-7/8" ceiling cut-out is critical to the proper fit of the D2LED. For installation hints see page 4 or download the instruction sheet from www.prescolite.com

REFLECTORS

BEAM ANGLE	DIM "A"
WFL45	5-7/8"
FL35	6-3/4"
MD25	7-1/2"
WW	7"

J-TUBE

OPTIONS	DIM "B"	DIM "C"
STANDARD	7-3/4"	9-1/2"
HDM	16-1/4"	18"
LDM	6"	7-3/4"
DM01	10"	11-3/4"



CATALOG NUMBER:

EXAMPLE: D2LED277VHDM-2D9LED9L30K8WFL45

Order housing, reflector, and accessories separately

J-TUBE ASSEMBLY

- ❑ **D2LED** 2" J-tube assembly with 0-10V Dimming Standard

VOLTAGE

- ❑ **Blank** 120V
- ❑ **277** 277V

OPTIONS

- ❑ **Blank** Standard 0-10V dimming
- ❑ **HDM**[5] Lutron Hi-Lume A- Series 3-wire or EcoSystem dimming to 1%
- ❑ **LDM** Leading Edge dimming to 10% (12L & 120V only)
- ❑ **DM01** ELDO LED 0-10V dimming to less than 1%.

LIGHT ENGINE

- ❑ **2D9LED** 2" Open Reflector/ Light Engine Assembly with Xicato module

OUTPUT

- ❑ **9L**[2] 900 Delivered Lumens
- ❑ **12L**[2,6] 1200 Delivered Lumens

LED COLOR

- ❑ **27K** 2700 Kelvin
- ❑ **30K** 3000 Kelvin
- ❑ **35K** 3500 Kelvin
- ❑ **40K** 4000 Kelvin

CRI

- ❑ **8** Nominal 80+ CRI
- ❑ **9**[6] Nominal 95 CRI

BEAM ANGLE

- ❑ **WFL45** Spun Aluminum reflector with a 45° wide flood distribution
- ❑ **FL35** Spun Aluminum reflector with 35° flood distribution
- ❑ **MD25** Spun Aluminum reflector with 25° medium distribution
- ❑ **WW** Wall Wash

REFLECTOR FINISH

- ❑ **Blank** Specular
- ❑ **SS** Semi-Specular
- ❑ **MFC**[7] American Matte™

REFLECTOR OPTION

- ❑ **WT** White Trim

REFLECTOR COLOR

- ❑ **Blank** Clear Alzak
- ❑ **CG** Champagne Gold Alzak
- ❑ **BL** Black Alzak
- ❑ **WE** Wheat Alzak
- ❑ **LW** Light Wheat Alzak
- ❑ **PW** Pewter Alzak
- ❑ **WH**[1] White Paint

ACCESSORIES

- ❑ **LiteGear**[3] Inverter, single phase central lighting, 125VA-250VA
- ❑ **LPS Series**[3] LitePower micro-inverter, 20VA-55VA
- ❑ **D2FRM**[4] Optional Mounting frame for the D2LED fixture.
- ❑ **D2ICAT**[4,5] Optional IC Rated, Air Tight housing for the D2LED.
- ❑ **D2GR** White ring for D2LED fixture
- ❑ **D2CP**[4,5] Optional CCEA compliant housing for the D2LED

1 Requires WT option

2 See page 2 for specific lumens per module and raw lumens.

3 See Central Inverter compatibility note and web links on page 4.

4 See page 5 for line art.

5 HDM not compatible with D2ICAT/D2CP.

6 See page 5 for important product life and warranty information when used with the 12L or 95 CRI options.

7 Not available with white paint

prescolite
A Division of Hubbell Lighting, Inc.

In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.

PHOTOMETRIC DATA

Architektūr - 2" D2LED Downlight

ELECTRICAL DATA	D2LED9L8	D2LED9L9	D2LED12L8	D2LED12L9
Input Voltage	120/277V	120/277V	120/277V	120/277V
Input Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Input Current	0.14/0.062	0.170/.076	0.20/0.087	0.18/0.08
Input Power	17 Watts	21 Watts	24 Watts	22 Watts
Constant Current Output	760mA	760mA	700mA	700mA
Power Factor	≥0.90	≥0.90	≥0.90	≥0.90
EMI Filtering	FCC 47CFR Part 15, Class B	FCC 47CFR Part 15, Class B	FCC 47CFR Part 15, Class B	FCC 47CFR Part 15, Class B
Fixture Operating Temperature	-30°C to 35°C	-30°C to 35°C	-30°C to 25°C	-30°C to 25°C
Dimming	0-10V to 10%	0-10V to 10%	0-10V to 10%	0-10V to 10%

Over-voltage, over-current,
(short-circuit protected, and over-temperature protection with auto recovery)

Lumen Multipliers For Various Alzak Colors

Clear Specular	1.00
Pewter	0.94
Champagne Gold	0.96
Wheat	0.86
Light Wheat	0.84
Black Alzak	0.62

Note: These values are based upon the WFL45 Reflectors.

Lumen Multiplier For CRI Options

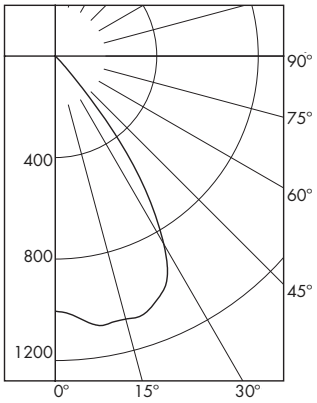
	80+ CRI	95 CRI
12L	1.0	.66
9L	0.71	0.57

*For exact lumen outputs, please visit www.prescolite.com to find IES reports

Xicato Module Chart

	80+ CRI	95 CRI	Drive Current	
12L	2000	1300	700 mA	Xicato XSM Module
	1420	930		Module Delivered Lumens
9L	1300	1000	760 mA	Xicato XSM Module
	1000	800		Module Delivered Lumens

D2LED-2D9LED12L30K8WFL45
LED Light Engine: 3000K, 80 CRI
System Wattage: 22
Fixture delivered lumens: 1235
Fixture Efficacy: 56
Spacing Criteria: 1.0



Test No. 6846
Tested at 25°C Ambient in accordance to IESNA LM-79-2008

CANDELA DISTRIBUTION

DEG	CANDELA	LUMENS
0	1005	
5	1035	100
15	1073	305
25	1014	457
35	571	337
45	19	34
55	2	2
65	0	0
75	0	0
85	0	0
90	0	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LUMINAIRE
0-30	862	69.8
0-40	1199	97.1
0-60	1235	100.0
0-90	1235	100.0
0-180	1235	100.0

LUMINANCE DATA IN CANDELA/ SQ. METER

Angle in Vertical	Average
45°	8482.
55°	1101.
65°	0.
75°	0.
85°	0.

COEFFICIENTS OF UTILIZATION

Zonal Cavity Method

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance: 80%				70%				50%			30%			10%		
	20% Effective Floor Cavity Reflectance																
	% Wall Reflectance: 70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95
2	108	103	99	96	106	101	98	95	98	95	92	95	93	91	92	90	89
3	102	96	91	87	100	95	90	86	92	88	85	90	86	84	87	85	82
4	97	90	84	80	95	88	83	79	86	82	78	84	80	77	82	79	77
5	92	84	78	73	90	83	77	73	81	76	72	79	75	72	78	74	71
6	87	78	72	68	86	78	72	68	76	71	67	75	70	67	73	69	66
7	83	73	67	63	81	73	67	63	71	66	63	70	66	62	69	65	62
8	79	69	63	59	77	68	63	59	67	62	58	66	61	58	65	61	58
9	75	65	59	55	74	64	59	55	63	58	54	62	58	54	62	57	54
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51

D2LED2D9LED12L30K8WFL45 Test No. 6846

Web: **www.prescolite.com** • Tech Support: **(888) 777-4832**
701 Millennium Blvd.,• Greenville, SC 29607 U.S.A. • Phone (864) 678-1000

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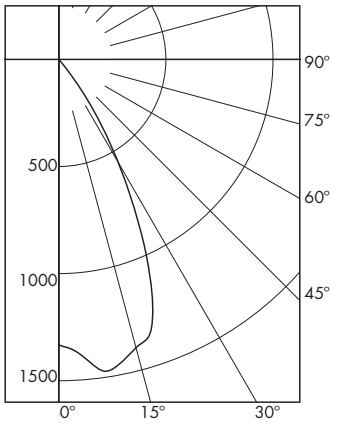
HUBBELL® Lighting, Inc.

PHOTOMETRIC DATA

Architektūr - 2" D2LED Downlight

D2LED-2D9LED12L30K8FL35
LED Light Engine: 3000K, 80 CRI
System Wattage: 22
Fixture delivered lumens: 1118
Fixture Efficacy: 50.8
Spacing Criteria: 0.8



CANDELA DISTRIBUTION

DEG	CANDELA	LUMENS
0	1333	
5	1399	136
15	1393	392
25	931	418
35	253	161
45	7	8
55	1	1
65	0	0
75	0	0
85	0	0
90	0	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LUMINAIRE
0-30	947	84.7
0-40	1108	99.1
0-60	1118	100.0
0-90	1118	100.0
0-180	1118	100.0

LUMINANCE DATA IN CANDELA/ SQ. METER

Angle in Vertical	Average
45°	3125.
55°	550.
65°	0.
75°	0.
85°	0.

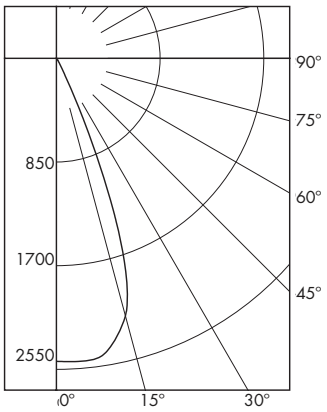
COEFFICIENTS OF UTILIZATION Zonal Cavity Method

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance: 80%				70%				50%			30%			10%		
	20% Effective Floor Cavity Reflectance																
	% Wall Reflectance: 70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
1	114	111	109	107	112	109	107	105	105	104	102	102	100	99	98	97	96
2	109	105	101	98	107	103	100	97	100	97	95	97	95	93	94	92	91
3	104	98	94	90	102	97	93	90	94	91	88	92	89	87	90	88	86
4	100	93	88	84	98	92	87	83	90	86	83	88	84	82	86	83	81
5	95	88	82	78	94	87	82	78	85	81	77	83	80	77	82	79	76
6	91	83	78	74	90	82	77	73	81	76	73	79	75	72	78	75	72
7	87	79	73	69	86	78	73	69	77	72	69	76	71	68	75	71	68
8	83	75	69	65	82	74	69	65	73	68	65	72	68	65	71	67	65
9	80	71	66	62	79	70	65	62	70	65	62	69	64	61	68	64	61
10	76	68	62	59	75	67	62	59	66	62	58	66	61	58	65	61	58

D2LED2D9LED12L30K8FL35 Test No. 6845

Test No. 6845
Tested at 25°C Ambient in accordance to IESNA LM-79-2008

D2LED-2D9LED12L30K8MD25
LED Light Engine: 3000K, 80 CRI
System Wattage: 22
Fixture delivered lumens: 1062
Fixture Efficacy: 48.3
Spacing Criteria: 0.6



CANDELA DISTRIBUTION

DEG	CANDELA	LUMENS
0	2484	
5	2492	236
15	2186	580
25	352	221
35	22	17
45	6	4
55	2	2
65	1	1
75	0	0
85	0	0
90	0	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LUMINAIRE
0-30	1038	97.7
0-40	1054	99.3
0-60	1061	99.9
0-90	1062	100.0
0-180	1062	100.0

LUMINANCE DATA IN CANDELA/ SQ. METER

Angle in Vertical	Average
45°	2678.
55°	1101.
65°	747.
75°	0.
85°	0.

COEFFICIENTS OF UTILIZATION Zonal Cavity Method

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance: 80%				70%				50%			30%			10%		
	20% Effective Floor Cavity Reflectance																
	% Wall Reflectance: 70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
1	115	113	111	109	112	110	109	107	106	105	104	103	102	101	99	99	98
2	111	107	104	101	109	105	102	100	102	100	98	99	97	96	97	95	94
3	107	102	98	95	105	101	97	94	98	95	93	96	94	92	94	92	90
4	103	98	93	90	102	97	93	90	95	91	89	93	90	88	91	89	87
5	100	94	89	86	98	93	89	86	91	88	85	90	87	84	88	86	84
6	97	90	86	82	95	89	85	82	88	84	82	87	83	81	85	83	81
7	94	87	82	79	92	86	82	79	85	81	78	84	81	78	83	80	78
8	91	84	79	76	90	83	79	76	82	78	76	81	78	75	80	77	75
9	88	81	76	73	87	80	76	73	79	76	73	79	75	73	78	75	73
10	85	78	74	71	84	78	73	71	77	73	70	76	73	70	76	72	70

D2LED2D9LED12L30K8MD25 Test No. 6844

Test No. 6844
Tested at 25°C Ambient in accordance to IESNA LM-79-2008

NOTES
Refer to www.prescolite.com for additional photometric tests (IES Files).

Web: **www.prescolite.com** • Tech Support: **(888) 777-4832**
701 Millennium Blvd.,• Greenville, SC 29607 U.S.A. • Phone (864) 678-1000

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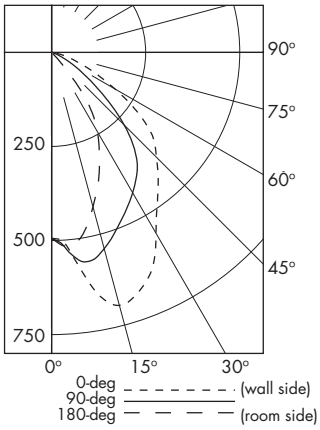
PHOTOMETRIC DATA

D2LED-2D9LED12L30K8WW
LED Light Engine: 3000K, 80 CRI
System Wattage: 22W
Fixture Delivered Lumens: 1006
Fixture Efficacy: 45.5



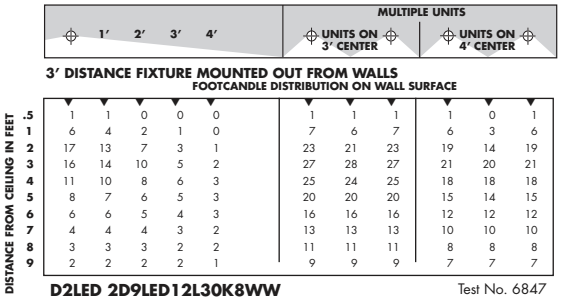
CANDELA DISTRIBUTION

DEG	0	90	180
0	495	495	495
5	543	536	513
15	710	532	421
25	639	463	291
35	493	402	177
45	397	294	3
55	291	118	0
65	129	25	0
75	41	0	0
85	0	0	0
90	0	0	0

Test No. 6847
Tested at 25°C Ambient in accordance to IESNA LM-79-2008

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	0 DEG	90 DEG	180 DEG
45°	177219	131240	1339
55°	160143	64938	0
65°	96349	18672	0
75°	50003	0	0
85°	0	0	0



D2LED 2D9LED12L30K8WW Test No. 6847

Central Inverters

For full fixture output in back-up mode, we recommend you visit www.dual-lite.com for your Central Lighting Inverter options. Please contact your local Hubbell representative for any assistance with proper sizing and loading of your inverter selection. Central lighting inverters must be ordered separately.

LiteGear: www.dual-lite.com/products/litegear_lg_series
LPS Series: www.dual-lite.com/products/lps

INSTALLATION HINTS

Daisy Chain:

Often times through branch wiring (Daisy Chaining) will be desired for installation of the D2LED in an application. There is one knock out available in the J-tube for the line voltage, and one for the low voltage control wires. To accomplish 2in/2out through branch wiring. Prescolite suggests the use of an Arlington Duplex Connector (PN 4040AST).

Ceiling Cut-out:

Due to the discrete trim flange on the D2LED, the accuracy of the 2-7/8" ceiling cut-out is critical to achieving the best results. Prescolite recommends making this cut-out with a 2-7/8" hole saw, such as one manufactured by the Morse Company (TAC46 and TACPD4).

Ceiling Clearance:

When using the standard driver and J-Tube, 8" of plenum clearance is recommended when no top access is available to the J-Tube

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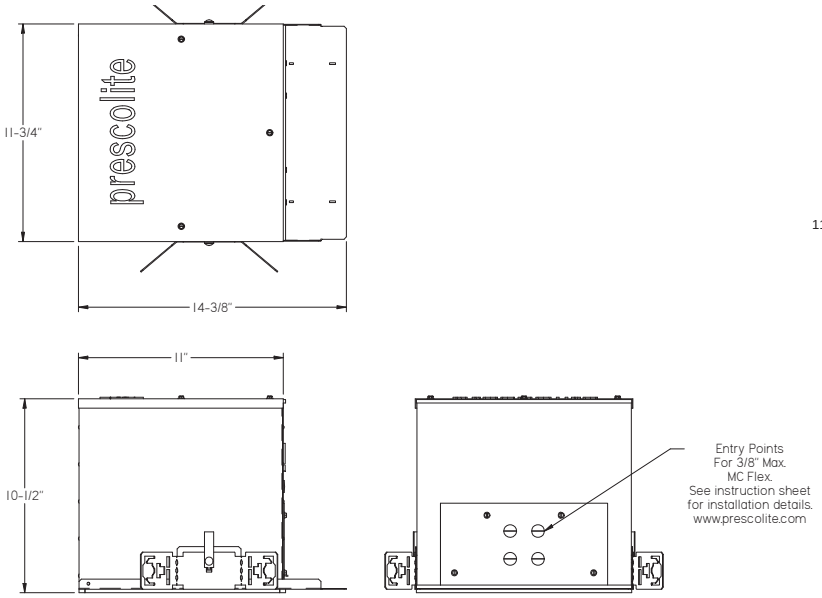
PHOTOMETRIC DATA

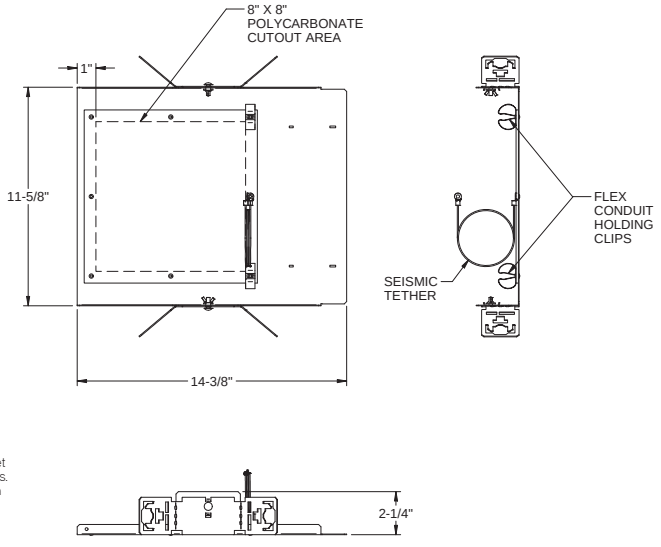
Dimming Compatibility Table

Dimming Driver	Manufacturer	Web Link
Standard DM01	Lutron DVTV	http://bit.ly/11jSvZg
Standard DM01	Leviton AWRMG-7xx, AWSMG-7xx, AWSMT-7xx	http://bit.ly/1BJn2R9
HDM	Lutron	http://bit.ly/1vtjHAl
LDM	Lutron MAELV-600, SPSELV-600, NTELV-300	http://bit.ly/K28so2 http://bit.ly/1bfUNhe http://bit.ly/1K28ziA
	Leviton 6615-P, 6672-1LW, 6674	http://bit.ly/1DlPktd http://bit.ly/1DcDlWr http://bit.ly/1vWD8Sk

Frame Accessories



D2ICAT/D2CP



D2FRM

* Note: Use of the D2ICAT and D2CP can cause heat entrapment, which while safe to use, can shorten the expected life of this product from > 50,000 hours to 25,000 hours when used with the 12L or 95 CRI options. The product warranty in these applications will be 5 years, or 25,000 hours, which ever comes first.

*Note: Ceiling thickness maximum when using D2ICAT or D2CP is 5/8". Ceiling thickness maximum when using D2FRM is 1". Bar hangers not included, order B6 for ceiling joists up to 24" centers or B24 for T-bar ceilings.

*Note: The standard product is designed and listed to be installed into most ceiling types without the use of an accessory frame. These frames are provided as an optional accessory to be used when desired by the end user to provide extra support or required by local code.

*Note: CP versions require the use of the D2ICAT accessory modified with metal plate in place of polycarbonate.

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HUBBELL® Lighting, Inc.

KIM LIGHTING

WP9S-LED

WARP9® Small PicoEmitter® LED

kl_wp9seled_spec.pdf

JOB _____ TYPE _____

NOTES _____ APPROVALS _____

FEATURES

- Full Cutoff PicoEmitter technology
- Patented low profile luminaire[1]
- Available in 580nm, 3000K, 4000K and 5000K standard CCT
- Type 1, 2, 3, 4, 5, R, L distributions
- 0-10V dimming drivers standard
- Sealed optical chamber, IP66 certified

Certifications

c UL us LISTED

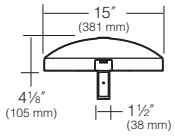
ida DARK SKY APPROVED 2016

DLC QPL LISTED

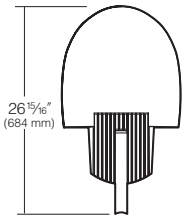
3000K and warmer CCTs only

SPECIFICATIONS

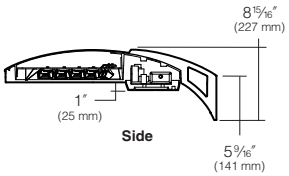
Max. Weight = 30 lbs. EPA .52 for 1SA.
See Configuration for Additional EPAs.



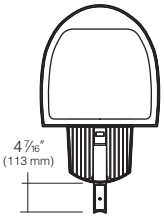
Front



Top



Side



Bottom

ORDERING CODE

Configuration			EPA
	1SA	1 Arm Side Mt.	.52
	2SB	2 Arm Side Mt.	1.0
	2SL	2 Arm Side Mt.	.82
	3ST	3 Arm Side Mt.	1.3
	3SY*	3 Arm Side Mt.	1.3
	4SC	4 Arm Side Mt.	1.5
	1W	Single Wall Mt.	n/a
	HSF	Horizontal Slipfitter	n/a

*Available round poles only. EPA is for Fixture only

Fixture

Housing	Distribution	Drive Current
WP9S Small, 60 LEDs	**1** Type I	**E35** 350mA PicoEmitter
	2 Type II	
	3 Type III	
	4 Type IV	
	5 Type V	
	R Type R, Right	
	L Type L, Left	

Electrical Module

Source	Color Temperature[2]	Voltages
60L 60 LEDs, 66W	**2K** 580nm[3]	**120** 120V
	3K 3000K	**208** 208V
	4K 4200K	**240** 240V
	5K 5100K	**277** 277V
		347 347V[4]
		480 480V[4]

Fixture Finish

- **BL** Black
- **DB** Dark Bronze
- **LG** Light Gray
- **PS** Platinum Silver
- **TT** Titanium
- **WH** White
- **CC** Custom Color*

*Consult factory

Photocell Options

- **A25-7** 7-pin Photocell Receptacle
- **A30** 120V Button Photocell
- **A31** 208V Button Photocell
- **A32** 240V Button Photocell
- **A33** 277V Button Photocell
- **A34** 480V Button Photocell
- **A35** 347V Button Photocell

Fuse Options

- **SF** 120, 277, 347 Line Volts
- **DF** 208, 240, 480 Line Volts

Lens Options

- **LS** Polycarbonate Lens[5]

NFO Option

- **NFO** Neighbor Friendly Optic*

*Photometry available for Type III / IV. All others, consult factory.

Other Options

- **TL** Tamper Resistant Latch

Control Options

Wireless

- **WIR-RML-IO** 120-347V, 1000' range, WiScape RF mesh control system with off/on/dim, motion, photo, GPS location, alert, monitoring and metering capabilities.

Motion

- **SCL-R** Round Pole Mounted Occupancy Sensor up to 16'
- **SCL-S** Square Pole Mounted Occupancy Sensor up to 16'
- **SCH-R** Round Pole Mounted Occupancy Sensor 16' to 30'
- **SCH-S** Square Pole Mounted Occupancy Sensor 16' to 30'

Mounting Options

- **VSF** Vertical Slipfitter Mount for 2" pipe tenon, (2-3/8" O.D.)
- **SVSF** Vertical Slipfitter Mount square for 2" pipe tenon, (2-3/8" O.D.)

Side Arm Mount

- **3** 3" O.D. Pole
- **3.5** 3.5" O.D. Pole
- **4** 4" O.D. Pole
- **5** 5" O.D. Pole
- **6** 6" O.D. Pole
- **SQ** Square Pole

For Pole Spec Select: http://www.kimlighting.com/products/arms_and_poles/
For Control Spec Select: http://trpssl.com/index.html

[1] US Patent No. D568,521 S. Other patents pending.
[2] For custom optics and color temperature configurations, contact factory.
[3] Turtle friendly. Maximum 500mA drive current for 2K amber option.
[4] 347V & 480V currents may be supplied with step-down transformer.
[5] Use only when vandalism is anticipated to be high. Required only for vandal protection in locations where fixtures can be reached by unauthorized persons.

Kim Lighting reserves the right to change specifications without notice.

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P 626.968.5666 | F 626.369.2695 | www.kimlighting.com | Rev. Nov. 15, 2016

HUBBELL Lighting

LUMINAIRE PERFORMANCE

Spectroradiometric			
	3000K Average	4200K Average	5100K Average
Correlated Color Temp. CCT (K)	2800K - 3175K	3800K - 4600K	4600K - 5600K
Color Rendering Index (CRI)	≤80	≤80	≤70
Power Factor	>.90	>.90	>.90

Projected Lumen Maintenance		
mA	100,000 hrs	Calculated L70
350 mA	94.26%	719,000 Hrs.

Electrical Drive Current @ 350mA		
Volts - AC	Amps - AC	System Watts
120	0.55	66
208	0.32	66
240	0.28	66
277	0.24	66
347	0.19	66
480	0.14	66

B.U.G. Rating for 350mA (TM15) in Lumens where B = Backlight, U = Uplight, G = Glare								
Temperature	Type I	Type II	Type III	Type III NFO	Type IV	Type IV NFO	Type V	Type L/R
3000K	N/A	B1 U0 G1	B1 U0 G1	N/A	B1 U0 G1	B0 U0 G1	B2 U0 G1	N/A
4200K	N/A	B2 U0 G2	B1 U0 G1	N/A	B1 U0 G2	B1 U0 G1	B3 U0 G1	N/A
5100K	N/A	B2 U0 G2	B1 U0 G2	N/A	B1 U0 G2	B1 U0 G1	B3 U0 G1	N/A

Absolute Lumens for 350mA								
Temperature	Type I	Type II	Type III	Type III NFO	Type IV	Type IV NFO	Type V	Type L/R
3000K	N/A	4663	4599	N/A	4703	3709	4753	N/A
4200K	N/A	6090	6006	N/A	6142	4844	6208	N/A
5100K	N/A	6477	6387	N/A	6531	5151	6601	N/A

LED performance and lumen output continues to improve at a rapid pace. Log onto www.kimlighting.com to download the most current photometric files from Kim Lighting's IES File Library.
For custom optics and color temperature configurations, contact factory.

Kim Lighting reserves the right to change specifications without notice.

SPECIFICATIONS

Housing:

- One-piece die-cast, low copper (<0.6% Cu) aluminumalloy with integral cooling ribs over the optical chamber and electricalcompartment.
- Solid barrier wall separates optical and electrical compartments.
- Double-thick wall with gussets on the support-arm mounting end.
- Housing forms a half cylinder with 55° front face plane providing a recess to allow a flush single-latch detail.
- All hardware is stainless steel or electro-zinc plated steel.

Lens Frame:

- Integral hinges with stainless steel pins provide no-tool mounting and removal from housing.
- Single die-cast aluminum cam-latch provides positive locking and sealing of the optical chamber by a one-piece extruded and vulcanized silicone gasket to provide an IP66 rating for the optical module.
- Clear 3/8" thick tempered glass lens retained by eight steel clips with full silicone gasketing around the perimeter.

Optical Module:

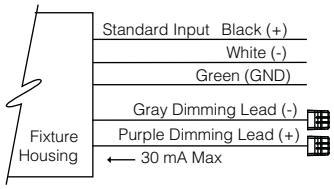
- Precision, replaceable PicoEmitters are positioned to achieve directional control toward desired task.
- The entire EmitterDeck fastens to the housing as a one-piece module.
- Type I, II, III, IV, V, L (left), and R (right) standard distributions. Custom available.
- 3000K, 4000K, 5000K standard CCT. Amber and custom available.
- IP66 certified
- Die-cast, low copper aluminum heat sink modules provide thermal transfer at PCB level.
- Anodized aluminum carrier plate and heat sink modules.

Electrical Characteristics:

- 120V through 480V @ 50/60Hz.
- Class 1, 350mA.
- Power Factor = >.90
- National Electrical Code, ANSI/NFPA 70.
- 10kV surge suppression.
- Thermalshield thermal control.
- -40c starting driver.
- 0-10V dimming interface.
- All electronic components are IP66 rated.
- Electronic components are UL and/or CSA recognized.

Dimming:

- 10% to 100% dimming by the use of standard 0-10V interface driver.
- To activate the dimming system, a wiring harness is supplied and attached to the DIM Port (DIM IN) on the thermal shield protection system. This port allows the 0-10V Interface to bypass the thermal shield and control the driver.
- The thermal shield works in conjunction with the control system to assure that overheating will not harm the LEDs.
- The wiring harness is connected with the use of the Purple lead as the positive (+) and the Grey lead as the negative (-) to an available control signal (by others).



Support Arm:

- One-piece extruded aluminum with internal bolt guides and fully radiussed top and bottom.
- Luminaire-to-pole attachment is by internal draw bolts, and includes a pole reinforcing plate with wire strain relief.
- Arm is circular cut for specified round pole.
- Optional cast, low copper aluminum horizontal slip-fitter with adaptor plate to secure the luminaire to 2" IPS pipe size arms.
- Optional cast aluminum wall mount plate assembly. Attaches to the wall over the junction box. Luminaire attaches to the wall plate.

Finish:

- Fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat.
- Standard colors include (BL) Black, (DB) Dark Bronze, (WH) White, (PS) Platinum Silver, (LG) Light Gray, (TT) Titanium, and (CC) Custom Color (Include RAL#).

Fusing:

SF for 120, 277 and 347 Line Volts
DF for 208, 240 and 480 Line Volts.

- High temperature fuse holders factory installed inside the fixture housing. Fuse is included.

Certifications and Listings:

- UL 1598 Standard for wet locations for Luminaires.
- UL 8750 Standard for Safety for Light Emitting Diode (LED) Equipment for use in Lighting Products.
- IP66 certified.
- CSA C22.2#250.0 Luminaires.
- ANSI C136.31-2010 3G Vibration tested and compliant.
- RoHS compliant.
- Meets Buy American provisions within ARRA.
- IDA approved, 3000K and warmer CCTs only.

CAUTION:

- Fixtures must be grounded in accordance with national, state and/or local electrical codes, Failure to do so may result in serious personal injury.

WARRANTY:

- For full warranty see http://www.hubbelllighting.com/resources/warranty

Kim Lighting reserves the right to change specifications without notice.

CONTROLS

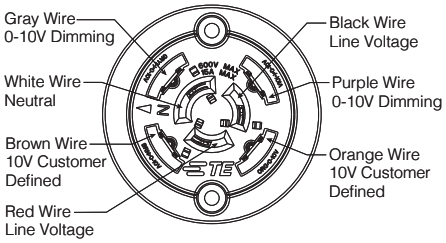
Photocell Receptacle

A25-7

Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

1. Traditional on/off photoelectric control.
2. 5-pin wireless photoelectric control for added dimming feature.
3. 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.



Button Photocell

A30 for 120V, **A31** for 208V, **A32** for 240V, **A33** for 277V, **A35** for 347V, **A34** for 480V,

Photocell is factory installed inside the housing with a fully gasketed sensor on the side wall. For multiple fixture mountings, one fixture is supplied with a photocell to operate the others.

Wireless Control

Hubbell Building Automation's wiSCAPE™ In-Fixture Module is a bi-directional wireless RF device that allows an individual fixture to be managed, monitored and metered. The wiSCAPE In-Fixture Module communicates wirelessly over a robust 2.4GHz ISM (Industrial, Scientific and Medical) certified meshed radio signal. The wiSCAPE Fixture Module drastically simplifies control and automation of projects, especially in retrofit environments, and challenges the legacy world of wired-systems. wiSCAPE wireless control technology easily adapts to complex automation situations for quick, simple and economical commissioning. The On-Fixture Module is compatible with A-25-7H option.

WIR-RML-IO

120 - 347V 1000 Foot Range WiScape RF mesh control system with off/on/dim, motion, photo, GPS location, alert, monitoring and metering capabilities.

Pole Mounted

Round Pole-Mounted Occupancy Sensor up to 16'

SCL-R

Round Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCL-R4[1]/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor up to 16'

SCL-S

Square Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for square pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCL-L/277[2]/BL[3]

Round Pole-Mounted Occupancy Sensor 16' to 30'

SCH-R

Round Pole-Mounted Occupancy Sensor: 16' to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-R4[1]/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor 16' to 30'

SCH-S

Square Pole-Mounted Occupancy Sensor: 16 to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-S/277[2]/BL[3]

SCP

The SCP is a photo-control with motion sensing accessory thats mounts to the side of any new or existing 3"-5" round or square straight pole. The SCP enables any pole mounted luminaire in excess of 75 watts, to meet California Title 24 requirements with integral 20KV/10KA surge protection for added reliability and serviceability.

For more detail:

http://www.aal.net/products/sensor_control_programmable

[1]Pole Diameter, [2]Voltage, [3]Color

Kim Lighting reserves the right to change specifications without notice.

ARCHITECTURAL EGRESS

Vandal Resistant

AEL Full Cut-Off LED

Fixture Type

Date

Job Name

Approved By

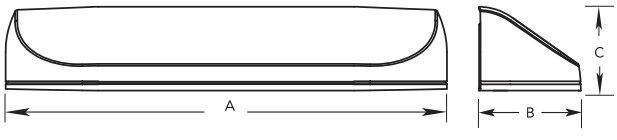
Catalog Number - - - - - -

SPECIFICATIONS

Description	The Architectural Egress Luminaire combines a unique, patented design shaped with high performance, full cut-off optics to achieve completely unobtrusive illumination of a space or path of egress. When mounted over a doorway, the fixture is perceived as an element of the building structure and, additionally, provides water protection in the form of a drip cap over the doorway. Multiple lengths are available to match a given door opening and our unique quick mount system facilitates installation and maintenance.
Housing	Marine grade heat treated extruded aluminum. Chemically primed and finished with robotically applied polyester powder coat.
Wall Mount	Marine grade heat treated extruded aluminum. Chemically primed and finished with robotically applied polyester powder coat. Designed to provide quick mounting to housing and secured with (2) captive stainless steel TORX® head screws.
Lens Frame	Marine grade heat treated extruded aluminum, clear anodized. Secured to fixture via integral concealed hinge and (3) captive stainless steel TORX® head screws.
Lens	UV stabilized diffused extruded polycarbonate.
End Caps	Die-cast marine grade aluminum continuously welded to housing. All welds ground smooth.
Reflector	Electrostatically brightened anodized aluminum PVD coated and absolutely color-free of iridescence. Shaped to provide full cutoff, LED point dispersion and maximum efficiency.
Drivers	Constant current drivers at 350mA. High output version utilizes 700mA.
LED	Samsung LM561B Series @ 3000K, 3500K, 4000K and 82 CRI wired in parallel-series. L_{70} projected life of 130,000 hours at 50ºC. Tested in accordance with LM-80. Ten year warranty on LED boards against operational defects.
Gaskets	Closed cell self-adhesive neoprene to provide watertight seal between fixture and wall and between fixture and lens frame.
UL Listing	U.L., C.UL., Wet standard.
Lifetime Warranty	Luminaire LED Incorporated will repair or replace any fixture damaged due to vandalism for the lifetime of the installation.

DIMENSIONAL DATA

	A	B	C
AEL 12	20.79	5.40	3.60
AEL 24	32.04	5.40	3.60
AEL 36	43.29	5.40	3.60
AEL 48	54.75	5.40	3.60
AEL 72	78.75	5.40	3.60



Luminaire Led
www.luminaireled.net

5 Sutton Place
P.O. Box 2162
Edison, NJ 08818

P. 732.549.0056
F. 732.549.9737

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Rev: 4/16

ARCHITECTURAL EGRESS

Vandal Resistant

AEL Full Cut-0ff LED

Fixture Type

ORDERING INFORMATION

SERIES	LED	CCT	VOLTS	LENS	COLOR	OPTIONS		TX/SD
								TX/SD
AEL 12	12” - 10W	3000K	120-277	DP	BKH	☐ DIM	☐ EMBDA	
AEL 24	24” - 10W	3500K	347		BZH	☐ A/B	☐ EMB310	
AEL 36	24” - 20W	4000K			SVH	☐ 2B	☐ EMB310ST	
AEL 48	36” - 15W				WOP	☐ PC	☐ EMB20R	
AEL 72	36” - 30W				PCP	☐ GLR	☐ EMB125R	
	48” - 20W				CUST	☐ SD2	☐ EMB250R	
	48” - 35W					☐ SD3	☐ ST/SC	
	72” - 30W					☐ OCC		
	72” - 55W							

OPTIONS

LENS DP = Diffused Polycarbonate.

COLORS BKH = Black (Hammertone) BZH = Bronze (Hammertone) SVH = Silver (Hammertone) WOP = White (Orange Peel) PCP = Black (Prime Coat Paintable) CUST = Custom Color (Consult Factory)

DIM 0-10V dimming driver. N/A with AEL12.

A/B Aluminum surface back box. Finished with polyester powder coat to match the fixture.

PC Photoelectric switch.

2B (2) LED drivers for independent LED board operation. N/A with AEL12.
N/A with the OCC option.

SD2 Tri-level Step-dimming: 25-50-100 light output. Not available in 12”. Not available with EMB310.

SD3 Tri-level Step-dimming: 33-66-100 light output. Not available in 12”. Not available with EMB310.

GLR Fuse and fuse holder.

EMB310 1000 lumen self-contained, 90 minute emergency battery pack.
Available for 36”, 48” and 72” lengths only. 0°C (32°F) to 55°C (131°F). Not available in 347V.

EMB310ST 1000 lumen self-testing, self-contained, 90 minute emergency battery pack.
Available for 36”, 48” and 72” lengths only. 0°C (32°F) to 55°C (131°F). Not available in 347V.

EMB20R Remote mounted micro inverter that will operate a 25W maximum load for 90 minutes.
0°C (32°F) to 45°C (113°F).

EMB125R Remote inverter that will operate a 125W maximum load for 90 minutes.
20°C (68°F) to 30°C (86°F). Not available in 347V.

EMB250R Remote inverter that will operate a 250W maximum load for 90 minutes.
20°C(68°F) to 30°C (86°F). Not available in 347V.

EMBDA Two drivers and two emergency battery packs self-contained within fixture for independent light engine operation. Each battery pack will operate each light engine for a minimum of 90 minutes.
Available in the 72” length only. Not available in 347V.

OCC Occupancy sensor. Maximum coverage of 10’ radius from 8’ height.

Luminaire Led
www.luminaireled.net

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Rev: 4/16

ARCHITECTURAL EGRESS

Fixture Type

Vandal Resistant

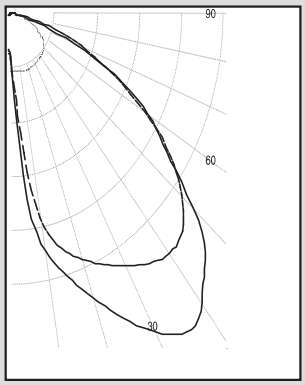
AEL Full Cut-0ff LED

PHOTOMETRIC DATA

Model	Watts	Input Watts	Delivered Lumens
AEL 12	10W	10.8W	726
AEL 24	10W	9.4W	809
AEL 24	20W	17.6W	1513
AEL 36	15W	14.1W	1213
AEL 36	30W	28.6W	2911

Model	Watts	Input Watts	Delivered Lumens
AEL 48	20W	18.8W	1880
AEL 48	35W	35.2W	3515
AEL 72	30W	27.9W	3072
AEL 72	55W	52.2W	5744

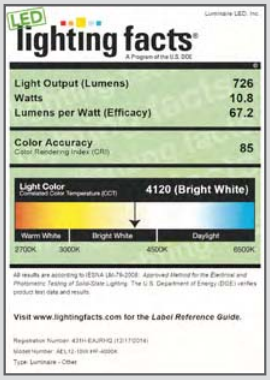
MODEL AEL12-10W-4000K
Delivered Lumens: 726 Lumens



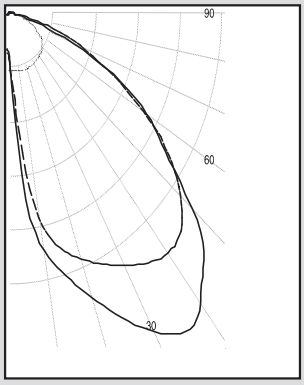
IES FILE: AEL12-10W-4000K
Total Power: 10.8W

Testing was performed in accordance with IES LM-79-08

Zone	Lumens	% Lamps
0 - 30	153	21.1
0 - 40	287	39.5
0 - 60	585	80.6
60 - 90	726	100.0
0 - 90	439	60.5
90 -180	0	0.0
0 - 180	726	100.0



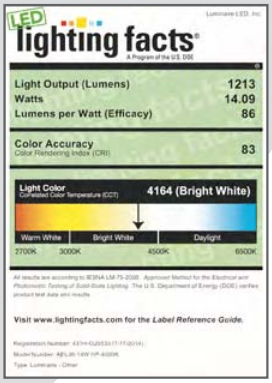
MODEL AEL36-15W-4000K
Delivered Lumens: 1213 Lumens



IES FILE: AEL36-15W-4000K
Total Power: 14.09W

Testing was performed in accordance with IES LM-79-08

Zone	Lumens	% Lamps
0 - 30	381	31.4
0 - 40	635	52.3
0 - 60	1063	87.7
60 - 90	150	12.3
0 - 90	1213	100.0
90 -180	0	0.0
0 - 180	1213	100.0



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Rev: 4/16

ARCHITECTURAL EGRESS

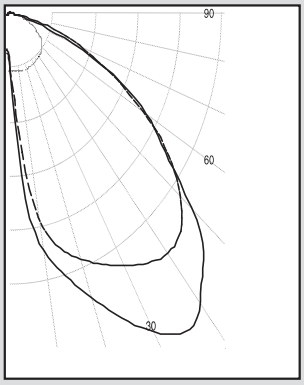
Fixture Type

Vandal Resistant

AEL Full Cut-0ff LED

PHOTOMETRIC DATA

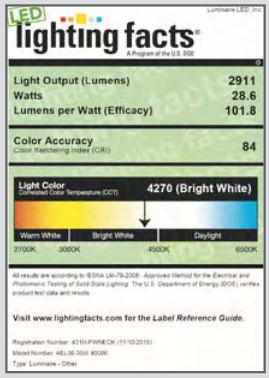
MODEL AEL36-30W-4000K
Delivered Lumens: 2911 Lumens



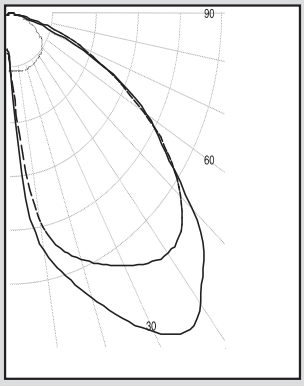
IES FILE: AEL36-30W-4000K
Total Power: 28.6W

Testing was performed in accordance with IES LM-79-08

Zone	Lumens	% Lamps
0 - 30	754	25.9
0 - 40	1308	44.9
0 - 60	2417	83.0
60 - 90	494	17.0
0 - 90	2911	100.0
90 -180	0	0.0
0 - 180	2911	100.0



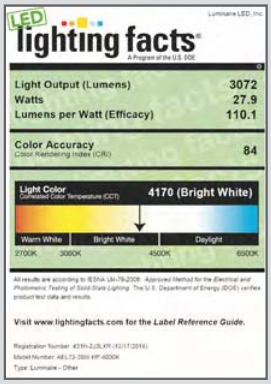
MODEL AEL72-30W-4000K
Delivered Lumens: 3072 Lumens



IES FILE: AEL72-30W-4000K
Total Power: 27.09W

Testing was performed in accordance with IES LM-79-08

Zone	Lumens	% Lamps
0 - 30	771	25.1
0 - 40	1353	44.1
0 - 60	2529	82.3
60 - 90	3072	100.0
0 - 90	1718	17.7
90 -180	542	0.0
0 - 180	3072	100.0



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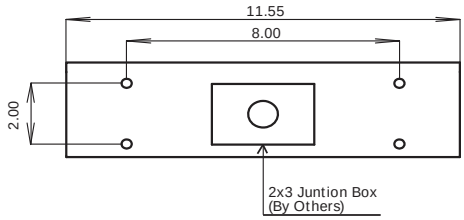
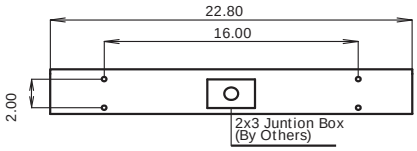
MOUNTING PLATE DETAILS

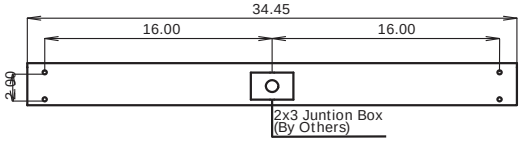
AEL 12



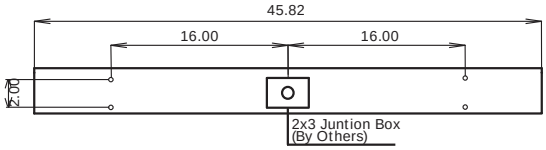
AEL 24



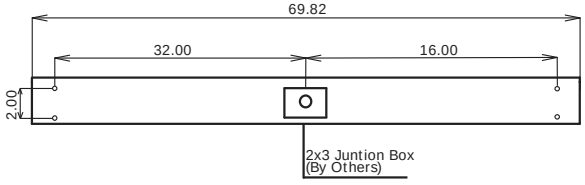
AEL 36



AEL 48



AEL 72



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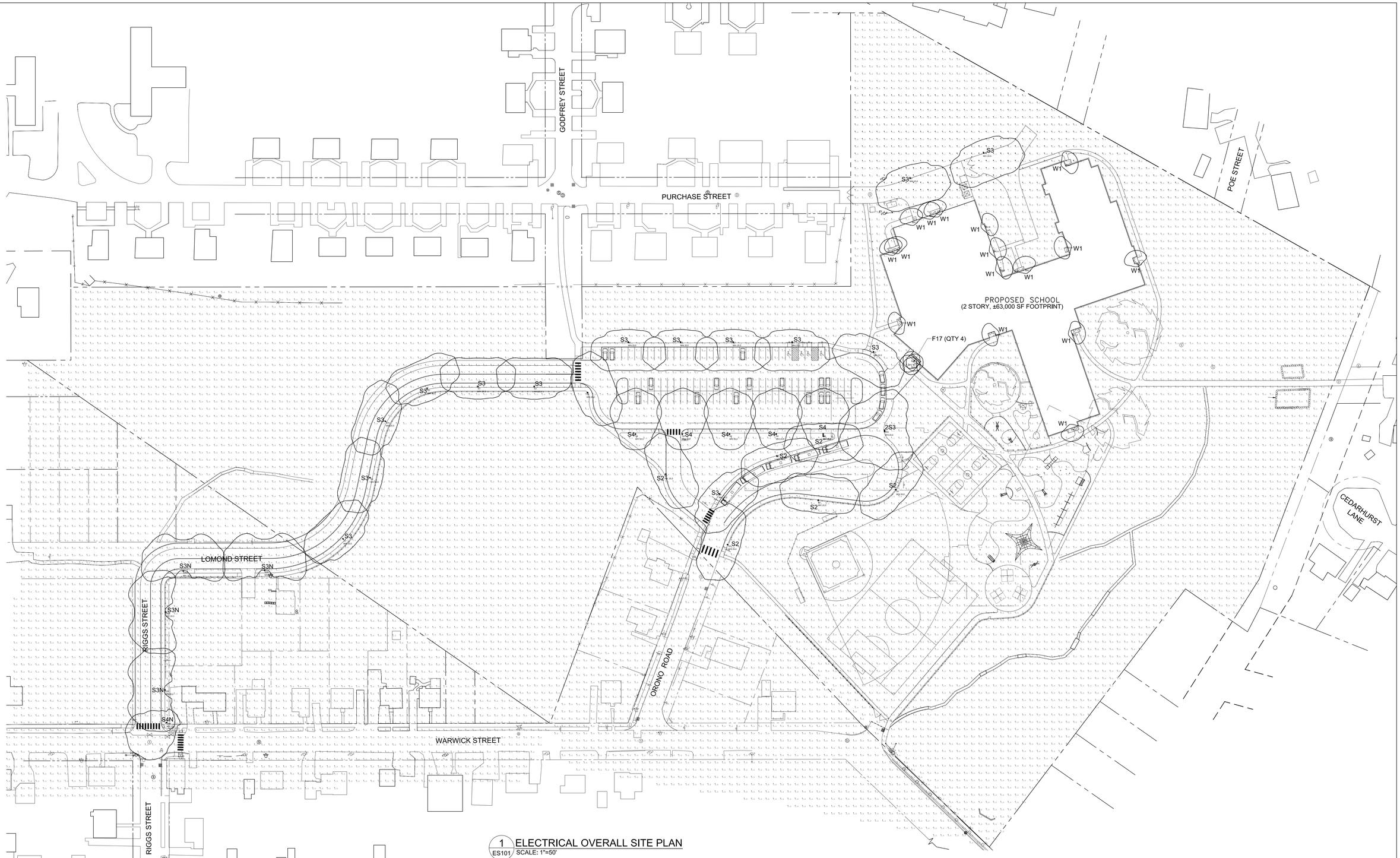


1 ES101 ELECTRICAL OVERALL SITE PLAN
SCALE: 1"=50'

Luminaire Schedule							
Symbol	Qty	Label		Lum, Lumens	LLF	Lum, Watts	Description
	1	S4N		3444	0,900	64,1	WPSIS4E35-60L3K-NFO
	15	S3		4344	0,900	63,7	WPSIS3E35-60L3K
	6	S2		4330	0,900	63,7	WPSIS2E35-60L3K
	5	S4		4366	0,900	63,8	WPSIS4E35-60L3K
	1	2S3		4344	0,900	63,7	twin WPSIS3E35-60L3K
	4	S3N		4679	0,900	68,8	WPSIS3P35-60L3K-NFO
	15	W1		726	1,000	10,8	AEL12-10W 4000K
	1	W1		726	0,900	10,8	AEL12-10W 4000K
	4	F17		881	0,900	16	D2LED 2DSLED9L30K8WFL45

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
bus loop	0,78	3,1	0,2	3,90	15,50
entrance drive	0,84	2,3	0,3	2,80	7,67
LOMOND ST	0,68	1,4	0,3	2,27	4,67
OFF PROP ORONO AREA	0,01	0,4	0,0	N.A.	N.A.
OFF PROP SOUTH WEST	0,07	2,8	0,0	N.A.	N.A.
parking	0,68	3,1	0,2	3,40	15,50
parking drop off	0,59	2,5	0,2	2,95	12,50
RIGGS ST	0,74	2,2	0,3	2,47	7,33
SITE	0,14	6,7	0,0	N.A.	N.A.
SOUTH PROP LINE	0,04	0,5	0,0	N.A.	N.A.

GRAPHIC SCALE
1"=50' 50' 25' 0 50' 100'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: RSW
CHECKED BY: DCL
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
SITE LIGHTING PLAN

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO.
LP101
SHEET NO.
1 OF 1

01 Feb, 2017 - 10:46am
C:\OFILE\216402.06-LP101.dwg

Appendix I – HVAC Product Information

Appendix I (HVAC Product Information)

Because the project will be competitively bid, exact models for HVAC equipment cannot be provided. The models included in this section indicate the basis of design products for the project (the actual models installed will be required to have similar specifications).

Exterior Equipment - Pages 3 to 26 of this section

Interior Equipment - Pages 28 to 44 of this section

Appendix I (HVAC Product Information) – Exterior Equipment

The following product data represents the basis of design for the exterior equipment proposed on this project.

IGX-118-H32

CONSTRUCTION FEATURES AND ACCESSORIES

Unit Overview

Model	Airflow (CFM)	Heating	Cooling	Electrical V/C/P
IGX-118-H32	7,200	Indirect Gas	No Cooling	460/60/3

Features

- Removable access panels
- Painted or galvanized steel blower and bearing supports
- Forward curved steel blower and motor
- Fan assembly is mounted on vibration isolators
- Motor pulleys are adjustable through 15 hp and fixed for 20 hp and greater
- Fan shaft is mounted in permanently lubricated ball bearings (up through size 118) or ball bearing pillow blocks (size 120 and greater)
- Static free belts
- Corrosion resistant fasteners are standard
- Disconnect mounted by factory

Options and Accessories

- Air Flow Arrangement: Outdoor Air Only
- Weatherhood: Birdscreen
- Filter Section: MERV8 and MERV13, 20x25x2 - (16)
- Damper: Inlet
- Outdoor Air Intake Position: End
- Discharge Position: Downblast
- Coating: Baked Enamel-To Be Selected
- Insulation: Double Wall - Heat Source On
- Isolation: Spring
- Access Side: Right-Hand
- Control Center
- Freeze Protection
- Heat Inlet Air Sensor
- 1 NO/1 NC on Supply Starter
- Remote Panel: Kitchen (ships loose)
- Service Receptacle (ships loose)
- Fire Stat: Type III (ships loose)
- Smoke Detector: 120V/24V (ships loose)
- Mounting: By Others
- Unit Warranty: 2 Yrs (1 Yr Ext)

NOTES:

Integral unit disconnect is supplied as a standard.

Birdscreen weatherhoods ship knocked down and require field installation.

Inlet damper being supplied is a VCD-23. The VCD-23 series is a low leakage, motorized damper. The VCD-23 is IECC (International Energy Conservation Code) compliant with a leakage rating of 3 CFM/ft2 at 1 in. wg or less.

Unit weight does NOT include skid/crating and may vary by 15% based on selected options.

IGX-118-H32

PERFORMANCE AND SPECIFICATIONS

Description/Arrangement

Model	Qty	Unit Weight (lb)	Discharge Position	Air Flow Arrangement	Unit Arrangement
IGX-118-H32	1	2,421	Downblast	Outdoor Air Only	Horizontal

Design Conditions

Elevation (ft)	Summer DB (F)	Summer WB (F)	Winter DB (F)
62	86.8	73.9	-4.0

Air Performance

Type	Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating hp (per motor)	Motor Quantity/HP (per motor)	Supply Fan Type/Quantity
Supply	7,200	1	1.448	785	3.7	Qty 1/5	Forward Curve/Qty (1)

Unit Pressure Drop (in. wg)

Air Stream	Weatherhood	Damper Section	Filter Section	Cooling Section	Heating Section
Supply	0.021	0.059	0.236	0	0.132

Sound Performance in Accordance with AMCA

Fan	Sound Power by Octave Band								Lwa	dBA	Sones
	62.5	125	250	500	1000	2000	4000	8000			
Supply	87	86	82	80	75	75	70	61	82	71	20

Electrical/Motor Specifications

V/C/P	Unit MCA (amps)	Unit MOP (amps)	Enclosure	Supply Motor RPM	Supply Efficiency
460/60/3	11.4	15	ODP	1725	Premium

Heating/Cooling Specifications

Heating Type	Gas Type	Input (MBH)	Output (MBH)	LAT (F)	Temp. Rise (F)	Furnace Size (MBH)	Furnace Control
Indirect Gas	Natural	800.0	640.0	78.3	82.3	800.0	8 to 1 Electronic

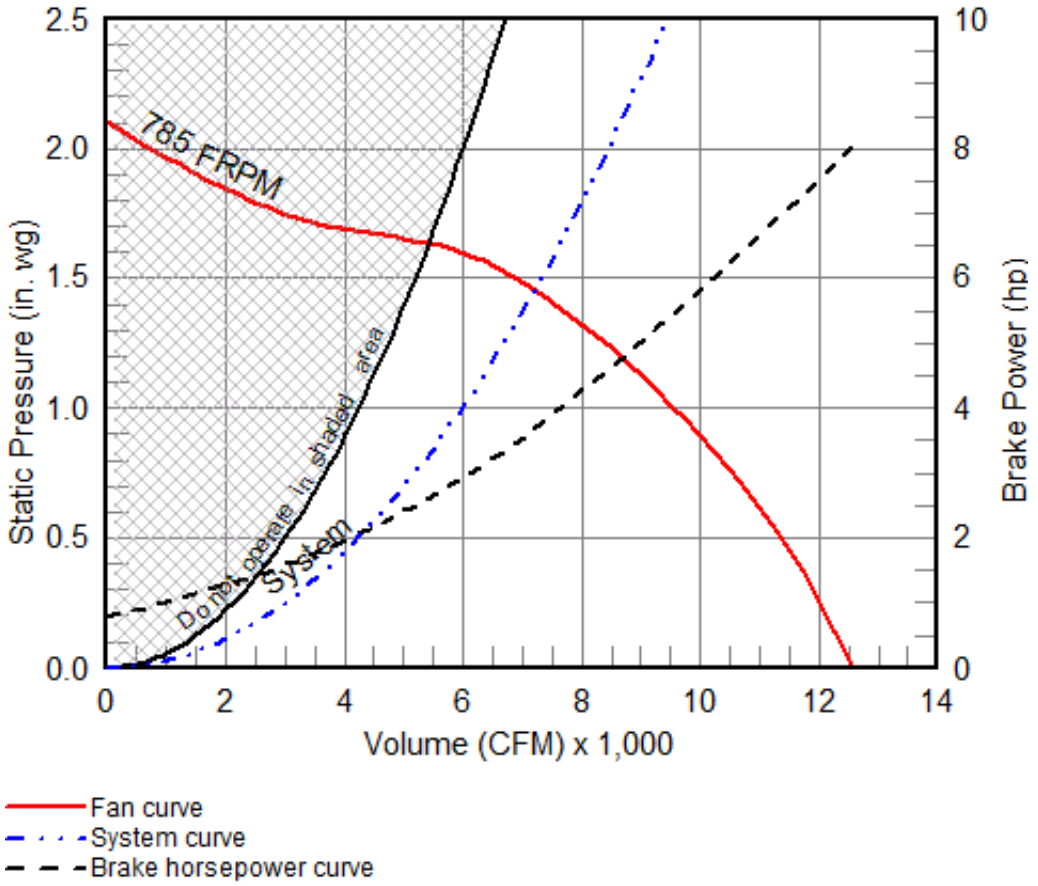
Note: Filter pressure drop is for clean filters.
Note: Weatherhood pressure drop is for clean filters.

IGX-118-H32

FAN CURVES

Supply Fan Performance

Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating hp (per motor)	Motor hp (per motor)	Supply Fan Type	Supply Fan Quantity
7,200	1	1.448	785	3.7	5	Forward Curve	1



IGX-118-H32

HEATING PERFORMANCE

Indirect Gas Heating

Heating Type	Gas Type	Input (MBH)	Output (MBH)	LAT (F)	Temp.Rise (F)	Furnace Control
Indirect Gas	Natural	800.0	640.0	78.3	82.3	8 to 1 Electronic

Indirect Gas Unit Details

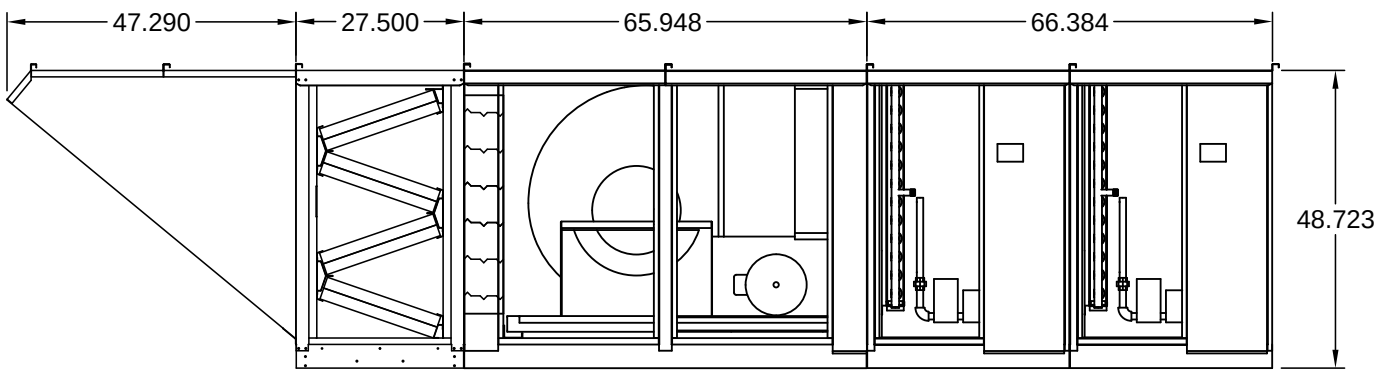
This unit will come equipped with the following:

- ETL Listed to ANSI Standard Z83.8 and CGA 2.6
- High Thermal Efficiency
- Direct Spark Ignition
- Power Venting
- 24 Volt Control Power
- At least 6 in. wg of natural gas pressure (14 in. wg for LP) is required at the units gas connection in order to achieve maximum performance

Heating Details

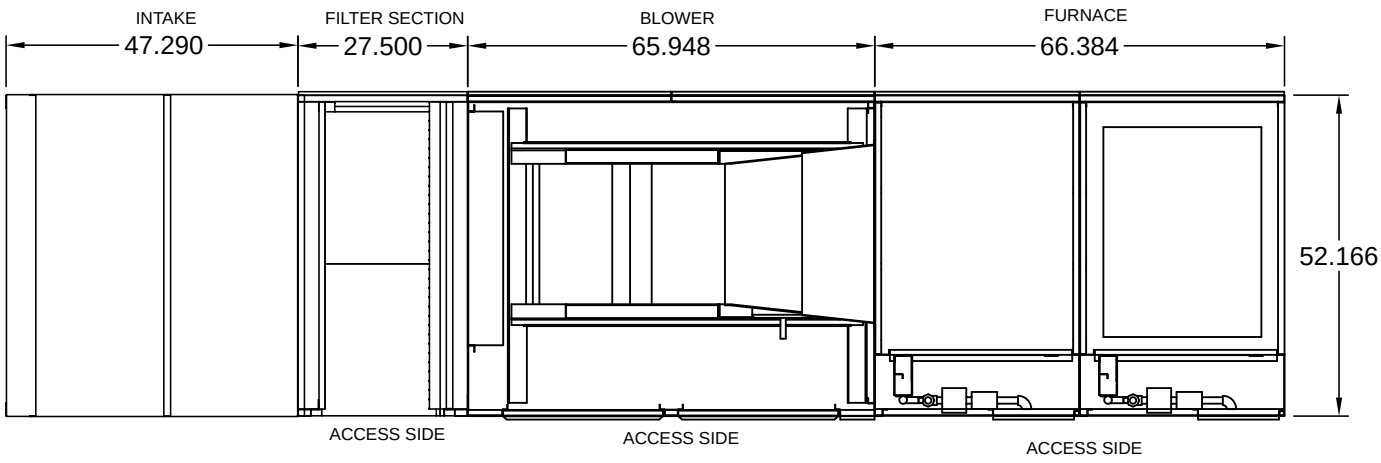
Heat Exch. Material	Stainless Steel
Unit Installation	Outdoor
Outdoor Venting	Standard
Furnace Control	8 to 1 Electronic
External Control	2-10 Vdc
Gas Pressure Regulators	1 PSI
Heat Ex. Warranty 5yr	Yes

IGX-118-H32



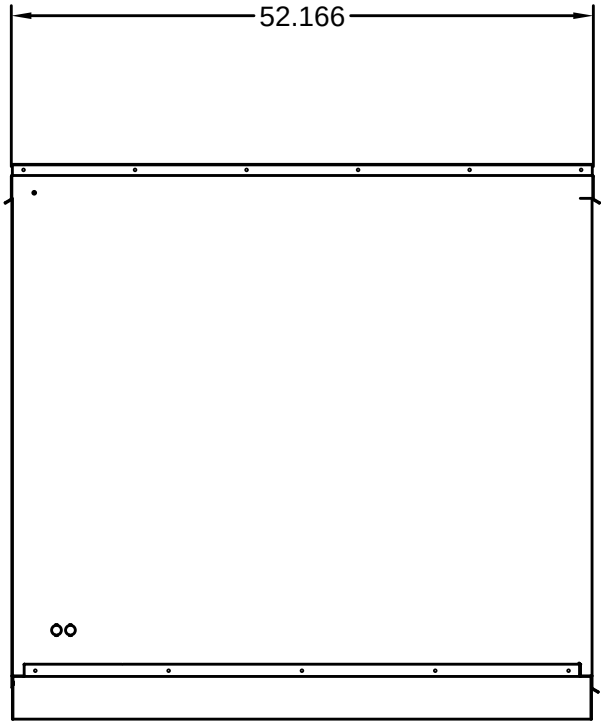
ELEVATION VIEW

*Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.
*Note: Order of unit sections is from intake of unit to discharge of unit.
*Sections included on this unit: Weatherhood Section, Filter Section, Blower Section, Furnace 1 Section, Furnace 2 Section
*Insulation: Double Wall, from Furnace Section through end of unit.



PLAN VIEW

* Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.

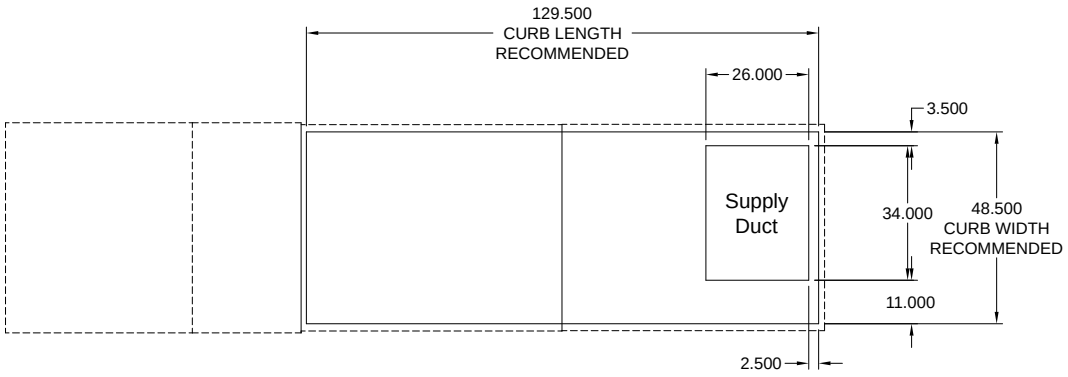


END VIEW

NOTE: Roof Opening Requirements:

Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides.
For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb.
For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.

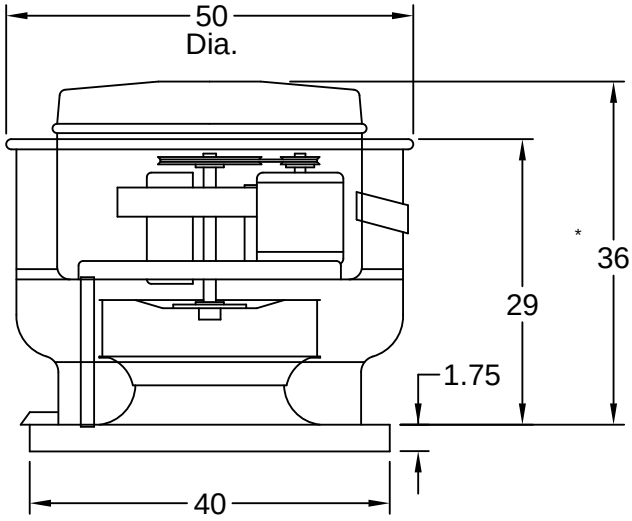


NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb.
This is by design, in order to help alleviate water infiltration issues.

FOOTPRINT VIEW

Model: CUBE-300HP-30

Belt Drive Upblast Centrifugal Roof Exhaust Fan

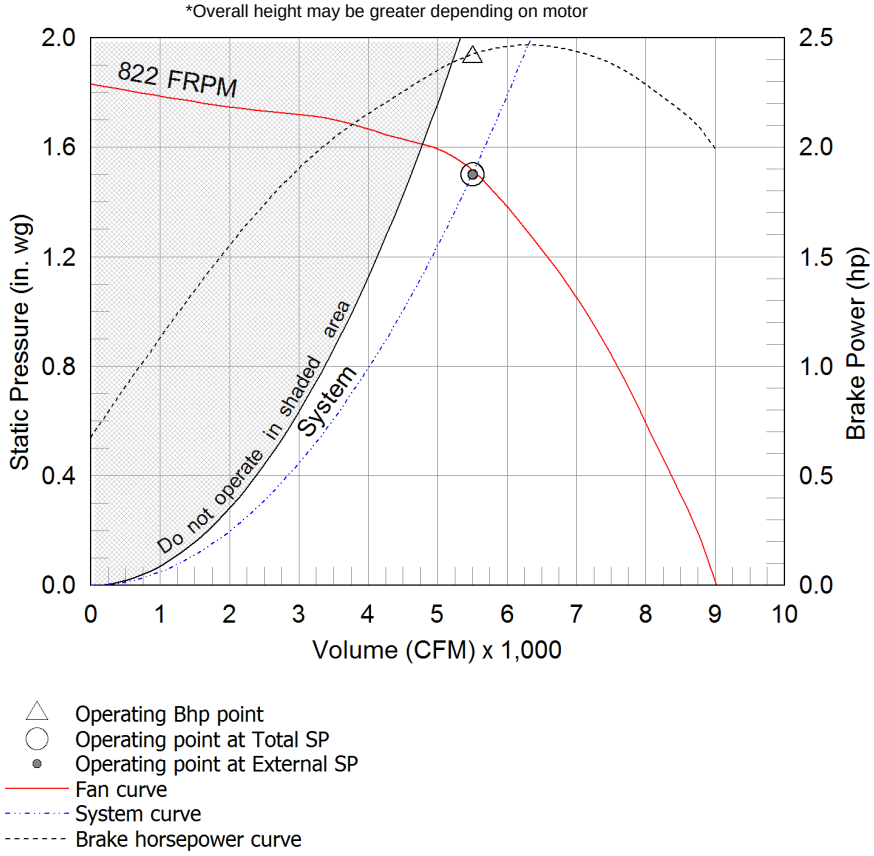


*Overall height may be greater depending on motor

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	225
Weight w/ Acc's (lb)	229
Max T Motor Frame Size	215
Roof Opening (in.)	32.5 x 32.5

Performance	
Requested Volume (CFM)	5,500
Actual Volume (CFM)	5,500
External SP (in. wg)	1.5
Total SP (in. wg)	1.5
Fan RPM	822
Operating Power (hp)	2.41
Elevation (ft)	62
Airstream Temp.(F)	110
Air Density (lb/ft3)	0.070
Drive Loss (%)	4.6
Tip Speed (ft/min)	6,560
Static Eff. (%)	56

Motor	
Motor Mounted	Yes
Size (hp)	3
Voltage/Cycle/Phase	460/60/3
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	4.8



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	81	83	84	78	73	71	69	64	81	69	18.2

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft

Model: CUBE-300HP-30

Belt Drive Upblast Centrifugal Roof Exhaust Fan

Standard Construction Features:

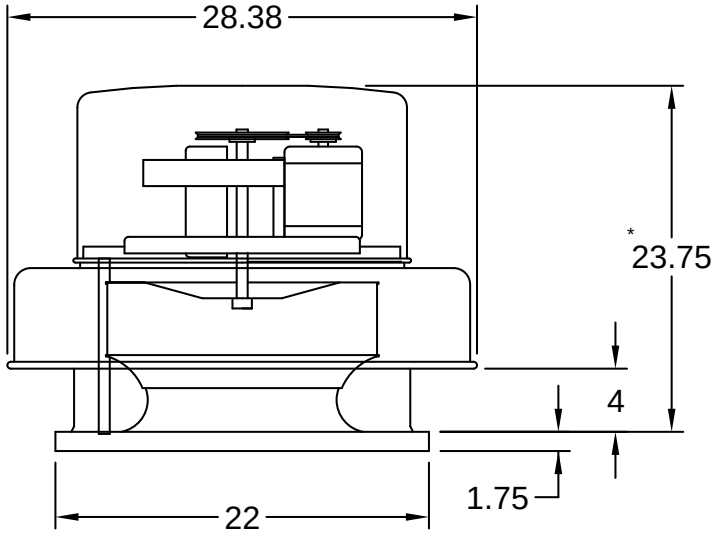
- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Drain trough - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Internal lifting lugs

Selected Options & Accessories:

NEMA Premium Efficient Motor - meets NEMA Table 12-12
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Bearings with Grease Fittings, L10 life of 100,000 hrs (L50 avg. life 500,000 hrs)
Unit Warranty: 1 Yr (Standard)

Model: GB-161HP-10

Belt Drive Centrifugal Roof Exhaust Fan

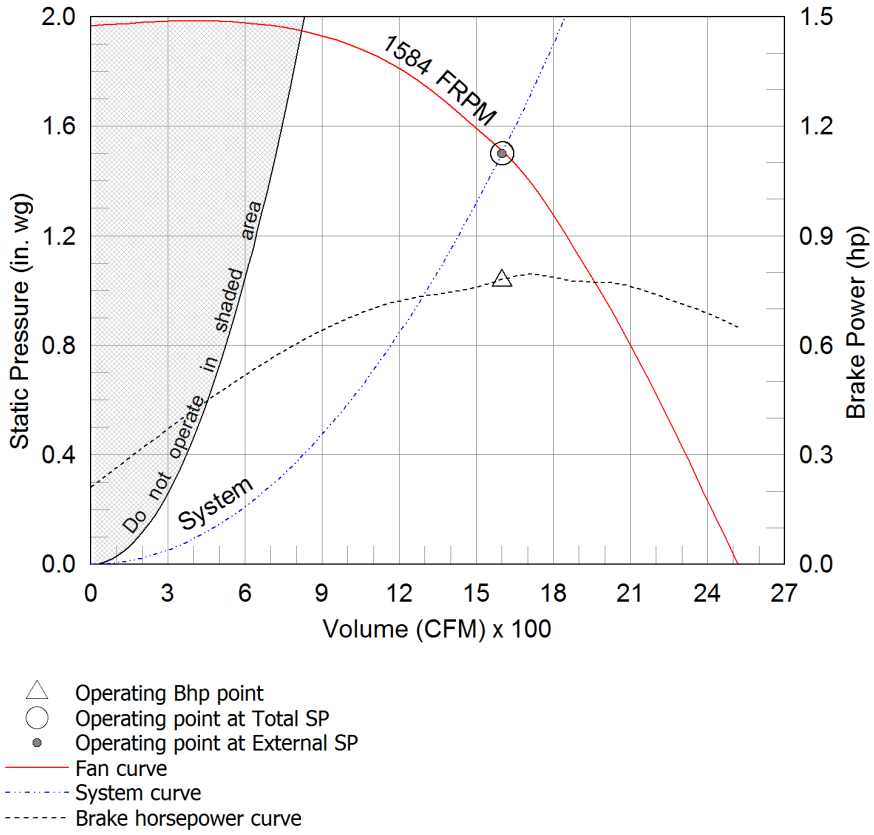


*Overall height may be greater depending on motor

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	74
Weight w/ Acc's (lb)	78
Max T Motor Frame Size	145
Roof Opening (in.)	18.5 x 18.5

Performance	
Requested Volume (CFM)	1,600
Actual Volume (CFM)	1,600
External SP (in. wg)	1.5
Total SP (in. wg)	1.5
Fan RPM	1584
Operating Power (hp)	0.78
Elevation (ft)	62
Airstream Temp.(F)	110
Air Density (lb/ft3)	0.070
Drive Loss (%)	6.8
Tip Speed (ft/min)	6,893
Static Eff. (%)	52

Motor	
Motor Mounted	Yes
Size (hp)	1
Voltage/Cycle/Phase	460/60/3
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	2.1



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	78	74	80	74	73	69	67	64	78	66	15.0

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft

Model: GB-161HP-10

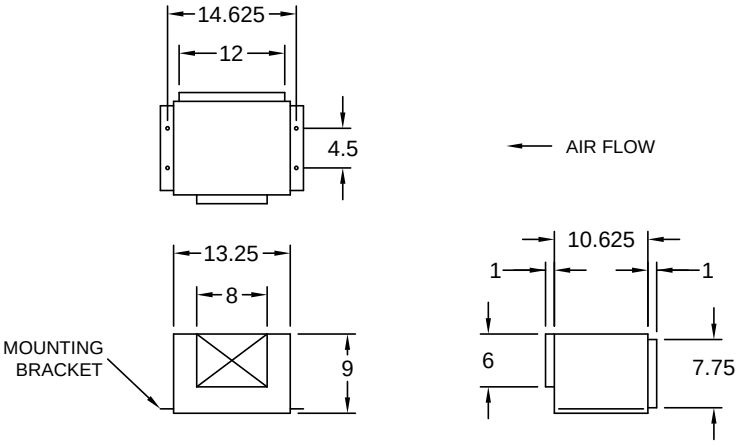
Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Bearings with Grease Fittings, L10 life of 100,000 hrs (L50 avg. life 500,000 hrs)
Unit Warranty: 1 Yr (Standard)



Model: CSP-A125

Inline Cabinet Fan

Standard Construction Features:

- Corrosion resistant galvanized steel scroll and housing - Sound absorbing insulation - Rectangular inlet and outlet duct collar - Outlet with integral spring loaded back draft damper - Double inlet forward curved wheel - Plug type disconnect - Adjustable mounting brackets - Field rotatable discharge

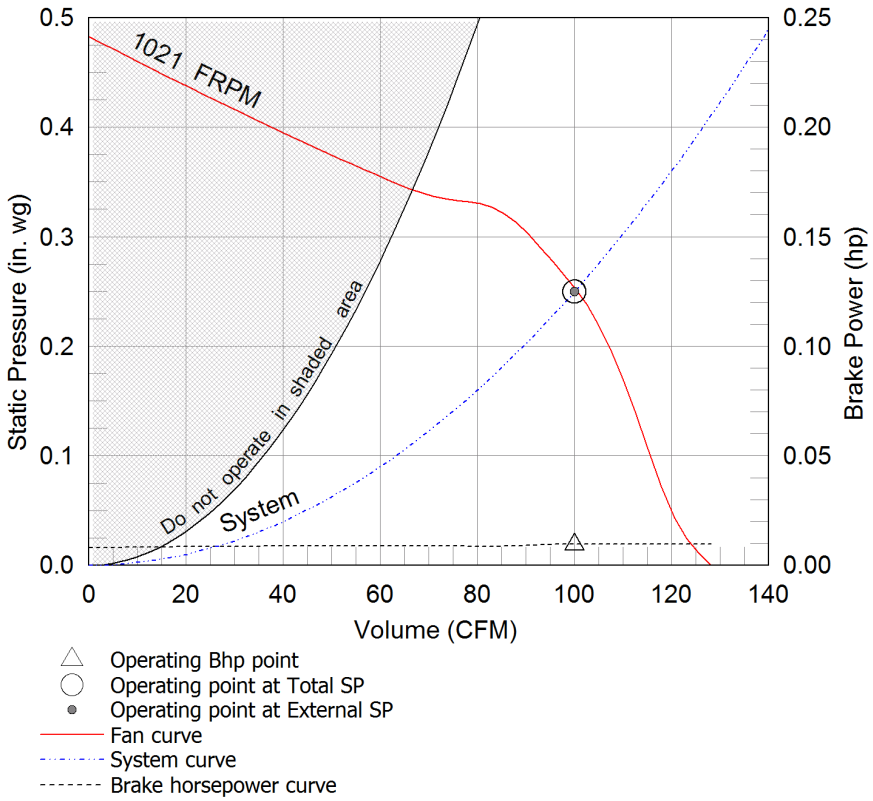
Selected Options & Accessories:

Motor with Thermal Overload
Motor with CSA Approval
Motor with 40 Degree C Ambient Temperature
Motor rated for continuous use
UL/cUL 507 Listed - Electric Fan
Solid State Speed Control, 6 Amp, Shipped Loose
Polypropylene Wheel Material

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	16
Weight w/ Acc's (lb)	17

Performance	
Requested Volume (CFM)	100
Actual Volume (CFM)	100
External SP (in. wg)	0.25
Total SP (in. wg)	0.25
Fan RPM	1021
* FLA (A)	0.63
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Sones	0.5

Motor	
Motor Mounted	Yes
** Input Watts (W)	17.9
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP



Notes:

All dimensions shown are in units of in.
*FLA is approximate and will vary slightly with the motor.
Sones - calculated using AMCA 301 at 5 ft
AMCA certified ratings seal applies to sone ratings only.
** Wattage is approximate and may vary between motors.

AMCA

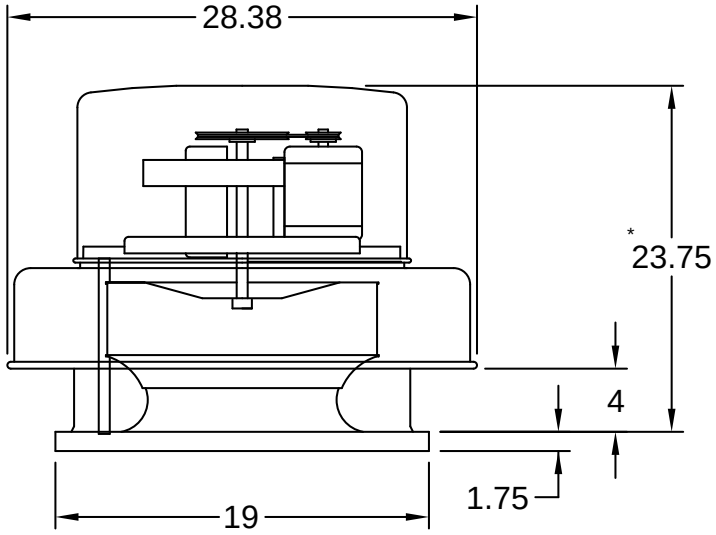
AMCA Licensed for Air Performance Without Appurtenances and Accessories. Power rating (BHP/kW) does not include transmission losses.

Greenheck Fan Corporation certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings seal applies to air performance ratings only. Performance certified is for installation type D: Ducted inlet, Ducted outlet. Performance ratings include the effects of a backdraft damper. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are for loudness values in spherical sones at 5 ft. (1.5m) in a spherical free field calculated per Annex B of AMCA 311. Values shown are for installation type D: ducted inlet spherical sone levels. Ratings do not include the effects of duct end correction. Ratings are based on 10 ft. of insulated duct.

The AMCA licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

Model: GB-131-4

Belt Drive Centrifugal Roof Exhaust Fan

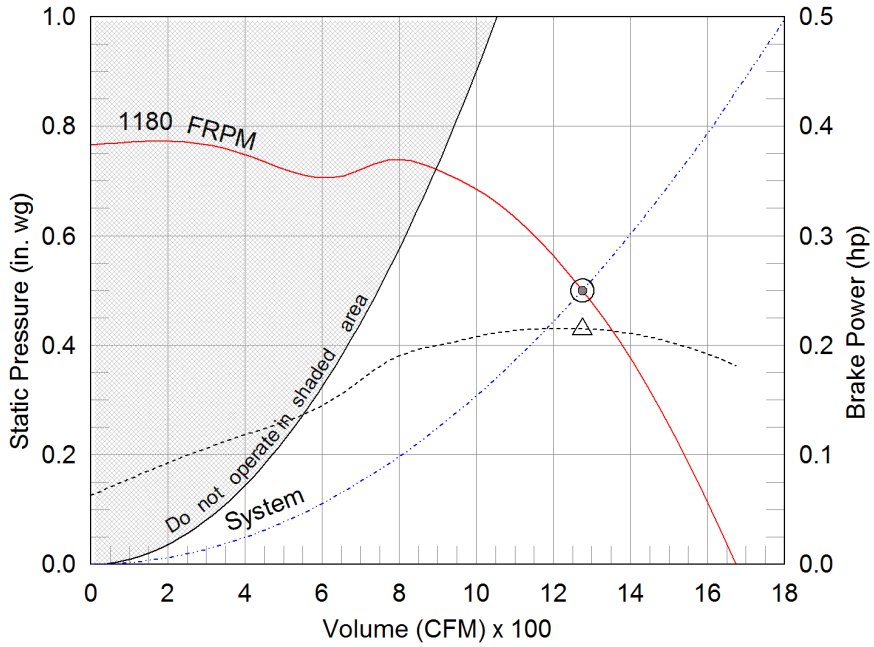


*Overall height may be greater depending on motor

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	54
Weight w/ Acc's (lb)	56
Max T Motor Frame Size	56
Roof Opening (in.)	14.5 x 14.5

Performance	
Requested Volume (CFM)	1,275
Actual Volume (CFM)	1,275
External SP (in. wg)	0.5
Total SP (in. wg)	0.5
Fan RPM	1180
Operating Power (hp)	0.21
Elevation (ft)	62
Airstream Temp.(F)	85
Air Density (lb/ft3)	0.073
Drive Loss (%)	13.6
Tip Speed (ft/min)	4,054
Static Eff. (%)	54

Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	5.8



△ Operating Bhp point
◯ Operating point at Total SP
Operating point at External SP
Fan curve
System curve
Brake horsepower curve

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	72	73	74	67	63	61	54	48	70	59	9.3

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft

Model: GB-131-4

Belt Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

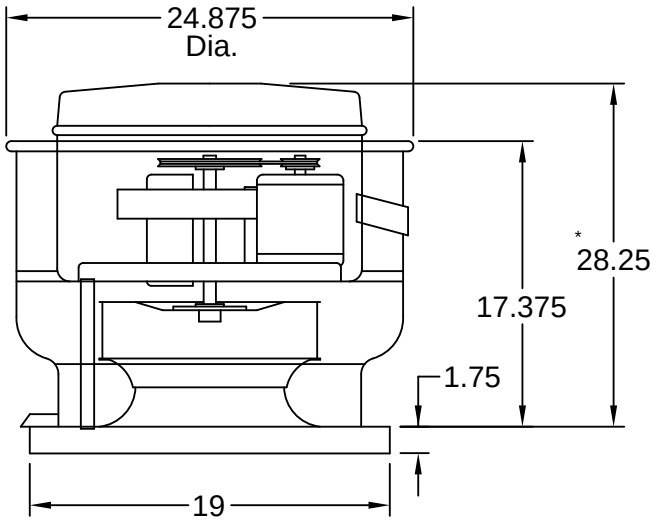
- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Birdscreen - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Sizes 141 and larger have internal Lifting lugs

Selected Options & Accessories:

Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Unit Warranty: 1 Yr (Standard)

Model: CUBE-099-4

Belt Drive Upblast Centrifugal Roof Exhaust Fan

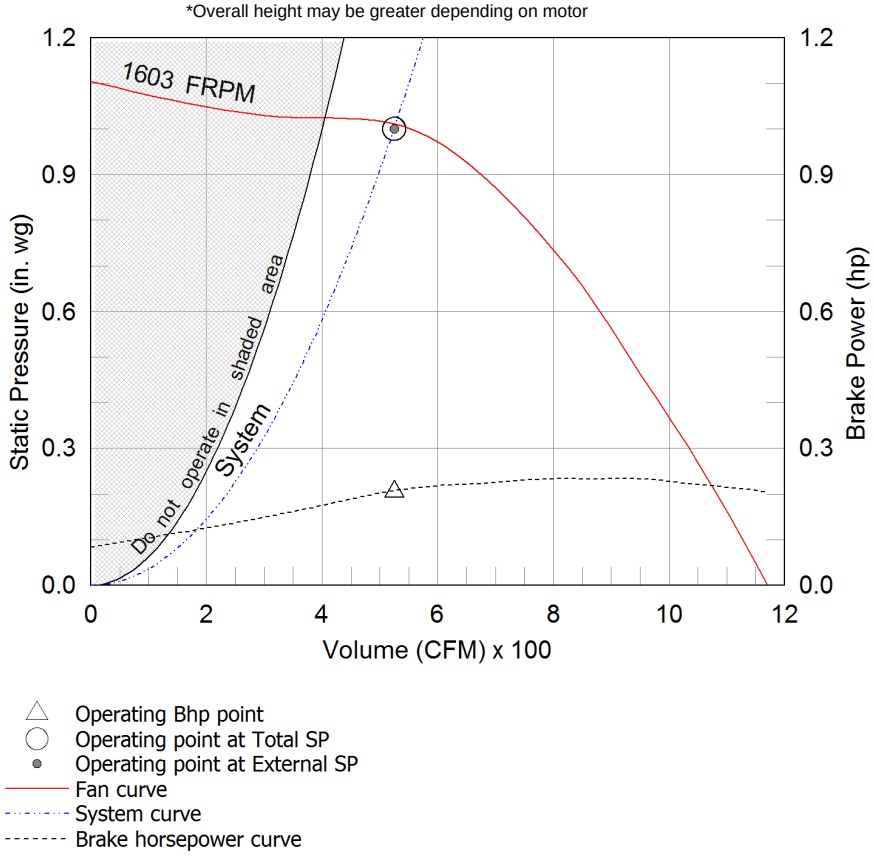


*Overall height may be greater depending on motor

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	57
Weight w/ Acc's (lb)	59
Max T Motor Frame Size	56
Roof Opening (in.)	14.5 x 14.5

Performance	
Requested Volume (CFM)	525
Actual Volume (CFM)	525
External SP (in. wg)	1
Total SP (in. wg)	1
Fan RPM	1603
Operating Power (hp)	0.2
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Drive Loss (%)	14.0
Tip Speed (ft/min)	4,696
Static Eff. (%)	47

Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
NEC FLA* (Amps)	5.8



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	77	72	71	65	61	62	58	50	69	58	9.0

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft

Model: CUBE-099-4

Belt Drive Upblast Centrifugal Roof Exhaust Fan

Standard Construction Features:

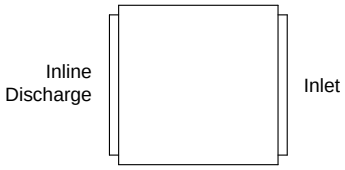
- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Drain trough - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Internal lifting lugs

Selected Options & Accessories:

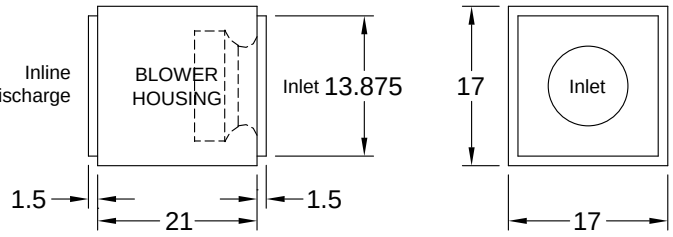
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Unit Warranty: 1 Yr (Standard)

Model: SQ-100-VG

Direct Drive Centrifugal Inline Fan



PLAN VIEW

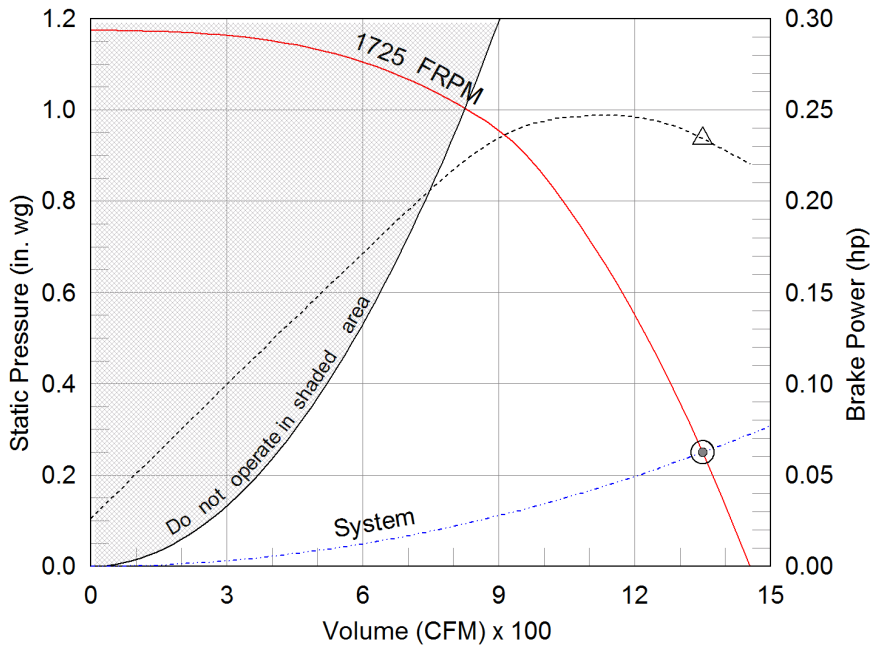


ELEVATION VIEW END VIEW

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	45
Weight w/ Acc's (lb)	47

Performance	
Requested Volume (CFM)	1,350
Actual Volume (CFM)	1,350
External SP (in. wg)	0.25
Total SP (in. wg)	0.25
Fan RPM	1725
Operating Power (hp)	0.23
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Tip Speed (ft/min)	5,052
Static Eff. (%)	23

Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
FLA (Amps)	3.7



△ Operating Bhp point
◯ Operating point at Total SP
● Operating point at External SP
Fan curve
System curve
Brake horsepower curve

External SP	0.25	in. wg
Direct Drive RPM Adjustment	0.000	in. wg
Total SP	0.25	in. wg

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	70	75	75	74	68	66	64	55	75	63	11.9
Radiated	71	77	69	68	63	61	57	51	70	58	9.2

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft

Model: SQ-100-VG

Direct Drive Centrifugal Inline Fan

Standard Construction Features:

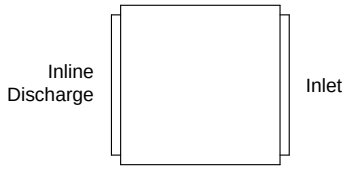
- Galvanized steel housing - Backward inclined aluminum wheel - Two bolted access panels - Integral duct connection flanges - Ball bearing motors (sizes 100-160 and all vari-green motors), sleeve bearing motors (sizes 60-95) - Corrosion resistant fasteners

Selected Options & Accessories:

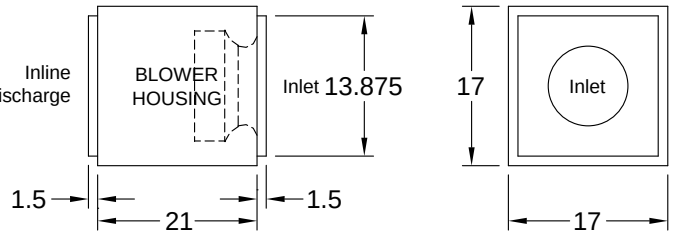
Motor - Vari-Green EC motor 0-10 VDC Input Signal
Control - Vari-Green Dial on Exterior of Fan Housing, Mounted and Wired
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Unit Warranty: 1 Yr (Standard)

Model: SQ-100-VG

Direct Drive Centrifugal Inline Fan



PLAN VIEW

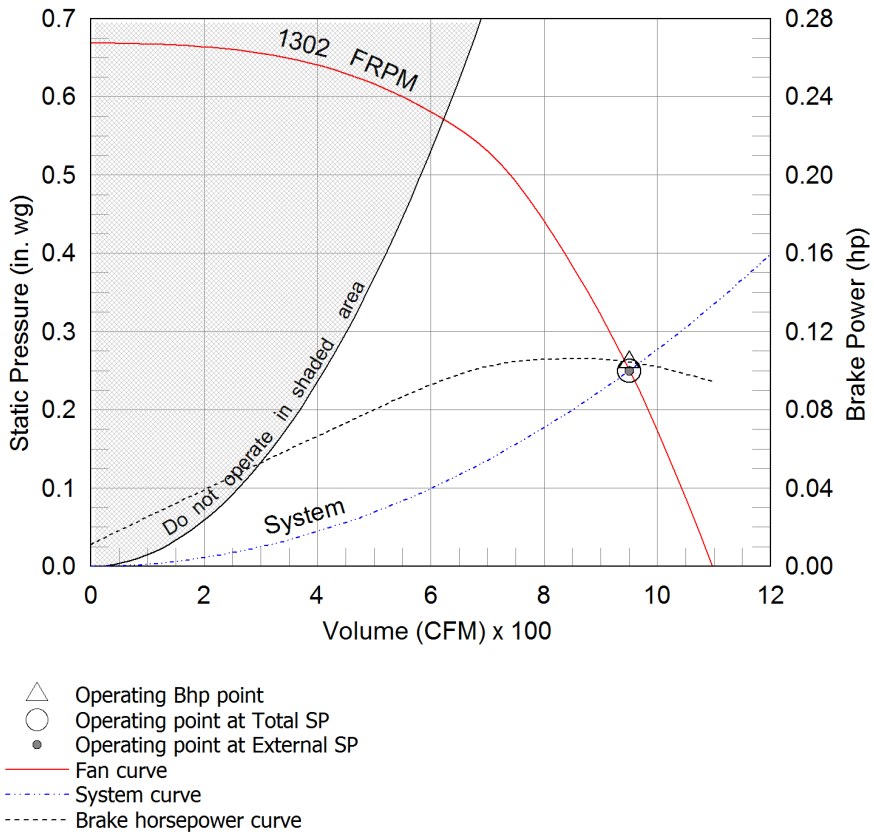


ELEVATION VIEW END VIEW

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	45
Weight w/ Acc's (lb)	47

Performance	
Requested Volume (CFM)	950
Actual Volume (CFM)	950
External SP (in. wg)	0.25
Total SP (in. wg)	0.25
Fan RPM	1302
Operating Power (hp)	0.1
Elevation (ft)	62
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Tip Speed (ft/min)	3,812
Static Eff. (%)	36

Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Windings	1
FLA (Amps)	3.7



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	67	70	67	66	62	57	51	47	68	56	7.5
Radiated	68	72	61	60	58	52	45	43	63	51	6.0

Notes:

All dimensions shown are in units of in.
*NEC FLA - based on tables 430.248 or 430.250 of National Electrical Code 2014. Actual motor FLA may vary, for sizing thermal overload, consult factory.
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using AMCA 301 at 5 ft

Model: SQ-100-VG

Direct Drive Centrifugal Inline Fan

Standard Construction Features:

- Galvanized steel housing - Backward inclined aluminum wheel - Two bolted access panels - Integral duct connection flanges - Ball bearing motors (sizes 100-160 and all vari-green motors), sleeve bearing motors (sizes 60-95) - Corrosion resistant fasteners

Selected Options & Accessories:

Motor - Vari-Green EC motor 0-10 VDC Input Signal
Control - Vari-Green Dial on Exterior of Fan Housing, Mounted and Wired
Switch, NEMA-1, Toggle, Shipped with Unit
Junction Box Mounted & Wired
Unit Warranty: 1 Yr (Standard)

Product Catalog

Split System Air Conditioners
Odyssey™

Cooling Condenser — 6 to 25 Tons — 60 Hz
Air Handler — 5 to 25 Tons — 60 Hz

January 2016

SS-PRC028L-EN

Table 7. General data — 10-15 tons (TTA120G-TTA180J) condensing units — 60 Hz

	10 Tons	10 Tons	10 Tons	12.5 Tons	15 Tons	15 Tons
	Single Compressor TTA120G*	Dual Compressor TTA120H*	Manifolded Compressor TTA120J*	Dual Compressor TTA150H*	Dual Compressor TTA180H*	Manifolded Compressor TTA180J*
Cooling Performance - Gross Cooling Capacity						
Matched Air Handler	124,000	124,000	124,000	153,000	186,000	186,000
Condensing Unit Only	120,000	120,000	114,000	144,000	178,000	182,000
ARI Net Cooling Capacity	120,000	120,000	120,000	150,000	180,000	180,000
Efficiency						
Matched Air Handler (EER)	11.2	11.2	11.2	11.0	11.0	11.0
Condensing Unit Only (EER)	12.2	12.2	12.2	11.7	12.6	12.8
System (IEER)	12.0	11.5	14.2	13.1	12.8	12.5
System kW/Condensing Unit kW	10.7 / 9.8	10.7 / 9.8	10.7 / 9.8	13.6 / 12.8	16.4 / 14.3	16.4 / 14.1
Compressor						
Type	Scroll	Scroll	Manifolded Scrolls	Scroll	Scroll	Manifolded Scrolls
No./Tons	1 / 8.6	2 / 4.3	2 / 4.3	2 / 5.6	2 / 6.9	2 / 6.9
System Data						
No. Refrigerant Circuits[a]	1	2	1	2	2	1
Suction Line (in.) OD[a]	1 3/8	1 1/8	1 3/8	1 1/8	1 3/8	1 5/8
Liquid Line (in.) OD[a]	1/2	1/2	1/2	1/2	1/2	5/8
Outdoor Coil						
Type	MCHE	MCHE	MCHE	MCHE	MCHE	MCHE
Tube Size OD/Coil Width MCHE (in.)	0.8	0.8	0.8	1.0	0.8	0.8
Face Area (sq ft)	23.8	22.7	23.8	27.0	44.3	44.3
Rows/FPI (Fins per inch)	1/23	1/23	1/23	1/23	1/23	1/23
Outdoor Fan						
Type	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter (in.)	1/28	1/28	1/28	1/28	2/28	2/26
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1	Direct/1	Direct/1
CFM	7,800	7,800	7,800	7,800	15,500	10,500
No. Motor/HP	1 / 1	1 / 1	1 / 1	1 / 1	2/1	2/0.5
Motor RPM	1,100	1,100	1,100	1,100	1,100	1,100
Refrigerant Charge (Field Supplied)						
lbs of R-410A	13.6	7.7 / 7.6	13.1	9.8 / 9.8	11.5 / 11.5	21.3
Shipping Dimensions						
HxWxD (in.)	45" x 55" x 42"	45" x 55" x 42"	45" x 55" x 42"	52.1" x 55" x 42"	51.1" x 96" x 48"	51.1" x 96" x 48"

[a] Refer to refrigerant piping applications manual for line sizing and line length.

Figure 31. 10 ton condensing unit, dual compressor, microchannel

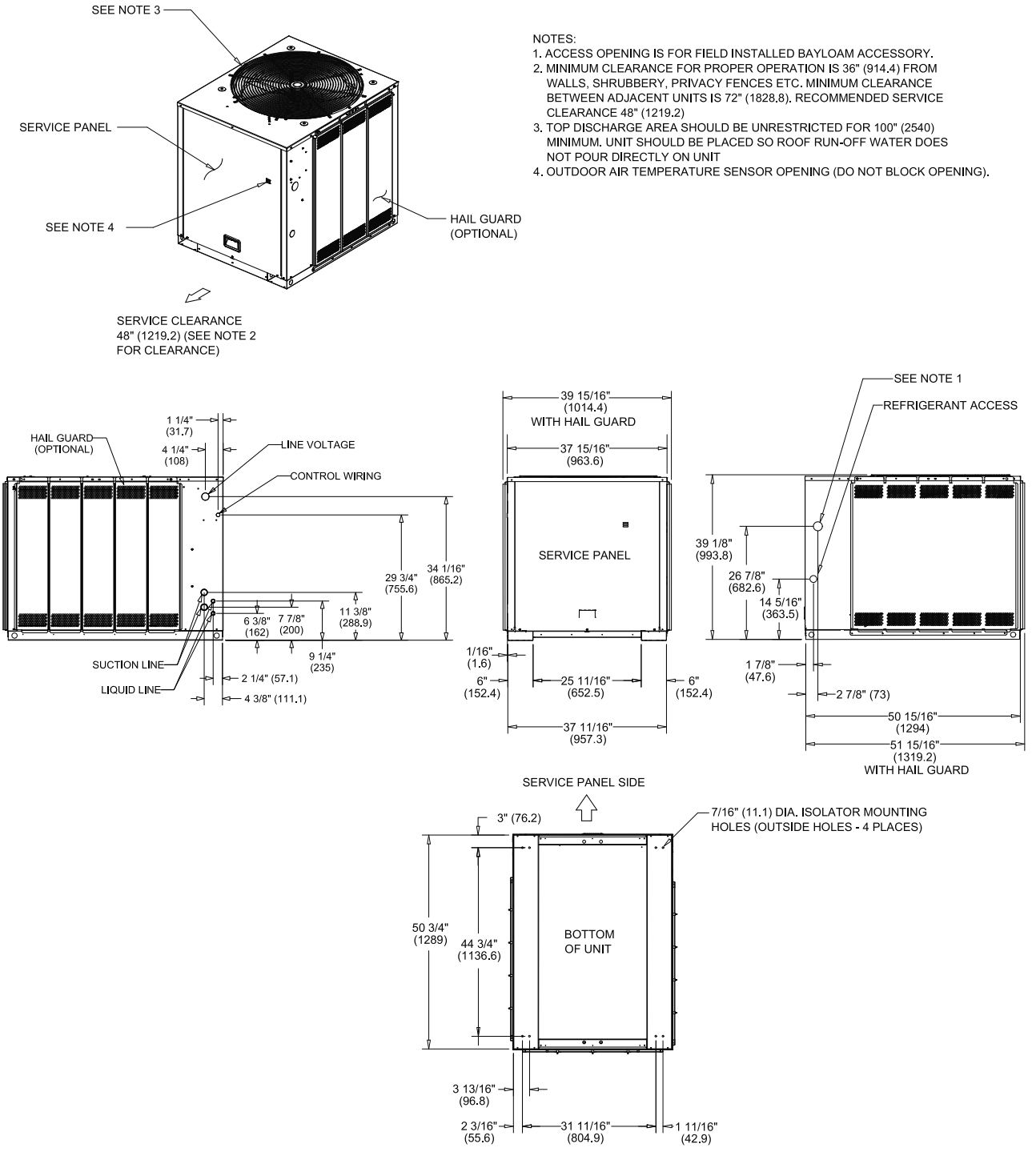
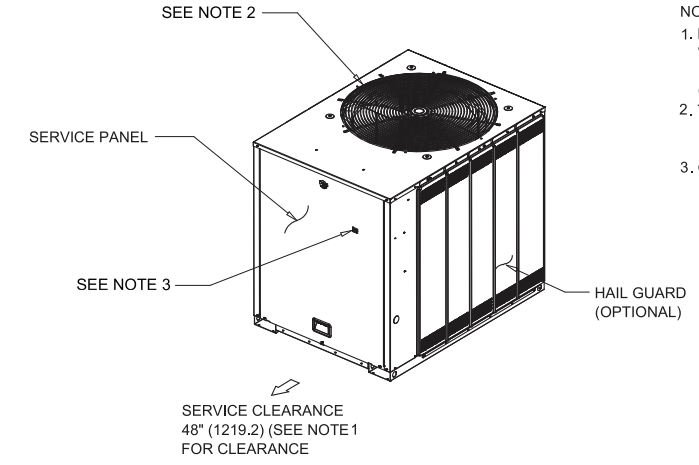
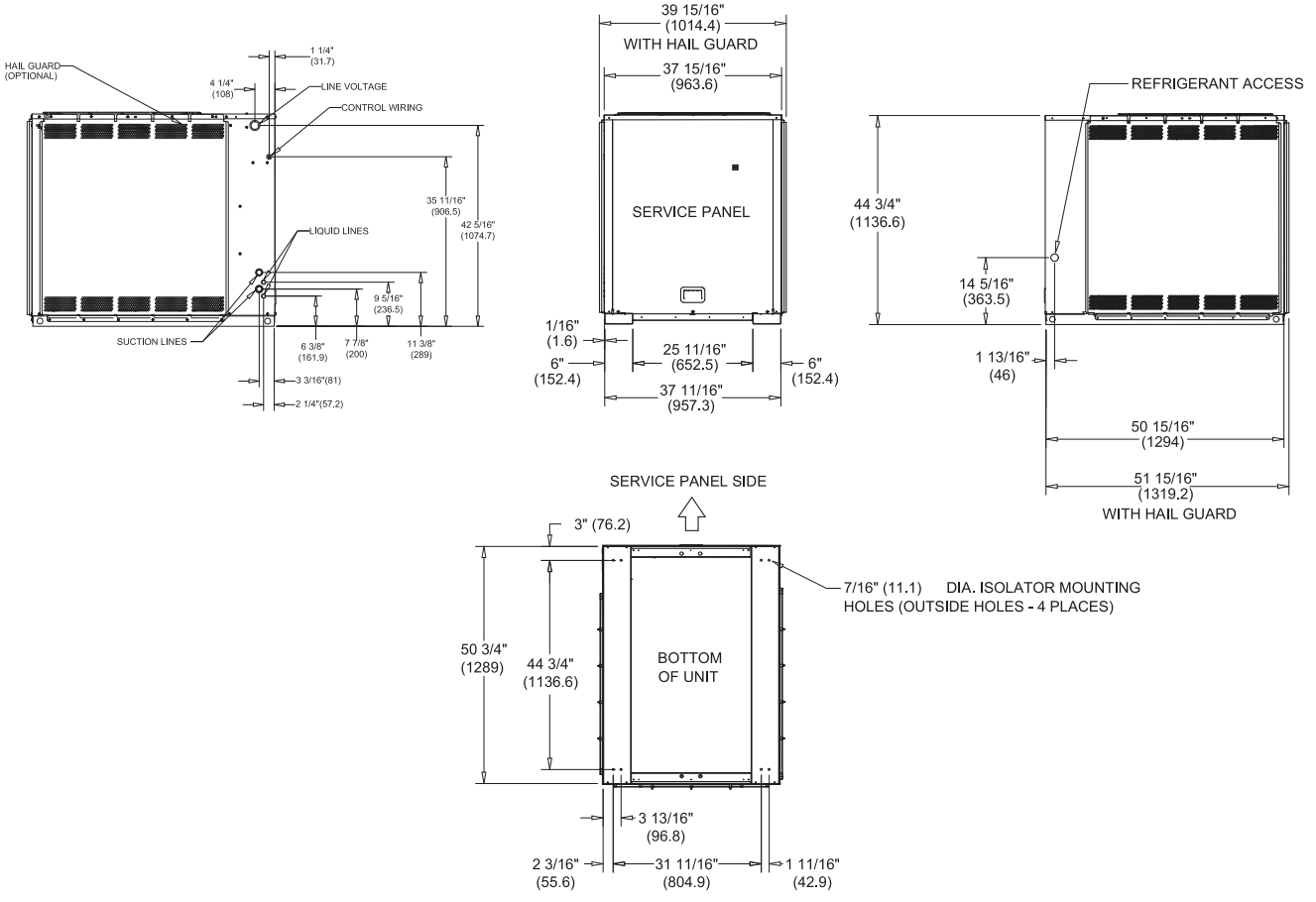


Figure 32. 12.5 ton condensing unit, dual compressor, microchannel



NOTES:

1. MINIMUM CLEARANCE FOR PROPER OPERATION IS 36" (914.4) FROM WALLS, SHRUBBERY, PRIVACY FENCES ETC. MINIMUM CLEARANCE BETWEEN ADJACENT UNITS IS 72" (1828.8). RECOMMENDED SERVICE CLEARANCE 48" (1219.2)
2. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 100" (2540) MINIMUM. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT
3. OUTDOOR AIR TEMPERATURE SENSOR OPENING (DO NOT BLOCK OPENING).



Appendix I (HVAC Product Information) – Interior Equipment

The following product data represents the basis of design for the interior equipment proposed on this project.

Trane Performance Climate Changer Air Handler

Unit Overview - AHU-1

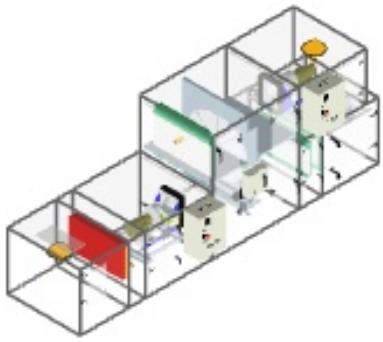
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	4	71.750 in	44.000 in	180.875 in	2323.6 lb	2313.0 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split
	Height	Width	Length	
5 pieces	63.750 in	44.000 in	52.250 in	629.2 lb

Supply Fan				Return/Exhaust Fan			
Airflow	1894 cfm	Total Static Pressure	4.180 in H2O	Airflow	1792 cfm	Total Static Pressure	3.232 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit



Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
High voltage harness top quantity: Circuit number 1 Single point power	460/3/60	8.86 A	10.06 A	15.00 A
High voltage harness top quantity: Circuit number 2 Lights + switch	115/1/60	2.61 A	3.26 A	15.00 A
High voltage harness top quantity: Circuit number 3 Receptacle	115/1/60	8.00 A	10.00 A	15.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
Supply top:	74 dB	72 dB	75 dB	79 dB	66 dB	66 dB	66 dB	62 dB
Return:	77 dB	76 dB	75 dB	74 dB	71 dB	70 dB	69 dB	67 dB
Outdoor:	75 dB	69 dB	70 dB	71 dB	67 dB	65 dB	65 dB	61 dB
Exhaust:	75 dB	72 dB	76 dB	76 dB	69 dB	69 dB	69 dB	67 dB
Casing:	78 dB	77 dB	73 dB	80 dB	74 dB	54 dB	46 dB	39 dB

Unit Controls

Factory Controls Package	No factory controls
Controller Type	No controller
Controller mounting	No mount
PPS Factory programmed	No

Warranty

Warranty section	Std. warranty only

Trane Performance Climate Changer Air Handler

Unit Overview - AHU_2

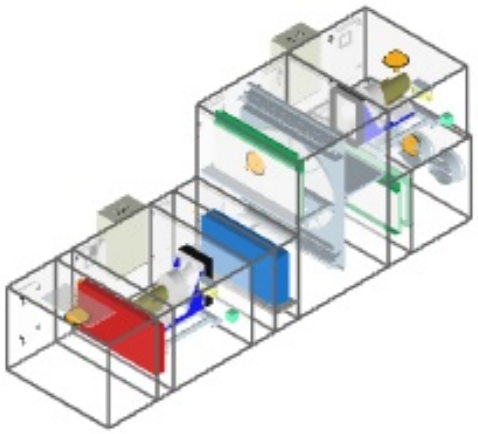
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	10	89.250 in	61.500 in	220.000 in	3706.7 lb	3683.3 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split
	Height	Width	Length	
6 pieces	81.250 in	61.500 in	54.500 in	910.7 lb

Supply Fan				Return/Exhaust Fan			
Airflow	5030 cfm	Total Static Pressure	5.544 in H2O	Airflow	5030 cfm	Total Static Pressure	3.014 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit



Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
High voltage harness top quantity: Circuit number 1 Single point power	460/3/60	19.86 A	22.61 A	30.00 A
High voltage harness top quantity: Circuit number 2 Lights + switch	115/1/60	2.61 A	3.26 A	15.00 A
High voltage harness top quantity: Circuit number 3 Receptacle	115/1/60	8.00 A	10.00 A	15.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K

Unit Controls

Factory Controls Package	No factory controls
Controller Type	No controller
Controller mounting	No mount
PPS Factory programmed	No

Warranty

Warranty section	Std. warranty only

Trane Performance Climate Changer Air Handler

Unit Overview - AHU-3

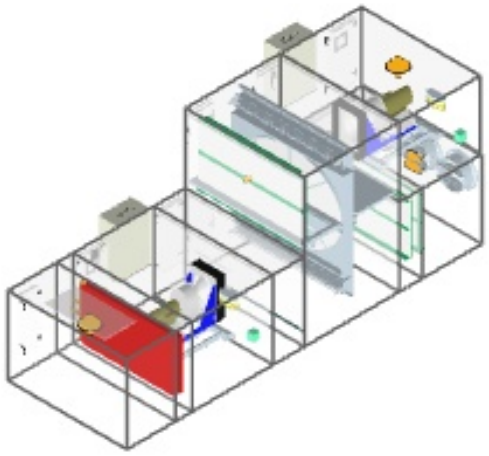
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	14	96.750 in	72.000 in	215.500 in	4024.6 lb	3994.7 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split
	Height	Width	Length	
6 pieces	88.750 in	72.000 in	57.500 in	1069.5 lb

Supply Fan				Return/Exhaust Fan			
Airflow	6530 cfm	Total Static Pressure	4.234 in H2O	Airflow	6530 cfm	Total Static Pressure	3.155 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit



Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
High voltage harness top quantity: Circuit number 1 Single point power	460/3/60	22.66 A	25.41 A	35.00 A
High voltage harness top quantity: Circuit number 2 Lights + switch	115/1/60	2.61 A	3.26 A	15.00 A
High voltage harness top quantity: Circuit number 3 Receptacle	115/1/60	8.00 A	10.00 A	15.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K

Unit Controls

Factory Controls Package	No factory controls
Controller Type	No controller
Controller mounting	No mount
PPS Factory programmed	No

Warranty

Warranty section	Std. warranty only

Trane Performance Climate Changer Air Handler

Unit Overview - AHU_4

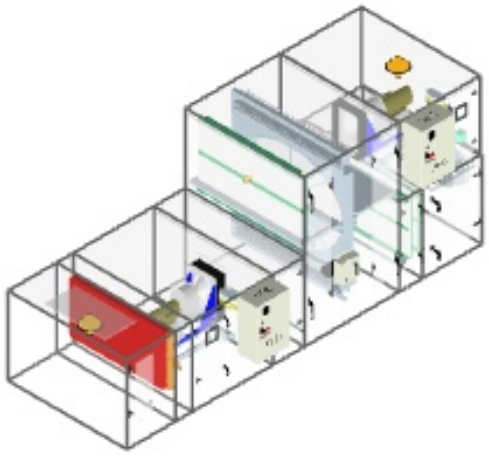
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	14	96.750 in	72.000 in	215.500 in	3978.1 lb	3948.2 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split
	Height	Width	Length	
6 pieces	88.750 in	72.000 in	57.500 in	1069.5 lb

Supply Fan				Return/Exhaust Fan			
Airflow	6125 cfm	Total Static Pressure	4.081 in H2O	Airflow	6125 cfm	Total Static Pressure	3.028 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit



Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
High voltage harness top quantity: Circuit number 1 Single point power	460/3/60	19.86 A	22.61 A	30.00 A
High voltage harness top quantity: Circuit number 2 Lights + switch	115/1/60	2.61 A	3.26 A	15.00 A
High voltage harness top quantity: Circuit number 3 Receptacle	115/1/60	8.00 A	10.00 A	15.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K

Unit Controls

Factory Controls Package	No factory controls
Controller Type	No controller
Controller mounting	No mount
PPS Factory programmed	No

Warranty

Warranty section	Std. warranty only

Trane Performance Climate Changer Air Handler

Unit Overview - AHU_5

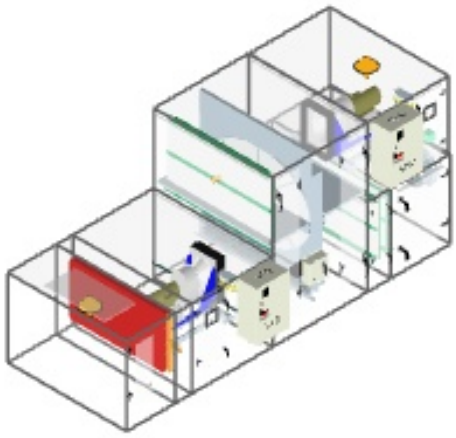
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	14	96.750 in	72.000 in	196.375 in	4024.2 lb	3994.3 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split
	Height	Width	Length	
5 pieces	88.750 in	72.000 in	57.500 in	1207.5 lb

Supply Fan				Return/Exhaust Fan			
Airflow	7400 cfm	Total Static Pressure	4.513 in H2O	Airflow	7214 cfm	Total Static Pressure	2.559 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit



Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
High voltage harness top quantity: Circuit number 1 Single point power	460/3/60	26.32 A	29.82 A	40.00 A
High voltage harness top quantity: Circuit number 2 Lights + switch	115/1/60	2.61 A	3.26 A	15.00 A
High voltage harness top quantity: Circuit number 3 Receptacle	115/1/60	8.00 A	10.00 A	15.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K

Unit Controls

Factory Controls Package	No factory controls
Controller Type	No controller
Controller mounting	No mount
PPS Factory programmed	No

Warranty

Warranty section	Std. warranty only

Trane Performance Climate Changer Air Handler

Unit Overview - AHU_6

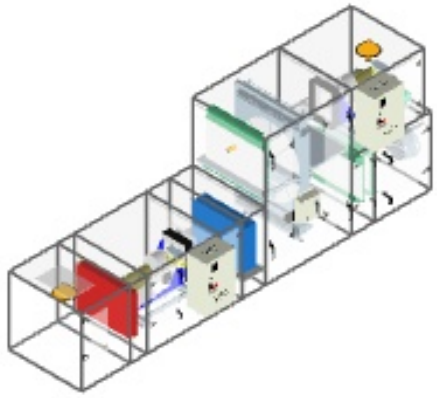
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	6	84.250 in	44.000 in	212.000 in	2878.2 lb	2864.1 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split
	Height	Width	Length	
6 pieces	76.250 in	44.000 in	52.250 in	705.2 lb

Supply Fan				Return/Exhaust Fan			
Airflow	3000 cfm	Total Static Pressure	5.402 in H2O	Airflow	3000 cfm	Total Static Pressure	2.810 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit



Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
High voltage harness top quantity: Circuit number 1 Single point power	460/3/60	13.66 A	15.71 A	20.00 A
High voltage harness top quantity: Circuit number 2 Lights + switch	115/1/60	2.61 A	3.26 A	15.00 A
High voltage harness top quantity: Circuit number 3 Receptacle	115/1/60	8.00 A	10.00 A	15.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K

Unit Controls

Factory Controls Package	No factory controls
Controller Type	No controller
Controller mounting	No mount
PPS Factory programmed	No

Warranty

Warranty section	Std. warranty only

Trane Performance Climate Changer Air Handler

Unit Overview - AHU-7

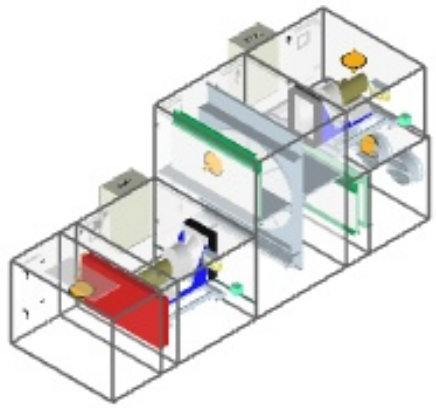
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	10	89.250 in	61.500 in	191.875 in	3394.9 lb	3371.5 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split
	Height	Width	Length	
5 pieces	81.250 in	61.500 in	54.500 in	915.7 lb

Supply Fan				Return/Exhaust Fan			
Airflow	5576 cfm	Total Static Pressure	4.754 in H2O	Airflow	5553 cfm	Total Static Pressure	3.708 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit



Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
High voltage harness top quantity: Circuit number 1 Single point power	460/3/60	22.66 A	25.41 A	35.00 A
High voltage harness top quantity: Circuit number 2 Lights + switch	115/1/60	2.61 A	3.26 A	15.00 A
High voltage harness top quantity: Circuit number 3 Receptacle	115/1/60	8.00 A	10.00 A	15.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K

Unit Controls

Factory Controls Package	No factory controls
Controller Type	No controller
Controller mounting	No mount
PPS Factory programmed	No

Warranty

Warranty section	Std. warranty only

Trane Performance Climate Changer Air Handler

Unit Overview - AHU_8

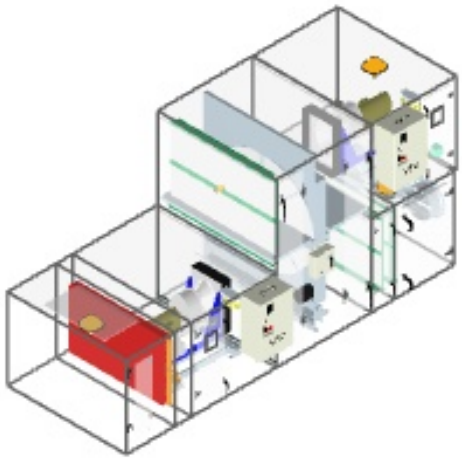
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	17	100.750 in	72.000 in	200.375 in	4290.6 lb	4248.8 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split
	Height	Width	Length	
5 pieces	98.250 in	72.000 in	57.500 in	1236.2 lb

Supply Fan				Return/Exhaust Fan			
Airflow	9268 cfm	Total Static Pressure	4.852 in H2O	Airflow	9063 cfm	Total Static Pressure	3.870 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	2.5in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit



Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
High voltage harness top quantity: Circuit number 1 Single point power	460/3/60	36.32 A	41.57 A	60.00 A
High voltage harness top quantity: Circuit number 2 Lights + switch	115/1/60	2.61 A	3.26 A	15.00 A
High voltage harness top quantity: Circuit number 3 Receptacle	115/1/60	8.00 A	10.00 A	15.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
Supply top:	77 dB	78 dB	91 dB	82 dB	78 dB	77 dB	77 dB	64 dB
Return:	81 dB	80 dB	95 dB	83 dB	79 dB	79 dB	79 dB	67 dB
Outdoor:	79 dB	74 dB	88 dB	82 dB	76 dB	75 dB	74 dB	62 dB
Exhaust:	78 dB	79 dB	93 dB	83 dB	80 dB	80 dB	79 dB	67 dB
Casing:	82 dB	81 dB	82 dB	80 dB	76 dB	65 dB	66 dB	60 dB

Unit Controls

Factory Controls Package	No factory controls
Controller Type	No controller
Controller mounting	No mount
PPS Factory programmed	No

Warranty

Warranty section	Std. warranty only

MODEL CFC BOILERS

500-3300 MBTU

Dimensions and Ratings

Figure 1a. Model CFC Dimensions (sheet 1 of 2)

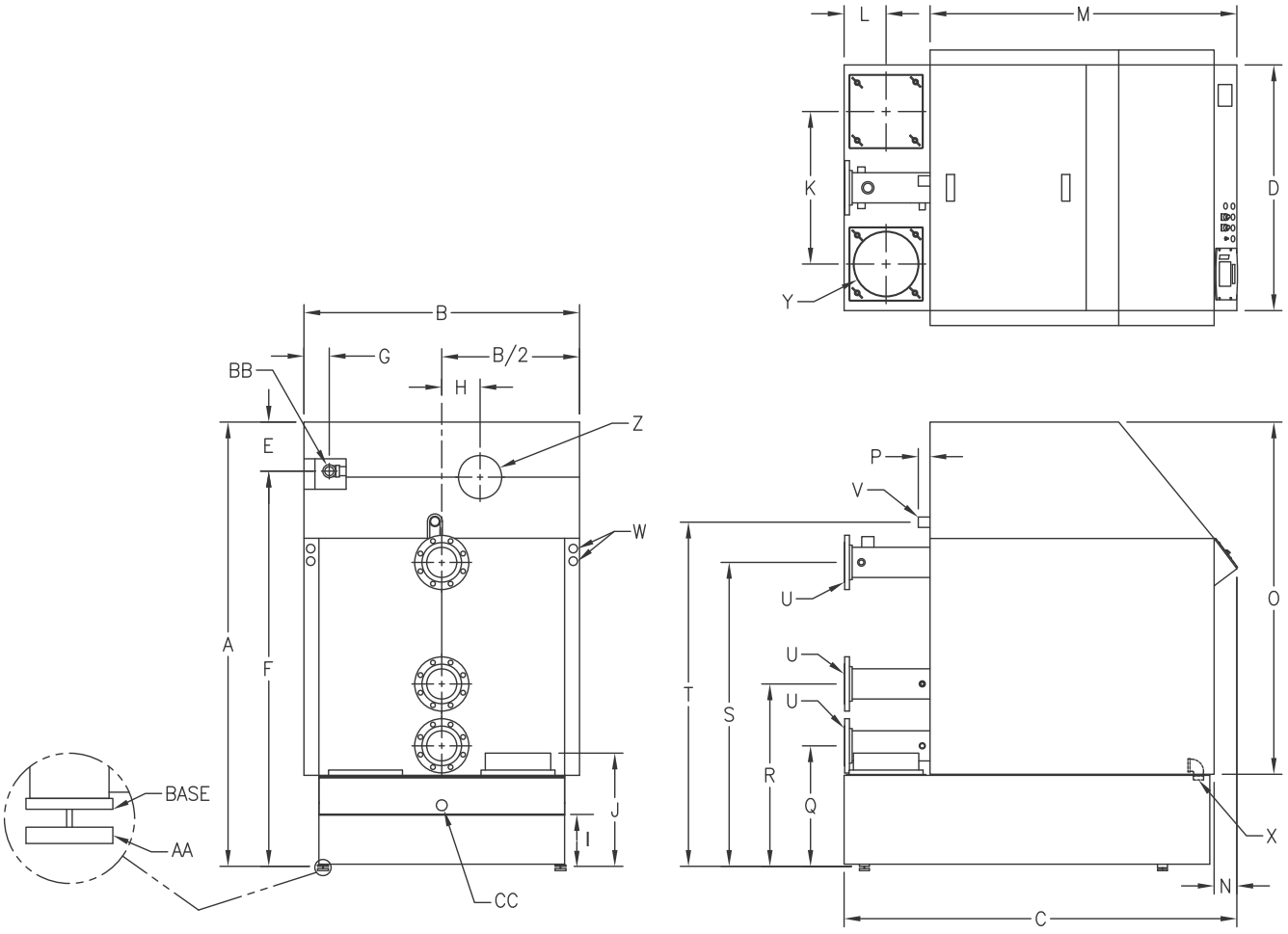


Figure 1b. Model CFC Dimensions (sheet 2 of 2)

ITEM	DIMENSIONS (inches)	500	750	1000	1500	1800	2500	3300
A	Overall Height	71.8	71.8	75.7	81.6	81.6	82.2	85.0
B	Overall Width	32.3	32.3	36.6	43.7	43.7	50.8	61.3
C	Overall Depth	48.8	48.8	62.6	65.6	65.6	72.6	86.3
D	Width Less Casing	26.8	26.8	31.1	38.2	38.2	45.3	55.5
E	Gas Connection to Top of Casing	8.1	8.1	9.5	12.5	10.2	9.4	10.0
F	Gas Connection to Floor	63.7	63.7	66.2	69.1	71.4	72.8	75.0
G	Side of Casing to Gas Connection	2.3	2.3	4.3	3.4	5.2	4.7	5.1
H	Boiler Centerline to Air Inlet Centerline	4.0	4.0	4.0	4.9	7.1	7.1	7.1
I	Floor to Bottom of Base	10.3	10.3	10.3	10.3	10.3	10.3	10.3
J	Floor to Top of Stack Connection	18.6	18.6	18.1	19.1	19.1	20.9	21.4
K	Centerline to Centerline of Stack Stub	15.4	15.4	16.9	21.0	21.0	28.1	35.8
L	Rear of Boiler to Centerline of Stack Stub	5.4	5.4	7.5	8.1	8.1	8.6	10.0
M	Front of Boiler to Rear of Casing	38.8	38.8	49.4	49.5	49.5	56.5	67.0
N	Control Panel Projection	4.1	4.1	4.1	4.1	4.1	4.1	4.3
O	Casing Height	56.2	56.2	60.0	65.4	65.4	65.4	67.0
P	Air Vent Line Projection from Rear of Casing	7.8	7.8	7.3	8.1	8.1	8.7	4.7
Q	Floor to Centerline of Lower Return	19.5	19.5	19.6	20.7	21.3	22.4	24.1
R	Floor to Centerline of Upper Return	28.2	28.7	30.5	20.3	32.3	33.8	35.5
S	Floor to Centerline of Supply Connection	54.3	54.3	56.2	57.1	56.2	56.2	59.1
T	Floor to Centerline of Air Vent	59.9	59.9	62.3	63.1	63.1	63.6	66.4
AA	Boiler Adjustment Foot Height	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	Height Above Boiler for Burner Service	14.0	14.0	14.0	14.0	14.0	14.0	18.0
CONNECTIONS								
U	Water Supply/Return, 150# RF Flg	2-1/2"	2-1/2"	2-1/2"	3"	4"	5"	5"
V	Boiler Air Vent, NPT	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
W	Electrical Conduit, left or right	1.6"	1.6"	1.6"	1.6"	1.6"	1.6"	1.6"
X	Boiler Drain, NPT	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
Y	Flue Gas Nominal OD, Left or Right option	6"	6"	8"	10"	12"	12"	12"
Z	Combustion Air Option	4" OR 6"	4" OR 6"	4" OR 6"	6" OR 8"	6" OR 8"	8"	8"
BB	Gas Connection, NPT	1"	1"	1"	1-1/2"	1-1/2"	1-1/2"	2"
CC	Condensate Drain, FPT	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"
	Relief Valve outlet @ 125 # Setting	1"	1"	1"	1"	1"	1"	1"
	Voltage Fan Motor	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	208-240/3/60
	Voltage Control Circuit	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60

Figure 2. Model CFC Boiler Ratings (Sea Level to 2000 Feet)

		Boiler Size						
Description	Units	500	750	1000	1500	1800	2500	3300
Input Max.	BTU/Hr.	500,000	750,000	1,000,000	1,500,000	1,800,000	2,500,000	3,300,000
Natural Gas (1000 Btu/ft3)	FT3/Hr	500	750	1000	1500	1800	2500	3300
Propane (2500 Btu/ft3)	FT3/Hr	200	300	400	600	720	1000	1320
Output at 104/86 F 100% Firing	BTU/Hr.	480,000	720,000	960,000	1,440,000	1,728,000	2,400,000	3,168,000
	BHP	14.3	21.5	28.7	43.0	51.6	71.7	94.6
	KW	141	211	281	422	506	703	928
Output at 176/140F 100% Firing	BTU/Hr.	435,000	652,500	870,000	1,305,000	1,566,000	2,175,000	2,871,000
	BHP	13.0	19.5	26.0	39.0	46.8	65.0	85.8
	KW	127	191	255	382	459	637	841
MAWP	PSI	125	125	125	125	125	125	125
Operating Temp., Max.	°F	194	194	194	194	194	194	194
Water Content	Gallons	51	51	90	113	99	126	209
Weight w/o Water (Shipping)	Pounds	1,160	1,160	1,795	2,225	2,505	3,640	4,835
Operating Weight	Pounds	1,585	1,585	2,545	3,165	3,325	4,685	6,570
Standby Heat Loss	BTU/Hr	1,206	1,639	1,912	2,459	2,561	3,415	4,620
	Watts	353	480	560	720	750	1000	1353
Fan Motor Size	Watts	335	335	335	750	1,200	1,200	2,200
Operating Voltage, Fan	Volts/Ph/Hz	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	208-240/3/60
Control Circuit	Volts/Ph/Hz	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60
Current Draw, Fan	Amperes	4	4	4	8.5	12	12	6.9
Current Draw Cont. Ckt.	Amperes	1.5	1.5	1.5	1.5	2	2	2.3
Condensate Quantity Firing Nat. Gas & operating @ 104/86 F.	Gal/Hr.	4	5	6.5	10	12	16.5	22
Condensate Value	PH	4.5 - 5.5	4.5 - 5.5	4.5 - 5.5	4.5 - 5.5	4.5 - 5.5	4.5 - 5.5	4.5 - 5.5
Flue Gas Mass Flow @ 100% Firing (Natural Gas)	lb/hr	557	835	1,113	1,670	2,004	2,783	3674
Flue Gas Temp. Oper.176/140 F	°F	155	180	160	170	170	160	160
Flue Gas Temp. Oper.104/86 F	°F	105	125	110	108	108	110	110

e-mail: info@cleaverbrooks.com
Web address: http://www.cleaverbrooks.com

Bell & Gossett
a xylem brand

SUBMITTAL
B-880.30C

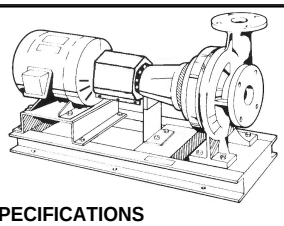
JOB: Hall School
P1 & P-1

REPRESENTATIVE:

UNIT TAG:
ENGINEER:
CONTRACTOR:

ORDER NO.
SUBMITTED BY:
APPROVED BY:

DATE: 1/4/2017
DATE:
DATE:



2EB
Series e-1510
Centrifugal Pumps - Base Mounted

SPECIFICATIONS

FLOW	220	HEAD	80
HP	7.50	RPM	1750
VOLTS			
CYCLE	60	PHASE	1
ENCLOSURE	ODP		
APPROX. WEIGHT	375		
SPECIALS			

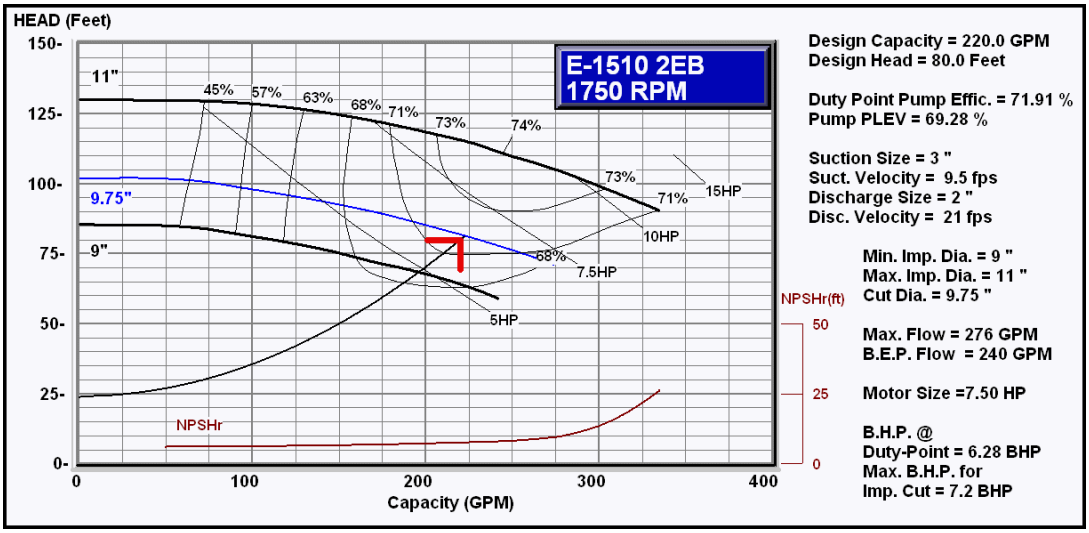
Note: Equipped with NEOPRENE coupling

MATERIALS OF CONSTRUCTION
☒ STAINLESS STEEL FITTED

FEATURES
☒ ANSI/OSHA Coupling Guard
☒ Center Drop Out Spacer Coupling
☒ Fabricated Heavy Duty Baseplate

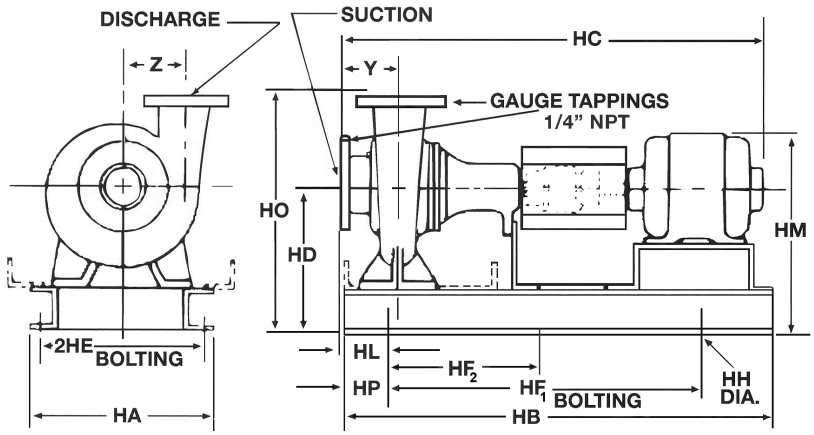
MAXIMUM WORKING PRESSURE
☐ 175 psi (12 bar) W.P.
w/125# ANSI flange drilling
☐ 250 psi (17 bar) W.P.
w/250# ANSI flange drilling
(requires 1510-S)

TYPE OF SEAL
☐ Standard Seal
(Buna-Carbon/Ceramic)
☐ -F Standard Seal w/ Flush Line
(Buna-Carbon/Ceramic)
☐ -S Stuffing Box Construction w/ Flushed
Mechanical Single Seal
(EPR-Tungsten Carbide/Carbon)
☐ -PF Stuffing Box Construction w/ Packing
(Graphite Impregnated Teflon)



Series e-1510 2EB Centrifugal Pump Submittal

B-880.30C



FLANGE DIMENSIONS IN INCHES (MM)			
	SIZE	THICKNESS	O.D.
Discharge	2"	7/8 (23)	6-1/4 (159)
Suction	3"	1-1/8 (29)	8 (203)

FLANGES ARE **125# ANSI - STANDARD**
250# ANSI - AVAILABLE

DIMENSIONS - Inches (mm)

STANDARD SEAL

MOTOR FRAME	HA	HB	HC MAX	HD	2HE	HF_1	HF_2	HH	HL	HM MAX	HO	HP	Y	Z
	"S" FRAME													
182T	16 (406)	42-1/4 (1073)	34 (864)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (410)	7/8 (22)	6-1/2 (165)	19-1/4 (489)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
184T	16 (406)	42-1/4 (1073)	34-3/4 (883)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (410)	7/8 (22)	6-1/2 (165)	19-1/4 (489)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
213T	16 (406)	42-1/4 (1073)	37-1/4 (946)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (410)	7/8 (22)	6-1/2 (165)	19-7/8 (505)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
215T	16 (406)	42-1/4 (1073)	38-3/4 (984)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (410)	7/8 (22)	6-1/2 (165)	19-7/8 (505)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
254T	16 (406)	42-1/4 (1073)	42-1/2 (1080)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (410)	7/8 (22)	6-1/2 (165)	20-7/8 (530)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
	"L" FRAME													
286TS	16 (406)	46-1/2 (1181)	49 (1245)	14 (356)	14 (356)	36-1/2 (927)	18-1/4 (464)	7/8 (22)	4-1/8 (105)	22 (559)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
324TS	16 (406)	51-3/4 (1314)	50-7/8 (1292)	14 (356)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	4-1/8 (105)	23-1/8 (587)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
326TS	16 (406)	51-3/4 (1314)	52-3/8 (1330)	14 (356)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	4-1/8 (105)	23-1/8 (587)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
364TS	24 (610)	56 (1422)	54-1/4 (1378)	16-1/2 (419)	21-1/2 (546)	44 (1118)	22 (559)	1 (25)	4-3/4 (121)	26-3/4 (679)	24-1/2 (622)	6 (152)	5-1/2 (140)	6-1/2 (165)
365TS	24 (610)	56 (1422)	54-7/8 (1394)	16-1/2 (419)	21-1/2 (546)	44 (1118)	22 (559)	1 (25)	4-3/4 (121)	26-3/4 (679)	24-1/2 (622)	6 (152)	5-1/2 (140)	6-1/2 (165)

STUFFING BOX

MOTOR FRAME	HA	HB	HC MAX	HD	2HE	HF_1	HF_2	HH	HL	HM MAX	HO	HP	Y	Z
	"S" FRAME													
182T	16 (406)	42-1/4 (1073)	37-5/8 (956)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (409)	7/8 (22)	6-1/2 (165)	19-1/4 (489)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
184T	16 (406)	42-1/4 (1073)	38-3/8 (975)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (409)	7/8 (22)	6-1/2 (165)	19-1/4 (489)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
213T	16 (406)	42-1/4 (1073)	40-7/8 (1038)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (409)	7/8 (22)	6-1/2 (165)	19-7/8 (505)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
215T	16 (406)	42-1/4 (1073)	42-3/8 (1076)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (409)	7/8 (22)	6-1/2 (165)	19-7/8 (505)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
254T	16 (406)	42-1/4 (1073)	46-1/8 (1171)	14 (356)	14 (356)	32-1/4 (819)	16-1/8 (409)	7/8 (22)	6-1/2 (165)	20-7/8 (530)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
	"L" FRAME													
286TS	16 (406)	51-3/4 (1314)	51-3/8 (1305)	14 (356)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	4-1/8 (105)	22 (559)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
324TS	16 (406)	51-3/4 (1314)	53-3/8 (1356)	14 (356)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	4-1/8 (105)	23-1/8 (587)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
326TS	16 (406)	51-3/4 (1314)	54-7/8 (1394)	14 (356)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	4-1/8 (105)	23-1/8 (587)	22 (559)	5 (127)	5-1/2 (140)	6-1/2 (165)
364TS	24 (610)	56 (1422)	56-5/8 (1438)	16-1/2 (419)	21-1/2 (546)	44 (1118)	22 (559)	1 (25)	4-3/4 (121)	26-3/4 (679)	24-1/2 (622)	6 (152)	5-1/2 (140)	6-1/2 (165)
365TS	24 (610)	56 (1422)	57-3/8 (1457)	16-1/2 (419)	21-1/2 (546)	44 (1118)	22 (559)	1 (25)	4-3/4 (121)	26-3/4 (679)	24-1/2 (622)	6 (152)	5-1/2 (140)	6-1/2 (165)

Dimensions are subject to change. Not to be used for construction purposes unless certified.

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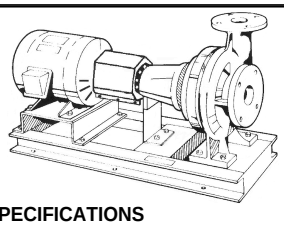
SUBMITTAL
B-880.18B

JOB: Hall School Pumps 3 & 4	**REPRESENTATIVE:**	
UNIT TAG:	**ORDER NO.**	**DATE:** 1/4/2017
ENGINEER:	**SUBMITTED BY:**	**DATE:**
CONTRACTOR:	**APPROVED BY:**	**DATE:**



2BD
Series e-1510
Centrifugal Pumps - Base Mounted

SPECIFICATIONS

FLOW	180	HEAD	50
HP	5.00	RPM	1750
VOLTS			
CYCLE	60	PHASE	1
ENCLOSURE	ODP		
APPROX. WEIGHT	250		
SPECIALS			

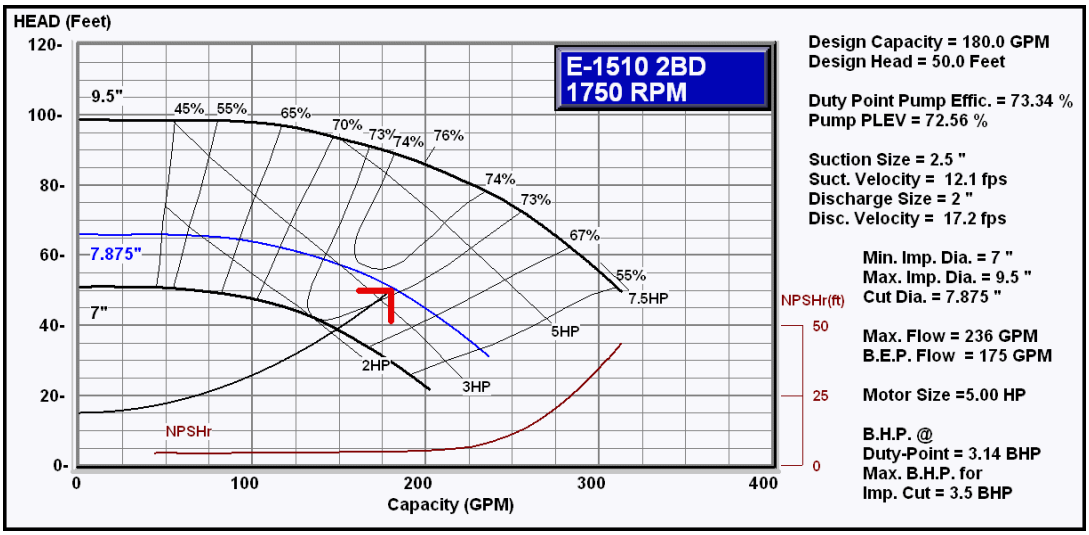
MATERIALS OF CONSTRUCTION
☒ Stainless Steel Fitted

FEATURES
☒ ANSI/OSHA Coupling Guard
☒ Center Drop Out Spacer Coupling
☒ Fabricated Heavy Duty Baseplate

MAXIMUM WORKING PRESSURE
☐ 175 psi (12 bar) W.P.
w/ 125# ANSI flange drilling

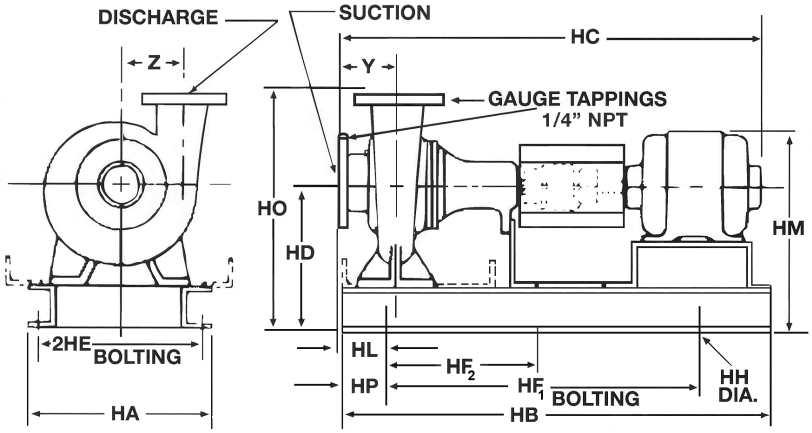
TYPE OF SEAL
☐ Standard Seal
(Buna-Carbon/Ceramic)
☐ -F Standard Seal w/ Flush Line
(Buna-Carbon/Ceramic)
☐ -S Stuffing Box Construction w/ Flushed
Mechanical Single Seal
(EPR-Tungsten Carbide/Carbon)
☐ -PF Stuffing Box Construction w/ Packing
(Graphite Impregnated Teflon)

Note: Equipped with NEOPRENE coupling



Series e-1510 2BD Centrifugal Pump Submittal

B-880.18B



FLANGE DIMENSIONS IN INCHES (MM)			
	SIZE	THICKNESS	O.D.
Discharge	2"	7/8" (22)	6-1/4" (159)
Suction	2-1/2"	1" (25)	7-3/8" (187)

FLANGES ARE 125# ANSI - STANDARD

DIMENSIONS – Inches (mm)

STANDARD SEAL

MOTOR FRAME	HA	HB	HC MAX	HD	2HE	HF_1	HF_2	HH	HL	HM MAX	HO	HP	Y	Z
	"S" FRAME													
143T	14-5/8 (371)	31 (787)	29-1/2 (749)	10-3/4 (273)	12-7/8 (327)	25 (635)	–	3/4 (19)	2-11/16 (68)	14-1/2 (368)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
145T	14-5/8 (371)	31 (787)	30-1/2 (775)	10-3/4 (273)	12-7/8 (327)	25 (635)	–	3/4 (19)	2-11/16 (68)	14-1/2 (368)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
182T	14-5/8 (371)	31 (787)	33-1/8 (841)	10-3/4 (273)	12-7/8 (327)	25 (635)	–	3/4 (19)	2-11/16 (68)	16 (406)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
184T	14-5/8 (371)	31 (787)	33-7/8 (860)	10-3/4 (273)	12-7/8 (327)	25 (635)	–	3/4 (19)	2-11/16 (68)	16 (406)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
213T	14-5/8 (371)	34-5/8 (879)	36-1/2 (927)	10-3/4 (273)	12-7/8 (327)	28-5/8 (727)	–	3/4 (19)	2-11/16 (68)	16-5/8 (422)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
	"L" FRAME													
215T	14-5/8 (371)	39-3/8 (1000)	42-3/8 (1076)	10-3/4 (273)	12-7/8 (327)	33-3/8 (848)	–	3/4 (19)	2-11/16 (68)	16-5/8 (422)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
254T	16 (406)	46-1/2 (1181)	46-1/8 (1172)	12 (305)	14 (356)	36-1/2 (927)	18-1/4 (464)	7/8 (22)	3-13/16 (97)	18-7/8 (479)	19 (483)	5 (127)	4 (102)	5-7/8 (149)
256T	16 (406)	46-1/2 (1181)	47-7/8 (1216)	12 (305)	14 (356)	36-1/2 (927)	18-1/4 (464)	7/8 (22)	3-13/16 (97)	18-7/8 (479)	19 (483)	5 (127)	4 (102)	5-7/8 (149)
284TS	16 (406)	46-1/2 (1181)	47-1/8 (1197)	13 (330)	14 (356)	36-1/2 (927)	18-1/4 (464)	7/8 (22)	3-13/16 (97)	21 (533)	20 (508)	5 (127)	4 (102)	5-7/8 (149)
286TS	16 (406)	46-1/2 (1181)	48-5/8 (1235)	13 (330)	14 (356)	36-1/2 (927)	18-1/4 (464)	7/8 (22)	3-13/16 (97)	21 (533)	20 (508)	5 (127)	4 (102)	5-7/8 (149)
324TS	16 (406)	46-1/2 (1181)	50-5/8 (1286)	12 (305)	14 (356)	36-1/2 (927)	18-1/4 (464)	7/8 (22)	3-13/16 (97)	21-1/8 (537)	19 (483)	5 (127)	4 (102)	5-7/8 (149)
326TS	16 (406)	46-1/2 (1181)	52-1/8 (1324)	12 (305)	14 (356)	36-1/2 (927)	18-1/4 (464)	7/8 (22)	3-13/16 (97)	21-1/8 (537)	19 (483)	5 (127)	4 (102)	5-7/8 (149)

STUFFING BOX

MOTOR FRAME	HA	HB	HC MAX	HD	2HE	HF_1	HF_2	HH	HL	HM MAX	HO	HP	Y	Z
	"S" FRAME													
143T	14-5/8 (371)	34-5/8 (879)	33 (838)	10-3/4 (273)	12-7/8 (327)	28-5/8 (727)	–	3/4 (19)	2-11/16 (68)	14-1/2 (368)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
145T	14-5/8 (371)	34-5/8 (879)	34 (864)	10-3/4 (273)	12-7/8 (327)	28-5/8 (727)	–	3/4 (19)	2-11/16 (68)	14-1/2 (368)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
182T	14-5/8 (371)	34-5/8 (879)	36-3/4 (933)	10-3/4 (273)	12-7/8 (327)	28-5/8 (727)	–	3/4 (19)	2-11/16 (68)	16 (406)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
184T	14-5/8 (371)	34-5/8 (879)	37-1/2 (953)	10-3/4 (273)	12-7/8 (327)	28-5/8 (727)	–	3/4 (19)	2-11/16 (68)	16 (406)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
213T	14-5/8 (371)	39-3/8 (1000)	40 (1016)	10-3/4 (273)	12-7/8 (327)	33-3/8 (848)	–	3/4 (19)	2-11/16 (68)	16-5/8 (422)	17-3/4 (451)	3 (76)	4 (102)	5-7/8 (149)
	"L" FRAME													
215T	16 (406)	46-1/2 (1181)	44-3/4 (1137)	12 (305)	14 (356)	36-1/2 (927)	18-1/4 (464)	7/8 (22)	3-13/16 (97)	17-7/8 (454)	19 (483)	5 (127)	4 (102)	5-7/8 (149)
254T	16 (406)	51-3/4 (1314)	48-1/2 (1232)	12 (305)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	3-13/16 (97)	18-7/8 (479)	19 (483)	5 (127)	4 (102)	5-7/8 (149)
256T	16 (406)	51-3/4 (1314)	50-1/4 (1276)	12 (305)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	3-13/16 (97)	18-7/8 (479)	19 (483)	5 (127)	4 (102)	5-7/8 (149)
284TS	16 (406)	51-3/4 (1314)	49-5/8 (1260)	13 (330)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	3-13/16 (97)	21 (533)	20 (508)	5 (127)	4 (102)	5-7/8 (149)
286TS	16 (406)	51-3/4 (1314)	51-1/8 (1299)	13 (330)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	3-13/16 (97)	21 (533)	20 (508)	5 (127)	4 (102)	5-7/8 (149)
324TS	16 (406)	51-3/4 (1314)	53 (1346)	12 (305)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	3-13/16 (97)	21-1/8 (537)	19 (483)	5 (127)	4 (102)	5-7/8 (149)
326TS	16 (406)	51-3/4 (1314)	54-1/2 (1384)	12 (305)	14 (356)	41-3/4 (1060)	20-7/8 (530)	7/8 (22)	3-13/16 (97)	21-1/8 (537)	19 (483)	5 (127)	4 (102)	5-7/8 (149)

Dimensions are subject to change. Not to be used for construction purposes unless certified.

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OAK POINT ASSOCIATES architecture engineering planning

MEETING MINUTES

Date: October 4, 2016

Project: New Elementary School – 23 Orono Road, Portland

Attendees:

Jonah DeWaters	Oak Point Associates	jdewaters@oakpoint.com
Allison Towne-Dimatteo	Oak Point Associates	atowne@oakpoint.com
Tyler Barter	Oak Point Associates	tbarter@oakpoint.com
Douglas Sherwood	Portland Public Schools	sherwd@portlandschools.org
Craig Worth	Portland Public Schools	worthc@portlandschools.org
Dawn Kenniston	Hall School Principal	kennid@portlanschools.org

Abutters/Members of the Public (see attached sign in sheet)

This informational meeting was held to review the project and its anticipated environmental impacts as well as to answer any questions the public had. The meeting satisfies both City of Portland and Maine Department of Environmental Protection requirements for a public informational meeting to be held as part of their respective application submissions. Notifications/invitations for the meeting were sent directly to owners of property directly abutting the site and published in the Portland Press Herald.

1. The presentation documentation can be viewed online via Hall School's website: https://hall.portlandschools.org/
2. Jonah went over the anticipated timeline for the project. The project is slated to go out to bid in Spring, 2017. Construction is anticipated to begin in Late Spring, 2017 and be completed by the start of the 2018-2019 school year.
3. Jonah discussed phasing: the existing school will remain open for the 2017-2018 school year, with the majority of the construction being focused on the new school building. Demolition of the existing school and construction of most of the site amenities is slated for summer, 2018.
4. As required by the City and Maine DEP, Jonah reviewed the environmental impacts from the project, including site layout, existing environmentally sensitive areas on the site (Capisic Brook), proposed stormwater treatment areas and on site erosion and sediment control.
5. Public Comments/Questions and discussion points were as follows:
    a. An abutter was concerned that the construction of the new entrance drive from Warwick Street and construction on Riggs Street and Lomond Street will increase stormwater runoff on his property. Jonah informed him that the project will be constructed in accordance with City and State regulations, which require him to demonstrate that the post construction peak flow rate of runoff from the site will be less than the current peak flow rate.
    b. An abutter had questions on the construction timeline for the project. Jonah reviewed the construction milestones and phasing (see item 2, above).
    c. Abutters on Poe Street were present at the meeting, and they were concerned about screening of the school in the vicinity of Poe Street. Jonah said that while tree clearing will occur in the vicinity of Poe Street, the school was sited to minimize clearing within the building setback as much as possible, while still avoiding disturbance to other valued natural

resources on the site (existing trees near the baseball field and along the northern side of the existing building) and minimizing disruption to the existing school.

d. Property owners on Orono Road requested additional information on the proposed work within Orono Road. Jonah outlined the work, which generally consists of upgrading the existing 2" water line to a 12" water line, transferring the residential water service connections to the new line, and re-paving the road. Jonah also stated that no work related to the sewer or storm drainage lines in Orono Road is anticipated as part of this project.

e. An abutter asked if the existing trails on the site were going to be effected by the work. Jonah discussed how the trails on the south side of the site will be interrupted by the proposed entrance drive construction. Jonah indicated that Portland Trails has been involved in the concept planning and discussions are ongoing to make sure they approve of the proposed construction.

The above items are true to the best of the writer's knowledge. If there are any errors or omissions, please notify Jonah DeWaters of Oak Point Associates within ten (10) days of October 28, 2016. If no corrections or additions are noted at that time, these minutes will become a permanent record of the proceeding.

October 4, 2016

Attendance List
Public Informational Meeting - New Fred P. Hall Elementary School

Name	Address	e-mail address
ERNEST SHOREY	8 Poe ST, Portland, ME. 04101	ernshorey@maine.rr.com
Dean Truith	52 Warwick St.	DMTTRuith@outlook.com
Reg Houston	14 cedarhurst lane	Reg.houston@gmail
Tom Houston	14 Cedarhurst lane	cedarhust14@gmail.com
Craig Worth	PPS	
Dawn Kenrick	Hall School	
ED CUNDY	18 ORONO ROAD	edcundy@gmail.com
Paul Olsen	8 Lomond St.	
Diana Cundy	18 Orono Rd.	dCundy@maine.edu
RITA KING	36 MACHIGONNE ST.	SULLIVAN.RITA@GMAIL.COM
Peter McCabe	7 Poe St.	
Douglas Sherwood	Portland Public Schools	
Jane Taylor	67 Lomond St. Portland	taylor.jane.k@gmail.com
Leslie Taylor.	67 Lomond St	les-taylor@Yahoo.

Att. Q

LEVEL III SITE PLAN APPLICATION

State of Maine
Public School Project
23 Orono Road, Portland, Maine

Stormwater Report
Final Site Plan Application

New Fred P. Hall Elementary School

Prepared For:

City of Portland Planning Division
389 Congress Street
Portland, Maine

January 31, 2017

Prepared By:

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING

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EMERGENCY SPILLWAY CALCULATIONS	APPENDIX E

Stormwater Management

Development Location

The new building will be located on the northwest portion of the site, just west of the existing elementary school building and in the vicinity of the existing baseball field. The project will consist of demolition of the existing elementary school and associated site amenities, including the existing site entrance from Warwick Street and the construction of a new elementary school and associated site amenities. These proposed amenities will generally consist of a parking lot, entrance drive, playground area, athletic fields and a drop off area (exclusively for busses) that connects to Orono Road. The new primary site entrance drive (for school staff, visitors, and parents) will originate at the end of Lomond Street and extend north through the existing wooded area and connect to the proposed parking lot/drop off area. As part of the construction of this entrance drive, portions of Riggs Street and Lomond Street will be redeveloped to meet current City of Portland Standards for a public street.

With the exception of a portion of the entrance drive (Riggs Street and Lomond Street redevelopment) and the reconstruction of a sidewalk leading to the site from Godfrey Street that is located within the public right-of-way, the work will take place on an approximately 21.2-acre parcel located at 23 Orono Road in Portland. The parcel is owned by the City of Portland and occupied by the existing Fred P. Hall Elementary School.

Reconstruction of Riggs Street and Lomond Street will occur mostly within the City's Right-of-Way. Some of the construction will require grading on the abutting properties on Riggs Street and Lomond Street and the reconstruction of the driveway of the house on Lomond Street adjacent to the site. Copies of the signed agreements to perform this work are included Section 2.

The project will result in a total disturbance of approximately 10.7 acres, including the creation of approximately 3.5 acres of new developed area, the removal of approximately 3.7 acres of existing impervious surfaces, and the construction of approximately 5.1 acres of new impervious surfaces, a net increase of approximately 1.4 acres of impervious area. Exact values for developed area, disturbed area, and impervious area can be found in Appendix D of this section.

Surface Water on or abutting the Site

Capisic Brook and one of its tributaries run along the northern site of the site. Also, a wetland delineation was performed on the site in 2013 and updated in 2015 (attached in Section 11) which revealed the presence of several small wetland areas at various locations on the site. These wetland areas are also shown on the attached drawings.

General Topography

The site is situated within a large neighborhood and generally bounded on all sides by residential development. The site itself is mostly wooded, particularly in the northern, western and southern portions. The site is generally very flat, with several depressed areas in the wooded portions that have formed into small wetlands. The

notable exception to this is an unnamed stream and a portion of Capisic Brook which flow along the northern boundary of the site, which are situated at the bottom of a deep gully.

The drainage areas affected by this project are indicated on drawing WS101 ("Pre-Development Watershed Plan"), included in Appendix B of this section. As indicated on this drawing, there are six different discharge points within the project area:

DPA consists of runoff primarily from the existing wooded area on the southern half of the site and some runoff from abutting properties on the western side of Warwick Street and the northern portions of Riggs Street and Lomond Street. Most of the runoff flows south into a large forested wetland area before ultimately exiting the site and pooling offsite in a wetland near Lomond Street.

DPB consists of runoff from most of the existing playground area (which consists of a mixture of turf, gravel, and woodchips), the southeast portion of the existing parking lot and a portion of the entrance/exit of Orono Road. The runoff from this area flows overland northeast until it is collected by a catch basin and conveyed into the existing combined sewer and storm drainage system beneath Orono Road.

DPC consists of runoff from a small strip of asphalt pavement area on the west side of the existing building as well as a turf corridor and a portion of the wooded area along the western property line. The runoff flows west over the turf corridor into a wetland/depression and ultimately exiting from the western corner of the site.

DPD and **DPE** consist of runoff from small portions of the wooded area of the western edge of the site. Runoff flows overland through the wooded area exiting the site into the adjacent properties.

DPF consists of runoff from the majority of the site, including the existing school building, the remainder of parking lot located on the eastern side of the school building, the large turf area making up the baseball field, the majority of the asphalt pavement area used as a playground and the northern wooded area. Most of the runoff flows overland to the north into the existing stream and Capisic Brook. The exception to this is portions of the playground area that are collected by a closed drainage system that also includes storm drainage from Sagamore Village and outlets into a tributary of Capisic Brook near Pinecrest Street and the parking lot, which drains into a closed drainage system that outlets into Capisic Brook near Warwick Street.

Flooding

Based on the FEMA flood zone map community panel 230051 0006 C, the only portion of the project that is anticipated to be constructed within a designated 100-year flood area is the replacement of an existing sidewalk and installation of erosion control for a proposed storm drain outfall. No portions of the building or parking/site circulation areas will be constructed within this zone.

Other than the portion of the site within the 100-year flood zone, no areas of significant flooding have been reported on the site.

Alterations to Natural Drainage ways

The project does not propose to alter any existing natural drainage ways.

Alterations to Land Cover

Proposed alterations to existing land cover can be seen on the drawings included in Appendix A.

Modeling Assumptions

Pre- and post-development runoff from the site has been modeled using the HydroCAD Stormwater Modeling System. The HydroCAD program is based largely on hydrology techniques developed by the Soil Conservation Service, primarily TR-55. In the HydroCAD Stormwater Model, it was assumed that all land cover types were in "good" condition as defined in U.S. Department of Agriculture Soil Conservation Services (SCS) publications. Soil types indicated on the soil survey to by Hydrologic Soul Group C/D were modeled as being in Group D.

Basic Standards

In accordance with the Maine Stormwater Management Rules (Chapter 500 and 502), the project requires compliance with the Basic Standards. This will be achieved through the use of Maine Erosion and Sedimentation Control Best Management Practices. The methods that will be used are described in Section 14 and shown in detail on the included drawings. They include the following:

- Sediment barriers placed on the down gradient of exposed soils
- Inlet protection on downstream structures
- Mulch or temporary seeding for temporary stabilization
- Erosion control blankets, netting, or riprap in erosion-prone areas (e.g. steep slopes and vegetated ditches)
- Pipe outlet protection (riprap) at storm drain outfalls
- Excavation dewatering (silt bags or sediment ponds) and the use of flocculants, where appropriate, for excavations below the groundwater elevation and into the soft clay layer on the site (8-13 feet below the ground surface)

General standards

In accordance with Maine Stormwater Management Rules (Chapter 500 and 502), the project must comply with the General Standards which include water quantity and water quality control. The standards will be achieved through the use of Best Management Practices for Stormwater Management.

Stormwater Quantity (Flooding Standard)

Pre- and Post-development watershed models were developed for the work as indicated on Drawings WS101 and WS102. Copies of these drawings, as well as of the curve number, time of concentration, and peak discharge calculations can be found in Appendices B and C of this section.

The table below summarizes the pre- and post-development peak flow rates at the point of analysis for the project area depicted on the Watershed Plans. This table is also included on sheet WS102.

Pre- and Post-Development Peak Runoff Rates (ft^3/s)

Discharge Point	2-Year Storm		10-Year Storm		25-Year Storm		100-Year Storm	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
DP-A	3.5	3.4	7.4	7.4	10.8	10.2	19.3	15.4
DP-B	1.8	0.6	3.0	1.0	3.9	1.4	5.8	2.1
DP-C	0.5	0.3	1.2	0.7	1.9	1.0	3.3	1.7
DP-D	0.1	0.1	0.2	0.2	0.4	0.3	0.6	0.6
DP-E	0.2	0.1	0.4	0.3	0.6	0.4	0.9	0.7
DP-F*	10.1	2.7	19.4	7.4	27.2	18.4	42.3	37.8

*The offsite runoff from Sagamore Village that flows through the site into Capisic Brook via the closed drainage system running along the western edge of the property has been excluded from these calculations for clarity.

As indicated on the above table, post-development peak runoff rates are either unchanged or less than the pre-development rates.

Pipe Sizing Calculations

Proposed drainage pipes have been designed to effectively convey runoff from the 25-year storm event without causing disruptions to the surrounding infrastructure (e.g. flooding at catch basins and storm drain inlets). Calculations are included in the post-development runoff calculations in Appendix C of this section.

Water Quality Treatment (Stormwater Quality)

The general (stormwater quality) standard for this project will be achieved through a combination of the following:

1. A underdrained subsurface sand filter located beneath the athletic fields that collects runoff from the majority of the site, including the proposed building, parking lot, bus loop, playground and athletic fields.
2. Two tree box filters (Filterra) located along the redeveloped portion of Lomond Street that will collect runoff from portions of the entrance drive and the redeveloped parts of Riggs Street and Lomond Street.
3. Three grassed underdrained soil filters at the following locations:
    - Along the south side of the entrance drive, collecting runoff from the majority of the on-site portion of the entrance drive.
    - On the rear (west side) of the proposed building, collecting runoff from the service area and sidewalks on the west side of the building.
    - On the north side of the proposed building, collecting runoff from sidewalks on the north side of the building.

A summary of the disturbed areas and the necessary treatment calculations can also be found in Appendix D of this section, and construction details for the treatment areas are included in the drawing set.

Pre-Treatment

Pre-treatment for the treatment areas will consist of the following:

- Underdrained subsurface sand filter: deep sump catch basins, sump skimmers in catch basins in the parking lot and bus loop, hooded inlets on selected catch basin outlets, and an MDEP-approved pre-treatment chamber row (Cultec R330-XLHD or similar) with catch basin access points on each end for cleaning and inspection.
- Grassed underdrained soil filters on the west and north sides of the proposed building: grassed filter strips located just upstream of the treatment areas.
- Grassed underdrained soil filter on the south side of the entrance drive: deep sump catch basins and a sediment forebay on the outlet of the storm drain piping into the treatment area.

The locations and applicable details of these pre-treatment methods are included in the drawing set.

Maps

See Sections 1 and 11 for USGS quad and Soils Maps.

Drainage Plans

See Appendices B and C of this Section.

Subsurface Investigation

Test pits and soil borings performed on the site indicated that all of the treatment areas will likely extend below the seasonal high water elevation. Because of this each of the treatment areas will require and impermeable liner and underdraining around their perimeter.

Stormwater Maintenance / Inspection Plan

This Maintenance Plan has been prepared as part of the Maine Department of Environmental Protection (MDEP) Site Location of Development Permit Application. In accordance with the Site Location of Development Law, regular maintenance of the on-site stormwater facilities are required to ensure they are functioning as intended and to prevent re-suspension and transport of sediment to existing downstream watercourses.

Maintenance of the majority of the stormwater management system components will be the responsibility of the Portland Public School Department. Provisions will be made with an outside entity to maintain the underdrained subsurface sand filter and tree box filter. The contract for maintenance will last for a minimum of five years. The person responsible for implementing the maintenance plan and coordinating maintenance procedures with contracted entities is as follows:

Douglas Sherwood, Facilities Director
Portland Public Schools
196 Allen Avenue
Portland, ME 04103

Phone: 207-842-5342
Fax: 207-874-8199
Email: sherwd@portlandschools.org

Records of all stormwater facilities inspections and maintenance work accomplished must be kept on file, retained for a minimum period of five years and made available to the MDEP upon request. A sample maintenance log is attached.

During construction of the proposed treatment areas, inspection and maintenance of erosion and sedimentation control practices and stormwater treatment practices will be the responsibility of the contractor. Refer to the attached drawings for inspection and maintenance requirements during construction.

Facilities that will require regular maintenance after the project has been accepted by the City are listed below along with a description of the required maintenance. The specified maintenance tasks and schedule is intended to identify the minimum requirements. Additional maintenance may be required based on site specific conditions

Sweeping

Paved surfaces shall be swept or vacuumed at least annually in the spring to remove all winter sand, and periodically during the year on an as-needed basis to minimize transportation of sediment during rainfall events.

Roadways and Parking Surfaces			
	Spring	Fall or Yearly	After a Major Storm
Clear accumulated winter sand in parking lots and along walkways.	X		
Sweep pavement to remove sediment.	X		
Ensure that stormwater is not impeded by accumulations of material.	X		

Vegetated Areas

Areas of maintained lawn are to be inspected regularly for signs of erosion and channelization. Areas where erosion is occurring or areas of sparse growth shall be replanted and stabilized.

Vegetated Areas			
	Spring	Fall or Yearly	After a Major Storm
Inspect all slopes and embankments.	X		
Replant bare areas or areas with sparse growth.	X		
Armor areas with rill erosions with an appropriate lining or divert the erosive flows to on-site areas able to withstand concentrated flows.	X		

Catch Basins

Catch basins shall be inspected annually for debris and the accumulation of sediments. Large debris and debris blocking inlet grates shall be removed immediately. Sediment accumulations shall be removed when sediment reaches two thirds of the total volume of the sump. Vacuuming sediments from catch basins must be done by a vacuum truck. The removed material must be disposed of in accordance with Maine's Solid Waste Disposal

Rules. Sump skimmers installed in basins located in paved areas to absorb hydrocarbons shall be inspected and replaced when saturated.

Catch Basin Systems				
	Spring	Fall or Yearly	After a Major Storm	As Needed
Inspect sump skimmer (catch basins in paved areas). Replace when saturated		X		
Inspect for accumulation of sediments		X		
Remove and legally dispose of accumulated sediments and debris from the bottom of the basin, inlet grates, inflow channels to the basin, and pipes between basins.				X
Remove floating debris and floating oils (using oil absorptive pads).	X	X		X
Inspect sumps annually and clean with vacuum pump when sediment occupies more than two thirds of the sump capacity. Clean drain lines when sediment occupies more than 20% of pipe diameter.	X	X		X

Ditches, Swales and Culverts				
	Spring	Fall or Yearly	After a Major Storm	As Needed
Inspect and remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.	X	X		X
Repair any erosion damage at the culvert's inlet and outlet.				X
Inspect after major rainfall event*. Repair erosion and sedimentation immediately			X	X

*A major storm event is classified as a rainfall total of 3.0 inches or more in a 24-hour period (a 2-year storm event).

Grassed Underdrained Soil Filter

Requirements for engineering inspection of the grassed underdrained soil filter during the construction phase are indicated on drawing C-510. During the first year of use, the grassed underdrained soil filter shall be inspected semi-annually and after major rainfall events for condition of vegetation, sediment accumulation, embankment condition, erosion, and proper functioning. Conditions requiring immediate repair include slope instability and erosion. Any bare areas shall be repaired and re-graded, if required, with new filter media or sandy loam then seeded and mulched.

The soil filter shall be inspected after every major storm in the first year to ensure proper function. A ball valve located on the outlet of the underdrain piping in the outlet control structure can be adjusted to ensure that the filter drains slowly over a period of 24-48 hours. Thereafter, the filter shall be inspected at least once every six months to ensure that it is draining within 48 hours following a one-inch storm or greater. Following storms that fill the system to overflow, the system shall drain in no less than 48 hours.

The top several inches of the filter shall be aerated or replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. The removed sediments shall be disposed of in an acceptable manner.

Fertilization of the underdrained filter areas should be avoided unless absolutely necessary to establish vegetation.

Pre-Treatment – Grassed underdrained soil filters

Grassed filter strips shall be routinely surface cleaned as to not impede the flow of stormwater. Grassed filter strips and stone diaphragms shall be inspected at least two times annually, and sediment shall be removed as required.

Grassed Underdrained Soil Filter					
	Initial Start-Up*	Spring	Fall or Yearly	After a Major Storm	As Needed
Inspect all slopes and embankments.	X	X			
Inspect drain dry time (24-48 hours) after 1" or greater storm and adjust flow rate by adjusting ball valve.	X	X			
Mow grassed underdrained soil filters, with hand held string trimmers or push-mowers only, no more than two times per growing season. Maintain grass heights of no less than 6".		X	X		
Remove sediment from soil filter.			X		X
Replace top several inches of soil filter material when water ponds on the surface of the bed for more than 72 hours.					X
Aerate the top of the filter bed to reestablish the soil's filtration capacity if ponding exceeds 48 hours.					X
Inspect grass filter strips for clogging.	X	X	X		
Remove accumulated sediment from grassed filter strips.	X	X	X		X

*Initial start-up includes all major storm events (rainfall greater than 3.0 inches in a 24-hour period (a 2-year storm event) for the first year of operation.

Underdrained Subsurface Sand Filter

Requirements for engineering inspection of the underdrained subsurface sand filter during the construction phase are indicated on drawing C-510.

The sand filter shall be inspected after every major storm in the first year to ensure proper function. A ball valve located on the outlet of the underdrain piping in the outlet control structure can be adjusted to ensure that the filter drains slowly over a period of 24-48 hours. Thereafter, the filter shall be inspected at least annually to

ensure that it is draining within 48 hours following a one-inch storm or greater. Following storms that fill the system to overflow, the system shall drain in no less than 48 hours.

Pre-Treatment – Underdrained subsurface sand filters

Regular inspection and cleaning of the primary treatment row is critical to ensure that the system functions properly. During the first year of service, the primary treatment row shall be inspected every six months. The frequency of future inspections can be adjusted based on previous inspections, but the system shall be inspected at least once a year. Inspections will be via the manholes on either end of the isolator row and inspection port risers installed during construction. Contractors performing the inspections and required maintenance shall be OSHA certified for confined space entry. When sediment accumulations exceed 3", the sediment shall be removed from the chambers using a manufacturer-approved high-pressure water sediment removal device (JetVac or similar).

Underdrained Subsurface Sand Filter					
	Initial Start-Up*	Spring	Fall or Yearly	After a Major Storm	As Needed
Inspect drain dry time (24-48 hours) after 1" or greater storm and adjust flow rate by adjusting ball valve.	X		X		
Inspect primary treatment row for accumulated sediment. Clean with manufacturer-approved high pressure water system when accumulated sediment reaches 3" or more. Inspect semiannually for first year of use an d at least annually thereafter.	X		X		X

*Initial start-up includes all major storm events (rainfall greater than 3.0 inches in a 24-hour period (a 2-year storm event) for the first year of operation.

Tree Box Filters (Filterra)

Regular inspection and maintenance shall be in accordance with the manufacturer's written recommendations. Operations and maintenance instructions for Filterra tree box filters is attached in Appendix A of this section. The requirements generally consist of semi-annual inspections by the manufacturer during the first year of service. After the first year of service, the frequency of inspections shall be determined based on the results of previous inspections but the system shall be inspected at least once a year. All inspections and maintenance shall be performed shall be performed by a manufacturer-approved inspector.

Tree Box Filter (based on Filterra inspection and maintenance requirements)					
	Initial Start-Up*	Spring	Fall or Yearly	After a Major Storm	As Needed
Inspect area around tree box filter and remove debris.	X		X	X	X
Remove debris, accumulated sediment, and mulch.	X		X	X	X
Inspect mulch level between top of filter media and underside of top slab. If the space exceeds 12", add additional Filterra engineered media until the space is 9"	X		X		X
Provide new mulch	X		X		
Inspect health of plant/shrub. Prune or replace plant if necessary	X		X		X

*Initial start-up includes all major storm events (rainfall greater than 3.0 inches in a 24-hour period (a 2-year storm event) for the first year of operation.

Sample

Stormwater Maintenance/Erosion & Sediment Control
Maintenance Log

This sample Maintenance Log is intended to accompany the Stormwater Management Facilities Maintenance Plan. The contractor shall maintain this log (or a similar log) from the start of construction through acceptance of the facilities by the City. Following acceptance of the facilities, the City shall be responsible for maintenance and updating the maintenance log. This log shall be kept on file for a minimum of five years and shall be available for review by MDEP. A certified post-construction stormwater inspector shall perform all inspections. A list of these individuals can be found on the MDEP website.

The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and/or as described in the table below.

Item	Maintenance Required & Frequency	Date Completed	Maintenance Personnel	Comments
Vegetated Areas	Inspect all slopes and embankments (annually in spring).			
	Replant bare areas or areas with sparse growth (annually in spring).			
	Armor areas with rill erosions with an appropriate lining or divert the erosive flows to on-site areas able to withstand concentrated flows (annually in spring).			
Catch Basins & Drain Lines	Inspect sump skimmers in catch basins in paved areas (annually in spring). Replace when saturated.			
	Inspect sumps (annually in spring). Clean with vacuum pump when sediment occupies more than two thirds of the sump capacity.			
	Inspect drain lines (annually in spring). Clean when sediment occupies more than 20% of pipe diameter.			
	Inspect drain line inlets/outlets (annually in spring). Remove accumulated sediments when needed.			

Sample (continued…)

Item	Maintenance Required & Frequency	Date Completed	Maintenance Personnel	Comments
Catch Basins & Drain Lines	Inspect drain line inlets/outlets (annually in spring). Repair any erosion damage at the culvert's inlet and outlet as needed.			
Ditches, Swales and Culverts	Inspect after major rainfall event*. Repair debris, erosion and sedimentation immediately.			
Grassed Under-drained Soil Filter	Inspect grass filter strips (grassed underdrained soil filters) for sediment build-up (semi annually in spring and fall). Remove accumulated sediment as needed			
	Mow grassed underdrained soil filters, with hand held string trimmers or push-mowers only, no more than two times per growing season. Maintain grass heights of no less than 6".			
	Inspect all slopes and embankments (annually in fall). Remove sediment as needed.			
	Inspect drain down time (annually in spring). Replace top several inches of soil filter material when water ponds on the surface of the bed for more than 72 hours.			
	Inspect drain down time (annually in spring). Aerate the top of the filter bed to reestablish the soil's filtration capacity if ponding exceeds 48 hours.			
Under-drained Subsurface Sand Filter	Inspect drain dry time (annually in spring). If necessary, adjust flow rate by adjusting ball valve.			

Sample (continued…)

Item	Maintenance Required & Frequency	Date Completed	Maintenance Personnel	Comments
Under-drained Subsurface Sand Filter	Inspect primary treatment row for accumulated sediment (annually in spring). Clean with manufacturer-approved high pressure water system when accumulated sediment reaches 3” or more.			
Tree box filter (Filterra)	Inspect area around and inside tree box filter (annually in spring). Remove accumulated sediment and debris. Remove mulch layer from tree box filter			
	Inspect level of engineered filtration media (annually in spring). Add additional media if necessary			
	Provide new mulch layer (annually in spring)			
	Inspect health of plant/shrub (annually in spring). Prune or replace plant if necessary			

*A major storm event is classified as a rainfall total of 3.0 inches or more in a 24-hour period (a 2-year storm event).

Appendix A - Manufacturer's Operations and Maintenance Manual (Tree Box Filter)

Operation & Maintenance (OM) Manual v01

filterra®

Bioretention Systems

CONTECH®

ENGINEERED SOLUTIONS

filterra®
Bioretention Systems

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- Design

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- Maintenance Tools, Safety Equipment and Supplies
- Maintenance Visit Procedure
- Maintenance Checklist

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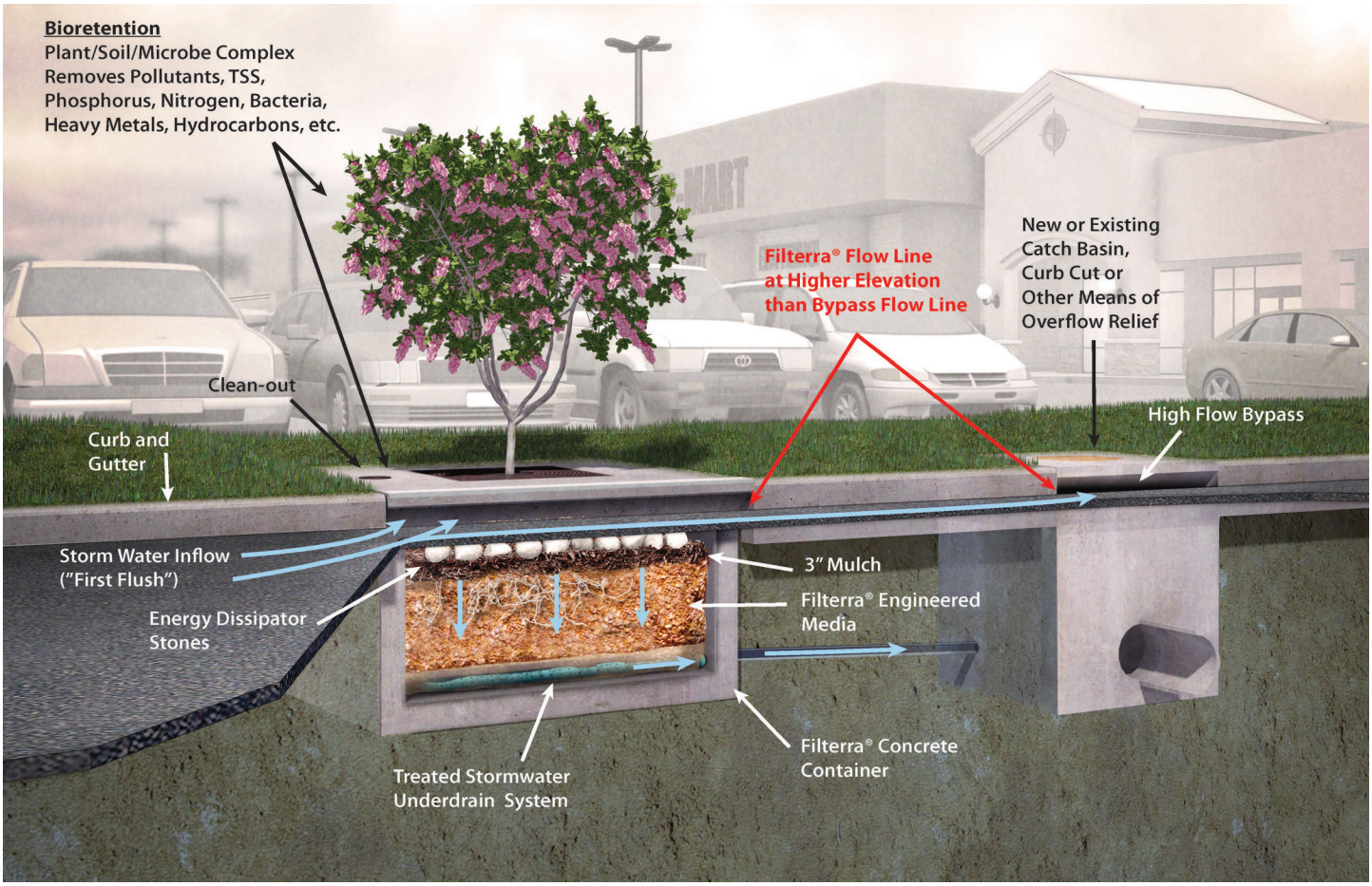
General Description

The following general specifications describe the general operations and maintenance requirements for the Contech Engineered Solutions LLC stormwater bioretention filtration system, the Filterra®. The system utilizes physical, chemical and biological mechanisms of a soil, plant and microbe complex to remove pollutants typically found in urban stormwater runoff. The treatment system is a fully equipped, pre-constructed drop-in place unit designed for applications in the urban landscape to treat contaminated runoff.



Stormwater flows through a specially designed filter media mixture contained in a landscaped concrete container. The mixture immobilizes pollutants which are then decomposed, volatilized and incorporated into the biomass of the Filterra® system's micro/macro fauna and flora. Stormwater runoff flows through the media and into an underdrain system at the bottom of the container, where the treated water is discharged. Higher flows bypass the Filterra® to a downstream inlet or outfall. Maintenance is a simple, inexpensive and safe operation that does not require confined space access, pumping or vacuum equipment or specialized tools. Properly trained landscape personnel can effectively maintain Filterra® Stormwater systems by following instructions in this manual.

Basic Operations

Filterra® is a bioretention system in a concrete box. Contaminated stormwater runoff enters the filter box through the curb inlet spreading over the 3-inch layer of mulch on the surface of the filter media. As the water passes through the mulch layer, most of the larger sediment particles and heavy metals are removed through sedimentation and chemical reactions with the organic material in the mulch. Water passes through the soil media where the finer particles are removed and other chemical reactions take place to immobilize and capture pollutants in the soil media. The cleansed water passes into an underdrain and flows to a pipe system or other appropriate discharge point. Once the pollutants are in the soil, the bacteria begin to break down and metabolize the materials and the plants begin to uptake and metabolize the pollutants. Some pollutants such as heavy metals, which are chemically bound to organic particles in the mulch, are released over time as the organic matter decomposes to release the metals to the feeder roots of the plants and the cells of the bacteria in the soil where they remain and are recycled. Other pollutants such as phosphorus are chemically bound to the soil particles and released slowly back to the plants and bacteria and used in their metabolic processes. Nitrogen goes through a very complex variety of biochemical processes where it can ultimately end up in the plant/bacteria biomass, turned to nitrogen gas or dissolves back into the water column as nitrates depending on soil temperature, pH and the availability of oxygen. The pollutants ultimately are retained in the mulch, soil and biomass with some passing out of the system into the air or back into the water.

Design and Installation

Each project presents different scopes for the use of Filterra® systems. To ensure the safe and specified function of the stormwater BMP, Contech reviews each application before supply. Information and help may be provided to the design engineer during the planning process. Correct Filterra® box sizing (by rainfall region) is essential to predict pollutant removal rates for a given area. The engineer shall submit calculations for approval by the local jurisdiction. The contractor is responsible for the correct installation of Filterra units as shown in approved plans. A comprehensive installation manual is available at www.conteches.com.

Maintenance

Why Maintain?

All stormwater treatment systems require maintenance for effective operation. This necessity is often incorporated in your property's permitting process as a legally binding BMP maintenance agreement.

- Avoid legal challenges from your jurisdiction's maintenance enforcement program.
- Prolong the expected lifespan of your Filterra media.
- Avoid more costly media replacement.
- Help reduce pollutant loads leaving your property.

Simple maintenance of the Filterra® is required to continue effective pollutant removal from stormwater runoff before discharge into downstream waters. This procedure will also extend the longevity of the living biofilter system. The unit will recycle and accumulate pollutants within the biomass, but is also subjected to other materials entering the throat. This may include trash, silt and leaves etc. which will be contained within the void below the top grate and above the mulch layer. Too much silt may inhibit the Filterra's® flow rate, which is the reason for site stabilization before activation. Regular replacement of the mulch stops accumulation of such sediment.

When to Maintain?

Contech includes a 1-year maintenance plan with each system purchase. Annual included maintenance consists of a maximum of two (2) scheduled visits. Additional maintenance may be necessary depending on sediment and trash loading (by Owner or at additional cost). The start of the maintenance plan begins when the system is activated for full operation. Full operation is defined as the unit installed, curb and gutter and transitions in place and activation (by Supplier) when mulch and plant are added and temporary throat protection removed.

Activation cannot be carried out until the site is fully stabilized (full landscaping, grass cover, final paving and street sweeping completed). Maintenance visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally required; regions with less rainfall often only require (1) one visit per annum. Varying land uses can affect maintenance frequency; e.g. some fast food restaurants require more frequent trash removal. Contributing drainage areas which are subject to new development wherein the recommended erosion and sediment control measures have not been implemented may require additional maintenance visits.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the Supplier and Owner predict future maintenance frequencies, reflecting individual site conditions.

Owners must promptly notify the (maintenance) Supplier of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology. Owners should also advise other landscape or maintenance contractors to leave all maintenance to the Supplier (i.e. no pruning or fertilizing).

Exclusion of Services

It is the responsibility of the owner to provide adequate irrigation when necessary to the plant of the Filterra® system.

Clean up due to major contamination such as oils, chemicals, toxic spills, etc. will result in additional costs and are not covered under the Supplier maintenance contract. Should a major contamination event occur the Owner must block off the outlet pipe of the Filterra® (where the cleaned runoff drains to, such as drop inlet) and block off the throat of the Filterra®. The Supplier should be informed immediately.

Maintenance Visit Summary

Each maintenance visit consists of the following simple tasks (detailed instructions below).

1. Inspection of Filterra® and surrounding area
2. Removal of tree grate and erosion control stones
3. Removal of debris, trash and mulch
4. Mulch replacement
5. Plant health evaluation and pruning or replacement as necessary
6. Clean area around Filterra®
7. Complete paperwork

Maintenance Tools, Safety Equipment and Supplies

Ideal tools include: camera, bucket, shovel, broom, pruners, hoe/rake, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local or company procedures. This may include impervious gloves where the type of trash is unknown, high visibility clothing and barricades when working in close proximity to traffic and also safety hats and shoes. A T-Bar or crowbar should be used for moving the tree grates (up to 170 lbs ea.). Most visits require minor trash removal and a full replacement of mulch. See below for actual number of bagged mulch that is required in each unit size. Mulch should be a double shredded, hardwood variety; do not use colored or dyed mulch. Some visits may require additional Filterra® engineered soil media available from the Supplier.

Box Length	Box Width	Filter Surface Area (ft^2)	Volume at 3″ (ft^3)	# of 2 ft^3 Mulch Bags
4	4	16	4	2
6	4	24	6	3
8	4	32	8	4
6	6	36	9	5
8	6	48	12	6
10	6	60	15	8
12	6	72	18	9
13	7	91	23	12

Maintenance Visit Procedure

Keep sufficient documentation of maintenance actions to predict location specific maintenance frequencies and needs. An example Maintenance Report is included in this manual.

1. Inspection of Filterra® and surrounding area

- Record individual unit before maintenance with photograph (numbered). Record on Maintenance Report (see example in this document) the following:

Record on Maintenance Report the following:

Standing Water	yes | no
Damage to Box Structure	yes | no
Damage to Grate	yes | no
Is Bypass Clear	yes | no

If yes answered to any of these observations, record with close-up photograph (numbered).

2. Removal of tree grate and erosion control stones

- Remove cast iron grates for access into Filterra® box.
- Dig out silt (if any) and mulch and remove trash & foreign items.

Record on Maintenance Report the following:

Silt/Clay	yes | no
Cups/ Bags	yes | no
Leaves	yes | no
# of Buckets Removed	_____

3. Removal of debris, trash and mulch

- After removal of mulch and debris, measure distance from the top of the Filterra® engineered media soil to the bottom of the top slab. If this distance is greater than 12", add Filterra® media (not top soil or other) to recharge to a 9" distance

Record on Maintenance Report the following:

Distance of Bottom of Top Slab (inches)	_____
# of Buckets of Media Added	_____

4. Mulch replacement

- Please see mulch specifications.
- Add double shredded mulch evenly across the entire unit to a depth of 3".
- Ensure correct repositioning of erosion control stones by the Filterra® inlet to allow for entry of trash during a storm event.
- Replace Filterra® grates correctly using appropriate lifting or moving tools, taking care not to damage the plant.

5. Plant health evaluation and pruning or replacement as necessary

- Examine the plant's health and replace if dead.
- Prune as necessary to encourage growth in the correct directions

Record on Maintenance Report the following:

Height above Grate	_____(ft)
Width at Widest Point	_____(ft)
Health	alive | dead
Damage to Plant	yes | no
Plant Replaced	yes | no

6. Clean area around Filterra®

- Clean area around unit and remove all refuse to be disposed of appropriately.

7. Complete paperwork

- Deliver Maintenance Report and photographs to appropriate location (normally Contech during maintenance contract period).
- Some jurisdictions may require submission of maintenance reports in accordance with approvals. It is the responsibility of the Owner to comply with local regulations.

Maintenance Checklist

Drainage System Failure	Problem	Conditions to Check	Condition that Should Exist	Actions
Inlet	Excessive sediment or trash accumulation.	Accumulated sediments or trash impair free flow of water into Filterra.	Inlet should be free of obstructions allowing free distributed flow of water into Filterra.	Sediments and/or trash should be removed.
Mulch Cover	Trash and floatable debris accumulation.	Excessive trash and/or debris accumulation.	Minimal trash or other debris on mulch cover.	Trash and debris should be removed and mulch cover raked level. Ensure bark nugget mulch is not used.
Mulch Cover	"Ponding" of water on mulch cover.	"Ponding" in unit could be indicative of clogging due to excessive fine sediment accumulation or spill of petroleum oils.	Stormwater should drain freely and evenly through mulch cover.	Recommend contact manufacturer and replace mulch as a minimum.
Vegetation	Plants not growing or in poor condition.	Soil/mulch too wet, evidence of spill. Incorrect plant selection. Pest infestation. Vandalism to plants.	Plants should be healthy and pest free.	Contact manufacturer for advice.
Vegetation	Plant growth excessive.	Plants should be appropriate to the species and location of Filterra.		Trim/prune plants in accordance with typical landscaping and safety needs.
Structure	Structure has visible cracks.	Cracks wider than 1/2 inch or evidence of soil particles entering the structure through the cracks.		Vault should be repaired.
Maintenance is ideally to be performed twice annually.				

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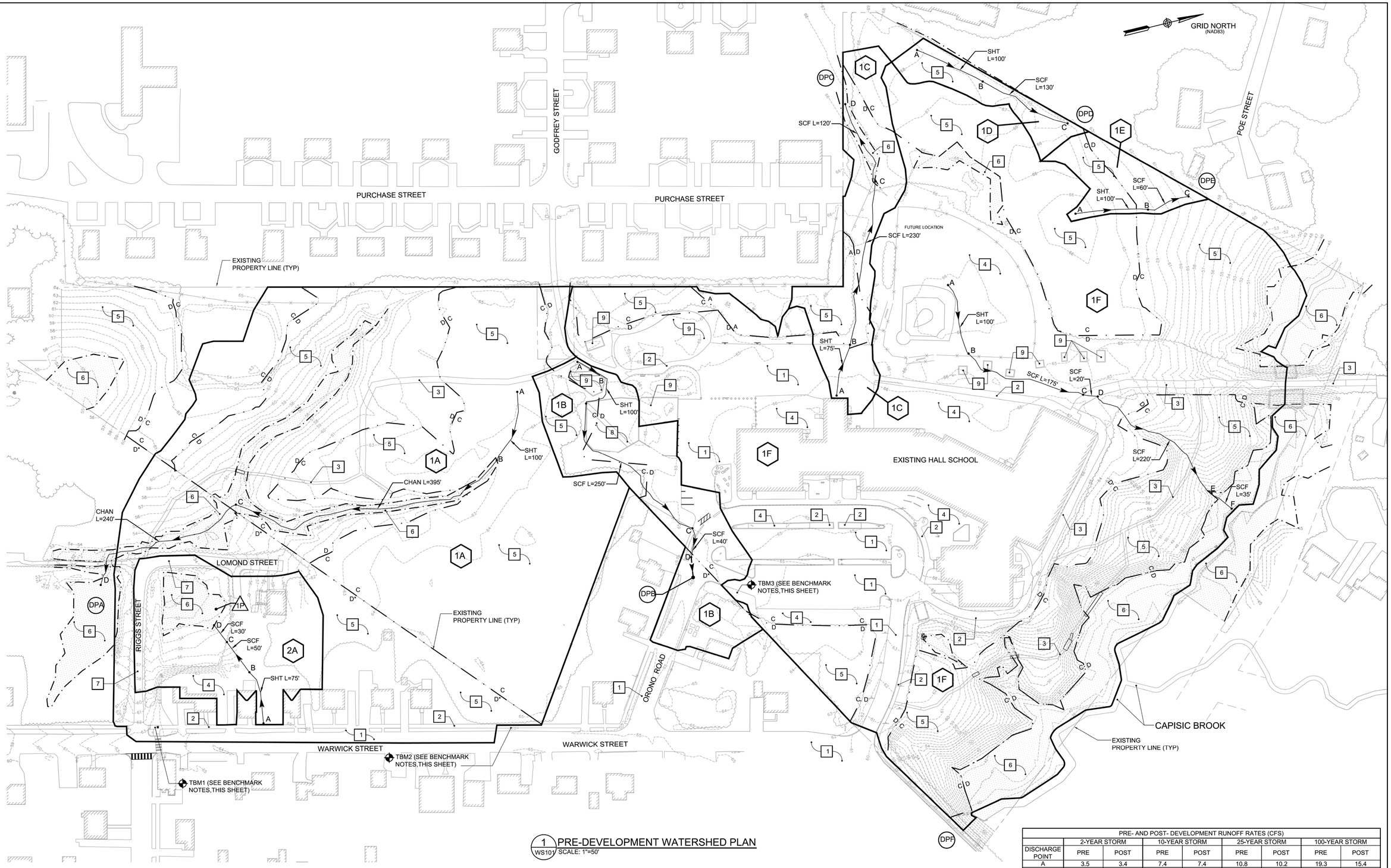
Revised 6/22/2015

Appendix B -
Pre-Development Runoff Calculations



1 WS101 PRE-DEVELOPMENT WATERSHED PLAN
SCALE: 1"=50'

PRE- AND POST- DEVELOPMENT RUNOFF RATES (CFS)								
	2-YEAR STORM		10-YEAR STORM		25-YEAR STORM		100-YEAR STORM	
DISCHARGE POINT	PRE	POST	PRE	POST	PRE	POST	PRE	POST
A	3.5	3.4	7.4	7.4	10.8	10.2	19.3	15.4
B	1.8	0.6	3.0	1.0	3.9	1.4	5.8	2.1
C	0.5	0.3	1.2	0.7	1.9	1.0	3.3	1.7
D	0.1	0.1	0.2	0.2	0.4	0.3	0.6	0.6
E	0.2	0.1	0.4	0.3	0.6	0.4	0.9	0.7
F*	10.1	2.7	19.4	7.4	27.2	18.4	42.3	37.8

*OFFSITE FLOW EXCLUDED FROM CALCULATIONS FOR CLARITY

BENCHMARK INFORMATION

1. ALL ELEVATIONS ARE BASED ON THE CITY OF PORTLAND DATUM.
2. THE PROJECT BENCHMARKS ARE AS FOLLOWS:
   a. TBM1: 3' OFFSET BRASS MONUMENT AT THE INTERSECTION OF RIGGS STREET AND WARWICK STREET. BENCHMARK ELEVATION: 63.31'.
   b. TBM2: FRONT BONNET BOLT ON FIRE HYDRANT ON THE WEST SIDE OF WARWICK STREET. BENCHMARK ELEVATION: 67.15'
   c. TBM3: SPIKE IN LIGHTPOLE #13.2, NEAR THE END OF ORONO ROAD. BENCHMARK ELEVATION: 67.16'

LEGEND:

- 1A — WATERSHED NUMBER
- A B — TIME OF CONCENTRATION FLOW PATH
- CATCH BASIN/REACH FLOW PATH
- WATERSHED BOUNDARY
- 173 — EXISTING CONTOUR LINE
- 173 — CONTOUR LINE
- D C D — HYDROLOGIC SOIL GROUP BOUNDARY
- D* — AREA OUTSIDE SOIL SURVEY BOUNDARY IS ASSUMED TO BE HSG D BASED ON CONVERSATIONS WITH STATEWIDE SURVEYS
- Q* — CATCH BASIN/POND ROUTING
- R20 C — REACH ROUTING
- DPA — DISCHARGE POINT (POINT OF ANALYSIS)
- SHT — SHEET FLOW
- SCF — SHALLOW CONCENTRATED FLOW
- CHAN — CHANNEL FLOW

KEYNOTES: (THIS SHEET ONLY)

1. EXISTING ASPHALT CONCRETE PAVEMENT.
2. EXISTING ASPHALT CONCRETE WALK.
3. EXISTING GRAVEL WALK.
4. EXISTING GRASS.
5. EXISTING WOODED AREA.
6. EXISTING WETLAND.
7. EXISTING GRAVEL ROAD.
8. EXISTING GRAVEL PLAY AREA.
9. EXISTING WOODCHIP PLAY AREA.

GRAPHIC SCALE
1"=50' — 50' 25' 0 50' 100'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: PRE-DEVELOPMENT WATERSHED PLAN

JONAH DeWATERS No. 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

NO.	DATE	DESCRIPTION	BY
REVISIONS			

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. WS101
SHEET NO. 1 of 4

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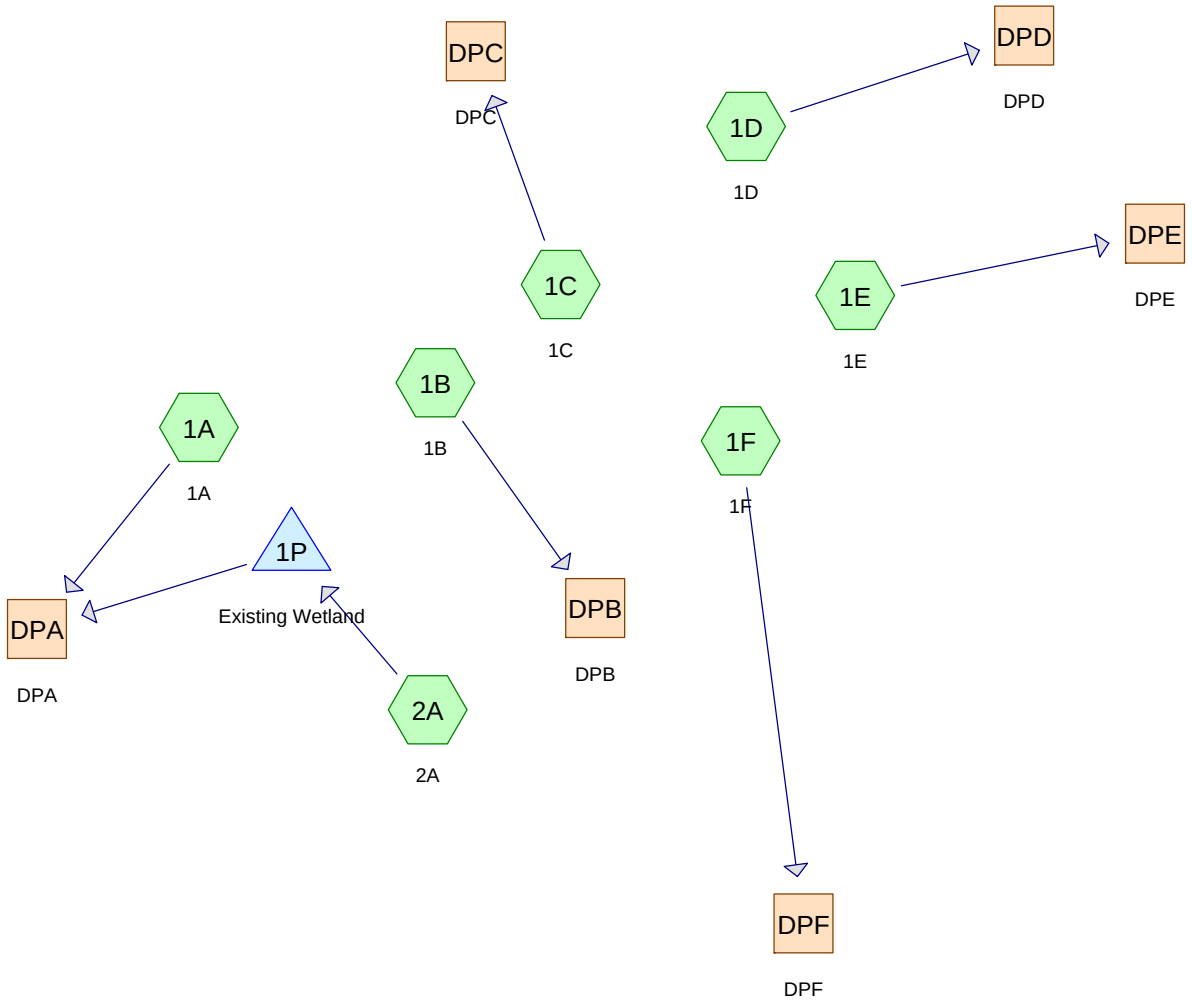


Subcat Reach Pond Link

Routing Diagram for 21602.08-Pre
Prepared by Oak Point Associates, Printed 2/1/2017
HydroCAD® 10.00-19 s/n 01227 © 2016 HydroCAD Software Solutions LLC

Summary for Subcatchment 1A: 1A

Runoff = 3.49 cfs @ 12.82 hrs, Volume= 28,017 cf, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
	4,992	98	Roofs, HSG D
	2,130	89	Gravel roads, HSG C
	6,285	91	Gravel roads, HSG D
*	13,919	98	Paved surfaces
	10,744	74	>75% Grass cover, Good, HSG C
	26,415	80	>75% Grass cover, Good, HSG D
	136,880	70	Woods, Good, HSG C
	109,080	77	Woods, Good, HSG D
	310,445	76	Weighted Average
	291,534		93.91% Pervious Area
	18,911		6.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.7	100	0.0100	0.03		**Sheet Flow, AB** Woods: Dense underbrush n= 0.800 P2= 2.70"
2.1	395	0.0230	3.11	35.81	**Channel Flow, BC** Area= 11.5 sf Perim= 34.2' r= 0.34' n= 0.035 Earth, dense weeds
1.6	240	0.0160	2.51	51.49	**Channel Flow, CD** Area= 20.5 sf Perim= 64.1' r= 0.32' n= 0.035 Earth, dense weeds
57.4	735	Total			

Summary for Subcatchment 1B: 1B

Runoff = 1.77 cfs @ 12.23 hrs, Volume= 7,663 cf, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
	647	98	Roofs, HSG D
	809	89	Gravel roads, HSG C
	4,382	91	Gravel roads, HSG D
*	10,728	98	Paved surfaces
*	82	86	Wood chip play surface, HSG C
*	3,243	89	Wood chip play surface, HSG D
	4,054	86	<50% Grass cover, Poor, HSG C
	13,407	89	<50% Grass cover, Poor, HSG D
	5,346	73	Woods, Fair, HSG C
	3,502	79	Woods, Fair, HSG D
	46,200	89	Weighted Average
	34,825		75.38% Pervious Area
	11,375		24.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0100	0.12		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 2.70"
2.6	250	0.0100	1.61		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
0.3	40	0.0100	2.03		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
0.1	30	0.0500	6.39	1.25	**Pipe Channel, DE** 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013 Corrugated PE, smooth interior
17.1	420	Total			

Summary for Subcatchment 1C: 1C

Runoff = 0.48 cfs @ 12.19 hrs, Volume= 2,109 cf, Depth= 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	5,646	98	Paved surfaces
	1,886	39	>75% Grass cover, Good, HSG A
	478	74	>75% Grass cover, Good, HSG C
	8,385	80	>75% Grass cover, Good, HSG D
	5,599	30	Woods, Good, HSG A
	3,924	70	Woods, Good, HSG C
	6,927	77	Woods, Good, HSG D
	32,845	70	Weighted Average
	27,199		82.81% Pervious Area
	5,646		17.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	75	0.0110	0.94		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
5.5	230	0.0100	0.70		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
5.7	120	0.0050	0.35		**Shallow Concentrated Flow, CD** Woodland Kv= 5.0 fps
12.5	425	Total			

Summary for Subcatchment 1D: 1D

Runoff = 0.10 cfs @ 12.70 hrs, Volume= 716 cf, Depth= 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
11,151	70	Woods, Good, HSG C
11,151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.7	100	0.0200	0.04		**Sheet Flow, AB** Woods: Dense underbrush n= 0.800 P2= 2.70"
3.1	130	0.0200	0.71		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
43.8	230	Total			

Summary for Subcatchment 1E: 1E

Runoff = 0.17 cfs @ 12.55 hrs, Volume= 1,064 cf, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
6,414	70	Woods, Good, HSG C
6,715	77	Woods, Good, HSG D
13,129	74	Weighted Average
13,129		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.6	100	0.0300	0.05		**Sheet Flow, AB** Woods: Dense underbrush n= 0.800 P2= 2.70"
0.8	60	0.0600	1.22		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
35.4	160	Total			

Summary for Subcatchment 1F: 1F

Runoff = 10.10 cfs @ 12.52 hrs, Volume= 60,888 cf, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	54,731	98	Roofs
	2,366	89	Gravel roads, HSG C
	7,284	91	Gravel roads, HSG D
*	71,967	98	Paved surfaces
*	10,341	89	Woodchip play surface, HSG D
	4,254	74	>75% Grass cover, Good, HSG C
	131,682	80	>75% Grass cover, Good, HSG D
	4,479	30	Woods, Good, HSG A
	137,815	70	Woods, Good, HSG C
	100,427	77	Woods, Good, HSG D
	525,346	81	Weighted Average
	398,648		75.88% Pervious Area
	126,698		24.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.0	100	0.0050	0.06		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
5.9	175	0.0050	0.49		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
0.3	20	0.0050	1.14		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
2.3	220	0.1000	1.58		**Shallow Concentrated Flow, DE** Woodland Kv= 5.0 fps
0.4	35	0.0700	1.32		**Shallow Concentrated Flow, EF** Woodland Kv= 5.0 fps
35.9	550	Total			

Summary for Subcatchment 2A: 2A

Runoff = 1.16 cfs @ 12.25 hrs, Volume= 5,159 cf, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,635	98	Unconnected roofs, HSG D
690	98	Paved roads w/curbs & sewers, HSG D
16,774	80	>75% Grass cover, Good, HSG D
23,786	77	Woods, Good, HSG D
3,825	91	Gravel roads, HSG D
46,710	80	Weighted Average
44,385		95.02% Pervious Area
2,325		4.98% Impervious Area
1,635		70.32% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	75	0.0100	0.08		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
0.4	50	0.0800	1.98		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
1.0	30	0.0100	0.50		**Shallow Concentrated Flow, CD** Woodland Kv= 5.0 fps
17.7	155	Total			

Summary for Reach DPA: DPA

Inflow Area = 357,155 sf, 5.95% Impervious, Inflow Depth = 0.94" for 2-Year event
Inflow = 3.49 cfs @ 12.82 hrs, Volume= 28,017 cf
Outflow = 3.49 cfs @ 12.82 hrs, Volume= 28,017 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach DPB: DPB

Inflow Area = 46,200 sf, 24.62% Impervious, Inflow Depth = 1.99" for 2-Year event
Inflow = 1.77 cfs @ 12.23 hrs, Volume= 7,663 cf
Outflow = 1.77 cfs @ 12.23 hrs, Volume= 7,663 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach DPC: DPC

Inflow Area = 32,845 sf, 17.19% Impervious, Inflow Depth = 0.77" for 2-Year event
Inflow = 0.48 cfs @ 12.19 hrs, Volume= 2,109 cf
Outflow = 0.48 cfs @ 12.19 hrs, Volume= 2,109 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach DPD: DPD

Inflow Area = 11,151 sf, 0.00% Impervious, Inflow Depth = 0.77" for 2-Year event
Inflow = 0.10 cfs @ 12.70 hrs, Volume= 716 cf
Outflow = 0.10 cfs @ 12.70 hrs, Volume= 716 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach DPE: DPE

Inflow Area = 13,129 sf, 0.00% Impervious, Inflow Depth = 0.97" for 2-Year event
Inflow = 0.17 cfs @ 12.55 hrs, Volume= 1,064 cf
Outflow = 0.17 cfs @ 12.55 hrs, Volume= 1,064 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach DPF: DPF

Inflow Area = 525,346 sf, 24.12% Impervious, Inflow Depth = 1.39" for 2-Year event
Inflow = 10.10 cfs @ 12.52 hrs, Volume= 60,888 cf
Outflow = 10.10 cfs @ 12.52 hrs, Volume= 60,888 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: Existing Wetland

Inflow Area = 46,710 sf, 4.98% Impervious, Inflow Depth = 1.33" for 2-Year event
Inflow = 1.16 cfs @ 12.25 hrs, Volume= 5,159 cf
Outflow = 0.05 cfs @ 17.29 hrs, Volume= 3,094 cf, Atten= 96%, Lag= 302.6 min
Discarded = 0.05 cfs @ 17.29 hrs, Volume= 3,094 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.52' @ 17.29 hrs Surf.Area= 4,360 sf Storage= 3,403 cf

Plug-Flow detention time= 500.8 min calculated for 3,094 cf (60% of inflow)
Center-of-Mass det. time= 386.5 min (1,241.8 - 855.3)

Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	24,289 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.00	181	0	0
52.00	2,856	1,519	1,519
53.00	5,735	4,296	5,814
54.00	9,605	7,670	13,484
55.00	12,005	10,805	24,289

Device	Routing	Invert	Outlet Devices
#1	Primary	53.31'	**25.0' long x 22.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	51.00'	**0.500 in/hr Exfiltration over Surface area**
			Conductivity to Groundwater Elevation = 0.00'

Discarded OutFlow Max=0.05 cfs @ 17.29 hrs HW=52.52' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=51.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1A: 1A Runoff Area=310,445 sf 6.09% Impervious Runoff Depth=1.08"
Flow Length=735' Tc=57.4 min CN=76 Runoff=3.49 cfs 28,017 cf

Subcatchment 1B: 1B Runoff Area=46,200 sf 24.62% Impervious Runoff Depth=1.99"
Flow Length=420' Tc=17.1 min CN=89 Runoff=1.77 cfs 7,663 cf

Subcatchment 1C: 1C Runoff Area=32,845 sf 17.19% Impervious Runoff Depth=0.77"
Flow Length=425' Tc=12.5 min CN=70 Runoff=0.48 cfs 2,109 cf

Subcatchment 1D: 1D Runoff Area=11,151 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=230' Slope=0.0200 '/' Tc=43.8 min CN=70 Runoff=0.10 cfs 716 cf

Subcatchment 1E: 1E Runoff Area=13,129 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=160' Tc=35.4 min CN=74 Runoff=0.17 cfs 1,064 cf

Subcatchment 1F: 1F Runoff Area=525,346 sf 24.12% Impervious Runoff Depth=1.39"
Flow Length=550' Tc=35.9 min CN=81 Runoff=10.10 cfs 60,888 cf

Subcatchment 2A: 2A Runoff Area=46,710 sf 4.98% Impervious Runoff Depth=1.33"
Flow Length=155' Tc=17.7 min CN=80 Runoff=1.16 cfs 5,159 cf

Reach DPA: DPA Inflow=3.49 cfs 28,017 cf
Outflow=3.49 cfs 28,017 cf

Reach DPB: DPB Inflow=1.77 cfs 7,663 cf
Outflow=1.77 cfs 7,663 cf

Reach DPC: DPC Inflow=0.48 cfs 2,109 cf
Outflow=0.48 cfs 2,109 cf

Reach DPD: DPD Inflow=0.10 cfs 716 cf
Outflow=0.10 cfs 716 cf

Reach DPE: DPE Inflow=0.17 cfs 1,064 cf
Outflow=0.17 cfs 1,064 cf

Reach DPF: DPF Inflow=10.10 cfs 60,888 cf
Outflow=10.10 cfs 60,888 cf

Pond 1P: Existing Wetland Peak Elev=52.52' Storage=3,403 cf Inflow=1.16 cfs 5,159 cf
Discarded=0.05 cfs 3,094 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 3,094 cf

Total Runoff Area = 985,826 sf Runoff Volume = 105,616 cf Average Runoff Depth = 1.29"
83.27% Pervious = 820,871 sf 16.73% Impervious = 164,955 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1A: 1A Runoff Area=310,445 sf 6.09% Impervious Runoff Depth=2.21"
Flow Length=735' Tc=57.4 min CN=76 Runoff=7.41 cfs 57,171 cf

Subcatchment 1B: 1B Runoff Area=46,200 sf 24.62% Impervious Runoff Depth=3.39"
Flow Length=420' Tc=17.1 min CN=89 Runoff=2.97 cfs 13,052 cf

Subcatchment 1C: 1C Runoff Area=32,845 sf 17.19% Impervious Runoff Depth=1.74"
Flow Length=425' Tc=12.5 min CN=70 Runoff=1.21 cfs 4,776 cf

Subcatchment 1D: 1D Runoff Area=11,151 sf 0.00% Impervious Runoff Depth=1.74"
Flow Length=230' Slope=0.0200 '/' Tc=43.8 min CN=70 Runoff=0.24 cfs 1,621 cf

Subcatchment 1E: 1E Runoff Area=13,129 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=160' Tc=35.4 min CN=74 Runoff=0.37 cfs 2,242 cf

Subcatchment 1F: 1F Runoff Area=525,346 sf 24.12% Impervious Runoff Depth=2.63"
Flow Length=550' Tc=35.9 min CN=81 Runoff=19.39 cfs 115,346 cf

Subcatchment 2A: 2A Runoff Area=46,710 sf 4.98% Impervious Runoff Depth=2.55"
Flow Length=155' Tc=17.7 min CN=80 Runoff=2.27 cfs 9,914 cf

Reach DPA: DPA Inflow=7.41 cfs 57,171 cf
Outflow=7.41 cfs 57,171 cf

Reach DPB: DPB Inflow=2.97 cfs 13,052 cf
Outflow=2.97 cfs 13,052 cf

Reach DPC: DPC Inflow=1.21 cfs 4,776 cf
Outflow=1.21 cfs 4,776 cf

Reach DPD: DPD Inflow=0.24 cfs 1,621 cf
Outflow=0.24 cfs 1,621 cf

Reach DPE: DPE Inflow=0.37 cfs 2,242 cf
Outflow=0.37 cfs 2,242 cf

Reach DPF: DPF Inflow=19.39 cfs 115,346 cf
Outflow=19.39 cfs 115,346 cf

Pond 1P: Existing Wetland Peak Elev=53.21' Storage=7,073 cf Inflow=2.27 cfs 9,914 cf
Discarded=0.08 cfs 4,787 cf Primary=0.00 cfs 0 cf Outflow=0.08 cfs 4,787 cf

Total Runoff Area = 985,826 sf Runoff Volume = 204,123 cf Average Runoff Depth = 2.48"
83.27% Pervious = 820,871 sf 16.73% Impervious = 164,955 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1A: 1A Runoff Area=310,445 sf 6.09% Impervious Runoff Depth=3.21"
Flow Length=735' Tc=57.4 min CN=76 Runoff=10.82 cfs 82,998 cf

Subcatchment 1B: 1B Runoff Area=46,200 sf 24.62% Impervious Runoff Depth=4.54"
Flow Length=420' Tc=17.1 min CN=89 Runoff=3.93 cfs 17,486 cf

Subcatchment 1C: 1C Runoff Area=32,845 sf 17.19% Impervious Runoff Depth=2.65"
Flow Length=425' Tc=12.5 min CN=70 Runoff=1.88 cfs 7,246 cf

Subcatchment 1D: 1D Runoff Area=11,151 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=230' Slope=0.0200 '/' Tc=43.8 min CN=70 Runoff=0.37 cfs 2,460 cf

Subcatchment 1E: 1E Runoff Area=13,129 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=160' Tc=35.4 min CN=74 Runoff=0.56 cfs 3,301 cf

Subcatchment 1F: 1F Runoff Area=525,346 sf 24.12% Impervious Runoff Depth=3.70"
Flow Length=550' Tc=35.9 min CN=81 Runoff=27.17 cfs 162,067 cf

Subcatchment 2A: 2A Runoff Area=46,710 sf 4.98% Impervious Runoff Depth=3.60"
Flow Length=155' Tc=17.7 min CN=80 Runoff=3.21 cfs 14,018 cf

Reach DPA: DPA Inflow=10.82 cfs 85,739 cf
Outflow=10.82 cfs 85,739 cf

Reach DPB: DPB Inflow=3.93 cfs 17,486 cf
Outflow=3.93 cfs 17,486 cf

Reach DPC: DPC Inflow=1.88 cfs 7,246 cf
Outflow=1.88 cfs 7,246 cf

Reach DPD: DPD Inflow=0.37 cfs 2,460 cf
Outflow=0.37 cfs 2,460 cf

Reach DPE: DPE Inflow=0.56 cfs 3,301 cf
Outflow=0.56 cfs 3,301 cf

Reach DPF: DPF Inflow=27.17 cfs 162,067 cf
Outflow=27.17 cfs 162,067 cf

Pond 1P: Existing Wetland Peak Elev=53.34' Storage=8,009 cf Inflow=3.21 cfs 14,018 cf
Discarded=0.08 cfs 5,343 cf Primary=0.40 cfs 2,741 cf Outflow=0.49 cfs 8,084 cf

Total Runoff Area = 985,826 sf Runoff Volume = 289,576 cf Average Runoff Depth = 3.52"
83.27% Pervious = 820,871 sf 16.73% Impervious = 164,955 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1A: 1A Runoff Area=310,445 sf 6.09% Impervious Runoff Depth=5.25"
Flow Length=735' Tc=57.4 min CN=76 Runoff=17.66 cfs 135,793 cf

Subcatchment 1B: 1B Runoff Area=46,200 sf 24.62% Impervious Runoff Depth=6.78"
Flow Length=420' Tc=17.1 min CN=89 Runoff=5.76 cfs 26,122 cf

Subcatchment 1C: 1C Runoff Area=32,845 sf 17.19% Impervious Runoff Depth=4.55"
Flow Length=425' Tc=12.5 min CN=70 Runoff=3.26 cfs 12,455 cf

Subcatchment 1D: 1D Runoff Area=11,151 sf 0.00% Impervious Runoff Depth=4.55"
Flow Length=230' Slope=0.0200 '/' Tc=43.8 min CN=70 Runoff=0.64 cfs 4,228 cf

Subcatchment 1E: 1E Runoff Area=13,129 sf 0.00% Impervious Runoff Depth=5.02"
Flow Length=160' Tc=35.4 min CN=74 Runoff=0.93 cfs 5,487 cf

Subcatchment 1F: 1F Runoff Area=525,346 sf 24.12% Impervious Runoff Depth=5.84"
Flow Length=550' Tc=35.9 min CN=81 Runoff=42.34 cfs 255,524 cf

Subcatchment 2A: 2A Runoff Area=46,710 sf 4.98% Impervious Runoff Depth=5.72"
Flow Length=155' Tc=17.7 min CN=80 Runoff=5.03 cfs 22,260 cf

Reach DPA: DPA Inflow=19.33 cfs 146,232 cf
Outflow=19.33 cfs 146,232 cf

Reach DPB: DPB Inflow=5.76 cfs 26,122 cf
Outflow=5.76 cfs 26,122 cf

Reach DPC: DPC Inflow=3.26 cfs 12,455 cf
Outflow=3.26 cfs 12,455 cf

Reach DPD: DPD Inflow=0.64 cfs 4,228 cf
Outflow=0.64 cfs 4,228 cf

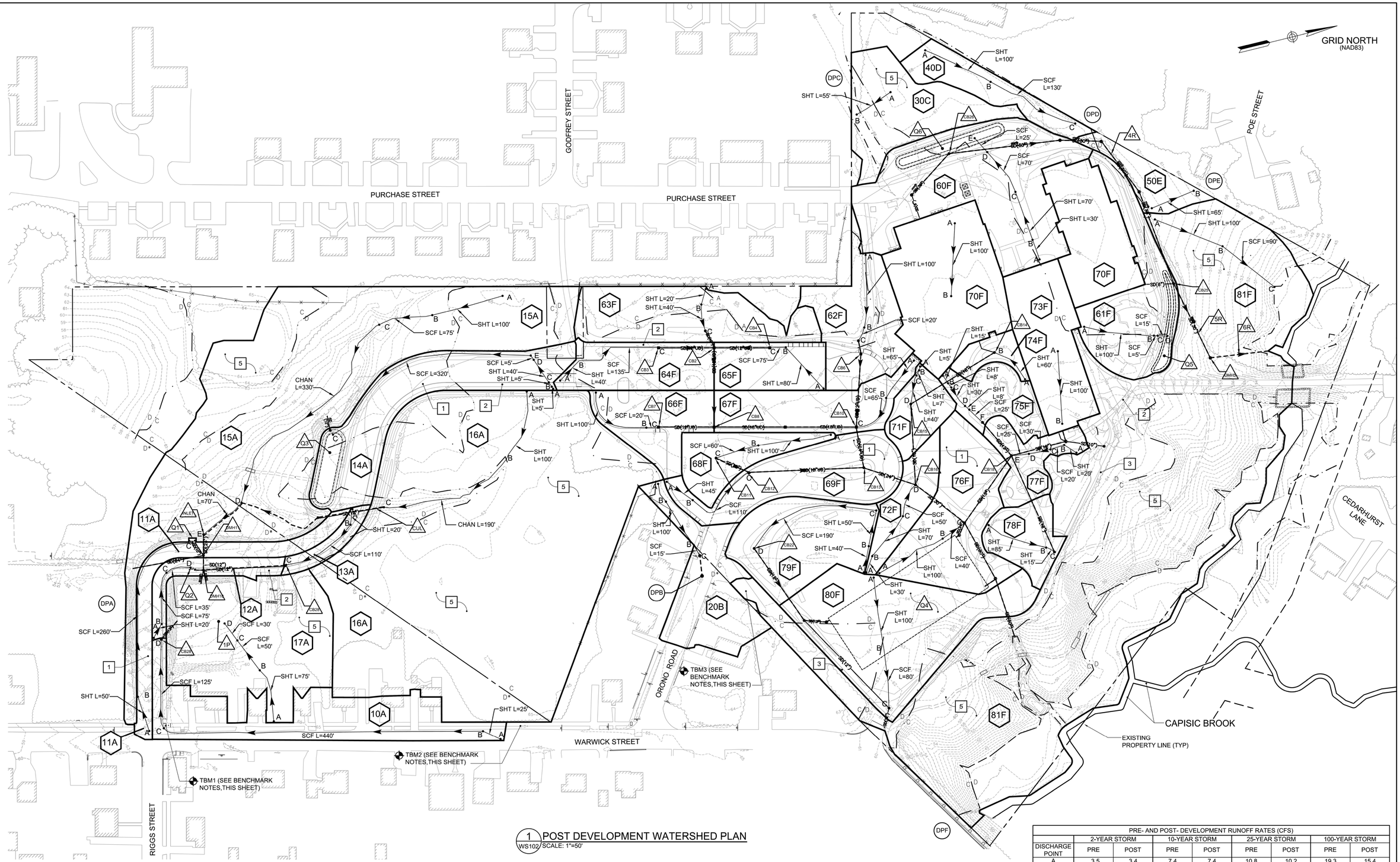
Reach DPE: DPE Inflow=0.93 cfs 5,487 cf
Outflow=0.93 cfs 5,487 cf

Reach DPF: DPF Inflow=42.34 cfs 255,524 cf
Outflow=42.34 cfs 255,524 cf

Pond 1P: Existing Wetland Peak Elev=53.45' Storage=8,783 cf Inflow=5.03 cfs 22,260 cf
Discarded=0.09 cfs 5,638 cf Primary=3.49 cfs 10,439 cf Outflow=3.58 cfs 16,077 cf

Total Runoff Area = 985,826 sf Runoff Volume = 461,870 cf Average Runoff Depth = 5.62"
83.27% Pervious = 820,871 sf 16.73% Impervious = 164,955 sf

Appendix C -
Post-Development Runoff Calculations



1 WS102 POST DEVELOPMENT WATERSHED PLAN
SCALE: 1"=50'

BENCHMARK INFORMATION

1. ALL ELEVATIONS ARE BASED ON THE CITY OF PORTLAND DATUM.
2. THE PROJECT BENCHMARKS ARE AS FOLLOWS:
   a. TBM1: 3' OFFSET BRASS MONUMENT AT THE INTERSECTION OF RIGGS STREET AND WARWICK STREET. BENCHMARK ELEVATION: 63.31'.
   b. TBM2: FRONT BONNET BOLT ON FIRE HYDRANT ON THE WEST SIDE OF WARWICK STREET. BENCHMARK ELEVATION: 67.15'
   c. TBM3: SPIKE IN LIGHTPOLE #13.2, NEAR THE END OF ORONO ROAD. BENCHMARK ELEVATION: 67.16'

LEGEND:

- 1A — WATERSHED NUMBER
- A B — TIME OF CONCENTRATION FLOW PATH
- CATCH BASIN/REACH FLOW PATH
- WATERSHED BOUNDARY
- 173 — EXISTING CONTOUR LINE
- 173 — CONTOUR LINE
- D C D C D C — HYDROLOGIC SOIL GROUP BOUNDARY
- D* — AREA OUTSIDE SOIL SURVEY BOUNDARY IS ASSUMED TO BE HSG D (BASED ON CONVERSATIONS WITH STATEWIDE SURVEYS)
- Q1 — CATCH BASIN/POND ROUTING
- R20 C — REACH ROUTING
- DPA — DISCHARGE POINT (POINT OF ANALYSIS)
- SHT — SHEET FLOW
- SCF — SHALLOW CONCENTRATED FLOW
- CHAN — CHANNEL FLOW

KEYNOTES: (THIS SHEET ONLY)

1. ASPHALT CONCRETE PAVEMENT.
2. ASPHALT CONCRETE WALK.
3. GRAVEL WALK.
4. TURF.
5. EXISTING WOODED AREA.
6. EXISTING WETLAND.
7. GRAVEL ROAD.
8. GRAVEL PLAY AREA.
9. WOODCHIP PLAY AREA.

GRAPHIC SCALE
1"=50' — 50' 25' 0 50' 100'
CHECK GRAPHIC SCALE BEFORE USING

PRE- AND POST- DEVELOPMENT RUNOFF RATES (CFS)

DISCHARGE POINT	2-YEAR STORM		10-YEAR STORM		25-YEAR STORM		100-YEAR STORM	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
A	3.5	3.4	7.4	7.4	10.8	10.2	19.3	15.4
B	1.8	0.6	3.0	1.0	3.9	1.4	5.8	2.1
C	0.5	0.3	1.2	0.7	1.9	1.0	3.3	1.7
D	0.1	0.1	0.2	0.2	0.4	0.3	0.6	0.6
E	0.2	0.1	0.4	0.3	0.6	0.4	0.9	0.7
F*	10.1	2.7	19.4	7.4	27.2	18.4	42.3	37.8

*OFFSITE FLOW EXCLUDED FROM CALCULATIONS FOR CLARITY

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE — JONAH DeW. PETERS No. 12273 — LICENSED PROFESSIONAL ENGINEER

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

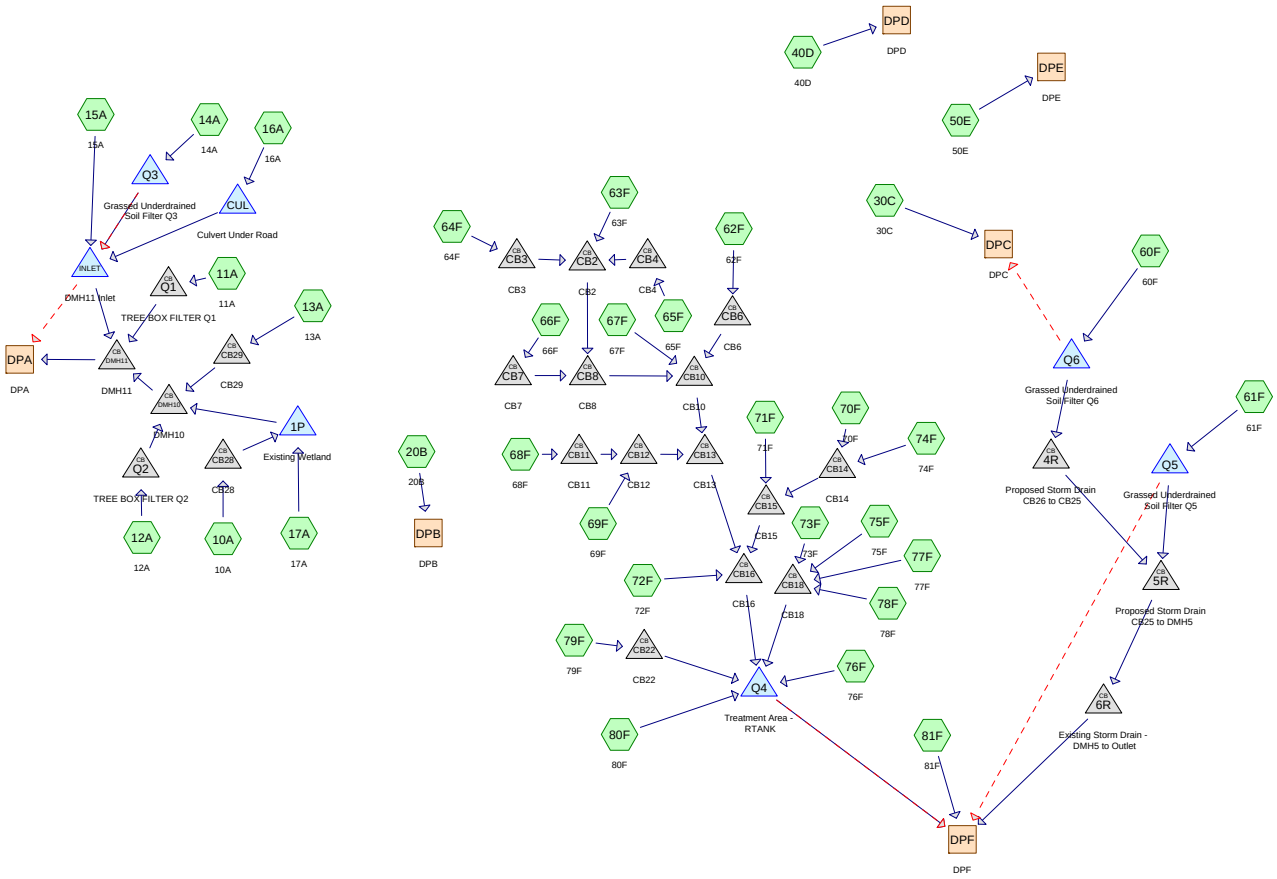
TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG: POST DEVELOPMENT WATERSHED PLAN

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. WS102
SHEET NO. 2 of 4

C:\dfile\21602.08-WS102.dwg 2/1/2017 1:26:15 PM EST



Subcat Reach Pond Link

Routing Diagram for 21602.08-Post
Prepared by Oak Point Associates, Printed 2/1/2017
HydroCAD® 10.00-19 s/n 01227 © 2016 HydroCAD Software Solutions LLC

Summary for Subcatchment 10A: 10A

Runoff = 1.53 cfs @ 12.11 hrs, Volume= 5,170 cf, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
3,589	98	Unconnected roofs, HSG D
800	91	Gravel roads, HSG D
14,629	98	Paved roads w/curbs & sewers, HSG D
7,107	80	>75% Grass cover, Good, HSG D
312	77	Woods, Good, HSG D
26,437	93	Weighted Average
8,219		31.09% Pervious Area
18,218		68.91% Impervious Area
3,589		19.70% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0060	0.59		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
6.6	440	0.0030	1.11		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
0.5	125	0.0400	4.06		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
7.8	590	Total			

Summary for Subcatchment 11A: 11A

Runoff = 0.91 cfs @ 12.03 hrs, Volume= 2,740 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
11,469	98	Paved roads w/curbs & sewers, HSG D
11,469		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0200	1.10		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
1.2	260	0.0300	3.52		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
2.0	310	Total			

Summary for Subcatchment 12A: 12A

Runoff = 0.47 cfs @ 12.01 hrs, Volume= 1,319 cf, Depth> 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
5,303	98	Paved roads w/curbs & sewers, HSG D
670	80	>75% Grass cover, Good, HSG D
5,973	96	Weighted Average
670		11.22% Pervious Area
5,303		88.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0400	1.21		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
0.3	75	0.0400	4.06		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
0.3	35	0.0100	2.03		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
0.9	130	Total, Increased to minimum Tc = 1.0 min			

Summary for Subcatchment 13A: 13A

Runoff = 0.25 cfs @ 12.02 hrs, Volume= 690 cf, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
129	98	Paved roads w/curbs & sewers, HSG C
2,427	98	Paved roads w/curbs & sewers, HSG D
5	74	>75% Grass cover, Good, HSG C
821	80	>75% Grass cover, Good, HSG D
3,382	94	Weighted Average
826		24.42% Pervious Area
2,556		75.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0300	1.08		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
0.5	110	0.0400	4.06		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
0.8	130	Total, Increased to minimum Tc = 1.0 min			

Summary for Subcatchment 14A: 14A

Runoff = 1.44 cfs @ 12.09 hrs, Volume= 4,453 cf, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
8,615	98	Paved roads w/curbs & sewers, HSG C
6,415	98	Paved roads w/curbs & sewers, HSG D
6,493	74	>75% Grass cover, Good, HSG C
5,354	80	>75% Grass cover, Good, HSG D
26,877	89	Weighted Average
11,847		44.08% Pervious Area
15,030		55.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	5	0.0200	0.69		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
1.4	5	0.0200	0.06		**Sheet Flow, BC** Grass: Dense n= 0.240 P2= 2.70"
0.8	40	0.0130	0.89		**Sheet Flow, CD** Smooth surfaces n= 0.011 P2= 2.70"
0.0	5	0.2500	3.50		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
3.6	320	0.0100	1.50		**Shallow Concentrated Flow, EF** Grassed Waterway Kv= 15.0 fps
5.9	375	Total			

Summary for Subcatchment 15A: 15A

Runoff = 1.16 cfs @ 12.86 hrs, Volume= 9,207 cf, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
67	89	Gravel roads, HSG C
1,031	91	Gravel roads, HSG D
504	98	Paved roads w/curbs & sewers, HSG D
11,017	74	>75% Grass cover, Good, HSG C
12,363	80	>75% Grass cover, Good, HSG D
20,036	70	Woods, Good, HSG C
58,634	77	Woods, Good, HSG D
103,652	76	Weighted Average
103,148		99.51% Pervious Area
504		0.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.7	100	0.0100	0.03		**Sheet Flow, AB**
					Woods: Dense underbrush n= 0.800 P2= 2.70"
0.9	75	0.0700	1.32		**Shallow Concentrated Flow, BC**
					Woodland Kv= 5.0 fps
2.4	330	0.0100	2.33	24.42	**Channel Flow, CD**
					Area= 10.5 sf Perim= 25.9' r= 0.41'
					n= 0.035 Earth, dense weeds
0.6	70	0.0100	1.99	40.70	**Channel Flow, DE**
					Area= 20.5 sf Perim= 64.1' r= 0.32'
					n= 0.035 Earth, dense weeds
0.0	30	0.0200	10.18	31.99	**Pipe Channel, EF**
					24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'
					n= 0.013 Corrugated PE, smooth interior
57.6	605	Total			

Summary for Subcatchment 16A: 16A

Runoff = 1.67 cfs @ 12.65 hrs, Volume= 11,417 cf, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,400	98	Unconnected roofs, HSG D
1,276	98	Paved roads w/curbs & sewers, HSG D
7,501	74	>75% Grass cover, Good, HSG C
13,332	80	>75% Grass cover, Good, HSG D
104,110	70	Woods, Good, HSG C
23,211	77	Woods, Good, HSG D
150,830	73	Weighted Average
148,154		98.23% Pervious Area
2,676		1.77% Impervious Area
1,400		52.32% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.7	100	0.0200	0.04		**Sheet Flow, AB**
					Woods: Dense underbrush n= 0.800 P2= 2.70"
1.0	190	0.0230	3.11	35.81	**Channel Flow, BC**
					Area= 11.5 sf Perim= 34.2' r= 0.34'
					n= 0.035 Earth, dense weeds
41.7	290	Total			

Summary for Subcatchment 17A: 17A

Runoff = 0.98 cfs @ 12.25 hrs, Volume= 4,263 cf, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,635	98	Unconnected roofs, HSG D
1,185	98	Paved roads w/curbs & sewers, HSG D
18,405	80	>75% Grass cover, Good, HSG D
17,524	77	Woods, Good, HSG D
38,749	80	Weighted Average
35,929		92.72% Pervious Area
2,820		7.28% Impervious Area
1,635		57.98% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	75	0.0100	0.08		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
0.4	50	0.0800	1.98		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0700	1.32		**Shallow Concentrated Flow, CD** Woodland Kv= 5.0 fps
17.1	155	Total			

Summary for Subcatchment 20B: 20B

Runoff = 0.60 cfs @ 12.26 hrs, Volume= 2,684 cf, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
647	98	Roofs, HSG D
6,582	98	Paved roads w/curbs & sewers, HSG D
1,003	74	>75% Grass cover, Good, HSG C
5,771	80	>75% Grass cover, Good, HSG D
193	73	Woods, Fair, HSG C
3,502	79	Woods, Fair, HSG D
17,698	87	Weighted Average
10,469		59.15% Pervious Area
7,229		40.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0050	0.09		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 2.70"
0.2	15	0.0050	1.14		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
0.1	25	0.0700	7.56	1.48	**Pipe Channel, CD** 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.013 Corrugated PE, smooth interior
18.9	140	Total			

Summary for Subcatchment 30C: 30C

Runoff = 0.28 cfs @ 12.29 hrs, Volume= 1,377 cf, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,354	80	>75% Grass cover, Good, HSG D
13,310	70	Woods, Good, HSG C
4,473	77	Woods, Good, HSG D
19,137	72	Weighted Average
19,137		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	55	0.0400	0.05		**Sheet Flow, AB** Woods: Dense underbrush n= 0.800 P2= 2.70"

Summary for Subcatchment 40D: 40D

Runoff = 0.08 cfs @ 12.70 hrs, Volume= 631 cf, Depth> 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
354	74	>75% Grass cover, Good, HSG C
9,610	70	Woods, Good, HSG C
9,964	70	Weighted Average
9,964		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.7	100	0.0200	0.04		**Sheet Flow, AB** Woods: Dense underbrush n= 0.800 P2= 2.70"
4.3	130	0.0100	0.50		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
45.0	230	Total			

Summary for Subcatchment 50E: 50E

Runoff = 0.14 cfs @ 12.27 hrs, Volume= 660 cf, Depth> 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
413	74	>75% Grass cover, Good, HSG C
928	80	>75% Grass cover, Good, HSG D
108	70	Woods, Good, HSG C
5,530	77	Woods, Good, HSG D
6,979	77	Weighted Average
6,979		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	65	0.0600	0.06		**Sheet Flow, AB** Woods: Dense underbrush n= 0.800 P2= 2.70"

Summary for Subcatchment 60F: 60F

Runoff = 1.50 cfs @ 12.14 hrs, Volume= 5,309 cf, Depth> 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
4,025	89	Gravel roads, HSG C
1,253	91	Gravel roads, HSG D
9,377	98	Paved parking, HSG D
12,009	74	>75% Grass cover, Good, HSG C
13,216	80	>75% Grass cover, Good, HSG D
48	30	Woods, Good, HSG A
39,928	84	Weighted Average
30,551		76.52% Pervious Area
9,377		23.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	30	0.0100	0.06		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
1.3	70	0.0100	0.89		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 2.70"
0.7	70	0.0100	1.61		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
0.2	25	0.1200	2.42		**Shallow Concentrated Flow, DE** Short Grass Pasture Kv= 7.0 fps
10.0	195	Total			

Summary for Subcatchment 61F: 61F

Runoff = 0.50 cfs @ 12.22 hrs, Volume= 2,125 cf, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	1,811	98	Paved parking
	8,967	74	>75% Grass cover, Good, HSG C
	9,506	80	>75% Grass cover, Good, HSG D
	20,284	79	Weighted Average
	18,473		91.07% Pervious Area
	1,811		8.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	100	0.0200	0.11		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
0.0	5	0.0200	2.87		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
0.1	15	0.2000	3.13		**Shallow Concentrated Flow, CD** Short Grass Pasture Kv= 7.0 fps
15.6	120	Total			

Summary for Subcatchment 62F: 62F

Runoff = 0.18 cfs @ 12.22 hrs, Volume= 891 cf, Depth> 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	4,867	98	Paved Surfaces
	1,688	39	>75% Grass cover, Good, HSG A
	6,039	80	>75% Grass cover, Good, HSG D
	5,512	30	Woods, Good, HSG A
	18,106	66	Weighted Average
	13,239		73.12% Pervious Area
	4,867		26.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0300	0.13		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
0.3	20	0.0300	1.21		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
0.0	15	0.0170	5.91	4.65	**Pipe Channel, CD** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.5	135	Total			

Summary for Subcatchment 63F: 63F

Runoff = 0.20 cfs @ 12.26 hrs, Volume= 1,057 cf, Depth> 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,318	74	>75% Grass cover, Good, HSG C
7,969	80	>75% Grass cover, Good, HSG D
4,538	30	Woods, Good, HSG A
7,426	70	Woods, Good, HSG C
236	77	Woods, Good, HSG D
21,487	66	Weighted Average
21,487		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	20	0.0300	0.03		**Sheet Flow, AB** Woods: Dense underbrush n= 0.800 P2= 2.70"
5.7	40	0.0400	0.12		**Sheet Flow, BC** Grass: Dense n= 0.240 P2= 2.70"
0.2	24	0.0020	2.03	1.59	**Pipe Channel, CD** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
15.5	84	Total			

Summary for Subcatchment 64F: 64F

Runoff = 1.05 cfs @ 12.03 hrs, Volume= 3,073 cf, Depth> 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	12,433	98	Paved parking
	199	74	>75% Grass cover, Good, HSG C
	743	80	>75% Grass cover, Good, HSG D
	13,375	97	Weighted Average
	942		7.04% Pervious Area
	12,433		92.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	40	0.0100	0.80		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
1.1	135	0.0100	2.03		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
1.9	175	Total			

Summary for Subcatchment 65F: 65F

Runoff = 0.79 cfs @ 12.04 hrs, Volume= 2,422 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	10,137	98	Paved parking
	10,137		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	80	0.0200	1.21		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
1.4	75	0.0020	0.91		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
2.5	155	Total			

Summary for Subcatchment 66F: 66F

Runoff = 0.98 cfs @ 12.02 hrs, Volume= 2,744 cf, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
10,926	98	Paved parking, HSG D
2,004	80	>75% Grass cover, Good, HSG D
12,930	95	Weighted Average
2,004		15.50% Pervious Area
10,926		84.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0200	1.26		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
0.4	20	0.0020	0.91		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
1.7	120	Total			

Summary for Subcatchment 67F: 67F

Runoff = 1.29 cfs @ 12.02 hrs, Volume= 3,783 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	15,546	98	Paved parking
	285	80	>75% Grass cover, Good, HSG D
	15,831	98	Weighted Average
	285		1.80% Pervious Area
	15,546		98.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	65	0.0200	1.16		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
0.5	65	0.0100	2.03		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
1.4	130	Total			

Summary for Subcatchment 68F: 68F

Runoff = 0.26 cfs @ 12.23 hrs, Volume= 1,127 cf, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
10,239	80	>75% Grass cover, Good, HSG D
10,239		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	100	0.0200	0.11		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
1.0	60	0.0200	0.99		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
16.5	160	Total			

Summary for Subcatchment 69F: 69F

Runoff = 1.67 cfs @ 12.02 hrs, Volume= 4,821 cf, Depth> 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	19,353	98	Paved parking
	1,632	80	>75% Grass cover, Good, HSG D
	20,985	97	Weighted Average
	1,632		7.78% Pervious Area
	19,353		92.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	45	0.0100	0.82		**Sheet Flow, AB**
					Smooth surfaces n= 0.011 P2= 2.70"
0.6	110	0.0200	2.87		**Shallow Concentrated Flow, BC**
					Paved Kv= 20.3 fps
1.5	155	Total			

Summary for Subcatchment 70F: 70F

Runoff = 3.58 cfs @ 12.02 hrs, Volume= 10,623 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
44,459	98	Roofs, HSG C
44,459		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	0.96		**Sheet Flow, AB**
					Smooth surfaces n= 0.011 P2= 2.70"

Summary for Subcatchment 71F: 71F

Runoff = 0.33 cfs @ 12.02 hrs, Volume= 864 cf, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	718	98	Paved parking
	6,398	80	>75% Grass cover, Good, HSG D
	7,116	82	Weighted Average
	6,398		89.91% Pervious Area
	718		10.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	5	0.0100	0.53		**Sheet Flow, AB**
					Smooth surfaces n= 0.011 P2= 2.70"
0.2	7	0.0100	0.56		**Sheet Flow, BC**
					Smooth surfaces n= 0.011 P2= 2.70"
1.0	40	0.0100	0.70		**Shallow Concentrated Flow, CD**
					Short Grass Pasture Kv= 7.0 fps
1.4	52	Total			

Summary for Subcatchment 72F: 72F

Runoff = 0.25 cfs @ 12.31 hrs, Volume= 1,173 cf, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	2,113	98	Paved parking
	6,339	80	>75% Grass cover, Good, HSG D
	8,452	85	Weighted Average
	6,339		75.00% Pervious Area
	2,113		25.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	30	0.0100	0.09		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 2.70"
15.4	70	0.0100	0.08		**Sheet Flow, BC** Grass: Dense n= 0.240 P2= 2.70"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow, CD** Short Grass Pasture Kv= 7.0 fps
21.6	150	Total			

Summary for Subcatchment 73F: 73F

Runoff = 1.45 cfs @ 12.02 hrs, Volume= 4,309 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
18,032	98	Roofs, HSG C
18,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	0.96		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"

Summary for Subcatchment 74F: 74F

Runoff = 0.12 cfs @ 12.19 hrs, Volume= 480 cf, Depth> 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
*	470	98	Paved parking
	3,493	80	>75% Grass cover, Good, HSG D
	3,963	82	Weighted Average
	3,493		88.14% Pervious Area
	470		11.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	60	0.0100	0.07		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"

Summary for Subcatchment 75F: 75F

Runoff = 0.30 cfs @ 12.19 hrs, Volume= 1,176 cf, Depth> 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
	981	91	Gravel roads, HSG D
*	945	98	Paved parking
	7,336	80	>75% Grass cover, Good, HSG D
	9,262	83	Weighted Average
	8,317		89.80% Pervious Area
	945		10.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	15	0.0100	0.06		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
0.2	8	0.0100	0.58		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 2.70"
7.8	30	0.0100	0.06		**Sheet Flow, CD** Grass: Dense n= 0.240 P2= 2.70"
0.2	8	0.0100	0.58		**Sheet Flow, DE** Smooth surfaces n= 0.011 P2= 2.70"
0.6	25	0.0100	0.70		**Shallow Concentrated Flow, EF** Short Grass Pasture Kv= 7.0 fps
0.2	58	0.0200	6.42	5.04	**Pipe Channel, FG** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
13.5	144	Total			

Summary for Subcatchment 76F: 76F

Runoff = 0.75 cfs @ 12.30 hrs, Volume= 3,517 cf, Depth> 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
645	91	Gravel roads, HSG D
7,838	98	Paved parking, HSG D
15,762	80	>75% Grass cover, Good, HSG D
24,245	86	Weighted Average
16,407		67.67% Pervious Area
7,838		32.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	100	0.0100	0.08		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
1.0	40	0.0100	0.70		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
21.5	140	Total			

Summary for Subcatchment 77F: 77F

Runoff = 0.44 cfs @ 12.06 hrs, Volume= 1,294 cf, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
	1,163	91	Gravel roads, HSG D
	4,899	80	>75% Grass cover, Good, HSG D
*	2,447	98	Paved parking
	8,509	87	Weighted Average
	6,062		71.24% Pervious Area
	2,447		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	20	0.0200	0.11		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 2.70"
0.5	20	0.0100	0.70		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
0.3	30	0.0100	1.61		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
0.6	25	0.0100	0.70		**Shallow Concentrated Flow, DE** Short Grass Pasture Kv= 7.0 fps
4.3	95	Total			

Summary for Subcatchment 78F: 78F

Runoff = 0.24 cfs @ 12.26 hrs, Volume= 1,070 cf, Depth> 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
	145	91	Gravel roads, HSG D
*	1,110	98	Paved parking
	7,188	80	>75% Grass cover, Good, HSG D
	8,443	83	Weighted Average
	7,333		86.85% Pervious Area
	1,110		13.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	85	0.0100	0.08		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
0.4	15	0.0100	0.66		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 2.70"
0.5	142	0.0100	4.54	3.56	**Pipe Channel, CD** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
18.9	242	Total			

Summary for Subcatchment 79F: 79F

Runoff = 0.47 cfs @ 12.30 hrs, Volume= 2,239 cf, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
408	91	Gravel roads, HSG D
19,963	80	>75% Grass cover, Good, HSG D
20,371	80	Weighted Average
20,371		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	40	0.0080	0.09		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 2.70"
8.9	50	0.0200	0.09		**Sheet Flow, BC** Grass: Dense n= 0.240 P2= 2.70"
4.5	190	0.0100	0.70		**Shallow Concentrated Flow, CD** Short Grass Pasture Kv= 7.0 fps
20.8	280	Total			

Summary for Subcatchment 80F: 80F

Runoff = 0.86 cfs @ 12.32 hrs, Volume= 4,170 cf, Depth> 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
	291	91	Gravel roads, HSG D
	574	89	Gravel roads, HSG C
*	4,662	98	Paved parking
	6,629	74	>75% Grass cover, Good, HSG C
	24,011	80	>75% Grass cover, Good, HSG D
	36,167	81	Weighted Average
	31,505		87.11% Pervious Area
	4,662		12.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	100	0.0100	0.08		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
1.9	80	0.0100	0.70		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
22.4	180	Total			

Summary for Subcatchment 81F: 81F

Runoff = 2.09 cfs @ 12.80 hrs, Volume= 16,216 cf, Depth> 1.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

	Area (sf)	CN	Description
	1,705	91	Gravel roads, HSG D
	2,381	89	Gravel roads, HSG C
*	3,149	98	Paved parking
	4,059	74	>75% Grass cover, Good, HSG C
	28,447	80	>75% Grass cover, Good, HSG D
	72,936	70	Woods, Good, HSG C
	79,780	77	Woods, Good, HSG D
	192,457	75	Weighted Average
	189,308		98.36% Pervious Area
	3,149		1.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.7	100	0.0100	0.03		**Sheet Flow, AB** Woods: Dense underbrush n= 0.800 P2= 2.70"
0.9	90	0.1200	1.73		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
54.6	190	Total			

Summary for Reach DPA: DPA

Inflow Area = 367,369 sf, 15.94% Impervious, Inflow Depth > 1.05" for 2-Year event
Inflow = 3.38 cfs @ 12.76 hrs, Volume= 32,122 cf
Outflow = 3.38 cfs @ 12.76 hrs, Volume= 32,122 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DPB: DPB

Inflow Area = 17,698 sf, 40.85% Impervious, Inflow Depth > 1.82" for 2-Year event
Inflow = 0.60 cfs @ 12.26 hrs, Volume= 2,684 cf
Outflow = 0.60 cfs @ 12.26 hrs, Volume= 2,684 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DPC: DPC

Inflow Area = 19,137 sf, 0.00% Impervious, Inflow Depth > 0.86" for 2-Year event
Inflow = 0.28 cfs @ 12.29 hrs, Volume= 1,377 cf
Outflow = 0.28 cfs @ 12.29 hrs, Volume= 1,377 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DPD: DPD

Inflow Area = 9,964 sf, 0.00% Impervious, Inflow Depth > 0.76" for 2-Year event
Inflow = 0.08 cfs @ 12.70 hrs, Volume= 631 cf
Outflow = 0.08 cfs @ 12.70 hrs, Volume= 631 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DPE: DPE

Inflow Area = 6,979 sf, 0.00% Impervious, Inflow Depth > 1.14" for 2-Year event
Inflow = 0.14 cfs @ 12.27 hrs, Volume= 660 cf
Outflow = 0.14 cfs @ 12.27 hrs, Volume= 660 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DPF: DPF

Inflow Area = 564,778 sf, 30.17% Impervious, Inflow Depth > 1.09" for 2-Year event
Inflow = 2.65 cfs @ 12.80 hrs, Volume= 51,534 cf
Outflow = 2.65 cfs @ 12.80 hrs, Volume= 51,534 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: Existing Wetland

Inflow Area = 65,186 sf, 32.27% Impervious, Inflow Depth > 1.74" for 2-Year event
Inflow = 2.21 cfs @ 12.13 hrs, Volume= 9,433 cf
Outflow = 0.60 cfs @ 12.52 hrs, Volume= 7,972 cf, Atten= 73%, Lag= 23.4 min
Discarded = 0.05 cfs @ 12.67 hrs, Volume= 1,706 cf
Primary = 0.55 cfs @ 12.52 hrs, Volume= 6,265 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 52.85' @ 12.67 hrs Surf.Area= 4,094 sf Storage= 4,002 cf

Plug-Flow detention time= 146.3 min calculated for 7,972 cf (85% of inflow)
Center-of-Mass det. time= 80.3 min (901.0 - 820.7)

Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	16,877 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.00	167	0	0
52.00	2,368	1,268	1,268
53.00	4,407	3,388	4,655
54.00	6,122	5,265	9,920
55.00	7,793	6,958	16,877

Device	Routing	Invert	Outlet Devices
#1	Primary	52.00'	**6.0" Round Culvert** L= 17.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 52.00' / 51.90' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Primary	53.83'	**12.0" Round Culvert** L= 15.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.83' / 51.90' S= 0.1222 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Discarded	51.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'

Discarded OutFlow Max=0.05 cfs @ 12.67 hrs HW=52.85' (Free Discharge)
└**3=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.55 cfs @ 12.52 hrs HW=52.83' TW=52.48' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.55 cfs @ 2.78 fps)
└**2=Culvert** (Controls 0.00 cfs)

Summary for Pond 4R: Proposed Storm Drain CB26 to CB25

Inflow Area = 39,928 sf, 23.48% Impervious, Inflow Depth > 0.61" for 2-Year event
Inflow = 0.13 cfs @ 13.67 hrs, Volume= 2,026 cf
Outflow = 0.13 cfs @ 13.67 hrs, Volume= 2,026 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 13.67 hrs, Volume= 2,026 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 50.21' @ 13.67 hrs
Flood Elev= 64.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.06'	**30.0" Round Culvert** L= 430.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 50.06' / 47.25' S= 0.0065 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=0.13 cfs @ 13.67 hrs HW=50.21' TW=47.34' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.13 cfs @ 1.64 fps)

Summary for Pond 5R: Proposed Storm Drain CB25 to DMH5

Inflow Area = 60,212 sf, 18.58% Impervious, Inflow Depth > 0.59" for 2-Year event
Inflow = 0.20 cfs @ 13.62 hrs, Volume= 2,976 cf
Outflow = 0.20 cfs @ 13.62 hrs, Volume= 2,976 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.20 cfs @ 13.62 hrs, Volume= 2,976 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 47.34' @ 13.62 hrs
Flood Elev= 63.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	**30.0" Round Culvert** L= 114.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.49' S= 0.0058 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=0.20 cfs @ 13.62 hrs HW=47.34' TW=46.56' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.20 cfs @ 1.75 fps)

Summary for Pond 6R: Existing Storm Drain - DMH5 to Outlet

Inflow Area = 60,212 sf, 18.58% Impervious, Inflow Depth > 0.59" for 2-Year event
Inflow = 0.20 cfs @ 13.62 hrs, Volume= 2,976 cf
Outflow = 0.20 cfs @ 13.62 hrs, Volume= 2,976 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.20 cfs @ 13.62 hrs, Volume= 2,976 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 46.56' @ 13.62 hrs
Flood Elev= 55.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.39'	**30.0" Round Culvert** L= 78.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 46.39' / 44.01' S= 0.0305 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=0.20 cfs @ 13.62 hrs HW=46.56' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.20 cfs @ 1.39 fps)

Summary for Pond CB10: CB10

Inflow Area = 91,866 sf, 58.68% Impervious, Inflow Depth > 1.82" for 2-Year event
Inflow = 4.17 cfs @ 12.03 hrs, Volume= 13,969 cf
Outflow = 4.17 cfs @ 12.03 hrs, Volume= 13,969 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.17 cfs @ 12.03 hrs, Volume= 13,969 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 60.21' @ 12.03 hrs
Flood Elev= 65.06'

Device	Routing	Invert	Outlet Devices
#1	Primary	58.98'	**24.0" Round Culvert** L= 54.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.98' / 58.69' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.97 cfs @ 12.03 hrs HW=60.20' TW=59.92' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.97 cfs @ 2.83 fps)

Summary for Pond CB11: CB11

Inflow Area = 10,239 sf, 0.00% Impervious, Inflow Depth > 1.32" for 2-Year event
Inflow = 0.26 cfs @ 12.23 hrs, Volume= 1,127 cf
Outflow = 0.26 cfs @ 12.23 hrs, Volume= 1,127 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.26 cfs @ 12.23 hrs, Volume= 1,127 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 60.35' @ 12.04 hrs
Flood Elev= 62.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	59.82'	**12.0" Round Culvert** L= 48.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.82' / 59.57' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.27 cfs @ 12.23 hrs HW=60.17' TW=59.98' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.27 cfs @ 1.63 fps)

Summary for Pond CB12: CB12

Inflow Area = 31,224 sf, 61.98% Impervious, Inflow Depth > 2.29" for 2-Year event
Inflow = 1.78 cfs @ 12.02 hrs, Volume= 5,948 cf
Outflow = 1.78 cfs @ 12.02 hrs, Volume= 5,948 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.78 cfs @ 12.02 hrs, Volume= 5,948 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 60.34' @ 12.03 hrs
Flood Elev= 63.13'

Device	Routing	Invert	Outlet Devices
#1	Primary	59.47'	**18.0" Round Culvert** L= 157.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.47' / 58.69' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.70 cfs @ 12.02 hrs HW=60.33' TW=59.92' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.70 cfs @ 2.35 fps)

Summary for Pond CB13: CB13

Inflow Area = 123,090 sf, 59.52% Impervious, Inflow Depth > 1.94" for 2-Year event
Inflow = 5.95 cfs @ 12.02 hrs, Volume= 19,917 cf
Outflow = 5.95 cfs @ 12.02 hrs, Volume= 19,917 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.95 cfs @ 12.02 hrs, Volume= 19,917 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.93' @ 12.03 hrs
Flood Elev= 63.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	58.59'	**24.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.59' / 58.21' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.82 cfs @ 12.02 hrs HW=59.92' TW=59.41' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 5.82 cfs @ 3.71 fps)

Summary for Pond CB14: CB14

Inflow Area = 48,422 sf, 92.79% Impervious, Inflow Depth > 2.75" for 2-Year event
Inflow = 3.63 cfs @ 12.02 hrs, Volume= 11,103 cf
Outflow = 3.63 cfs @ 12.02 hrs, Volume= 11,103 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.02 hrs, Volume= 11,103 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 63.66' @ 12.02 hrs
Flood Elev= 66.33'

Device	Routing	Invert	Outlet Devices
#1	Primary	62.75'	**18.0" Round Culvert** L= 135.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.75' / 61.39' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.61 cfs @ 12.02 hrs HW=63.66' TW=62.24' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.61 cfs @ 3.24 fps)

Summary for Pond CB15: CB15

Inflow Area = 55,538 sf, 82.19% Impervious, Inflow Depth > 2.59" for 2-Year event
Inflow = 3.96 cfs @ 12.02 hrs, Volume= 11,968 cf
Outflow = 3.96 cfs @ 12.02 hrs, Volume= 11,968 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.96 cfs @ 12.02 hrs, Volume= 11,968 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 62.25' @ 12.02 hrs
Flood Elev= 64.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	61.29'	**18.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.29' / 60.18' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.94 cfs @ 12.02 hrs HW=62.24' TW=59.41' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.94 cfs @ 3.32 fps)

Summary for Pond CB16: CB16

Inflow Area = 187,080 sf, 64.69% Impervious, Inflow Depth > 2.12" for 2-Year event
Inflow = 10.00 cfs @ 12.02 hrs, Volume= 33,057 cf
Outflow = 10.00 cfs @ 12.02 hrs, Volume= 33,057 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.00 cfs @ 12.02 hrs, Volume= 33,057 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.41' @ 12.02 hrs
Flood Elev= 63.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	58.11'	**30.0" Round Culvert** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.11' / 57.21' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=9.95 cfs @ 12.02 hrs HW=59.41' TW=57.64' (Dynamic Tailwater)
1=Culvert (Barrel Controls 9.95 cfs @ 5.62 fps)

Summary for Pond CB18: CB18

Inflow Area = 44,246 sf, 50.93% Impervious, Inflow Depth > 2.13" for 2-Year event
Inflow = 2.08 cfs @ 12.03 hrs, Volume= 7,849 cf
Outflow = 2.08 cfs @ 12.03 hrs, Volume= 7,849 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.08 cfs @ 12.03 hrs, Volume= 7,849 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 60.97' @ 12.03 hrs
Flood Elev= 65.54'

Device	Routing	Invert	Outlet Devices
#1	Primary	60.26'	**15.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 60.26' / 58.00' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.07 cfs @ 12.03 hrs HW=60.97' TW=57.66' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 2.07 cfs @ 2.87 fps)

Summary for Pond CB2: CB2

Inflow Area = 44,999 sf, 50.16% Impervious, Inflow Depth > 1.75" for 2-Year event
Inflow = 1.88 cfs @ 12.03 hrs, Volume= 6,551 cf
Outflow = 1.88 cfs @ 12.03 hrs, Volume= 6,551 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.88 cfs @ 12.03 hrs, Volume= 6,551 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 61.54' @ 12.04 hrs
Flood Elev= 63.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	60.71'	**18.0" Round Culvert** L= 106.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 60.71' / 60.16' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.85 cfs @ 12.03 hrs HW=61.54' TW=61.12' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.85 cfs @ 2.67 fps)

Summary for Pond CB22: CB22

Inflow Area = 20,371 sf, 0.00% Impervious, Inflow Depth > 1.32" for 2-Year event
Inflow = 0.47 cfs @ 12.30 hrs, Volume= 2,239 cf
Outflow = 0.47 cfs @ 12.30 hrs, Volume= 2,239 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 12.30 hrs, Volume= 2,239 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.83' @ 12.30 hrs
Flood Elev= 62.49'

Device	Routing	Invert	Outlet Devices
#1	Primary	59.49'	**12.0" Round Culvert** L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.49' / 57.74' S= 0.0146 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.47 cfs @ 12.30 hrs HW=59.83' TW=58.13' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.47 cfs @ 1.99 fps)

Summary for Pond CB28: CB28

Inflow Area = 26,437 sf, 68.91% Impervious, Inflow Depth > 2.35" for 2-Year event
Inflow = 1.53 cfs @ 12.11 hrs, Volume= 5,170 cf
Outflow = 1.53 cfs @ 12.11 hrs, Volume= 5,170 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.53 cfs @ 12.11 hrs, Volume= 5,170 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 56.20' @ 12.11 hrs
Flood Elev= 59.29'

Device	Routing	Invert	Outlet Devices
#1	Primary	55.54'	**12.0" Round Culvert** L= 27.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.54' / 53.89' S= 0.0594 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.52 cfs @ 12.11 hrs HW=56.20' TW=52.37' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.52 cfs @ 2.77 fps)

Summary for Pond CB29: CB29

Inflow Area = 3,382 sf, 75.58% Impervious, Inflow Depth > 2.45" for 2-Year event
Inflow = 0.25 cfs @ 12.02 hrs, Volume= 690 cf
Outflow = 0.25 cfs @ 12.02 hrs, Volume= 690 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.02 hrs, Volume= 690 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 55.24' @ 12.02 hrs
Flood Elev= 58.34'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.99'	**12.0" Round Culvert** L= 73.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 54.99' / 51.90' S= 0.0420 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.25 cfs @ 12.02 hrs HW=55.24' TW=52.38' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.25 cfs @ 1.69 fps)

Summary for Pond CB3: CB3

Inflow Area = 13,375 sf, 92.96% Impervious, Inflow Depth > 2.76" for 2-Year event
Inflow = 1.05 cfs @ 12.03 hrs, Volume= 3,073 cf
Outflow = 1.05 cfs @ 12.03 hrs, Volume= 3,073 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.03 hrs, Volume= 3,073 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 62.01' @ 12.03 hrs
Flood Elev= 64.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	61.37'	**12.0" Round Culvert** L= 80.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.37' / 60.91' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.03 hrs HW=62.01' TW=61.53' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.02 cfs @ 2.74 fps)

Summary for Pond CB4: CB4

Inflow Area = 10,137 sf,100.00% Impervious, Inflow Depth > 2.87" for 2-Year event
Inflow = 0.79 cfs @ 12.04 hrs, Volume= 2,422 cf
Outflow = 0.79 cfs @ 12.04 hrs, Volume= 2,422 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.79 cfs @ 12.04 hrs, Volume= 2,422 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 62.02' @ 12.04 hrs
Flood Elev= 64.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	61.48'	**12.0" Round Culvert** L= 80.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.48' / 60.91' S= 0.0071 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.78 cfs @ 12.04 hrs HW=62.02' TW=61.54' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.78 cfs @ 2.61 fps)

Summary for Pond CB6: CB6

Inflow Area = 18,106 sf, 26.88% Impervious, Inflow Depth > 0.59" for 2-Year event
Inflow = 0.18 cfs @ 12.22 hrs, Volume= 891 cf
Outflow = 0.18 cfs @ 12.22 hrs, Volume= 891 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.22 hrs, Volume= 891 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 60.67' @ 12.22 hrs
Flood Elev= 65.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	60.46'	**12.0" Round Culvert** L= 98.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 60.46' / 59.08' S= 0.0141 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.18 cfs @ 12.22 hrs HW=60.67' TW=59.70' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.18 cfs @ 2.24 fps)

Summary for Pond CB7: CB7

Inflow Area = 12,930 sf, 84.50% Impervious, Inflow Depth > 2.55" for 2-Year event
Inflow = 0.98 cfs @ 12.02 hrs, Volume= 2,744 cf
Outflow = 0.98 cfs @ 12.02 hrs, Volume= 2,744 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.98 cfs @ 12.02 hrs, Volume= 2,744 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 61.92' @ 12.03 hrs
Flood Elev= 64.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	61.40'	**12.0" Round Culvert** L= 74.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.40' / 60.26' S= 0.0154 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.96 cfs @ 12.02 hrs HW=61.92' TW=61.11' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.96 cfs @ 3.42 fps)

Summary for Pond CB8: CB8

Inflow Area = 57,929 sf, 57.82% Impervious, Inflow Depth > 1.93" for 2-Year event
Inflow = 2.86 cfs @ 12.03 hrs, Volume= 9,295 cf
Outflow = 2.86 cfs @ 12.03 hrs, Volume= 9,295 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.86 cfs @ 12.03 hrs, Volume= 9,295 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 61.12' @ 12.03 hrs
Flood Elev= 63.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	60.16'	**18.0" Round Culvert** L= 190.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 60.16' / 59.08' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.81 cfs @ 12.03 hrs HW=61.11' TW=60.21' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.81 cfs @ 3.38 fps)

Summary for Pond CUL: Culvert Under Road

Inflow Area = 150,830 sf, 1.77% Impervious, Inflow Depth > 0.91" for 2-Year event
Inflow = 1.67 cfs @ 12.65 hrs, Volume= 11,417 cf
Outflow = 1.67 cfs @ 12.65 hrs, Volume= 11,416 cf, Atten= 0%, Lag= 0.4 min
Primary = 1.67 cfs @ 12.65 hrs, Volume= 11,416 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 59.51' @ 12.65 hrs Surf.Area= 191 sf Storage= 55 cf

Plug-Flow detention time= 0.4 min calculated for 11,411 cf (100% of inflow)

Center-of-Mass det. time= 0.3 min (894.0 - 893.7)

Volume	Invert	Avail.Storage	Storage Description
#1	58.75'	11,195 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.75	14	0	0
59.00	12	3	3
60.00	366	189	192
61.00	1,510	938	1,130
62.00	3,942	2,726	3,856
62.50	6,790	2,683	6,539
63.00	11,834	4,656	11,195

Device	Routing	Invert	Outlet Devices
#1	Primary	58.75'	**12.0" Round Culvert** L= 90.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 58.75' / 57.00' S= 0.0194 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.66 cfs @ 12.65 hrs HW=59.51' TW=53.22' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.66 cfs @ 2.61 fps)

Summary for Pond DMH10: DMH10

Inflow Area = 74,541 sf, 38.77% Impervious, Inflow Depth > 1.33" for 2-Year event
Inflow = 0.73 cfs @ 12.01 hrs, Volume= 8,274 cf
Outflow = 0.73 cfs @ 12.01 hrs, Volume= 8,274 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.01 hrs, Volume= 8,274 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 52.53' @ 12.76 hrs
Flood Elev= 56.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.80'	**12.0" Round Culvert** L= 17.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.80' / 51.70' S= 0.0058 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.69 cfs @ 12.01 hrs HW=52.38' TW=52.23' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.69 cfs @ 2.10 fps)

Summary for Pond DMH11: DMH11

Inflow Area = 367,369 sf, 15.94% Impervious, Inflow Depth > 1.05" for 2-Year event
Inflow = 3.38 cfs @ 12.76 hrs, Volume= 32,122 cf
Outflow = 3.38 cfs @ 12.76 hrs, Volume= 32,122 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.38 cfs @ 12.76 hrs, Volume= 32,122 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 52.48' @ 12.76 hrs
Flood Elev= 56.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.60'	**24.0" Round Culvert** L= 97.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.60' / 51.10' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=3.38 cfs @ 12.76 hrs HW=52.48' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 3.38 cfs @ 3.74 fps)

Summary for Pond INLET: DMH11 Inlet

Inflow Area = 281,359 sf, 6.47% Impervious, Inflow Depth > 0.90" for 2-Year event
Inflow = 2.75 cfs @ 12.71 hrs, Volume= 21,140 cf
Outflow = 2.72 cfs @ 12.77 hrs, Volume= 21,108 cf, Atten= 1%, Lag= 3.2 min
Primary = 2.72 cfs @ 12.77 hrs, Volume= 21,108 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 53.24' @ 12.77 hrs Surf.Area= 1,478 sf Storage= 501 cf

Plug-Flow detention time= 3.3 min calculated for 21,099 cf (100% of inflow)
Center-of-Mass det. time= 2.5 min (905.5 - 903.1)

Volume	Invert	Avail.Storage	Storage Description
#1	52.50'	16,961 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.50	106	0	0
53.00	808	229	229
54.00	3,620	2,214	2,443
55.00	6,736	5,178	7,621
56.00	11,944	9,340	16,961

Device	Routing	Invert	Outlet Devices
#1	Primary	52.50'	**24.0" Round Culvert** L= 27.8' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 52.50' / 51.70' S= 0.0288 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	53.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.72 cfs @ 12.77 hrs HW=53.24' TW=52.48' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 2.72 cfs @ 2.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=52.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond Q1: TREE BOX FILTER Q1

Inflow Area = 11,469 sf,100.00% Impervious, Inflow Depth > 2.87" for 2-Year event
Inflow = 0.91 cfs @ 12.03 hrs, Volume= 2,740 cf
Outflow = 0.91 cfs @ 12.03 hrs, Volume= 2,740 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.91 cfs @ 12.03 hrs, Volume= 2,740 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 52.63' @ 12.03 hrs
Flood Elev= 55.59'

Device	Routing	Invert	Outlet Devices
#1	Primary	52.07'	**10.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 52.07' / 51.70' S= 0.0185 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.91 cfs @ 12.03 hrs HW=52.63' TW=52.24' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.91 cfs @ 3.31 fps)

Summary for Pond Q2: TREE BOX FILTER Q2

Inflow Area = 5,973 sf, 88.78% Impervious, Inflow Depth > 2.65" for 2-Year event
Inflow = 0.47 cfs @ 12.01 hrs, Volume= 1,319 cf
Outflow = 0.47 cfs @ 12.01 hrs, Volume= 1,319 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 12.01 hrs, Volume= 1,319 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 52.65' @ 12.02 hrs
Flood Elev= 55.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	52.28'	**10.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 52.28' / 51.90' S= 0.0422 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.46 cfs @ 12.01 hrs HW=52.65' TW=52.38' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.46 cfs @ 2.91 fps)

Summary for Pond Q3: Grassed Underdrained Soil Filter Q3

Inflow Area = 26,877 sf, 55.92% Impervious, Inflow Depth > 1.99" for 2-Year event
Inflow = 1.44 cfs @ 12.09 hrs, Volume= 4,453 cf
Outflow = 0.03 cfs @ 18.10 hrs, Volume= 518 cf, Atten= 98%, Lag= 361.0 min
Primary = 0.03 cfs @ 18.10 hrs, Volume= 518 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 61.01' @ 18.10 hrs Surf.Area= 3,162 sf Storage= 3,948 cf

Plug-Flow detention time= 602.2 min calculated for 518 cf (12% of inflow)
Center-of-Mass det. time= 414.1 min (1,225.7 - 811.6)

Volume	Invert	Avail.Storage	Storage Description
#1	59.50'	8,541 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.50	2,079	0	0
60.00	2,421	1,125	1,125
61.00	3,148	2,785	3,910
62.00	4,306	3,727	7,637
62.20	4,739	905	8,541

Device	Routing	Invert	Outlet Devices
#1	Primary	57.07'	**12.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 57.07' / 56.75' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	61.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	61.75'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.03 cfs @ 18.10 hrs HW=61.01' TW=52.71' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.03 cfs of 7.02 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 0.03 cfs @ 0.36 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=59.50' TW=52.50' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond Q4: Treatment Area - RTANK

Inflow Area = 312,109 sf, 50.00% Impervious, Inflow Depth > 1.95" for 2-Year event
Inflow = 12.82 cfs @ 12.03 hrs, Volume= 50,832 cf
Outflow = 0.56 cfs @ 15.74 hrs, Volume= 32,342 cf, Atten= 96%, Lag= 222.7 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.56 cfs @ 15.74 hrs, Volume= 32,342 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 58.78' @ 15.74 hrs Surf.Area= 17,715 sf Storage= 26,848 cf
Flood Elev= 63.51' Surf.Area= 17,715 sf Storage= 51,269 cf

Plug-Flow detention time= 265.7 min calculated for 32,329 cf (64% of inflow)
Center-of-Mass det. time= 158.9 min (950.7 - 791.9)

Volume	Invert	Avail.Storage	Storage Description
#1B	56.82'	1,784 cf	**6.33'W x 208.00'L x 4.54'H Field B** 5,983 cf Overall - 1,524 cf Embedded = 4,459 cf x 40.0% Voids
#2A	56.82'	16,558 cf	**78.80'W x 208.08'L x 4.54'H Field A** 74,451 cf Overall - 33,057 cf Embedded = 41,395 cf x 40.0% Voids
#3A	57.32'	31,404 cf	**ACF R-Tank HD 1.5** x 4959 Inside #2 Inside= 15.7"W x 26.0"H => 2.70 sf x 2.35'L = 6.3 cf Outside= 15.7"W x 26.0"H => 2.84 sf x 2.35'L = 6.7 cf 57 Rows of 87 Chambers
#4B	57.32'	1,524 cf	**Cultec R-330XLHD** x 29 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		51,269 cf	Total Available Storage

Storage Group B created with Chamber Wizard
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	53.95'	**30.0" Round Culvert** L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.95' / 53.00' S= 0.0106 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	58.82'	**8.0" Vert. 18" WQV Impoundment Orifice** C= 0.600
#3	Device 1	60.10'	**6.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#4	Secondary	56.82'	**1.330 in/hr Exfiltration to DMH3 over Surface area** Conductivity to Groundwater Elevation = 1.00' Phase-In= 0.01'

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.82' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.00 cfs of 30.08 cfs potential flow)
  ├─**2=18" WQV Impoundment Orifice** (Controls 0.00 cfs)
  └─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.56 cfs @ 15.74 hrs HW=58.78' TW=0.00' (Dynamic Tailwater)
└─**4=Exfiltration to DMH3** (Controls 0.56 cfs)

Summary for Pond Q5: Grassed Underdrained Soil Filter Q5

Inflow Area = 20,284 sf, 8.93% Impervious, Inflow Depth > 1.26" for 2-Year event
Inflow = 0.50 cfs @ 12.22 hrs, Volume= 2,125 cf
Outflow = 0.07 cfs @ 13.42 hrs, Volume= 950 cf, Atten= 87%, Lag= 72.0 min
Primary = 0.07 cfs @ 13.42 hrs, Volume= 950 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 63.02' @ 13.42 hrs Surf.Area= 1,634 sf Storage= 1,201 cf

Plug-Flow detention time= 276.8 min calculated for 950 cf (45% of inflow)

Center-of-Mass det. time= 151.4 min (1,005.8 - 854.4)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	3,373 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	718	0	0
63.00	1,614	1,166	1,166
63.50	2,083	924	2,090
64.00	3,048	1,283	3,373

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	63.50'	**75.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.07 cfs @ 13.42 hrs HW=63.02' TW=47.33' (Dynamic Tailwater)
↑**1=Orifice/Grate** (Weir Controls 0.07 cfs @ 0.48 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.00' TW=0.00' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond Q6: Grassed Underdrained Soil Filter Q6

Inflow Area = 39,928 sf, 23.48% Impervious, Inflow Depth > 1.60" for 2-Year event
Inflow = 1.50 cfs @ 12.14 hrs, Volume= 5,309 cf
Outflow = 0.13 cfs @ 13.67 hrs, Volume= 2,026 cf, Atten= 91%, Lag= 91.5 min
Primary = 0.13 cfs @ 13.67 hrs, Volume= 2,026 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 64.40' @ 13.67 hrs Surf.Area= 3,051 sf Storage= 3,357 cf

Plug-Flow detention time= 304.4 min calculated for 2,025 cf (38% of inflow)
Center-of-Mass det. time= 180.6 min (1,014.0 - 833.5)

Volume	Invert	Avail.Storage	Storage Description
#1	62.87'	10,943 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.87	1,456	0	0
63.00	1,573	197	197
64.00	2,530	2,052	2,248
64.37	2,901	1,005	3,253
65.00	5,616	2,683	5,936
65.80	6,902	5,007	10,943

Device	Routing	Invert	Outlet Devices
#1	Primary	64.37'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	65.16'	**17.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.13 cfs @ 13.67 hrs HW=64.40' TW=50.21' (Dynamic Tailwater)
└**1=Orifice/Grate** (Weir Controls 0.13 cfs @ 0.61 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.87' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10A: 10A Runoff Area=26,437 sf 68.91% Impervious Runoff Depth>2.35"
Flow Length=590' Tc=7.8 min CN=93 Runoff=1.53 cfs 5,170 cf

Subcatchment11A: 11A Runoff Area=11,469 sf 100.00% Impervious Runoff Depth>2.87"
Flow Length=310' Tc=2.0 min CN=98 Runoff=0.91 cfs 2,740 cf

Subcatchment12A: 12A Runoff Area=5,973 sf 88.78% Impervious Runoff Depth>2.65"
Flow Length=130' Tc=1.0 min CN=96 Runoff=0.47 cfs 1,319 cf

Subcatchment13A: 13A Runoff Area=3,382 sf 75.58% Impervious Runoff Depth>2.45"
Flow Length=130' Tc=1.0 min CN=94 Runoff=0.25 cfs 690 cf

Subcatchment14A: 14A Runoff Area=26,877 sf 55.92% Impervious Runoff Depth>1.99"
Flow Length=375' Tc=5.9 min CN=89 Runoff=1.44 cfs 4,453 cf

Subcatchment15A: 15A Runoff Area=103,652 sf 0.49% Impervious Runoff Depth>1.07"
Flow Length=605' Tc=57.6 min CN=76 Runoff=1.16 cfs 9,207 cf

Subcatchment16A: 16A Runoff Area=150,830 sf 1.77% Impervious Runoff Depth>0.91"
Flow Length=290' Tc=41.7 min CN=73 Runoff=1.67 cfs 11,417 cf

Subcatchment17A: 17A Runoff Area=38,749 sf 7.28% Impervious Runoff Depth>1.32"
Flow Length=155' Tc=17.1 min CN=80 Runoff=0.98 cfs 4,263 cf

Subcatchment20B: 20B Runoff Area=17,698 sf 40.85% Impervious Runoff Depth>1.82"
Flow Length=140' Tc=18.9 min CN=87 Runoff=0.60 cfs 2,684 cf

Subcatchment30C: 30C Runoff Area=19,137 sf 0.00% Impervious Runoff Depth>0.86"
Flow Length=55' Slope=0.0400 '/' Tc=19.1 min CN=72 Runoff=0.28 cfs 1,377 cf

Subcatchment40D: 40D Runoff Area=9,964 sf 0.00% Impervious Runoff Depth>0.76"
Flow Length=230' Tc=45.0 min CN=70 Runoff=0.08 cfs 631 cf

Subcatchment50E: 50E Runoff Area=6,979 sf 0.00% Impervious Runoff Depth>1.14"
Flow Length=65' Slope=0.0600 '/' Tc=18.6 min CN=77 Runoff=0.14 cfs 660 cf

Subcatchment60F: 60F Runoff Area=39,928 sf 23.48% Impervious Runoff Depth>1.60"
Flow Length=195' Tc=10.0 min CN=84 Runoff=1.50 cfs 5,309 cf

Subcatchment61F: 61F Runoff Area=20,284 sf 8.93% Impervious Runoff Depth>1.26"
Flow Length=120' Tc=15.6 min CN=79 Runoff=0.50 cfs 2,125 cf

Subcatchment62F: 62F Runoff Area=18,106 sf 26.88% Impervious Runoff Depth>0.59"
Flow Length=135' Tc=13.5 min CN=66 Runoff=0.18 cfs 891 cf

Subcatchment63F: 63F Runoff Area=21,487 sf 0.00% Impervious Runoff Depth>0.59"
Flow Length=84' Tc=15.5 min CN=66 Runoff=0.20 cfs 1,057 cf

Subcatchment 64F: 64F Runoff Area=13,375 sf 92.96% Impervious Runoff Depth>2.76"
Flow Length=175' Slope=0.0100 '/' Tc=1.9 min CN=97 Runoff=1.05 cfs 3,073 cf

Subcatchment 65F: 65F Runoff Area=10,137 sf 100.00% Impervious Runoff Depth>2.87"
Flow Length=155' Tc=2.5 min CN=98 Runoff=0.79 cfs 2,422 cf

Subcatchment 66F: 66F Runoff Area=12,930 sf 84.50% Impervious Runoff Depth>2.55"
Flow Length=120' Tc=1.7 min CN=95 Runoff=0.98 cfs 2,744 cf

Subcatchment 67F: 67F Runoff Area=15,831 sf 98.20% Impervious Runoff Depth>2.87"
Flow Length=130' Tc=1.4 min CN=98 Runoff=1.29 cfs 3,783 cf

Subcatchment 68F: 68F Runoff Area=10,239 sf 0.00% Impervious Runoff Depth>1.32"
Flow Length=160' Slope=0.0200 '/' Tc=16.5 min CN=80 Runoff=0.26 cfs 1,127 cf

Subcatchment 69F: 69F Runoff Area=20,985 sf 92.22% Impervious Runoff Depth>2.76"
Flow Length=155' Tc=1.5 min CN=97 Runoff=1.67 cfs 4,821 cf

Subcatchment 70F: 70F Runoff Area=44,459 sf 100.00% Impervious Runoff Depth>2.87"
Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=98 Runoff=3.58 cfs 10,623 cf

Subcatchment 71F: 71F Runoff Area=7,116 sf 10.09% Impervious Runoff Depth>1.46"
Flow Length=52' Slope=0.0100 '/' Tc=1.4 min CN=82 Runoff=0.33 cfs 864 cf

Subcatchment 72F: 72F Runoff Area=8,452 sf 25.00% Impervious Runoff Depth>1.67"
Flow Length=150' Tc=21.6 min CN=85 Runoff=0.25 cfs 1,173 cf

Subcatchment 73F: 73F Runoff Area=18,032 sf 100.00% Impervious Runoff Depth>2.87"
Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=98 Runoff=1.45 cfs 4,309 cf

Subcatchment 74F: 74F Runoff Area=3,963 sf 11.86% Impervious Runoff Depth>1.45"
Flow Length=60' Slope=0.0100 '/' Tc=13.6 min CN=82 Runoff=0.12 cfs 480 cf

Subcatchment 75F: 75F Runoff Area=9,262 sf 10.20% Impervious Runoff Depth>1.52"
Flow Length=144' Tc=13.5 min CN=83 Runoff=0.30 cfs 1,176 cf

Subcatchment 76F: 76F Runoff Area=24,245 sf 32.33% Impervious Runoff Depth>1.74"
Flow Length=140' Slope=0.0100 '/' Tc=21.5 min CN=86 Runoff=0.75 cfs 3,517 cf

Subcatchment 77F: 77F Runoff Area=8,509 sf 28.76% Impervious Runoff Depth>1.83"
Flow Length=95' Tc=4.3 min CN=87 Runoff=0.44 cfs 1,294 cf

Subcatchment 78F: 78F Runoff Area=8,443 sf 13.15% Impervious Runoff Depth>1.52"
Flow Length=242' Slope=0.0100 '/' Tc=18.9 min CN=83 Runoff=0.24 cfs 1,070 cf

Subcatchment 79F: 79F Runoff Area=20,371 sf 0.00% Impervious Runoff Depth>1.32"
Flow Length=280' Tc=20.8 min CN=80 Runoff=0.47 cfs 2,239 cf

Subcatchment 80F: 80F Runoff Area=36,167 sf 12.89% Impervious Runoff Depth>1.38"
Flow Length=180' Slope=0.0100 '/' Tc=22.4 min CN=81 Runoff=0.86 cfs 4,170 cf

Subcatchment 81F: 81F Runoff Area=192,457 sf 1.64% Impervious Runoff Depth>1.01"
Flow Length=190' Tc=54.6 min CN=75 Runoff=2.09 cfs 16,216 cf

Reach DPA: DPA Inflow=3.38 cfs 32,122 cf
Outflow=3.38 cfs 32,122 cf

Reach DPB: DPB Inflow=0.60 cfs 2,684 cf
Outflow=0.60 cfs 2,684 cf

Reach DPC: DPC Inflow=0.28 cfs 1,377 cf
Outflow=0.28 cfs 1,377 cf

Reach DPD: DPD Inflow=0.08 cfs 631 cf
Outflow=0.08 cfs 631 cf

Reach DPE: DPE Inflow=0.14 cfs 660 cf
Outflow=0.14 cfs 660 cf

Reach DPF: DPF Inflow=2.65 cfs 51,534 cf
Outflow=2.65 cfs 51,534 cf

Pond 1P: Existing Wetland Peak Elev=52.85' Storage=4,002 cf Inflow=2.21 cfs 9,433 cf
Discarded=0.05 cfs 1,706 cf Primary=0.55 cfs 6,265 cf Outflow=0.60 cfs 7,972 cf

Pond 4R: Proposed Storm Drain CB26 to CB25 Peak Elev=50.21' Inflow=0.13 cfs 2,026 cf
30.0" Round Culvert n=0.013 L=430.0' S=0.0065 '/' Outflow=0.13 cfs 2,026 cf

Pond 5R: Proposed Storm Drain CB25 to DMH5 Peak Elev=47.34' Inflow=0.20 cfs 2,976 cf
30.0" Round Culvert n=0.013 L=114.0' S=0.0058 '/' Outflow=0.20 cfs 2,976 cf

Pond 6R: Existing Storm Drain - DMH5 to Outlet Peak Elev=46.56' Inflow=0.20 cfs 2,976 cf
30.0" Round Culvert n=0.013 L=78.0' S=0.0305 '/' Outflow=0.20 cfs 2,976 cf

Pond CB10: CB10 Peak Elev=60.21' Inflow=4.17 cfs 13,969 cf
24.0" Round Culvert n=0.013 L=54.0' S=0.0054 '/' Outflow=4.17 cfs 13,969 cf

Pond CB11: CB11 Peak Elev=60.35' Inflow=0.26 cfs 1,127 cf
12.0" Round Culvert n=0.013 L=48.0' S=0.0052 '/' Outflow=0.26 cfs 1,127 cf

Pond CB12: CB12 Peak Elev=60.34' Inflow=1.78 cfs 5,948 cf
18.0" Round Culvert n=0.013 L=157.0' S=0.0050 '/' Outflow=1.78 cfs 5,948 cf

Pond CB13: CB13 Peak Elev=59.93' Inflow=5.95 cfs 19,917 cf
24.0" Round Culvert n=0.013 L=72.0' S=0.0053 '/' Outflow=5.95 cfs 19,917 cf

Pond CB14: CB14 Peak Elev=63.66' Inflow=3.63 cfs 11,103 cf
18.0" Round Culvert n=0.013 L=135.0' S=0.0101 '/' Outflow=3.63 cfs 11,103 cf

Pond CB15: CB15 Peak Elev=62.25' Inflow=3.96 cfs 11,968 cf
18.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=3.96 cfs 11,968 cf

Pond CB16: CB16 Peak Elev=59.41' Inflow=10.00 cfs 33,057 cf
30.0" Round Culvert n=0.013 L=85.0' S=0.0106 '/' Outflow=10.00 cfs 33,057 cf

Pond CB18: CB18 Peak Elev=60.97' Inflow=2.08 cfs 7,849 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0205 '/' Outflow=2.08 cfs 7,849 cf

Pond CB2: CB2 Peak Elev=61.54' Inflow=1.88 cfs 6,551 cf
18.0" Round Culvert n=0.013 L=106.0' S=0.0052 '/' Outflow=1.88 cfs 6,551 cf

Pond CB22: CB22 Peak Elev=59.83' Inflow=0.47 cfs 2,239 cf
12.0" Round Culvert n=0.013 L=120.0' S=0.0146 '/' Outflow=0.47 cfs 2,239 cf

Pond CB28: CB28 Peak Elev=56.20' Inflow=1.53 cfs 5,170 cf
12.0" Round Culvert n=0.013 L=27.8' S=0.0594 '/' Outflow=1.53 cfs 5,170 cf

Pond CB29: CB29 Peak Elev=55.24' Inflow=0.25 cfs 690 cf
12.0" Round Culvert n=0.013 L=73.5' S=0.0420 '/' Outflow=0.25 cfs 690 cf

Pond CB3: CB3 Peak Elev=62.01' Inflow=1.05 cfs 3,073 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0058 '/' Outflow=1.05 cfs 3,073 cf

Pond CB4: CB4 Peak Elev=62.02' Inflow=0.79 cfs 2,422 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0071 '/' Outflow=0.79 cfs 2,422 cf

Pond CB6: CB6 Peak Elev=60.67' Inflow=0.18 cfs 891 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0141 '/' Outflow=0.18 cfs 891 cf

Pond CB7: CB7 Peak Elev=61.92' Inflow=0.98 cfs 2,744 cf
12.0" Round Culvert n=0.013 L=74.0' S=0.0154 '/' Outflow=0.98 cfs 2,744 cf

Pond CB8: CB8 Peak Elev=61.12' Inflow=2.86 cfs 9,295 cf
18.0" Round Culvert n=0.013 L=190.0' S=0.0057 '/' Outflow=2.86 cfs 9,295 cf

Pond CUL: Culvert Under Road Peak Elev=59.51' Storage=55 cf Inflow=1.67 cfs 11,417 cf
12.0" Round Culvert n=0.013 L=90.0' S=0.0194 '/' Outflow=1.67 cfs 11,416 cf

Pond DMH10: DMH10 Peak Elev=52.53' Inflow=0.73 cfs 8,274 cf
12.0" Round Culvert n=0.013 L=17.2' S=0.0058 '/' Outflow=0.73 cfs 8,274 cf

Pond DMH11: DMH11 Peak Elev=52.48' Inflow=3.38 cfs 32,122 cf
24.0" Round Culvert n=0.013 L=97.2' S=0.0051 '/' Outflow=3.38 cfs 32,122 cf

Pond INLET: DMH11 Inlet Peak Elev=53.24' Storage=501 cf Inflow=2.75 cfs 21,140 cf
Primary=2.72 cfs 21,108 cf Secondary=0.00 cfs 0 cf Outflow=2.72 cfs 21,108 cf

Pond Q1: TREE BOX FILTER Q1 Peak Elev=52.63' Inflow=0.91 cfs 2,740 cf
10.0" Round Culvert n=0.013 L=20.0' S=0.0185 '/' Outflow=0.91 cfs 2,740 cf

Pond Q2: TREE BOX FILTER Q2 Peak Elev=52.65' Inflow=0.47 cfs 1,319 cf
10.0" Round Culvert n=0.013 L=9.0' S=0.0422 '/' Outflow=0.47 cfs 1,319 cf

Pond Q3: Grassed Underdrained Soil Filter Q3 Peak Elev=61.01' Storage=3,948 cf Inflow=1.44 cfs 4,453 cf
Primary=0.03 cfs 518 cf Secondary=0.00 cfs 0 cf Outflow=0.03 cfs 518 cf

Pond Q4: Treatment Area - RTANK Peak Elev=58.78' Storage=26,848 cf Inflow=12.82 cfs 50,832 cf
Primary=0.00 cfs 0 cf Secondary=0.56 cfs 32,342 cf Outflow=0.56 cfs 32,342 cf

Pond Q5: Grassed Underdrained Soil Filter Q5 Peak Elev=63.02' Storage=1,201 cf Inflow=0.50 cfs 2,125 cf
Primary=0.07 cfs 950 cf Secondary=0.00 cfs 0 cf Outflow=0.07 cfs 950 cf

Pond Q6: Grassed Underdrained Soil Filter Q6 Peak Elev=64.40' Storage=3,357 cf Inflow=1.50 cfs 5,309 cf
Primary=0.13 cfs 2,026 cf Secondary=0.00 cfs 0 cf Outflow=0.13 cfs 2,026 cf

Total Runoff Area = 985,925 sf Runoff Volume = 119,095 cf Average Runoff Depth = 1.45"
76.04% Pervious = 749,727 sf 23.96% Impervious = 236,198 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10A: 10A Runoff Area=26,437 sf 68.91% Impervious Runoff Depth>3.80"
Flow Length=590' Tc=7.8 min CN=93 Runoff=2.41 cfs 8,374 cf

Subcatchment11A: 11A Runoff Area=11,469 sf 100.00% Impervious Runoff Depth>4.36"
Flow Length=310' Tc=2.0 min CN=98 Runoff=1.37 cfs 4,170 cf

Subcatchment12A: 12A Runoff Area=5,973 sf 88.78% Impervious Runoff Depth>4.13"
Flow Length=130' Tc=1.0 min CN=96 Runoff=0.72 cfs 2,058 cf

Subcatchment13A: 13A Runoff Area=3,382 sf 75.58% Impervious Runoff Depth>3.91"
Flow Length=130' Tc=1.0 min CN=94 Runoff=0.40 cfs 1,103 cf

Subcatchment14A: 14A Runoff Area=26,877 sf 55.92% Impervious Runoff Depth>3.39"
Flow Length=375' Tc=5.9 min CN=89 Runoff=2.40 cfs 7,586 cf

Subcatchment15A: 15A Runoff Area=103,652 sf 0.49% Impervious Runoff Depth>2.18"
Flow Length=605' Tc=57.6 min CN=76 Runoff=2.46 cfs 18,831 cf

Subcatchment16A: 16A Runoff Area=150,830 sf 1.77% Impervious Runoff Depth>1.95"
Flow Length=290' Tc=41.7 min CN=73 Runoff=3.79 cfs 24,528 cf

Subcatchment17A: 17A Runoff Area=38,749 sf 7.28% Impervious Runoff Depth>2.54"
Flow Length=155' Tc=17.1 min CN=80 Runoff=1.91 cfs 8,196 cf

Subcatchment20B: 20B Runoff Area=17,698 sf 40.85% Impervious Runoff Depth>3.18"
Flow Length=140' Tc=18.9 min CN=87 Runoff=1.04 cfs 4,692 cf

Subcatchment30C: 30C Runoff Area=19,137 sf 0.00% Impervious Runoff Depth>1.89"
Flow Length=55' Slope=0.0400 '/' Tc=19.1 min CN=72 Runoff=0.66 cfs 3,008 cf

Subcatchment40D: 40D Runoff Area=9,964 sf 0.00% Impervious Runoff Depth>1.72"
Flow Length=230' Tc=45.0 min CN=70 Runoff=0.21 cfs 1,432 cf

Subcatchment50E: 50E Runoff Area=6,979 sf 0.00% Impervious Runoff Depth>2.28"
Flow Length=65' Slope=0.0600 '/' Tc=18.6 min CN=77 Runoff=0.30 cfs 1,328 cf

Subcatchment60F: 60F Runoff Area=39,928 sf 23.48% Impervious Runoff Depth>2.90"
Flow Length=195' Tc=10.0 min CN=84 Runoff=2.72 cfs 9,654 cf

Subcatchment61F: 61F Runoff Area=20,284 sf 8.93% Impervious Runoff Depth>2.45"
Flow Length=120' Tc=15.6 min CN=79 Runoff=1.00 cfs 4,146 cf

Subcatchment62F: 62F Runoff Area=18,106 sf 26.88% Impervious Runoff Depth>1.46"
Flow Length=135' Tc=13.5 min CN=66 Runoff=0.52 cfs 2,197 cf

Subcatchment63F: 63F Runoff Area=21,487 sf 0.00% Impervious Runoff Depth>1.46"
Flow Length=84' Tc=15.5 min CN=66 Runoff=0.59 cfs 2,605 cf

Subcatchment 64F: 64F Runoff Area=13,375 sf 92.96% Impervious Runoff Depth>4.25"
Flow Length=175' Slope=0.0100 '/' Tc=1.9 min CN=97 Runoff=1.58 cfs 4,734 cf

Subcatchment 65F: 65F Runoff Area=10,137 sf 100.00% Impervious Runoff Depth>4.36"
Flow Length=155' Tc=2.5 min CN=98 Runoff=1.19 cfs 3,685 cf

Subcatchment 66F: 66F Runoff Area=12,930 sf 84.50% Impervious Runoff Depth>4.02"
Flow Length=120' Tc=1.7 min CN=95 Runoff=1.51 cfs 4,335 cf

Subcatchment 67F: 67F Runoff Area=15,831 sf 98.20% Impervious Runoff Depth>4.36"
Flow Length=130' Tc=1.4 min CN=98 Runoff=1.92 cfs 5,756 cf

Subcatchment 68F: 68F Runoff Area=10,239 sf 0.00% Impervious Runoff Depth>2.54"
Flow Length=160' Slope=0.0200 '/' Tc=16.5 min CN=80 Runoff=0.51 cfs 2,166 cf

Subcatchment 69F: 69F Runoff Area=20,985 sf 92.22% Impervious Runoff Depth>4.25"
Flow Length=155' Tc=1.5 min CN=97 Runoff=2.52 cfs 7,428 cf

Subcatchment 70F: 70F Runoff Area=44,459 sf 100.00% Impervious Runoff Depth>4.36"
Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=98 Runoff=5.35 cfs 16,165 cf

Subcatchment 71F: 71F Runoff Area=7,116 sf 10.09% Impervious Runoff Depth>2.72"
Flow Length=52' Slope=0.0100 '/' Tc=1.4 min CN=82 Runoff=0.62 cfs 1,615 cf

Subcatchment 72F: 72F Runoff Area=8,452 sf 25.00% Impervious Runoff Depth>2.99"
Flow Length=150' Tc=21.6 min CN=85 Runoff=0.44 cfs 2,105 cf

Subcatchment 73F: 73F Runoff Area=18,032 sf 100.00% Impervious Runoff Depth>4.36"
Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=98 Runoff=2.17 cfs 6,556 cf

Subcatchment 74F: 74F Runoff Area=3,963 sf 11.86% Impervious Runoff Depth>2.72"
Flow Length=60' Slope=0.0100 '/' Tc=13.6 min CN=82 Runoff=0.23 cfs 897 cf

Subcatchment 75F: 75F Runoff Area=9,262 sf 10.20% Impervious Runoff Depth>2.81"
Flow Length=144' Tc=13.5 min CN=83 Runoff=0.55 cfs 2,167 cf

Subcatchment 76F: 76F Runoff Area=24,245 sf 32.33% Impervious Runoff Depth>3.08"
Flow Length=140' Slope=0.0100 '/' Tc=21.5 min CN=86 Runoff=1.31 cfs 6,230 cf

Subcatchment 77F: 77F Runoff Area=8,509 sf 28.76% Impervious Runoff Depth>3.19"
Flow Length=95' Tc=4.3 min CN=87 Runoff=0.77 cfs 2,262 cf

Subcatchment 78F: 78F Runoff Area=8,443 sf 13.15% Impervious Runoff Depth>2.80"
Flow Length=242' Slope=0.0100 '/' Tc=18.9 min CN=83 Runoff=0.44 cfs 1,973 cf

Subcatchment 79F: 79F Runoff Area=20,371 sf 0.00% Impervious Runoff Depth>2.54"
Flow Length=280' Tc=20.8 min CN=80 Runoff=0.93 cfs 4,305 cf

Subcatchment 80F: 80F Runoff Area=36,167 sf 12.89% Impervious Runoff Depth>2.62"
Flow Length=180' Slope=0.0100 '/' Tc=22.4 min CN=81 Runoff=1.65 cfs 7,905 cf

Subcatchment 81F: 81F Runoff Area=192,457 sf 1.64% Impervious Runoff Depth>2.10"
Flow Length=190' Tc=54.6 min CN=75 Runoff=4.53 cfs 33,703 cf

Reach DPA: DPA Inflow=7.36 cfs 67,143 cf
Outflow=7.36 cfs 67,143 cf

Reach DPB: DPB Inflow=1.04 cfs 4,692 cf
Outflow=1.04 cfs 4,692 cf

Reach DPC: DPC Inflow=0.66 cfs 3,008 cf
Outflow=0.66 cfs 3,008 cf

Reach DPD: DPD Inflow=0.21 cfs 1,432 cf
Outflow=0.21 cfs 1,432 cf

Reach DPE: DPE Inflow=0.30 cfs 1,328 cf
Outflow=0.30 cfs 1,328 cf

Reach DPF: DPF Inflow=7.35 cfs 101,568 cf
Outflow=7.35 cfs 101,568 cf

Pond 1P: Existing Wetland Peak Elev=53.58' Storage=7,491 cf Inflow=3.83 cfs 16,570 cf
Discarded=0.06 cfs 2,119 cf Primary=0.82 cfs 12,864 cf Outflow=0.88 cfs 14,983 cf

Pond 4R: Proposed Storm Drain CB26 to CB25 Peak Elev=50.57' Inflow=1.57 cfs 6,360 cf
30.0" Round Culvert n=0.013 L=430.0' S=0.0065 '/' Outflow=1.57 cfs 6,360 cf

Pond 5R: Proposed Storm Drain CB25 to DMH5 Peak Elev=47.80' Inflow=2.32 cfs 9,326 cf
30.0" Round Culvert n=0.013 L=114.0' S=0.0058 '/' Outflow=2.32 cfs 9,326 cf

Pond 6R: Existing Storm Drain - DMH5 to Outlet Peak Elev=46.98' Inflow=2.32 cfs 9,326 cf
30.0" Round Culvert n=0.013 L=78.0' S=0.0305 '/' Outflow=2.32 cfs 9,326 cf

Pond CB10: CB10 Peak Elev=60.69' Inflow=6.59 cfs 23,312 cf
24.0" Round Culvert n=0.013 L=54.0' S=0.0054 '/' Outflow=6.59 cfs 23,312 cf

Pond CB11: CB11 Peak Elev=60.72' Inflow=0.51 cfs 2,166 cf
12.0" Round Culvert n=0.013 L=48.0' S=0.0052 '/' Outflow=0.51 cfs 2,166 cf

Pond CB12: CB12 Peak Elev=60.72' Inflow=2.75 cfs 9,594 cf
18.0" Round Culvert n=0.013 L=157.0' S=0.0050 '/' Outflow=2.75 cfs 9,594 cf

Pond CB13: CB13 Peak Elev=60.40' Inflow=9.32 cfs 32,907 cf
24.0" Round Culvert n=0.013 L=72.0' S=0.0053 '/' Outflow=9.32 cfs 32,907 cf

Pond CB14: CB14 Peak Elev=63.94' Inflow=5.46 cfs 17,062 cf
18.0" Round Culvert n=0.013 L=135.0' S=0.0101 '/' Outflow=5.46 cfs 17,062 cf

Pond CB15: CB15 Peak Elev=62.55' Inflow=6.08 cfs 18,677 cf
18.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=6.08 cfs 18,677 cf

Pond CB16: CB16 Peak Elev=60.00' Inflow=15.60 cfs 53,688 cf
30.0" Round Culvert n=0.013 L=85.0' S=0.0106 '/' Outflow=15.60 cfs 53,688 cf

Pond CB18: CB18 Peak Elev=61.21' Inflow=3.32 cfs 12,958 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0205 '/' Outflow=3.32 cfs 12,958 cf

Pond CB2: CB2 Peak Elev=61.88' Inflow=2.99 cfs 11,025 cf
18.0" Round Culvert n=0.013 L=106.0' S=0.0052 '/' Outflow=2.99 cfs 11,025 cf

Pond CB22: CB22 Peak Elev=60.02' Inflow=0.93 cfs 4,305 cf
12.0" Round Culvert n=0.013 L=120.0' S=0.0146 '/' Outflow=0.93 cfs 4,305 cf

Pond CB28: CB28 Peak Elev=56.44' Inflow=2.41 cfs 8,374 cf
12.0" Round Culvert n=0.013 L=27.8' S=0.0594 '/' Outflow=2.41 cfs 8,374 cf

Pond CB29: CB29 Peak Elev=55.30' Inflow=0.40 cfs 1,103 cf
12.0" Round Culvert n=0.013 L=73.5' S=0.0420 '/' Outflow=0.40 cfs 1,103 cf

Pond CB3: CB3 Peak Elev=62.27' Inflow=1.58 cfs 4,734 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0058 '/' Outflow=1.58 cfs 4,734 cf

Pond CB4: CB4 Peak Elev=62.24' Inflow=1.19 cfs 3,685 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0071 '/' Outflow=1.19 cfs 3,685 cf

Pond CB6: CB6 Peak Elev=60.86' Inflow=0.52 cfs 2,197 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0141 '/' Outflow=0.52 cfs 2,197 cf

Pond CB7: CB7 Peak Elev=62.13' Inflow=1.51 cfs 4,335 cf
12.0" Round Culvert n=0.013 L=74.0' S=0.0154 '/' Outflow=1.51 cfs 4,335 cf

Pond CB8: CB8 Peak Elev=61.50' Inflow=4.48 cfs 15,360 cf
18.0" Round Culvert n=0.013 L=190.0' S=0.0057 '/' Outflow=4.48 cfs 15,360 cf

Pond CUL: Culvert Under Road Peak Elev=60.44' Storage=462 cf Inflow=3.79 cfs 24,528 cf
12.0" Round Culvert n=0.013 L=90.0' S=0.0194 '/' Outflow=3.64 cfs 24,526 cf

Pond DMH10: DMH10 Peak Elev=52.93' Inflow=1.26 cfs 16,025 cf
12.0" Round Culvert n=0.013 L=17.2' S=0.0058 '/' Outflow=1.26 cfs 16,025 cf

Pond DMH11: DMH11 Peak Elev=52.88' Inflow=6.53 cfs 65,942 cf
24.0" Round Culvert n=0.013 L=97.2' S=0.0051 '/' Outflow=6.53 cfs 65,942 cf

Pond INLET: DMH11 Inlet Peak Elev=53.60' Storage=1,217 cf Inflow=6.42 cfs 46,998 cf
Primary=5.57 cfs 45,747 cf Secondary=0.83 cfs 1,201 cf Outflow=6.40 cfs 46,948 cf

Pond Q1: TREE BOX FILTER Q1 Peak Elev=52.88' Inflow=1.37 cfs 4,170 cf
10.0" Round Culvert n=0.013 L=20.0' S=0.0185 '/' Outflow=1.37 cfs 4,170 cf

Pond Q2: TREE BOX FILTER Q2 Peak Elev=52.93' Inflow=0.72 cfs 2,058 cf
10.0" Round Culvert n=0.013 L=9.0' S=0.0422 '/' Outflow=0.72 cfs 2,058 cf

Pond Q3: Grassed Underdrained Soil Filter Q3 Peak Elev=61.10' Storage=4,217 cf Inflow=2.40 cfs 7,586 cf
Primary=0.61 cfs 3,641 cf Secondary=0.00 cfs 0 cf Outflow=0.61 cfs 3,641 cf

Pond Q4: Treatment Area - RTANK Peak Elev=60.00' Storage=41,596 cf Inflow=20.45 cfs 85,086 cf
Primary=1.54 cfs 22,919 cf Secondary=0.58 cfs 35,620 cf Outflow=2.12 cfs 58,539 cf

Pond Q5: Grassed Underdrained Soil Filter Q5 Peak Elev=63.11' Storage=1,353 cf Inflow=1.00 cfs 4,146 cf
Primary=0.77 cfs 2,966 cf Secondary=0.00 cfs 0 cf Outflow=0.77 cfs 2,966 cf

Pond Q6: Grassed Underdrained Soil Filter Q6 Peak Elev=64.55' Storage=3,845 cf Inflow=2.72 cfs 9,654 cf
Primary=1.57 cfs 6,360 cf Secondary=0.00 cfs 0 cf Outflow=1.57 cfs 6,360 cf

Total Runoff Area = 985,925 sf Runoff Volume = 217,894 cf Average Runoff Depth = 2.65"
76.04% Pervious = 749,727 sf 23.96% Impervious = 236,198 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10A: 10A Runoff Area=26,437 sf 68.91% Impervious Runoff Depth>4.98"
Flow Length=590' Tc=7.8 min CN=93 Runoff=3.11 cfs 10,970 cf

Subcatchment11A: 11A Runoff Area=11,469 sf 100.00% Impervious Runoff Depth>5.56"
Flow Length=310' Tc=2.0 min CN=98 Runoff=1.73 cfs 5,315 cf

Subcatchment12A: 12A Runoff Area=5,973 sf 88.78% Impervious Runoff Depth>5.33"
Flow Length=130' Tc=1.0 min CN=96 Runoff=0.92 cfs 2,652 cf

Subcatchment13A: 13A Runoff Area=3,382 sf 75.58% Impervious Runoff Depth>5.10"
Flow Length=130' Tc=1.0 min CN=94 Runoff=0.51 cfs 1,437 cf

Subcatchment14A: 14A Runoff Area=26,877 sf 55.92% Impervious Runoff Depth>4.54"
Flow Length=375' Tc=5.9 min CN=89 Runoff=3.17 cfs 10,163 cf

Subcatchment15A: 15A Runoff Area=103,652 sf 0.49% Impervious Runoff Depth>3.17"
Flow Length=605' Tc=57.6 min CN=76 Runoff=3.60 cfs 27,366 cf

Subcatchment16A: 16A Runoff Area=150,830 sf 1.77% Impervious Runoff Depth>2.90"
Flow Length=290' Tc=41.7 min CN=73 Runoff=5.70 cfs 36,403 cf

Subcatchment17A: 17A Runoff Area=38,749 sf 7.28% Impervious Runoff Depth>3.59"
Flow Length=155' Tc=17.1 min CN=80 Runoff=2.69 cfs 11,591 cf

Subcatchment20B: 20B Runoff Area=17,698 sf 40.85% Impervious Runoff Depth>4.31"
Flow Length=140' Tc=18.9 min CN=87 Runoff=1.39 cfs 6,360 cf

Subcatchment30C: 30C Runoff Area=19,137 sf 0.00% Impervious Runoff Depth>2.82"
Flow Length=55' Slope=0.0400 '/' Tc=19.1 min CN=72 Runoff=1.00 cfs 4,495 cf

Subcatchment40D: 40D Runoff Area=9,964 sf 0.00% Impervious Runoff Depth>2.62"
Flow Length=230' Tc=45.0 min CN=70 Runoff=0.33 cfs 2,175 cf

Subcatchment50E: 50E Runoff Area=6,979 sf 0.00% Impervious Runoff Depth>3.29"
Flow Length=65' Slope=0.0600 '/' Tc=18.6 min CN=77 Runoff=0.43 cfs 1,915 cf

Subcatchment60F: 60F Runoff Area=39,928 sf 23.48% Impervious Runoff Depth>4.00"
Flow Length=195' Tc=10.0 min CN=84 Runoff=3.72 cfs 13,318 cf

Subcatchment61F: 61F Runoff Area=20,284 sf 8.93% Impervious Runoff Depth>3.49"
Flow Length=120' Tc=15.6 min CN=79 Runoff=1.43 cfs 5,901 cf

Subcatchment62F: 62F Runoff Area=18,106 sf 26.88% Impervious Runoff Depth>2.29"
Flow Length=135' Tc=13.5 min CN=66 Runoff=0.86 cfs 3,449 cf

Subcatchment63F: 63F Runoff Area=21,487 sf 0.00% Impervious Runoff Depth>2.28"
Flow Length=84' Tc=15.5 min CN=66 Runoff=0.96 cfs 4,091 cf

Subcatchment 64F: 64F Runoff Area=13,375 sf 92.96% Impervious Runoff Depth>5.44"
Flow Length=175' Slope=0.0100 '/' Tc=1.9 min CN=97 Runoff=2.01 cfs 6,067 cf

Subcatchment 65F: 65F Runoff Area=10,137 sf 100.00% Impervious Runoff Depth>5.56"
Flow Length=155' Tc=2.5 min CN=98 Runoff=1.50 cfs 4,697 cf

Subcatchment 66F: 66F Runoff Area=12,930 sf 84.50% Impervious Runoff Depth>5.21"
Flow Length=120' Tc=1.7 min CN=95 Runoff=1.93 cfs 5,616 cf

Subcatchment 67F: 67F Runoff Area=15,831 sf 98.20% Impervious Runoff Depth>5.56"
Flow Length=130' Tc=1.4 min CN=98 Runoff=2.43 cfs 7,337 cf

Subcatchment 68F: 68F Runoff Area=10,239 sf 0.00% Impervious Runoff Depth>3.59"
Flow Length=160' Slope=0.0200 '/' Tc=16.5 min CN=80 Runoff=0.72 cfs 3,063 cf

Subcatchment 69F: 69F Runoff Area=20,985 sf 92.22% Impervious Runoff Depth>5.44"
Flow Length=155' Tc=1.5 min CN=97 Runoff=3.20 cfs 9,520 cf

Subcatchment 70F: 70F Runoff Area=44,459 sf 100.00% Impervious Runoff Depth>5.56"
Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=98 Runoff=6.76 cfs 20,603 cf

Subcatchment 71F: 71F Runoff Area=7,116 sf 10.09% Impervious Runoff Depth>3.80"
Flow Length=52' Slope=0.0100 '/' Tc=1.4 min CN=82 Runoff=0.85 cfs 2,255 cf

Subcatchment 72F: 72F Runoff Area=8,452 sf 25.00% Impervious Runoff Depth>4.10"
Flow Length=150' Tc=21.6 min CN=85 Runoff=0.60 cfs 2,887 cf

Subcatchment 73F: 73F Runoff Area=18,032 sf 100.00% Impervious Runoff Depth>5.56"
Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=98 Runoff=2.74 cfs 8,356 cf

Subcatchment 74F: 74F Runoff Area=3,963 sf 11.86% Impervious Runoff Depth>3.79"
Flow Length=60' Slope=0.0100 '/' Tc=13.6 min CN=82 Runoff=0.32 cfs 1,253 cf

Subcatchment 75F: 75F Runoff Area=9,262 sf 10.20% Impervious Runoff Depth>3.90"
Flow Length=144' Tc=13.5 min CN=83 Runoff=0.76 cfs 3,008 cf

Subcatchment 76F: 76F Runoff Area=24,245 sf 32.33% Impervious Runoff Depth>4.20"
Flow Length=140' Slope=0.0100 '/' Tc=21.5 min CN=86 Runoff=1.77 cfs 8,494 cf

Subcatchment 77F: 77F Runoff Area=8,509 sf 28.76% Impervious Runoff Depth>4.32"
Flow Length=95' Tc=4.3 min CN=87 Runoff=1.03 cfs 3,065 cf

Subcatchment 78F: 78F Runoff Area=8,443 sf 13.15% Impervious Runoff Depth>3.89"
Flow Length=242' Slope=0.0100 '/' Tc=18.9 min CN=83 Runoff=0.61 cfs 2,739 cf

Subcatchment 79F: 79F Runoff Area=20,371 sf 0.00% Impervious Runoff Depth>3.59"
Flow Length=280' Tc=20.8 min CN=80 Runoff=1.31 cfs 6,089 cf

Subcatchment 80F: 80F Runoff Area=36,167 sf 12.89% Impervious Runoff Depth>3.69"
Flow Length=180' Slope=0.0100 '/' Tc=22.4 min CN=81 Runoff=2.31 cfs 11,110 cf

Subcatchment 81F: 81F Runoff Area=192,457 sf 1.64% Impervious Runoff Depth>3.08"
Flow Length=190' Tc=54.6 min CN=75 Runoff=6.69 cfs 49,318 cf

Reach DPA: DPA Inflow=10.20 cfs 97,780 cf
Outflow=10.20 cfs 97,780 cf

Reach DPB: DPB Inflow=1.39 cfs 6,360 cf
Outflow=1.39 cfs 6,360 cf

Reach DPC: DPC Inflow=1.00 cfs 4,495 cf
Outflow=1.00 cfs 4,495 cf

Reach DPD: DPD Inflow=0.33 cfs 2,175 cf
Outflow=0.33 cfs 2,175 cf

Reach DPE: DPE Inflow=0.43 cfs 1,915 cf
Outflow=0.43 cfs 1,915 cf

Reach DPF: DPF Inflow=18.40 cfs 149,407 cf
Outflow=18.40 cfs 149,407 cf

Pond 1P: Existing Wetland Peak Elev=54.04' Storage=10,197 cf Inflow=5.15 cfs 22,561 cf
Discarded=0.07 cfs 2,434 cf Primary=1.09 cfs 18,461 cf Outflow=1.16 cfs 20,895 cf

Pond 4R: Proposed Storm Drain CB26 to CB25 Peak Elev=50.78' Inflow=3.09 cfs 10,016 cf
30.0" Round Culvert n=0.013 L=430.0' S=0.0065 '/' Outflow=3.09 cfs 10,016 cf

Pond 5R: Proposed Storm Drain CB25 to DMH5 Peak Elev=48.07' Inflow=4.38 cfs 14,734 cf
30.0" Round Culvert n=0.013 L=114.0' S=0.0058 '/' Outflow=4.38 cfs 14,734 cf

Pond 6R: Existing Storm Drain - DMH5 to Outlet Peak Elev=47.22' Inflow=4.38 cfs 14,734 cf
30.0" Round Culvert n=0.013 L=78.0' S=0.0305 '/' Outflow=4.38 cfs 14,734 cf

Pond CB10: CB10 Peak Elev=61.09' Inflow=8.59 cfs 31,256 cf
24.0" Round Culvert n=0.013 L=54.0' S=0.0054 '/' Outflow=8.59 cfs 31,256 cf

Pond CB11: CB11 Peak Elev=61.08' Inflow=0.72 cfs 3,063 cf
12.0" Round Culvert n=0.013 L=48.0' S=0.0052 '/' Outflow=0.72 cfs 3,063 cf

Pond CB12: CB12 Peak Elev=61.07' Inflow=3.53 cfs 12,583 cf
18.0" Round Culvert n=0.013 L=157.0' S=0.0050 '/' Outflow=3.53 cfs 12,583 cf

Pond CB13: CB13 Peak Elev=60.81' Inflow=12.10 cfs 43,839 cf
24.0" Round Culvert n=0.013 L=72.0' S=0.0053 '/' Outflow=12.10 cfs 43,839 cf

Pond CB14: CB14 Peak Elev=64.20' Inflow=6.92 cfs 21,856 cf
18.0" Round Culvert n=0.013 L=135.0' S=0.0101 '/' Outflow=6.92 cfs 21,856 cf

Pond CB15: CB15 Peak Elev=62.88' Inflow=7.78 cfs 24,111 cf
18.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=7.78 cfs 24,111 cf

Pond CB16: CB16 Peak Elev=60.76' Inflow=20.12 cfs 70,837 cf
30.0" Round Culvert n=0.013 L=85.0' S=0.0106 '/' Outflow=20.12 cfs 70,837 cf

Pond CB18: CB18 Peak Elev=61.41' Inflow=4.33 cfs 17,168 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0205 '/' Outflow=4.33 cfs 17,168 cf

Pond CB2: CB2 Peak Elev=62.21' Inflow=3.91 cfs 14,855 cf
18.0" Round Culvert n=0.013 L=106.0' S=0.0052 '/' Outflow=3.91 cfs 14,855 cf

Pond CB22: CB22 Peak Elev=60.85' Inflow=1.31 cfs 6,089 cf
12.0" Round Culvert n=0.013 L=120.0' S=0.0146 '/' Outflow=1.31 cfs 6,089 cf

Pond CB28: CB28 Peak Elev=56.72' Inflow=3.11 cfs 10,970 cf
12.0" Round Culvert n=0.013 L=27.8' S=0.0594 '/' Outflow=3.11 cfs 10,970 cf

Pond CB29: CB29 Peak Elev=55.35' Inflow=0.51 cfs 1,437 cf
12.0" Round Culvert n=0.013 L=73.5' S=0.0420 '/' Outflow=0.51 cfs 1,437 cf

Pond CB3: CB3 Peak Elev=62.55' Inflow=2.01 cfs 6,067 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0058 '/' Outflow=2.01 cfs 6,067 cf

Pond CB4: CB4 Peak Elev=62.49' Inflow=1.50 cfs 4,697 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0071 '/' Outflow=1.50 cfs 4,697 cf

Pond CB6: CB6 Peak Elev=61.17' Inflow=0.86 cfs 3,449 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0141 '/' Outflow=0.86 cfs 3,449 cf

Pond CB7: CB7 Peak Elev=62.35' Inflow=1.93 cfs 5,616 cf
12.0" Round Culvert n=0.013 L=74.0' S=0.0154 '/' Outflow=1.93 cfs 5,616 cf

Pond CB8: CB8 Peak Elev=61.88' Inflow=5.81 cfs 20,471 cf
18.0" Round Culvert n=0.013 L=190.0' S=0.0057 '/' Outflow=5.81 cfs 20,471 cf

Pond CUL: Culvert Under Road Peak Elev=61.36' Storage=1,823 cf Inflow=5.70 cfs 36,403 cf
12.0" Round Culvert n=0.013 L=90.0' S=0.0194 '/' Outflow=4.84 cfs 36,401 cf

Pond DMH10: DMH10 Peak Elev=53.12' Inflow=1.69 cfs 22,549 cf
12.0" Round Culvert n=0.013 L=17.2' S=0.0058 '/' Outflow=1.69 cfs 22,549 cf

Pond DMH11: DMH11 Peak Elev=53.02' Inflow=7.72 cfs 91,375 cf
24.0" Round Culvert n=0.013 L=97.2' S=0.0051 '/' Outflow=7.72 cfs 91,375 cf

Pond INLET: DMH11 Inlet Peak Elev=53.70' Storage=1,497 cf Inflow=8.87 cfs 69,979 cf
Primary=6.37 cfs 63,511 cf Secondary=2.49 cfs 6,405 cf Outflow=8.85 cfs 69,916 cf

Pond Q1: TREE BOX FILTER Q1 Peak Elev=53.12' Inflow=1.73 cfs 5,315 cf
10.0" Round Culvert n=0.013 L=20.0' S=0.0185 '/' Outflow=1.73 cfs 5,315 cf

Pond Q2: TREE BOX FILTER Q2 Peak Elev=53.12' Inflow=0.92 cfs 2,652 cf
10.0" Round Culvert n=0.013 L=9.0' S=0.0422 '/' Outflow=0.92 cfs 2,652 cf

Pond Q3: Grassed Underdrained Soil Filter Peak Elev=61.19' Storage=4,545 cf Inflow=3.17 cfs 10,163 cf
Primary=1.77 cfs 6,212 cf Secondary=0.00 cfs 0 cf Outflow=1.77 cfs 6,212 cf

Pond Q4: Treatment Area - RTANK Peak Elev=60.72' Storage=46,701 cf Inflow=26.70 cfs 113,698 cf
Primary=10.10 cfs 47,763 cf Secondary=0.58 cfs 37,592 cf Outflow=10.68 cfs 85,354 cf

Pond Q5: Grassed Underdrained Soil Filter Q5 Peak Elev=63.16' Storage=1,443 cf Inflow=1.43 cfs 5,901 cf
Primary=1.36 cfs 4,718 cf Secondary=0.00 cfs 0 cf Outflow=1.36 cfs 4,718 cf

Pond Q6: Grassed Underdrained Soil Filter Peak Elev=64.65' Storage=4,245 cf Inflow=3.72 cfs 13,318 cf
Primary=3.09 cfs 10,016 cf Secondary=0.00 cfs 0 cf Outflow=3.09 cfs 10,016 cf

Total Runoff Area = 985,925 sf Runoff Volume = 303,078 cf Average Runoff Depth = 3.69"
76.04% Pervious = 749,727 sf 23.96% Impervious = 236,198 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10A: 10A Runoff Area=26,437 sf 68.91% Impervious Runoff Depth>7.25"
Flow Length=590' Tc=7.8 min CN=93 Runoff=4.43 cfs 15,981 cf

Subcatchment11A: 11A Runoff Area=11,469 sf 100.00% Impervious Runoff Depth>7.86"
Flow Length=310' Tc=2.0 min CN=98 Runoff=2.42 cfs 7,511 cf

Subcatchment12A: 12A Runoff Area=5,973 sf 88.78% Impervious Runoff Depth>7.62"
Flow Length=130' Tc=1.0 min CN=96 Runoff=1.29 cfs 3,793 cf

Subcatchment13A: 13A Runoff Area=3,382 sf 75.58% Impervious Runoff Depth>7.38"
Flow Length=130' Tc=1.0 min CN=94 Runoff=0.72 cfs 2,080 cf

Subcatchment14A: 14A Runoff Area=26,877 sf 55.92% Impervious Runoff Depth>6.78"
Flow Length=375' Tc=5.9 min CN=89 Runoff=4.64 cfs 15,183 cf

Subcatchment15A: 15A Runoff Area=103,652 sf 0.49% Impervious Runoff Depth>5.19"
Flow Length=605' Tc=57.6 min CN=76 Runoff=5.89 cfs 44,825 cf

Subcatchment16A: 16A Runoff Area=150,830 sf 1.77% Impervious Runoff Depth>4.86"
Flow Length=290' Tc=41.7 min CN=73 Runoff=9.60 cfs 61,055 cf

Subcatchment17A: 17A Runoff Area=38,749 sf 7.28% Impervious Runoff Depth>5.70"
Flow Length=155' Tc=17.1 min CN=80 Runoff=4.24 cfs 18,411 cf

Subcatchment20B: 20B Runoff Area=17,698 sf 40.85% Impervious Runoff Depth>6.53"
Flow Length=140' Tc=18.9 min CN=87 Runoff=2.07 cfs 9,627 cf

Subcatchment30C: 30C Runoff Area=19,137 sf 0.00% Impervious Runoff Depth>4.76"
Flow Length=55' Slope=0.0400 '/' Tc=19.1 min CN=72 Runoff=1.69 cfs 7,598 cf

Subcatchment40D: 40D Runoff Area=9,964 sf 0.00% Impervious Runoff Depth>4.51"
Flow Length=230' Tc=45.0 min CN=70 Runoff=0.56 cfs 3,742 cf

Subcatchment50E: 50E Runoff Area=6,979 sf 0.00% Impervious Runoff Depth>5.35"
Flow Length=65' Slope=0.0600 '/' Tc=18.6 min CN=77 Runoff=0.70 cfs 3,110 cf

Subcatchment60F: 60F Runoff Area=39,928 sf 23.48% Impervious Runoff Depth>6.18"
Flow Length=195' Tc=10.0 min CN=84 Runoff=5.64 cfs 20,567 cf

Subcatchment61F: 61F Runoff Area=20,284 sf 8.93% Impervious Runoff Depth>5.59"
Flow Length=120' Tc=15.6 min CN=79 Runoff=2.26 cfs 9,442 cf

Subcatchment62F: 62F Runoff Area=18,106 sf 26.88% Impervious Runoff Depth>4.08"
Flow Length=135' Tc=13.5 min CN=66 Runoff=1.57 cfs 6,153 cf

Subcatchment63F: 63F Runoff Area=21,487 sf 0.00% Impervious Runoff Depth>4.08"
Flow Length=84' Tc=15.5 min CN=66 Runoff=1.76 cfs 7,299 cf

Subcatchment 64F: 64F Runoff Area=13,375 sf 92.96% Impervious Runoff Depth>7.74"
Flow Length=175' Slope=0.0100 '/' Tc=1.9 min CN=97 Runoff=2.82 cfs 8,625 cf

Subcatchment 65F: 65F Runoff Area=10,137 sf 100.00% Impervious Runoff Depth>7.86"
Flow Length=155' Tc=2.5 min CN=98 Runoff=2.10 cfs 6,638 cf

Subcatchment 66F: 66F Runoff Area=12,930 sf 84.50% Impervious Runoff Depth>7.50"
Flow Length=120' Tc=1.7 min CN=95 Runoff=2.72 cfs 8,081 cf

Subcatchment 67F: 67F Runoff Area=15,831 sf 98.20% Impervious Runoff Depth>7.86"
Flow Length=130' Tc=1.4 min CN=98 Runoff=3.40 cfs 10,368 cf

Subcatchment 68F: 68F Runoff Area=10,239 sf 0.00% Impervious Runoff Depth>5.70"
Flow Length=160' Slope=0.0200 '/' Tc=16.5 min CN=80 Runoff=1.14 cfs 4,866 cf

Subcatchment 69F: 69F Runoff Area=20,985 sf 92.22% Impervious Runoff Depth>7.74"
Flow Length=155' Tc=1.5 min CN=97 Runoff=4.49 cfs 13,534 cf

Subcatchment 70F: 70F Runoff Area=44,459 sf 100.00% Impervious Runoff Depth>7.86"
Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=98 Runoff=9.46 cfs 29,116 cf

Subcatchment 71F: 71F Runoff Area=7,116 sf 10.09% Impervious Runoff Depth>5.95"
Flow Length=52' Slope=0.0100 '/' Tc=1.4 min CN=82 Runoff=1.31 cfs 3,531 cf

Subcatchment 72F: 72F Runoff Area=8,452 sf 25.00% Impervious Runoff Depth>6.29"
Flow Length=150' Tc=21.6 min CN=85 Runoff=0.91 cfs 4,428 cf

Subcatchment 73F: 73F Runoff Area=18,032 sf 100.00% Impervious Runoff Depth>7.86"
Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=98 Runoff=3.84 cfs 11,809 cf

Subcatchment 74F: 74F Runoff Area=3,963 sf 11.86% Impervious Runoff Depth>5.94"
Flow Length=60' Slope=0.0100 '/' Tc=13.6 min CN=82 Runoff=0.49 cfs 1,962 cf

Subcatchment 75F: 75F Runoff Area=9,262 sf 10.20% Impervious Runoff Depth>6.06"
Flow Length=144' Tc=13.5 min CN=83 Runoff=1.16 cfs 4,677 cf

Subcatchment 76F: 76F Runoff Area=24,245 sf 32.33% Impervious Runoff Depth>6.41"
Flow Length=140' Slope=0.0100 '/' Tc=21.5 min CN=86 Runoff=2.65 cfs 12,943 cf

Subcatchment 77F: 77F Runoff Area=8,509 sf 28.76% Impervious Runoff Depth>6.54"
Flow Length=95' Tc=4.3 min CN=87 Runoff=1.52 cfs 4,640 cf

Subcatchment 78F: 78F Runoff Area=8,443 sf 13.15% Impervious Runoff Depth>6.05"
Flow Length=242' Slope=0.0100 '/' Tc=18.9 min CN=83 Runoff=0.93 cfs 4,259 cf

Subcatchment 79F: 79F Runoff Area=20,371 sf 0.00% Impervious Runoff Depth>5.70"
Flow Length=280' Tc=20.8 min CN=80 Runoff=2.06 cfs 9,673 cf

Subcatchment 80F: 80F Runoff Area=36,167 sf 12.89% Impervious Runoff Depth>5.81"
Flow Length=180' Slope=0.0100 '/' Tc=22.4 min CN=81 Runoff=3.60 cfs 17,523 cf

Subcatchment 81F: 81F Runoff Area=192,457 sf 1.64% Impervious Runoff Depth>5.08"
Flow Length=190' Tc=54.6 min CN=75 Runoff=11.03 cfs 81,413 cf

Reach DPA: DPA Inflow=15.39 cfs 160,141 cf
Outflow=15.39 cfs 160,141 cf

Reach DPB: DPB Inflow=2.07 cfs 9,627 cf
Outflow=2.07 cfs 9,627 cf

Reach DPC: DPC Inflow=1.69 cfs 7,598 cf
Outflow=1.69 cfs 7,598 cf

Reach DPD: DPD Inflow=0.56 cfs 3,742 cf
Outflow=0.56 cfs 3,742 cf

Reach DPE: DPE Inflow=0.70 cfs 3,110 cf
Outflow=0.70 cfs 3,110 cf

Reach DPF: DPF Inflow=37.76 cfs 246,497 cf
Outflow=37.76 cfs 246,497 cf

Pond 1P: Existing Wetland Peak Elev=54.60' Storage=13,896 cf Inflow=7.72 cfs 34,392 cf
Discarded=0.09 cfs 2,848 cf Primary=2.74 cfs 29,748 cf Outflow=2.83 cfs 32,596 cf

Pond 4R: Proposed Storm Drain CB26 to CB25 Peak Elev=50.99' Inflow=5.01 cfs 17,251 cf
30.0" Round Culvert n=0.013 L=430.0' S=0.0065 '/' Outflow=5.01 cfs 17,251 cf

Pond 5R: Proposed Storm Drain CB25 to DMH5 Peak Elev=48.36' Inflow=7.09 cfs 25,505 cf
30.0" Round Culvert n=0.013 L=114.0' S=0.0058 '/' Outflow=7.09 cfs 25,505 cf

Pond 6R: Existing Storm Drain - DMH5 to Outlet Peak Elev=47.46' Inflow=7.09 cfs 25,505 cf
30.0" Round Culvert n=0.013 L=78.0' S=0.0305 '/' Outflow=7.09 cfs 25,505 cf

Pond CB10: CB10 Peak Elev=63.63' Inflow=12.51 cfs 47,164 cf
24.0" Round Culvert n=0.013 L=54.0' S=0.0054 '/' Outflow=12.51 cfs 47,164 cf

Pond CB11: CB11 Peak Elev=63.50' Inflow=1.14 cfs 4,866 cf
12.0" Round Culvert n=0.013 L=48.0' S=0.0052 '/' Outflow=1.14 cfs 4,866 cf

Pond CB12: CB12 Peak Elev=63.47' Inflow=5.03 cfs 18,399 cf
18.0" Round Culvert n=0.013 L=157.0' S=0.0050 '/' Outflow=5.03 cfs 18,399 cf

Pond CB13: CB13 Peak Elev=63.03' Inflow=17.51 cfs 65,563 cf
24.0" Round Culvert n=0.013 L=72.0' S=0.0053 '/' Outflow=17.51 cfs 65,563 cf

Pond CB14: CB14 Peak Elev=65.63' Inflow=9.72 cfs 31,078 cf
18.0" Round Culvert n=0.013 L=135.0' S=0.0101 '/' Outflow=9.72 cfs 31,078 cf

Pond CB15: CB15 Peak Elev=63.80' Inflow=11.03 cfs 34,608 cf
18.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=11.03 cfs 34,608 cf

Pond CB16: CB16 Peak Elev=61.89' Inflow=28.93 cfs 104,599 cf
30.0" Round Culvert n=0.013 L=85.0' S=0.0106 '/' Outflow=28.93 cfs 104,599 cf

Pond CB18: CB18 Peak Elev=62.28' Inflow=6.27 cfs 25,384 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0205 '/' Outflow=6.27 cfs 25,384 cf

Pond CB2: CB2 Peak Elev=65.63' Inflow=5.72 cfs 22,562 cf
18.0" Round Culvert n=0.013 L=106.0' S=0.0052 '/' Outflow=5.72 cfs 22,562 cf

Pond CB22: CB22 Peak Elev=61.82' Inflow=2.06 cfs 9,673 cf
12.0" Round Culvert n=0.013 L=120.0' S=0.0146 '/' Outflow=2.06 cfs 9,673 cf

Pond CB28: CB28 Peak Elev=57.41' Inflow=4.43 cfs 15,981 cf
12.0" Round Culvert n=0.013 L=27.8' S=0.0594 '/' Outflow=4.43 cfs 15,981 cf

Pond CB29: CB29 Peak Elev=55.42' Inflow=0.72 cfs 2,080 cf
12.0" Round Culvert n=0.013 L=73.5' S=0.0420 '/' Outflow=0.72 cfs 2,080 cf

Pond CB3: CB3 Peak Elev=66.16' Inflow=2.82 cfs 8,625 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0058 '/' Outflow=2.82 cfs 8,625 cf

Pond CB4: CB4 Peak Elev=65.97' Inflow=2.10 cfs 6,638 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0071 '/' Outflow=2.10 cfs 6,638 cf

Pond CB6: CB6 Peak Elev=63.73' Inflow=1.57 cfs 6,153 cf
12.0" Round Culvert n=0.013 L=98.0' S=0.0141 '/' Outflow=1.57 cfs 6,153 cf

Pond CB7: CB7 Peak Elev=65.65' Inflow=2.72 cfs 8,081 cf
12.0" Round Culvert n=0.013 L=74.0' S=0.0154 '/' Outflow=2.72 cfs 8,081 cf

Pond CB8: CB8 Peak Elev=65.14' Inflow=8.41 cfs 30,643 cf
18.0" Round Culvert n=0.013 L=190.0' S=0.0057 '/' Outflow=8.41 cfs 30,643 cf

Pond CUL: Culvert Under Road Peak Elev=62.62' Storage=7,387 cf Inflow=9.60 cfs 61,055 cf
12.0" Round Culvert n=0.013 L=90.0' S=0.0194 '/' Outflow=6.12 cfs 61,052 cf

Pond DMH10: DMH10 Peak Elev=53.85' Inflow=2.94 cfs 35,621 cf
12.0" Round Culvert n=0.013 L=17.2' S=0.0058 '/' Outflow=2.94 cfs 35,621 cf

Pond DMH11: DMH11 Peak Elev=53.26' Inflow=9.88 cfs 136,990 cf
24.0" Round Culvert n=0.013 L=97.2' S=0.0051 '/' Outflow=9.88 cfs 136,990 cf

Pond INLET: DMH11 Inlet Peak Elev=53.85' Storage=1,929 cf Inflow=12.51 cfs 117,098 cf
Primary=6.99 cfs 93,858 cf Secondary=5.56 cfs 23,152 cf Outflow=12.52 cfs 117,010 cf

Pond Q1: TREE BOX FILTER Q1 Peak Elev=53.93' Inflow=2.42 cfs 7,511 cf
10.0" Round Culvert n=0.013 L=20.0' S=0.0185 '/' Outflow=2.42 cfs 7,511 cf

Pond Q2: TREE BOX FILTER Q2 Peak Elev=53.86' Inflow=1.29 cfs 3,793 cf
10.0" Round Culvert n=0.013 L=9.0' S=0.0422 '/' Outflow=1.29 cfs 3,793 cf

Pond Q3: Grassed Underdrained Soil Filter Peak Elev=61.34' Storage=5,036 cf Inflow=4.64 cfs 15,183 cf
Primary=4.02 cfs 11,222 cf Secondary=0.00 cfs 0 cf Outflow=4.02 cfs 11,222 cf

Pond Q4: Treatment Area - RTANK Peak Elev=61.27' Storage=50,599 cf Inflow=38.82 cfs 170,122 cf
Primary=25.58 cfs 98,998 cf Secondary=0.59 cfs 40,580 cf Outflow=26.16 cfs 139,578 cf

Pond Q5: Grassed Underdrained Soil Filter Q5 Peak Elev=63.23' Storage=1,553 cf Inflow=2.26 cfs 9,442 cf
Primary=2.19 cfs 8,254 cf Secondary=0.00 cfs 0 cf Outflow=2.19 cfs 8,254 cf

Pond Q6: Grassed Underdrained Soil Filter Peak Elev=64.76' Storage=4,713 cf Inflow=5.64 cfs 20,567 cf
Primary=5.01 cfs 17,251 cf Secondary=0.00 cfs 0 cf Outflow=5.01 cfs 17,251 cf

Total Runoff Area = 985,925 sf Runoff Volume = 474,460 cf Average Runoff Depth = 5.77"
76.04% Pervious = 749,727 sf 23.96% Impervious = 236,198 sf

Appendix D - Treatment Calculations

1 WS103 TREATMENT PLAN - NON-LINEAR PORTION OF PROJECT
SCALE: 1"=50'

NON-LINEAR TREATMENT REQUIREMENTS (SEE TREATMENT SUMMARY)	
TOTAL DEVELOPED AREA	395,352 SF
DEVELOPED AREA REQUIRING TREATMENT (80% OF TOTAL)	316,282 SF
DEVELOPED AREA BEING TREATED	372,806 SF
TOTAL IMPERVIOUS AREA	187,932 SF
IMPERVIOUS AREA REQUIRING TREATMENT (95% OF TOTAL)	178,535 SF
IMPERVIOUS AREA BEING TREATED	182,296 SF

TREATMENT CREDIT SUMMARY (THIS SHEET ONLY)	
TOTAL DEVELOPED AREA REQUIRING TREATMENT	316,282 SF
TOTAL DEVELOPED AREA BEING TREATED	372,806 SF
DEVELOPED AREA CREDIT AVAILABLE FOR FUTURE PROJECTS	56,524 SF
TOTAL IMPERVIOUS AREA REQUIRING TREATMENT	178,535 SF
TOTAL IMPERVIOUS AREA BEING TREATED	182,296 SF
IMPERVIOUS AREA CREDIT AVAILABLE FOR FUTURE PROJECTS	3,761 SF

TREATMENT SUMMARY (NON-LINEAR)

SUBCATCHMENT	TOTAL AREA	NEW IMPERVIOUS AREA	EXISTING IMPERVIOUS AREA TREATED	TOTAL IMPERVIOUS AREA TREATED	% OF NEW IMPERVIOUS AREA TREATED	NEW PERVIOUS AREA	EXISTING PERVIOUS AREA TREATED	NET NEW DEVELOPED AREA	TOTAL AREA TREATED	% OF TOTAL NEW DEVELOPED AREA TREATED	BMP TYPE
T40	309,606 SF	165,383 SF	0 SF	165,383 SF	100.0%	131,178 SF	13,045 SF	296,561 SF	309,606 SF	104.3%	UNDERDRAINED SUBSURFACE SAND FILTER
T50	23,233 SF	2,476 SF	0 SF	2,476 SF	100.0%	20,757 SF	0 SF	23,247 SF	23,233 SF	100.0%	GRASSED UNDERDRAINED SOIL FILTER
T60	39,967 SF	14,437 SF	0 SF	14,437 SF	100.0%	25,530 SF	0 SF	39,947 SF	39,967 SF	100.0%	GRASSED UNDERDRAINED SOIL FILTER
UNTREATED	35,591 SF	5,636 SF	0 SF	0 SF	0.0%	29,955 SF	0 SF	35,591 SF	0 SF	0.0%	
TOTAL	408,397 SF	187,932 SF	0 SF	182,296 SF	97.0%	207,420 SF	13,045 SF	395,352 SF	372,806 SF	94.3%	

TREATMENT AREA SIZING

TREATMENT AREA	IMPERVIOUS AREA TREATED	PERVIOUS AREA TREATED	REQUIRED VOLUME (IMPERVIOUS AREA x 1"/12)*	REQUIRED VOLUME (IMPERVIOUS AREA x 1.6"/12)**	REQUIRED VOLUME (IMPERVIOUS AREA x 0.4"/12)**	TOTAL VOLUME REQUIRED*	TOTAL VOLUME REQUIRED**	VOLUME PROVIDED	REQUIRED SURFACE AREA (5% OF IMPERVIOUS AREA)	REQUIRED SURFACE AREA (2% OF IMPERVIOUS AREA)	TOTAL SURFACE AREA REQUIRED	TOTAL SURFACE AREA PROVIDED
Q4	165,383 SF	144,223 SF	13,782 CF	22,051 CF	4,807 CF	18,589 CF	26,859 CF	27,442 CF	8,269 SF	2,884 SF	11,154 SF	17,713 SF
Q5	2,476 SF	20,757 SF	206 CF	330 CF	692 CF	898 CF	1,022 CF	1,166 CF	124 SF	415 SF	539 SF	718 SF
Q6	14,437 SF	25,530 SF	1,203 CF	1,925 CF	851 CF	2,054 CF	2,776 CF	3,268 CF	722 SF	511 SF	1,232 SF	1,456 SF

*MAINE DEP REQUIREMENTS
**CITY OF PORTLAND REQUIREMENTS

URBAN IMPAIRED STREAM MITIGATION REQUIREMENTS

LAND USE CATEGORY	POLLUTANT RANKING	COMPENSATION CATEGORY	EXISTING AREA	PROPOSED AREA	NET CHANGE	COMPENSATION FEE (PER ACRE)	COMPENSATION FEE REQUIRED
ROADS WHERE IDLING MAY OCCUR/ HIGH USE PARKING LOT	5	NON-ROOF IMPERVIOUS	0.88 AC	1.43 AC	0.55 AC	$12,500	$6,875
OTHER ROADS; MEDIUM USE PARKING LOTS	4	NON-ROOF IMPERVIOUS	0.0 AC	0.0 AC	0.0 AC	$12,500	-
OTHER PARKING LOTS/DRIVEWAYS	3	NON-ROOF IMPERVIOUS	0.71 AC	0.27 AC	(-)0.44 AC	$12,500	(-)$5,500
ROOFTOPS	3	ROOF	1.25 AC	1.43 AC	0.18 AC	$5,000	$900
BIKEWAYS/WALKWAYS	2	NON-ROOF IMPERVIOUS	0.66 AC	0.97 AC	0.31 AC	$12,500	$3,875
GRASSED AREAS	2	LANDSCAPED AREA	3.32 AC	4.20 AC	0.88 AC	$2,500	$2,200
NON-GRASSED LANDSCAPED AREAS	1	LANDSCAPED AREA	0.31 AC	0.59 AC	0.28 AC	$2,500	$700
STORMWATER TREATMENT AREAS	1	LANDSCAPED AREA	0.0 AC	0.10 AC	0.10 AC	$2,500	$250
TOTAL							$9,300

LEGEND:

- TREATED AREA
- TREATED AREA BOUNDARY
- DEVELOPED AREA BOUNDARY
- T11 — TREATED AREA NUMBER
- Q11 — STORMWATER TREATMENT AREA NUMBER
- DPA — DISCHARGE POINT (POINT OF ANALYSIS)

GRAPHIC SCALE
1"=50'
50' 25' 0 50' 100'
CHECK GRAPHIC SCALE BEFORE USING

BENCHMARK NOTE:

1. SEE SHEET WS101 (PRE-DEVELOPMENT WATERSHED PLAN) FOR BENCHMARK LOCATIONS AND DESCRIPTIONS.

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE
JONAH DeWATERS
No. 12273
LICENSED PROFESSIONAL ENGINEER

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
LOCATION: NEW FRED P. HALL ELEMENTARY SCHOOL
23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS SHEET: TREATMENT PLAN - NON-LINEAR PORTION OF PROJECT

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. WS103
SHEET NO. 3 OF 4

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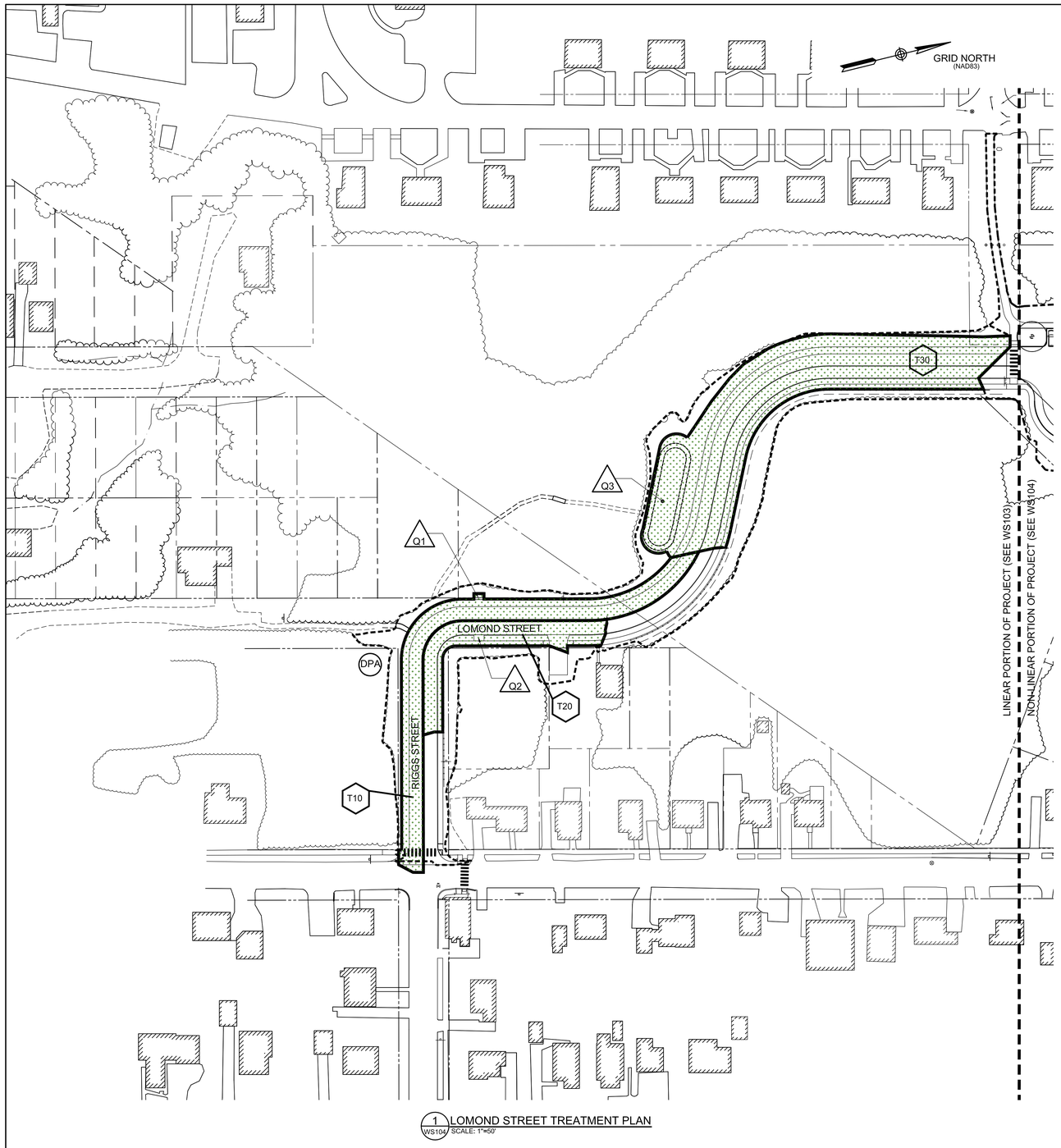

1 WS104 LOMOND STREET TREATMENT PLAN
SCALE: 1"=50'

LINEAR TREATMENT REQUIREMENTS (SEE TREATMENT SUMMARY)	
TOTAL DEVELOPED AREA	69,728 SF
DEVELOPED AREA REQUIRING TREATMENT (50% OF TOTAL)	34,864 SF
DEVELOPED AREA BEING TREATED	45,035 SF
TOTAL IMPERVIOUS AREA	37,432 SF
IMPERVIOUS AREA REQUIRING TREATMENT (75% OF TOTAL)	28,074 SF
IMPERVIOUS AREA BEING TREATED	31,811 SF

TREATMENT CREDIT SUMMARY (THIS SHEET ONLY)	
TOTAL DEVELOPED AREA REQUIRING TREATMENT	34,864 SF
TOTAL DEVELOPED AREA BEING TREATED	45,196 SF
DEVELOPED AREA CREDIT AVAILABLE FOR FUTURE PROJECTS	10,332 SF
TOTAL IMPERVIOUS AREA REQUIRING TREATMENT	28,074 SF
TOTAL IMPERVIOUS AREA BEING TREATED	31,811 SF
IMPERVIOUS AREA CREDIT AVAILABLE FOR FUTURE PROJECTS	3,737 SF

TREATMENT SUMMARY (LINEAR)

SUBCATCHMENT	TOTAL AREA	NEW IMPERVIOUS AREA	EXISTING IMPERVIOUS AREA TREATED	TOTAL IMPERVIOUS AREA TREATED	% OF NEW IMPERVIOUS AREA TREATED	NEW PERVIOUS AREA	EXISTING PERVIOUS AREA TREATED	NET NEW DEVELOPED AREA	TOTAL AREA TREATED	% OF TOTAL NEW DEVELOPED AREA TREATED	BMP TYPE
T10	11,467 SF	11,306 SF	161 SF	11,467 SF	101.4%	0 SF	0 SF	11,306 SF	10,973 SF	101.4%	TREEBOX FILTER (6' x 8')
T20	5,973 SF	5,303 SF	0 SF	5,303 SF	100.0%	670 SF	0 SF	5,973 SF	5,973 SF	100.0%	TREEBOX FILTER (6' x 4')
T30	26,190 SF	15,041 SF	0 SF	15,041 SF	100.0%	12,715 SF	0 SF	27,756 SF	27,756 SF	100.0%	GRASSED UNDERDRAINED SOIL FILTER
UNTREATED	24,693 SF	5,621 SF	0 SF	0 SF	0.0%	19,072 SF	0 SF	24,693 SF	0 SF	0.0%	
TOTAL	68,323 SF	37,271 SF	161 SF	31,191 SF	83.7%	32,457 SF	0 SF	69,728 SF	45,196 SF	64.8%	

TREE BOX FILTER SIZING

SUBCATCHMENT	TREE BOX SIZE	IMPERVIOUS AREA TREATED	PERVIOUS AREA TREATED	TOTAL AREA TREATED	MDEP ALLOWABLE TREATMENT AREA	REQUIRED CHANNEL PROTECTION VOLUME (IMPERVIOUS AREA x 1"/12)	REQUIRED CHANNEL PROTECTION VOLUME (PERVIOUS AREA x 0.4"/12)	TOTAL REQUIRED CHANNEL PROTECTION VOLUME*
Q1	6' x 8'	11,467 SF (0.263 AC)	0 SF (0 AC)	11,467 SF (0.263 AC)	0.301 AC	956 CF	0 CF	956 CF
Q2	6' x 4'	5,303 SF (0.122 AC)	670 SF (0.015 AC)	5,973 SF (0.137 AC)	0.154 AC	442 CF	22 CF	464 CF
							TOTAL REQUIRED*:	2,318 CF

*CHANNEL PROTECTION VOLUME REQUIRED FOR TREE BOX FILTERS WILL BE PROVIDED BY ENLARGING THE GRASSED UNDERDRAINED SOIL FILTER

GRASSED UNDERDRAIN SOIL FILTER SIZING

TREATMENT AREA	IMPERVIOUS AREA TREATED	PERVIOUS AREA TREATED	REQUIRED VOLUME (IMPERVIOUS AREA x 1"/12)*	REQUIRED VOLUME (IMPERVIOUS AREA x 1.6"/12)**	REQUIRED VOLUME (PERVIOUS AREA x 0.4"/12)	TOTAL VOLUME REQUIRED*	TOTAL VOLUME REQUIRED**	VOLUME PROVIDED***	REQUIRED SURFACE AREA (5% OF IMPERVIOUS AREA)	REQUIRED SURFACE AREA (2% OF PERVIOUS AREA)	TOTAL SURFACE AREA REQUIRED	TOTAL SURFACE AREA PROVIDED
Q3	15,041 SF	12,715 SF	1,253 CF	2,005 CF	424 CF	1,677 CF	2,429 CF	3,920 CF	752 SF	254 SF	1,006 SF	2,079 SF

*MAINE DEP REQUIREMENTS
**CITY OF PORTLAND REQUIREMENTS
**INCLUDES ADDITIONAL CHANNEL PROTECTION VOLUME REQUIRED FOR TREE BOX FILTERS

LEGEND:

- TREATED AREA
- TREATED AREA BOUNDARY
- DEVELOPED AREA BOUNDARY
- T10 — TREATED AREA NUMBER
- Q1 — STORMWATER TREATMENT AREA NUMBER
- DPA — DISCHARGE POINT (POINT OF ANALYSIS)

BENCHMARK NOTE:

1. SEE SHEET WS101 (PRE-DEVELOPMENT WATERSHED PLAN) FOR BENCHMARK LOCATIONS AND DESCRIPTIONS.

GRAPHIC SCALE
1"=50' — 50' 25' 0 50' 100'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE
JONAH DeWATERS
No 12273
LICENSED PROFESSIONAL ENGINEER

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: SOUTH TREATMENT PLAN

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ◆ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. WS104
SHEET NO. 4 OF 4

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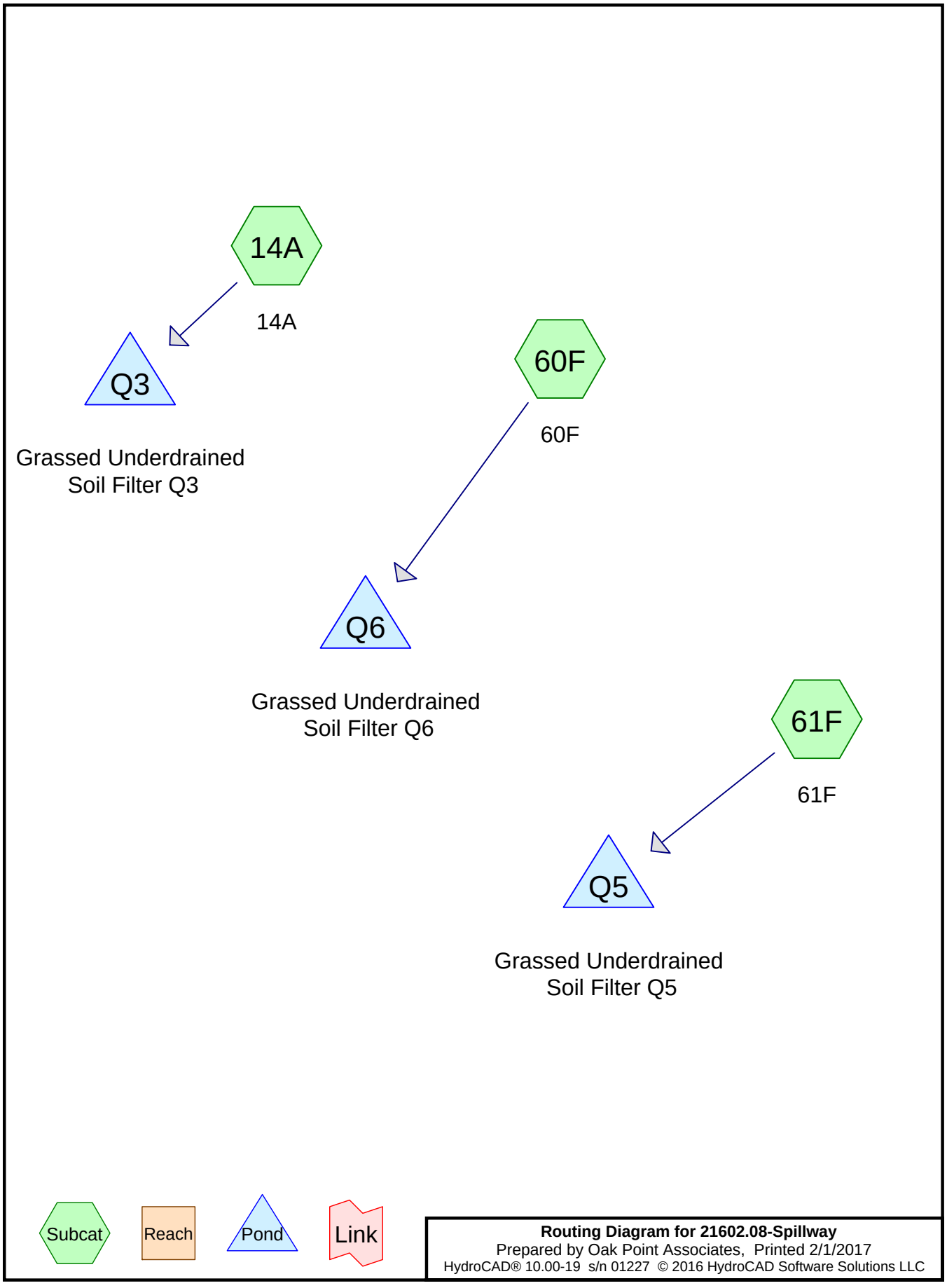
Appendix E -
Emergency Spillway Calculations

Appendix E (Emergency Spillway Calculations)

Emergency spillway capacities were checked by routing all flow through the emergency spillway for the 25-year storm event and confirming that the velocity of the runoff will not cause soil erosion. Calculations are attached.



Routing Diagram for 21602.08-Spillway
Prepared by Oak Point Associates, Printed 2/1/2017
HydroCAD® 10.00-19 s/n 01227 © 2016 HydroCAD Software Solutions LLC

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 14A: 14A Runoff Area=26,877 sf 55.92% Impervious Runoff Depth>4.54"
Flow Length=375' Tc=5.9 min CN=89 Runoff=3.17 cfs 10,163 cf

Subcatchment 60F: 60F Runoff Area=39,928 sf 23.48% Impervious Runoff Depth>4.00"
Flow Length=195' Tc=10.0 min CN=84 Runoff=3.72 cfs 13,318 cf

Subcatchment 61F: 61F Runoff Area=20,284 sf 8.93% Impervious Runoff Depth>3.49"
Flow Length=120' Tc=15.6 min CN=79 Runoff=1.43 cfs 5,901 cf

Pond Q3: Grassed Underdrained Soil Filter Peak Elev=61.80' Storage=6,793 cf Inflow=3.17 cfs 10,163 cf
Outflow=0.26 cfs 3,520 cf

Pond Q5: Grassed Underdrained Soil Filter Q5 Peak Elev=63.53' Storage=2,164 cf Inflow=1.43 cfs 5,901 cf
Outflow=1.19 cfs 3,806 cf

Pond Q6: Grassed Underdrained Soil Filter Peak Elev=65.24' Storage=7,349 cf Inflow=3.72 cfs 13,318 cf
Outflow=0.99 cfs 6,401 cf

Total Runoff Area = 87,089 sf Runoff Volume = 29,383 cf Average Runoff Depth = 4.05"
69.90% Pervious = 60,871 sf 30.10% Impervious = 26,218 sf

Summary for Subcatchment 14A: 14A

Runoff = 3.17 cfs @ 12.08 hrs, Volume= 10,163 cf, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
8,615	98	Paved roads w/curbs & sewers, HSG C
6,415	98	Paved roads w/curbs & sewers, HSG D
6,493	74	>75% Grass cover, Good, HSG C
5,354	80	>75% Grass cover, Good, HSG D
26,877	89	Weighted Average
11,847		44.08% Pervious Area
15,030		55.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	5	0.0200	0.69		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 2.70"
1.4	5	0.0200	0.06		**Sheet Flow, BC** Grass: Dense n= 0.240 P2= 2.70"
0.8	40	0.0130	0.89		**Sheet Flow, CD** Smooth surfaces n= 0.011 P2= 2.70"
0.0	5	0.2500	3.50		**Shallow Concentrated Flow, BC** Short Grass Pasture Kv= 7.0 fps
3.6	320	0.0100	1.50		**Shallow Concentrated Flow, EF** Grassed Waterway Kv= 15.0 fps
5.9	375	Total			

Summary for Subcatchment 60F: 60F

Runoff = 3.72 cfs @ 12.14 hrs, Volume= 13,318 cf, Depth> 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
4,025	89	Gravel roads, HSG C
1,253	91	Gravel roads, HSG D
9,377	98	Paved parking, HSG D
12,009	74	>75% Grass cover, Good, HSG C
13,216	80	>75% Grass cover, Good, HSG D
48	30	Woods, Good, HSG A
39,928	84	Weighted Average
30,551		76.52% Pervious Area
9,377		23.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	30	0.0100	0.06		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
1.3	70	0.0100	0.89		**Sheet Flow, BC** Smooth surfaces n= 0.011 P2= 2.70"
0.7	70	0.0100	1.61		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
0.2	25	0.1200	2.42		**Shallow Concentrated Flow, DE** Short Grass Pasture Kv= 7.0 fps
10.0	195	Total			

Summary for Subcatchment 61F: 61F

Runoff = 1.43 cfs @ 12.22 hrs, Volume= 5,901 cf, Depth> 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,811	98	Paved parking
	8,967	74	>75% Grass cover, Good, HSG C
	9,506	80	>75% Grass cover, Good, HSG D
	20,284	79	Weighted Average
	18,473		91.07% Pervious Area
	1,811		8.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	100	0.0200	0.11		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 2.70"
0.0	5	0.0200	2.87		**Shallow Concentrated Flow, BC** Paved Kv= 20.3 fps
0.1	15	0.2000	3.13		**Shallow Concentrated Flow, CD** Short Grass Pasture Kv= 7.0 fps
15.6	120	Total			

Summary for Pond Q3: Grassed Underdrained Soil Filter Q3

Inflow Area = 26,877 sf, 55.92% Impervious, Inflow Depth > 4.54" for 25-Year event
Inflow = 3.17 cfs @ 12.08 hrs, Volume= 10,163 cf
Outflow = 0.26 cfs @ 13.05 hrs, Volume= 3,520 cf, Atten= 92%, Lag= 58.2 min
Secondary = 0.26 cfs @ 13.05 hrs, Volume= 3,520 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 61.80' @ 13.05 hrs Surf.Area= 4,073 sf Storage= 6,793 cf

Plug-Flow detention time= 327.2 min calculated for 3,520 cf (35% of inflow)
Center-of-Mass det. time= 191.4 min (980.0 - 788.6)

Volume	Invert	Avail.Storage	Storage Description
#1	59.50'	8,541 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.50	2,079	0	0
60.00	2,421	1,125	1,125
61.00	3,148	2,785	3,910
62.00	4,306	3,727	7,637
62.20	4,739	905	8,541

Device	Routing	Invert	Outlet Devices
#1	Secondary	61.75'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Secondary OutFlow Max=0.26 cfs @ 13.05 hrs HW=61.80' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.26 cfs @ 0.54 fps)

Summary for Pond Q5: Grassed Underdrained Soil Filter Q5

Inflow Area = 20,284 sf, 8.93% Impervious, Inflow Depth > 3.49" for 25-Year event
Inflow = 1.43 cfs @ 12.22 hrs, Volume= 5,901 cf
Outflow = 1.19 cfs @ 12.32 hrs, Volume= 3,806 cf, Atten= 16%, Lag= 6.2 min
Secondary = 1.19 cfs @ 12.32 hrs, Volume= 3,806 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 63.53' @ 12.32 hrs Surf.Area= 2,150 sf Storage= 2,164 cf

Plug-Flow detention time= 170.2 min calculated for 3,804 cf (64% of inflow)
Center-of-Mass det. time= 70.1 min (895.2 - 825.1)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	3,373 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	718	0	0
63.00	1,614	1,166	1,166
63.50	2,083	924	2,090
64.00	3,048	1,283	3,373

Device	Routing	Invert	Outlet Devices
#1	Secondary	63.50'	**75.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Secondary OutFlow Max=1.19 cfs @ 12.32 hrs HW=63.53' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.19 cfs @ 0.46 fps)

Summary for Pond Q6: Grassed Underdrained Soil Filter Q6

Inflow Area = 39,928 sf, 23.48% Impervious, Inflow Depth > 4.00" for 25-Year event
Inflow = 3.72 cfs @ 12.14 hrs, Volume= 13,318 cf
Outflow = 0.99 cfs @ 12.55 hrs, Volume= 6,401 cf, Atten= 73%, Lag= 24.8 min
Secondary = 0.99 cfs @ 12.55 hrs, Volume= 6,401 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 65.24' @ 12.55 hrs Surf.Area= 6,007 sf Storage= 7,349 cf

Plug-Flow detention time= 239.6 min calculated for 6,399 cf (48% of inflow)
Center-of-Mass det. time= 126.3 min (933.7 - 807.4)

Volume	Invert	Avail.Storage	Storage Description
#1	62.87'	10,943 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.87	1,456	0	0
63.00	1,573	197	197
64.00	2,530	2,052	2,248
64.37	2,901	1,005	3,253
65.00	5,616	2,683	5,936
65.80	6,902	5,007	10,943

Device	Routing	Invert	Outlet Devices
#1	Secondary	65.16'	**17.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Secondary OutFlow Max=0.99 cfs @ 12.55 hrs HW=65.24' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.99 cfs @ 0.70 fps)

Att. R

CONDITIONAL USE APPLICATION

State of Maine
Public School Project
23 Orono Road, Portland, Maine

Final Site Plan Application

New Fred P. Hall Elementary School

Prepared For:

City of Portland Planning Division
389 Congress Street
Portland, Maine

January 31, 2017

Prepared By:

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING

Conditional Use for Planning Board Review
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Conditional Use where the Planning Board is listed as the reviewing authority rather than the Zoning Board of Appeals. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

A. Conditional Use: Standards and Criteria – Section 14-474 and Zone Related Criteria
Conditional uses are listed in the Zoning Ordinance for each zone and these proposed uses must address the criteria contained in Section 14-474 in the written application. In addition to the criteria in Section 14-474, each application must address any applicable conditional use standards contained in the applicable zone and the proposed specific use. The Zoning Ordinance specifies when the Planning Board is designated as the reviewing authority rather than the Zoning Board of Appeals. This application is for Planning Board reviews only.

Upon showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the Board determines that:

a. The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and

b. The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and

c. The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

B. Site Plan Application: <u>Please submit the Conditional Use Application in addition to the applicable Site Plan Application.</u>

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

PROJECT NAME:

New Fred P. Hall Elementary School

PROPOSED DEVELOPMENT ADDRESS:

23 Orono Road

CHART/BLOCK/LOT (s): 275 C048 001 **Applicable Zone:** R-3

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Anita LaChance Business Name, if applicable: City of Portland Address: 389 Congress Street City/State : Portland, ME Zip Code: 04101	**Applicant Contact Information** Work # (207) 874-8681 Home# Cell # Fax# (207) 874-8669 e-mail: arl@portlandmaine.gov
Owner – (if different from Applicant) Name: Address: City/State : Zip Code:	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Billing Information Name: Address: City/State : Zip Code:	**Billing Information** Work # Cell # Fax# e-mail:

Designated person/person(s) for uploading to e-Plan:

Name: Jonah DeWaters, P.E. - Oak Point Associates (Agent)

e-mail: jdewaters@oakpoint.com

Name:

e-mail:

Name:

e-mail:

RIGHT, TITLE OR INTEREST:

The site is owned by the City of Portland

(Please identify the status provide documentary evidence, attached to this application, of the applicant's right, title, or interest in the subject property (ex: deed, option or contract to purchase or lease the property.)

VICINITY MAP: (Please attach a map showing the subject parcel and abutting parcels, labeled as to ownership and/or current use.)

EXISTING USE: Describe the existing use of the subject property.

Elementary School

PROPOSED USE: Describe the proposed use of the subject property

Elementary School

TYPE OF CONDITIONAL USE PROPOSED (Refer To Specific Provisions Of Land Use Code Authorizing The Proposed Conditional Use).

Institutional (Elementary School)

SITE PLAN: Submit a separate site plan application for the proposal that provides a site plan for the property, showing existing and proposed improvements, which meets the submission requirements of the applicable level of site plan review.

CONDITIONAL USE STANDARDS AND CONDITIONS – 14-474

Address the following criteria in your written application and any applicable conditional use standards contained in the zoning code for the specific use. Upon showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the Board determines that:

a. The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and

b. The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and

c. The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

CONDITIONAL USE AUTHORIZED BY: SECTION 14- 88

Address any specific conditional use standards for the specific use contained in the zoning code in the written submission.

APPLICATION FEES:

___ Conditional Use Review ($100.00) (Please submit a separate application for the applicable site plan review. Fees and charges are listed within the application)	The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($50.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.

INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov (Please be sure to designate a person who will be responsible for uploading documents and drawings.) This step will generate the project ID number for your project.

2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at Pay Your Invoice , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.

3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
   Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
   Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
   Tab 3 - Preparing and uploading revised drawings and documents

   Applying Online Instructions

5. When ready, upload your files and documents into the following folders:
   "Application Submittal – Drawings"
   "Application Submittal – Documents"

6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
X		1	Completed Application Form
X		1	Cover letter stating the nature of the project.
X		1	Evidence of right, title and interest.
X		1	Written Submittals that address the conditional use standards of Sec. 14-474.
X		1	Written submittals that address any applicable standards of review contained in the zoning code for the specific use.
X		1	A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet and containing the information required for the applicable level of site plan review.
X		1	An accompanying site plan application, as applicable.

APPLICANT SIGNATURE:

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Conditional Use. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	Date:
	1/31/17

OAK POINT ■ ASSOCIATES

January 31, 2017

Shukria Wiar, Planner
City of Portland
Department of Planning Division
389 Congress Street
4th Floor
Portland, ME 04103-3553

RE: Conditional Use Application
New Fred P. Hall Elementary School, 23 Orono Road
Portland, Maine

Dear Shukria:

Please find enclosed one (1) completed copy the Conditional Use Application and supporting documentation for the above referenced project, including the following:

- Completed Application Form
- Vicinity Map
- One full size (30"x42") copy of the overall existing conditions site plan (CX101) and the Overall Site plan (CO101)
- Property Deed
- Boundary Survey Plans for the property.

As indicated in the application as well as in the Level III Site Plan Approval Applications, the project consists of replacing the existing Fred P. Hall Elementary School with a new elementary school. The site has been occupied by an elementary school since 1957, and this project will not modify the general use of the property. In accordance with the Conditional Use Application requirements, please note the following:

a. The operating hours for the school will not change once the project is completed. All paved areas and associated site amenities are consistent with those found at other elementary school sites in the city. The types and volumes of vehicles accessing the site (school buses, personally operated vehicles and small amount of delivery trucks) are also consistent with other elementary schools.
b. The site will not produce or create unsanitary or harmful conditions, as the site will continue to be used as it is currently being used.

c. The design of the replacement school and associated site amenities will result in minimal impacts to the surrounding neighborhoods beyond the existing elementary school and associated site amenities. The only notable changes are the relocation of the primary site access from Warwick Street to be via Riggs Street (to separate bus traffic from all other traffic on the site and alleviate traffic problems on Orono Road) and the provision of a service entrance at the end of Purchas Street (this access point will be gated).

Thank you for taking the time to review the application package. If you have any questions or require additional information, please do not hesitate to contact me.

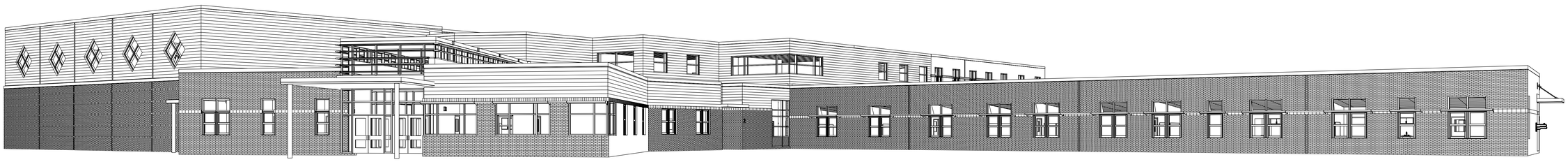
Sincerely,

Jonah DeWaters, PE, LEED AP
Civil Engineer

Enclosures

cc: Douglas Sherwood (w/enclosures)
Anita LaChance (w/o enclosures)

PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
23 ORONO ROAD, PORTLAND, ME
LEVEL III SITE PLAN APPROVAL



OAK POINT ASSOCIATES

ARCHITECTURE - ENGINEERING - PLANNING

231 MAIN STREET, BIDDEFORD, MAINE 04005

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE
JONAH DeWATERS
No 12273
LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JGB
CHECKED BY: TGB
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
COVER SHEET

OAK POINT ASSOCIATES
ARCHITECTURE • CONSTRUCTION MANAGEMENT • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. G-001
SHEET NO. 1 OF 53

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LIST OF DRAWINGS

NUMBER	SHEET	TITLE
1 OF 53	G-001	COVER SHEET
2 OF 53	G-002	LIST OF DRAWINGS, MAPS, LEGEND AND ABBREVIATIONS
3 OF 53	G-101	CODE INFORMATION
4 OF 53	G-102	EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING A
5 OF 53	G-103	EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING B
6 OF 53	G-104	EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING C
7 OF 53	G-105	EGRESS AND FIRE RATING SECOND FLOOR PART PLAN WING D
8 OF 53	G-106	EGRESS AND FIRE RATING SECOND FLOOR PART PLAN WING D - SOUTH END
9 OF 53	C-001	CIVIL NOTES, LEGEND AND ABBREVIATIONS
10 OF 53	CX101	OVERALL EXISTING CONDITIONS SITE PLAN
11 OF 53	CO101	OVERALL SITE PLAN
12 OF 53	CP101	PHASING PLAN
13 OF 53	CD101	NORTH REMOVALS SITE PLAN - PHASE 1
14 OF 53	CD102	NORTH REMOVALS SITE PLAN - PHASE 2
15 OF 53	CD103	SOUTH REMOVALS SITE PLAN
16 OF 53	CD104	TREE REMOVALS AND PRESERVATION PLAN
17 OF 53	CS101	NORTH SITE PLAN - PHASE 1
18 OF 53	CS102	NORTH SITE PLAN - PHASE 2
19 OF 53	CS103	SOUTH SITE PLAN
20 OF 53	CM101	PAVEMENT MARKING, SIGNAGE AND CIRCULATION PLAN
21 OF 53	CL101	NORTH LAYOUT PLAN
22 OF 53	CL102	SOUTH LAYOUT PLAN
23 OF 53	CU101	NORTH UTILITY PLAN - PHASE 1
24 OF 53	CU102	NORTH UTILITY PLAN - PHASE 2
25 OF 53	CU103	SOUTH UTILITY PLAN
26 OF 53	CG101	NORTH GRADING PLAN
27 OF 53	CG102	SOUTH GRADING PLAN
28 OF 53	C-301	ACCESS ROAD PROFILE AND CROSS SECTIONS
29 OF 53	C-501	EROSION AND SEDIMENTATION CONTROL NOTES
30 OF 53	C-502	EROSION AND SEDIMENTATION CONTROL DETAILS
31 OF 53	C-503	SITE DETAILS - 1
32 OF 53	C-504	SITE DETAILS - 2
33 OF 53	C-505	SITE DETAILS - 3
34 OF 53	C-506	WATER MAIN PROFILE AND WATER DETAILS
35 OF 53	C-507	UTILITY DETAILS - 1
36 OF 53	C-508	UTILITY DETAILS - 2
37 OF 53	C-509	UTILITY DETAILS - 3
38 OF 53	C-510	UTILITY DETAILS - 4
39 OF 53	LS101	NORTH LANDSCAPE PLAN
40 OF 53	LS102	SOUTH LANDSCAPE PLAN
	L-501	NOT INCLUDED IN THIS SUBMISSION
41 OF 53	L-502	LANDSCAPE DETAILS - 2
42 OF 53	AE001	FIRST FLOOR REFERENCE PLAN
43 OF 53	AE002	SECOND FLOOR REFERENCE PLAN
	AE003	NOT INCLUDED IN THIS SUBMISSION
44 OF 53	AE004	KEYNOTES
45 OF 53	AE101	FIRST FLOOR PART PLAN WING A
46 OF 53	AE102	FIRST FLOOR PART PLAN WING B
47 OF 53	AE103	FIRST FLOOR PART PLAN WING C
48 OF 53	AE104	SECOND FLOOR PART PLAN WING D
49 OF 53	AE105	SECOND FLOOR PART PLAN WING D SOUTH END
50 OF 53	AE120	ROOF PLAN
51 OF 53	AE201	BUILDING ELEVATIONS
52 OF 53	AE202	BUILDING ELEVATIONS
53 OF 53	AE203	BUILDING ELEVATIONS

LOCATION MAP
NOT TO SCALE

PLAN NORTH

GENERAL CONSTRUCTION NOTES

1. WORK INCLUDED IN THIS CONTRACT SHALL CONFORM TO STATE, NATIONAL AND OTHER CODES AND ORDINANCES WHICH APPLY TO THIS PROJECT.
2. ITEMS AND COMPONENTS SHOWN ON THE DRAWINGS SHALL BE PROVIDED UNLESS NOTED AS EXISTING.
3. WORK INDICATED IS INCLUDED IN THE BASE BID UNLESS NOTED OTHERWISE.
4. WORK FROM GIVEN DIMENSIONS AND LARGE SCALE DETAILS. DO NOT SCALE DRAWINGS.
5. VERIFY EXISTING CONDITIONS AND DIMENSIONS AND REPORT DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. PROCEED WITH THE WORK AFTER THE DISCREPANCIES HAVE BEEN RESOLVED BY THE OWNER.
6. AT ALL TIMES DURING CONSTRUCTION, MAINTAIN CONSTRUCTION SITE IN A NEAT, CLEAN AND SAFE MANNER.
7. OTHER THAN ENVIRONMENTAL PERMITS, OBTAIN ALL STATE AND LOCAL PERMITS THAT REQUIRED FOR THE SATISFACTORY COMPLETION OF WORK COMPLY WITH PERMIT APPROVAL CONDITIONS.
8. DISPOSE OF AND/OR RECYCLE NON-HAZARDOUS CONSTRUCTION DEBRIS FROM THE PROJECT SITE AS REQUIRED BY THE STATE OF MAINE AND AS REQUIRED BY THE CONTRACT. OBTAIN DISPOSAL PERMITS THAT ARE REQUIRED.
9. DISPOSE OF AND/OR RECYCLE NON-HAZARDOUS CONSTRUCTION DEBRIS FROM THE PROJECT SITE AS REQUIRED BY THE STATE OF MAINE AND AS REQUIRED BY THE CONTRACT. OBTAIN DISPOSAL PERMITS THAT ARE REQUIRED.
10. POWDER DRIVEN FASTENERS SHALL BE PROHIBITED FOR SUPPORT OF ARCHITECTURAL, MECHANICAL, OR ELECTRICAL COMPONENTS SUPPORT WHEN LOADED IN TENSION.
11. OBTAIN APPROVAL FROM THE OWNER FOR SEQUENCE AND TIMING OF OPERATIONS PRIOR TO COMMENCING WORK.
12. WORK SHALL BE COMPLETED IN COMPLIANCE WITH INDUSTRY STANDARDS AND PERFORMED IN A WORKMANLIKE PROFESSIONAL MANNER.
13. COORDINATE WITH THE OWNER FOR EXISTING OWNER EQUIPMENT TO BE REMOVED AND RELOCATED.

ABBREVIATIONS

&	AND
@	AT
±	PLUS/MINUS
%	PERCENT
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
BD	BOARD
BLDG	BUILDING
BOC	BOTTOM OF CURB
CB	CATCH FOR BASIN
CJ	CONTROL JOINT
CLG	CEILING
CLR	CLEAR
CMP	CENTRAL MAINE POWER
COOR	COORDINATE
CONC	CONCRETE
CONT	CONTINUOUS
DIA, ø	DIAMETER
DN	DOWN
DWG	DRAWING
EA	EACH
ELEV, EL	ELEVATION
EW	EACH WAY
EXIST	EXISTING
EXT	EXTERIOR
EQ	EQUAL
F	FINISH
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FF	FINISH FLOOR
FFE	FINISH FLOOR ELEVATION
FO	FIBER OPTIC
FT	FOOT
GA	GAGE
GAL	GALLON
HORIZ	HORIZONTAL
HM	HOLLOW METAL
HP	HIGH POINT
IBC	INTERNATIONAL BUILDING CODE
INV	INVERT
LLV	LONG LEG VERTICAL
MAX	MAXIMUM
MDEP	MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
MECH	MECHANICAL
MFRS	MANUFACTURE'S
MIN	MINIUM OR MINUTE
MTD	MOUNTED
MTL	METAL
N	NORTH
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO, #	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PLYWD	PLYWOOD
PPM	PARTS PER MILLION
PREFAB	PREFABRICATED
PSI	PUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTD	PAINT, PAINTED
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REINF	REINFORCED
SCFH	STANDARD CUBIC FOOT PER HOUR
SF	SQUARE FOOT
SIM	SIMILAR
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
SY	SQUARE YARD
SYS	SYSTEM
TBM	TEMPORARY BENCH MARK
TLCP	TOXICITY CHARACTERISTICS LEACHING PROCEDURE
TOC	TOP OF CURB
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
WWF	WELDED WIRE FABRIC

LEGEND

- DETAIL NUMBER / SHEET WHERE DETAIL IS DRAWN / SHEETS WHERE DETAIL IS TAKEN
- INDICATES DIRECTION OF CUTTING PLANE / WALL SECTION OR ELEVATION NUMBER / SHEETS WHERE WALL SECTION OR ELEVATION IS DRAWN / SHEETS WHERE WALL SECTION OR ELEVATION IS TAKEN
- INDICATES DIRECTION OF CUTTING PLANE / BUILDING SECTION NUMBER / SHEETS WHERE BUILDING SECTION IS DRAWN / SHEETS WHERE BUILDING SECTION IS TAKEN
- INTERIOR ELEVATION / SHEET WHERE INTERIOR ELEVATION IS DRAWNR
- A / 1 — COLUMN GRID LINE
- 5/AE201 — DETAIL NUMBER / SHEET WHERE DETAIL IS DRAWN
- A / 12 — KEYNOTES
- LIMIT OF WORK
- EXISTING ITEM TO REMAIN
- REMOVE OR SALVAGE EXISTING ITEM
- PROVIDE ITEM OR INSTALL SALVAGED ITEM
- ELEVATION TARGET
- DOOR NUMBER
- HANDICAP ACCESSIBILITY SYMBOL
- VCT / CPT — CHANGE IN FLOOR FINISH
- 11 — WINDOW TYPE
- NA — WALL TYPE
- CLASSROOM A / 102 — ROOM NAME AND NUMBER

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE
JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JGB
CHECKED BY: TGB
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK 024B, LOT 001)

TITLE THIS DWG:
LIST OF DRAWINGS, GENERAL NOTES
ARCHITECTURAL LEGEND AND
ABBREVIATIONS

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. G-002
SHEET NO. 2 OF 53

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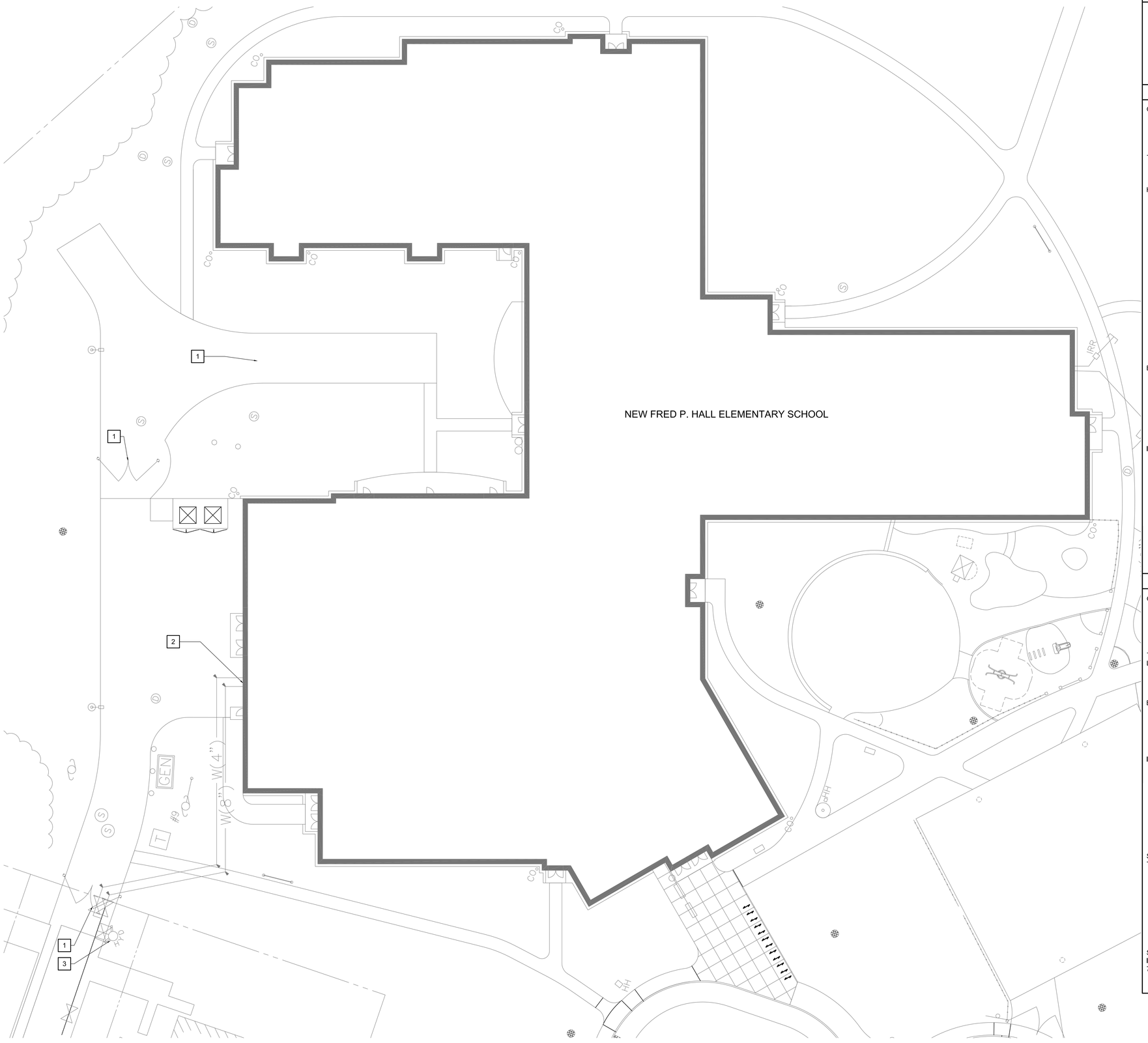

GENERAL CODE INFORMATION

APPLICABLE LIFE SAFETY/BUILDING CODES:
Maine Uniform Building and Energy Code (MUBEC) which is based on the 2009 International Building Code (IBC) and the 2009 International Existing Building Code (IEBC)
2009 National Fire Protection Association (NFPA) 1, adopted by the State Fire Marshal's Office and City of Portland
2009 NFPA 101, adopted by the State Fire Marshal's Office and City of Portland

AUTOMATIC SUPPRESSION SYSTEM: Fully Sprinklered in accordance with NFPA 13.

FIRE ALARM SYSTEM: Addressable, voice evacuation system in accordance with NFPA 72.

BUILDING CODE SUMMARY (IBC)

OCCUPANCY CLASSIFICATION:
- IBC: Mixed Use, Non-Separated Occupancies (IBC, Sections 508 and 508.3)
- Classifications of A-3/E (West, Zone 1) and (East, Zone 2) (IBC, Sections 303.1, 305.1)

TYPE OF CONSTRUCTION:
- IBC Type IIIB City of Portland Chapter 10 Fire Prevention and Protection Ordinance (IBC, Section 602.2 and Table 601).

HEIGHT AND AREA LIMITATIONS (based on IBC Type IIIB classification):
- Height: 55' Allowable/30' Actual (IBC, Table 503)
- Stories: 2 stories Allowable/2 stories Actual (IBC, Table 503)
- Base Areas per zone (IBC, Table 503):
  - Zone 1 (Assembly/Education, A-3/E) = 9,500 SF
  - Zone 2 (Education, E) = 14,500 SF
- Frontage & Automatic Sprinkler System Increases(IBC 506.2, Equation 5-2):
  - Zone 1 (Assembly/Education, A-3/E) If = [381'/531'-0.25] x30'/30'=.47
  - Zone 2 (Educational, E) If = [1299'/1,449'-0.25] x30'/30'=.60
  - Is = 2.0 (IBC, Section 506.3)
- Area Modifications with Increases (IBC, Equation 5-1):
  - Zone 1 (Assembly/Education, A-3/E) = 9,500 + [9,500x.60] + [9,500x2.0] = 34,200 SF
  - Zone 2 (Educational, E)=14,500+[14,500x.60]+[14,500x2.0] =52,200 SF
- Actual Areas:
  - Zone 1 (Assembly/Education, A-3/E) = 16,000 SF
  - Zone 2 (Educational, E) = 44,500 SF

EXTERIOR FIRE RESISTANCE RATINGS:
- Exposure to Other Buildings: No rating required
- Stair Enclosures with Exterior Walls with Exposure at <180°: 1 hour required for 10' (IBC, Section 1022.6)
- Fire Wall Intersecting Exterior Wall at <180°: 1 hour required for 4' on each side of fire wall, with 45 min penetrations (IBC, Section 706.5.1)
- Roof Rating: Min. Class C roof covering required (IBC, Table 1505.1)

INTERIOR FIRE RESISTANCE RATINGS:
- Stair Enclosures: 1 hour required (IBC, Sections 707.3.2 and 1022.1)
- Fire Wall: 3 hour (IBC, Section 706.4, and Table 706.4)
- Horizontal Exit: 2 hour (IBC, Section 1025.2)
- Elevator Shafts: 1 hour required (IBC, Sections 708.4 and 708.14)
- Elevator Machine Room: 1 hour required (IBC, Section 3006.4)
- Ductwork Shafts: NA, fire dampers provided at floor (IBC, Sections 708.2 exception 4 and 716.5.4)
- Areas with Increased Hazard: smoke partitions required (IBC, Table 508.2.5)
- Corridors: no rating required (IBC, Table 1018.1)
- IBC Occupancy Separation between A-3/E: none required (IBC, Table 508.4)
- Vertical Opening Protection: see schedule on G-103

STRUCTURAL ELEMENTS - FIRE RESISTANCE RATINGS REQUIRED FOR THE TYPE OF CONSTRUCTION (IBC, Table 601):
- Exterior load bearing walls: 0 hour, non-combustible
- Exterior non-load bearing walls: 0 hour
- Non-load bearing partitions: 0 hour
- Interior load bearing walls: 0 hour
- Structural Frame: 0 hour
- Floor Construction: 0 hour
- Roof Construction: 0 hour

STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, FLOORS, WALLS OR CEILINGS (IBC, Section 707.5.1):
- Rating to Match Barrier.

OCCUPANCY LOAD FACTORS (IBC, Table 1004.1.1):
- Classrooms: 20 net SF per occupant
- Assembly Unconcentrated (tables and chairs): 15 net SF per occupant
- Assembly Concentrated (chairs - not fixed): 7 net SF per occupant
- Administration/Clinic/Office: 100 gross SF per occupant
- Mechanical Spaces: 300 gross SF per occupant
- Storage Rooms: 500 gross SF per occupant

TOTAL CALCULATED BUILDING OCCUPANT LOAD: 3,405
- First Floor Occupant Load: 2,777
- Second Floor Occupant Load: 628

CAPACITY OF EGRESS COMPONENTS (IBC, Section 1005.1):
- Clear Width per person:
  - 0.2" per person for doors, corridors, and ramps
  - 0.3" per person for stairs

EXIT DISCHARGE (IBC, Section 1027.1):
- Exits discharge directly to the exterior.

COMMON PATH, DEAD-END, AND TRAVEL DISTANCE LIMITS (IBC, Sections 1014.3 and 1018.4, and Table 1016.1):
- Travel Distance: 250' Allowable/128' Actual
- Common Path of Travel elsewhere: 75' Allowable/60' Actual
- Dead End Lengths for Assembly Occupancies: 20' Allowable/0' Actual
- Dead End Lengths for Educational Occupancies: 50' Allowable/20' Actual

INTERIOR FINISH REQUIREMENTS FOR WALLS AND CEILINGS (IBC, Table 803.9):
- A-3/E Group (Zone 1):
  - Exit Enclosures (Stairs and Exit Passageway): Minimum of Class B
  - Corridors: Minimum of Class B
  - Individual Rooms: Minimum of Class C
- E Group (Zone 2):
  - Exit Enclosures (Stairs and Exit Passageway): Minimum of Class B
  - Corridors: Minimum of Class C
  - Individual Rooms: Minimum of Class C

LIFE SAFETY CODE SUMMARY (NFPA 101)

OCCUPANCY CLASSIFICATION:
- NFPA 101: Multiple Occupancy, Non-Seperated Occupancy (NFPA 101, Sections 6.1.14 and 6.1.14.4)
- Classifications of Assembly/Education (West, Zone 1)(NFPA 101, Sections 6.1.2, 6.1.3)
- Classification of Education (East, Zone 2) (NFPA 101, Section 6.2.3)

TYPE OF CONSTRUCTION AND ASSEMBLY OCCUPANT LOAD LIMITATIONS:
- Construction elements are NFPA Type II(000)
- Non-Rated Construction, Non-Combustible (2006 NFPA 220, Section 4.3.1 and Table 4.1.1)

EXTERIOR FIRE RESISTANCE RATINGS:
- Stair Enclosures with Exterior Walls with Exposure at < 180°: 1 hour required for 10' (NFPA 101, Section 7.2.2.5.2.1)
- Horizontal Exit Exposure at <180°: 1 hour required for 10' (NFPA 101, Section 7.2.4.3.4)

INTERIOR FIRE RESISTANCE RATINGS:
- Stair Enclosures: 1 hour required (NFPA 101, Section 7.1.3.2.1)
- Horizontal Exit at <180°: 1 hour required for 10'
- Elevator Shafts: 1 hour required (NFPA 101, Section 8.6.4)
- Ductwork Shafts: NA, fire dampers provided at floor (NFPA 101, Section 9.2.1 and 2009 NFPA 90A, Section 5.3.4.3.1)
- Areas with Increased Hazard; smoke partitions required (NFPA 101, Sections 8.7, 12.3.2.1.2, and 14.3.2.1)
- Corridors: smoke partitions (Sections 12.3.6 and 14.3.6)
- Vertical Opening Protection: see schedule on G-103

STRUCTURAL ELEMENT FIRE RESISTANCE RATINGS REQUIRED FOR THE TYPE OF CONSTRUCTION (2006 NFPA 220, Table 4.1.1).
- The new structural elements are required to meet Type II(000) construction):
  - Exterior load bearing walls: 0 hour, non-combustible
  - Exterior non-load bearing walls: 0 hour, non-combustible
  - Non-load bearing partitions: 0 hour, non-combustible
  - Interior load bearing walls: 0 hour, non-combustible
  - Structural Frame: 0 hour, non-combustible
  - Floor Construction: 0 hour, non-combustible
  - Roof Construction: 0 hour, non-combustible

STRUCTURAL ELEMENTS SUPPORTING FIRE RATED BARRIERS INCLUDING, WALLS, FLOORS OR CEILINGS (2009 NFPA 221, Section 7.2.5):
- Rating to Match Barrier.

OCCUPANCY LOAD FACTORS (NFPA 101, Table 7.3.1.2):
- Classrooms: 20 net SF per occupant
- Assembly Unconcentrated (tables and chairs): 15 net SF per occupant
- Assembly Concentrated (chairs - not fixed): 7 net SF per occupant
- Administration/Clinic/Office: 100 gross SF per occupant
- Mechanical Spaces: 300 gross SF per occupant
- Storage Rooms: 500 gross SF per occupant

TOTAL CALCULATED BUILDING OCCUPANT LOAD: 3,405
- First Floor Occupant Load: 2,777
- Second Floor Occupant Load: 628

CAPACITY OF EGRESS COMPONENTS (NFPA 101, Table 7.3.3.1):
- Clear Width per person:
  - 0.2" per person for doors, corridors, and ramps
  - 0.3" per person for stairs

EXIT DISCHARGE (NFPA 101, Section 7.7.1):
- Exits discharge is directly to the exterior.

COMMON PATH, DEAD-END, AND TRAVEL DISTANCE LIMITS (NFPA 101, Table A.7.6):
- Travel Distance Assembly: 250'/86' Actual
- Travel Distance elsewhere: 200' Allowable/148' Actual
- Common Path of Travel from Assembly Occupancies with more than 50 occupants: 20' Allowable/0' Actual
- Common Path of Travel from Assembly Occupancies with less than 50 occupants: 75' Allowable/60' Actual
- Common Path of Travel elsewhere: 100' Allowable/57' Actual
- Dead End Lengths for Assembly Occupancies: 20' Allowable/0' Actual
- Dead End Lengths elsewhere: 50' Allowable/20' Actual

INTERIOR FINISH REQUIREMENTS FOR WALLS AND CEILINGS (NFPA 101, Table A.10.2.2):
- Exit Enclosures (Stairs and Exit Passageway): Minimum of Class B
- Corridors: Minimum of Class C
- Individual Rooms: Minimum of Class C
- Textile Finishes: Class A (NFPA 101, Section 10.2.4.1)

GENERAL NOTE:

1. FIRE PROTECTION FEATURES OF THE BUILDING SHOWN IN SITE LAYOUT SKETCH ARE SHOWN FOR GENERAL INFORMATION ONLY. REFER TO APPLICABLE CIVIL, FIRE ALARM AND SPRINKLER SHEETS FOR DESIGN INFORMATION.

KEYNOTES: (THIS SHEET ONLY)

1	FIRE DEPARTMENT ACCESS
2	FIRE DEPARTMENT CONNECTION
3	FIRE HYDRANT

1 SITE LAYOUT SKETCH
G-101 NOT TO SCALE

GRID NORTH
(NAD83)

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: MDF
CHECKED BY: LEC
NO.
DATE: 01/31/17

STATE OF MAINE
LAURA E. CLEBAK
No. 10417
LICENSED PROFESSIONAL ENGINEER

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
CODE INFORMATION

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. G-101
SHEET NO. 3 OF 53

31 Jan, 2017 - 2:58pm
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GENERAL SHEET NOTE:

1. SEE SHEET G-103 FOR GENERAL NOTES, FIRE RATING LEGEND, AND FIRE RATING/FIRE RATING KEYNOTES.

EXTERIOR DOOR A38		
	WIDTH	CAPACITY
DOOR	32"	160
STAIR	NA	-
LIMIT		160
USE		115

EXTERIOR DOOR A38A		
	WIDTH	CAPACITY
DOOR	32"	160
STAIR	NA	-
LIMIT		160
USE		115

HORIZONTAL EXIT A16		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		322

EXTERIOR DOOR A38		
	WIDTH	CAPACITY
DOOR	32"	160
STAIR	NA	-
LIMIT		160
USE		114

EXTERIOR DOOR A33		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		3

EXTERIOR DOOR A33B		
	WIDTH	CAPACITY
DOOR	36"	160
STAIR	NA	-
LIMIT		160
USE		1

HORIZONTAL EXIT		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		244

EXTERIOR DOOR A30C		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		244

EXTERIOR DOOR A30B		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		243

HORIZONTAL EXIT		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		243

EXTERIOR DOOR A20		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		115

EXTERIOR DOOR A13		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		116

NOTE:
PROVIDES ADEQUATE CAPACITY FOR 209 SECOND FLOOR OCCUPANTS

HORIZONTAL EXIT TEMPORARY REFUGE
AREA=4,737
CAPACITY FACTORS=3 SF/PERSON
CAPACITY=4,737SF/3 SF PER PERSON=1,579 PERSONS
USE=322+244+243=809

EXTERIOR DOOR A02		
	WIDTH	CAPACITY
DOOR	132"	660
STAIR	NA	-
LIMIT		660
USE		116

MATCHLINE SEE SHEET G-103 FOR CONTINUATION

MATCHLINE SEE SHEET G-103 FOR CONTINUATION

78+573+1=652

30+25+2+2+248+19+20=346

10+7+1+2+778+176=974

1+1+29+30+11+3=75

DEAD-END=15'-0"

DEAD - END=20'-0"

VERTICAL OPENING 6

COMMON PATH OF TRAVEL=60'

10' - 0"

10' - 0"

10' - 0"

CAFETERIA A38
3,955 SF
OLF=7
OL=565

KITCHEN A37 1,801 SF OLF=100 OL=18

DRY STORAGE A40

TOILET A39

OFFICE A41

MOP A42

DISH WASH A43

CORRIDOR A16

TABLE/CHAIR STORAGE A29
327 SF
OLF=500
OL=1

STOR A28
245 SF
OLF=500
OL=1

MUSIC B11

MAKER SPACE B10

READ 180 B09

RECY A16A

STAIR S01

274 SF
OLF=500
OL=1

STORAGE A15A

ENTRY A15

GIRLS A27

BOYS A26

TOILET A14

TOILET A11A

TOILET A13

NURSE A11
337 SF
OLF=15
OL=23

LOST & FOUND A12
70 SF
OLF=500
OL=1

RECORDS A10
143 SF
OLF=500
OL=1

CORR A05

SMALL CONF A08
180 SF
OLF=15
OL=12

TOILET A09

2412 SF
OLF=15
OL=25

PRINCIPAL A07

ASSISTANT PRINCIPAL A06

WORK/VOL ROOM A04

MAIN OFFICE A03

LOBBY A02

VESTIBULE A01

BOILER A33
676 SF
OLF=300
OL=3

STOR A34
235 SF
OLF=500
OL=1

STAGE A35
1,166 SF
OLF=15
OL=78

OFFICE A30A
187 SF
OLF=100
OL=2

STOR A32A

BOYS A32

ELEC A33A
300 SF
OLF=300
OL=1

317 SF
OLF=50
OL=7

GIRLS A31

TOILET A31A

459 SF
OLF=50
OL=10

GYM A30
5,446 SF
OLF=7
OL=778

BLEACHERS
FIXED SEAT COUNT
OL=176

CORRIDOR A16

CUST A25

TECH A24
269 SF

460 SF
OLF=100
OL=4

CONF A23

362 SF
OLF=15
OL=25

CORRIDOR A22

WAITING A21
162 SF
OLF=15
OL=11

SMALL CONF A19
235 SF
OLF=15
OL=16

OFFICE A18
291 SF
OLF=100
OL=3

OFFICE A17

ENTRY A20

115

116

322

244

243

39

248

19

20

25

30

45

3

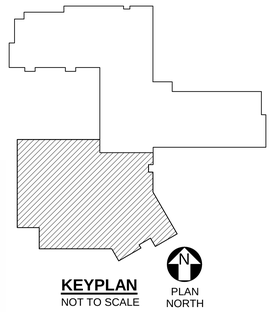
1

2

7

10

114



KEYPLAN
NOT TO SCALE

PLAN NORTH

1 EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING A

G-102 SCALE: 1/8" = 1'-0"

GRAPHIC SCALE

1/8"=1'-0" 8' 4' 0 8' 16'

CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: SAS
CHECK BY: LEC
NO.
DATE 01/31/17

LAURENT C. LECLAIR No. 10417 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE
1" = 16' Electrical

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG.
EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING A

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. G-102
SHEET NO. 4 OF 53

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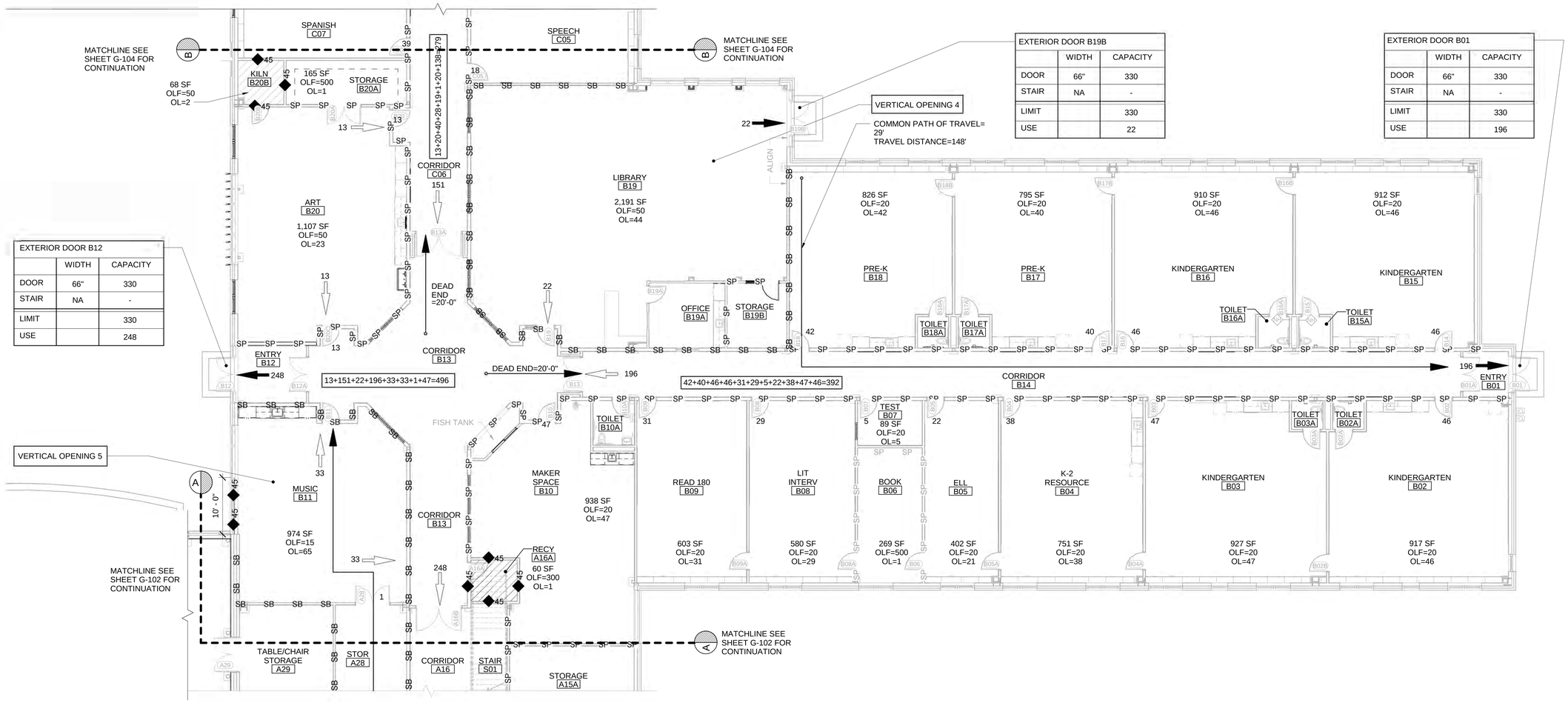


EXTERIOR DOOR B12		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		248

EXTERIOR DOOR B19B		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		22

EXTERIOR DOOR B01		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		196

1 EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING B

G-103 SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTE:

FIRE RATING LEGEND

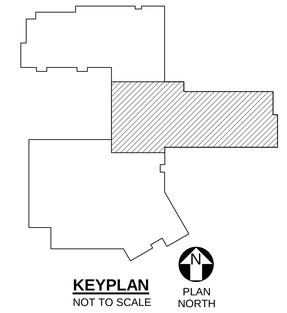
	TRAVEL PATH
XXX	EGRESSING OCCUPANTS EN-ROUTE TO EXIT (SHOWN FOR CLARITY ONLY)
XXX	OCCUPANTS UTILIZING EXIT
CP	COMMON PATH OF TRAVEL
DE	DEAD END LENGTH
LF	LINEAR FEET
OLF	OCCUPANT LOAD FACTOR
OL	OCCUPANT LOAD
SF	SQUARE FEET
TD	TRAVEL DISTANCE
	EXIT SIGN

FIRE RATING/FIRE RATING KEYNOTES

◆45	FIRE BARRIER WALL: 1-HOUR FIRE RESISTANCE RATING WITH 45-MINUTE OPENING PROTECTION AND 1-HOUR FIRESTOPPING AT PENETRATIONS AND JOINTS.
◆60	FIRE BARRIER WALL: 1-HOUR FIRE RESISTANCE RATING WITH 60-MINUTE OPENING PROTECTION AND 1-HOUR FIRESTOPPING AT PENETRATIONS AND JOINTS.
◆◆◆	FIRE WALL: 3-HOUR FIRE WALL ACHIEVED BY A DOUBLE FIRE WALL, WITH EACH WALL HAVING A 2-HOUR FIRE RESISTANCE RATING WITH 90-MINUTE OPENING PROTECTION AND 2-HOUR FIRESTOPPING AT PENETRATIONS AND JOINTS.
◆◆◆SB	COMBINATION 3-HOUR FIRE WALL AND SMOKE BARRIER.
SB	SMOKE BARRIER WALLS: SMOKE RESISTANT SEALANT AT PENETRATIONS AND JOINTS. SELF-CLOSING AND LATCHING DOORS WITH GASKETING. SMOKE DAMPPERS AT DUCTWORK PENETRATIONS.
SP	SMOKE PARTITION WALLS: SMOKE RESISTANT SEALANT AT PENETRATIONS AND JOINTS AND SELF-CLOSING AND LATCHING DOORS.
	FIRE WALL HORIZONTAL VESTIBULE: 2-HOUR FIRE RATED HORIZONTAL FLOOR/CEILING ASSEMBLY WITH 90-MINUTE OPENING PROTECTION AND 2-HOUR FIRESTOPPING AT PENETRATIONS AND JOINTS.
	FIRE BARRIER HORIZONTAL ASSEMBLY: 1-HOUR FIRE RATED HORIZONTAL FLOOR/CEILING ASSEMBLY WITH 60-MINUTE OPENING PROTECTION AND 1-HOUR FIRESTOPPING AT PENETRATIONS AND JOINTS.
	FIRE BARRIER HORIZONTAL ASSEMBLY: 1-HOUR FIRE RATED HORIZONTAL FLOOR/CEILING ASSEMBLY WITH 45-MINUTE OPENING PROTECTION AND 1-HOUR FIRESTOPPING AT PENETRATIONS AND JOINTS.

VERTICAL OPENING SCHEDULE

VERTICAL OPENING	2015 IBC OPENING CLASSIFICATION AND PROTECTION REQUIREMENTS	2009 NFPA 101 OPENING CLASSIFICATION AND PROTECTION REQUIREMENTS
1-TWO STORY STAIR 2-TWO STORY STAIR	1023.2 INTERIOR EXIT STAIRWAY. I-HOUR FIRE BARRIERS AT BOTH FLOOR LEVELS.	7.1.3.2.1 (1) EXIT STAIR. 1-HOUR FIRE BARRIERS AT BOTH FLOOR LEVELS.
3-TWO STORY ELEVATOR SHAFT	712.1.1 AND 713 SHAFT ENCLOSURE. 1-HOUR FIRE BARRIERS AT BOTH FLOOR LEVELS.	8.6.4 AND 8.6.5 SHAFT ENCLOSURE. 1-HOUR FIRE BARRIERS AT BOTH FLOOR LEVELS.
4-OPEN TO LIBRARY BELOW 5-OPEN TO MUSIC ROOM BELOW	712.1.9 TWO-STORY OPENING. NO PROTECTION REQUIRED.	8.6.6 COMMUNICATING SPACE. SEPARATED FROM BOTH FLOOR LEVELS BY SMOKE BARRIERS.
6-OPEN STAIR	712.1.2 AND 1019.3 EXCEPTION 1 TWO-STORY EXIT ACCESS STAIR NO PROTECTION REQUIRED.	8.6.8.1 CONVENIENCE OPENING. SEPARATED FROM 1-STORY BY 1-HOUR FIRE BARRIERS.



GRAPHIC SCALE

1/8"=1'-0" 8' 4' 0 8' 16'

CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
		REVISIONS

BY

DRAWN BY: SAS
CHECK BY: LEC

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG.: EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING B

OAK POINT ASSOCIATES

231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO.: G-103

SHEET NO.: 5 OF 53

1/31/2017 3:34:37 PM
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GENERAL SHEET NOTE:

1. SEE SHEET G-103 FOR GENERAL NOTES, FIRE RATING LEGEND, AND FIRE RATING/FIRE RATING KEYNOTES.

EXTERIOR DOOR C01		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		151

NOTE:
PROVIDES ADEQUATE CAPACITY FOR 209 SECOND FLOOR OCCUPANTS

VERTICAL OPENING 1

STAIR S03		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	NA	-
LIMIT		330
USE		168

NOTE:
PROVIDES ADEQUATE CAPACITY FOR 210 SECOND FLOOR OCCUPANTS

TRAVEL DISTANCE 125'

VERTICAL OPENING 2

VERTICAL OPENING 3

35+43+3+48+1+1+39+38+39+39+39+1+9=335

13+39+2+167+1+18+27+18+17=302

COMMON PATH OF TRAVEL=57'

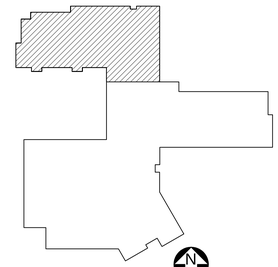
DOOR C10A		
	WIDTH	CAPACITY
DOOR	32"	160
STAIR	NA	-
LIMIT		160
USE		1

MATCHLINE SEE SHEET G-103 FOR CONTINUATION

MATCHLINE SEE SHEET G-103 FOR CONTINUATION

1 EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING C

G-104 SCALE: 1/8" = 1'-0"



KEYPLAN
NOT TO SCALE

PLAN NORTH

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

GRAPHIC SCALE

1/8"=1'-0" 8' 4' 0 8' 16'

CHECK GRAPHIC SCALE BEFORE USING

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: SAS
CHECK BY: LEC
NO.
DATE 01/31/17

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: EGRESS AND FIRE RATING FIRST FLOOR PART PLAN WING C

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. G-104
SHEET NO. 6 OF 53

1/31/2017 3:34:49 PM
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STAIR S03		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	66"	220
LIMIT		220
USE		210

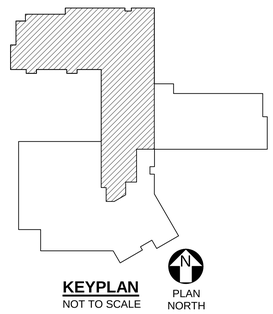
STAIR S02		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	67"	223
LIMIT		223
USE		209

GENERAL SHEET NOTE:

1. SEE SHEET G-103 FOR GENERAL NOTES, FIRE RATING LEGEND, AND FIRE RATING/FIRE RATING KEYNOTES.

1 EGRESS AND FIRE RATING SECOND FLOOR PART PLAN WING D

G-105 SCALE: 1/8" = 1'-0"



GRAPHIC SCALE

1/8"=1'-0" 8' 4' 0 8' 16'

SEE GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
		DATE 01/31/17	NO.

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: EGRESS AND FIRE RATING SECOND FLOOR PART PLAN WING D

DRAWN BY: SAS
CHECK BY: LEC

DRAWING NO. G-105
SHEET NO. 7 OF 53

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

1/31/2017 3:34:57 PM
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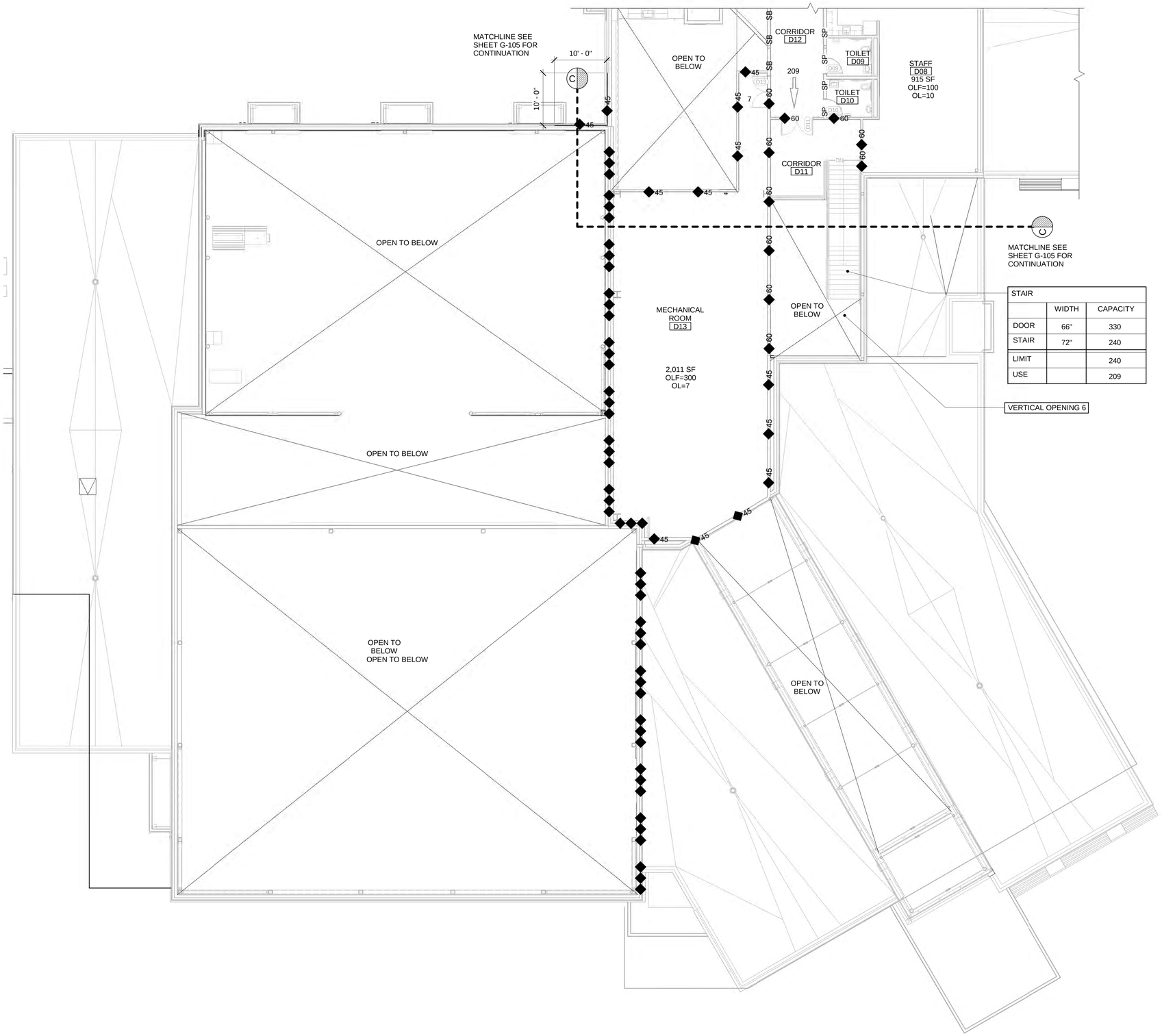
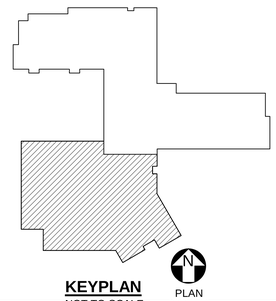
GENERAL SHEET NOTE:

1. SEE SHEET G-103 FOR GENERAL NOTES, FIRE RATING LEGEND, AND FIRE RATING/FIRE RATING KEYNOTES.



STAIR		
	WIDTH	CAPACITY
DOOR	66"	330
STAIR	72"	240
LIMIT		240
USE		209



KEYPLAN
NOT TO SCALE

PLAN NORTH

1 EGRESS AND FIRE RATING SECOND FLOOR PART PLAN WING D - SOUTH END

G-106 SCALE: 1/8" = 1'-0"

GRAPHIC SCALE

1/8"=1'-0" 8' 4' 0 8' 16'

SEE GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

LAURALEE CLESAY No. 10417 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: EGRESS AND FIRE RATING SECOND FLOOR PART PLAN WING D - SOUTH END

DRAWN BY: SAS
CHECK BY: LEC

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
		DATE 01/31/17	

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. G-106
SHEET NO. 8 OF 53

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CIVIL NOTES:

GENERAL

1. REPAIR OR REPLACE ALL DAMAGE RESULTING FROM CONTRACTOR OPERATIONS, AS APPROVED BY THE OWNER, AT NO ADDITIONAL COST TO THE OWNER.

2. DO NOT PLACE, PUT OR DUMP ANY CONSTRUCTION MATERIALS OR DEMOLITION DEBRIS IN AREAS THAT COULD ADVERSELY IMPACT THE SURROUNDING WETLAND AREAS OR CAPISIC BROOK.

4. INFORMATION SHOWN HEREON IS BASED ON THE FOLLOWING:
   a. "BOUNDARY AND TOPOGRAPHIC SURVEY, HALL SCHOOL" BY OWEN HASKELL, INC, 390 US ROUTE 1, FALMOUTH, ME. DATED FEBRUARY 14, 2013. LAST REVISED 10/5/15.
   b. SITE RECONNAISSANCE PERFORMED BY OAK POINT ASSOCIATES IN SPRING, 2013 AND BETWEEN SPRING 2014 AND SUMMER, 2016.
   c. INFORMATION PROVIDED BY THE CITY OF PORTLAND BETWEEN SPRING, 2012 AND WINTER, 2016.
   d. INFORMATION PROVIDED BY THE PORTLAND WATER DISTRICT BETWEEN SPRING, 2012 AND WINTER, 2016.
   e. INFORMATION PROVIDED BY UNITIL IN SUMMER, 2016.

5. PROPERTY LINES SHOWN ARE BASED ON PLAN REFERENCE 4a ABOVE.

6. WETLANDS SHOWN HEREON ARE BASED ON A WETLAND DELINEATION PERFORMED IN 2013 STATEWIDE SURVEYS, INC, 35 EASTMAN ROAD, CAPE ELIZABETH, MAINE, 04107.

7. ELEVATIONS SHOWN HEREON ARE BASED ON THE CITY OF PORTLAND DATUM. THE PROJECT BENCHMARK IS A 3' OFFSET MONUMENT AT THE CORNER OF RIGGS STREET AND WARWICK STREET. ELEVATION: 63.61' (AS INDICATED IN THE OWEN HASKELL SURVEY REFERENCED ABOVE).

8. EXISTING BENCHMARK INFORMATION:
   a. TBM1 IS A 3' OFFSET BRASS MONUMENT AT THE INTERSECTION OF RIGGS AND WARWICK STREET REFERENCED ABOVE. BENCHMARK ELEVATION: 63.31'
   b. TBM2 IS THE FRONT BONNET BOLT ON FIRE HYDRANT ON THE WEST SIDE OF WARWICK STREET. BENCHMARK ELEVATION: 67.15'
   c. TBM3 IS A SPIKE IN LIGHT POLE #13.2, NEAR THE END OF ORONO ROAD. BENCHMARK ELEVATION: 67.16'

9. BENCH MARKS A AND C LISTED ABOVE WILL BE DISTURBED/REMOVED DURING CONSTRUCTION ACTIVITIES. ESTABLISH ADDITIONAL PROJECT BENCHMARKS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES THAT WILL DISTURB EXISTING BENCHMARKS.

10. BEARINGS AND NORTH ROTATION ARE BASED ON GRID NORTH, NAD83. COORDINATES SHOWN HEREON ARE ON THE CITY OF PORTLAND COORDINATE DATUM AND ARE BASED ON THE COORDINATES FOR A MONUMENT AT THE NORTHWEST CORNER OF RIGGS STREET AND WARWICK STREET AND A MONUMENT AT THE SOUTHEAST CORNER OF THE HALL SCHOOL PROPERTY.

11. THIS PROJECT IS SUBJECT TO THE FOLLOWING PERMITS. ALL KNOWN CONDITIONS OF THE PERMITS HAVE BEEN INCLUDED IN THE CONTRACT DRAWINGS AND SPECIFICATIONS. ABIDE BY ALL CONDITIONS OF THESE PERMITS:
   a. MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION "SITE LOCATION OF DEVELOPMENT"
   b. NATURAL RESOURCES PROTECTION ACT, TIER I (FOR WETLAND IMPACTS LESS THAN 14,999 SQUARE FEET).
   c. MAINE GENERAL CONSTRUCTION PERMIT (MGCP).
   d. CITY OF PORTLAND LEVEL III SITE PLAN APPROVAL.
   e. CITY OF PORTLAND CONDITIONAL USE PERMIT.

12. REVIEW MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION SITE LOCATION OF DEVELOPMENT APPROVAL AND CONDITIONS (PROVIDED IN THE PROJECT SPECIFICATIONS). PRIOR TO COMMENCING ANY SITEWORK, PROVIDE A SIGNED COPY OF THE CERTIFICATION FORM INCLUDED IN THE PROJECT SPECIFICATIONS TO THE ARCHITECT FOR FILING WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

13. PERFORM ALL WORK WITHIN PUBLIC RIGHT OF WAYS (LOMOND STREET, ORONO ROAD, PURCHAS STREET, RIGGS STREET, AND WARWICK STREET) IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS.

UTILITY NOTES:

1. EXISTING UNDERGROUND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ONLY AND ARE BASED ON FIELD RECONNAISSANCE, PLAN REFERENCES AND SUBSURFACE UTILITY LOCATION. PRIOR TO COMMENCING EXCAVATION OPERATIONS ON THE SITE, DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES IN THE WORK UTILIZING A PRIVATE UTILITY LOCATING SERVICE, CONTACT "OK TO DIG" AT 1-866-658-6344, AND CONTACT "DIG SAFE" AT 811 TO OBTAIN A "DIGSAFE" PERMIT. REPORT ANY DISCREPANCIES BETWEEN THE PLANS AND THE EXACT UTILITY LOCATIONS TO THE OWNER PRIOR TO DISTURBING AREAS SURROUNDING THE UNDERGROUND UTILITIES.

2. PROVIDE ADEQUATE NOTIFICATION OF ALL UTILITY COMPANIES PRIOR TO PERFORMING ANY WORK THAT COULD EFFECT THEM. COORDINATE TIMING OF NOTIFICATION WITH EACH UTILITY COMPANY'S REQUIREMENTS AND THE NOTIFICATION REQUIREMENTS ON THIS SHEET.

3. PERFORM ALL WATER SERVICE AND WATER MAIN WORK, INCLUDING TEMPORARY IN ACCORDANCE WITH PORTLAND WATER DISTRICT REQUIREMENTS. OBTAIN APPROVAL FROM PORTLAND WATER DISTRICT PRIOR TO CONSTRUCTION. ALL WATER MAIN WORK SHALL BE PERFORMED BY A PORTLAND WATER DISTRICT-APPROVED CONTRACTOR.

4. PERFORM ALL ELECTRICAL SERVICE ENTRANCE WORK, TEMPORARY POWER DURING CONSTRUCTION AND UTILITY WORK ON RIGGS AND LOMOND STREET IN ACCORDANCE WITH CENTRAL MAINE POWER REQUIREMENTS. OBTAIN APPROVAL FROM CENTRAL MAINE POWER COMPANY PRIOR TO CONSTRUCTION.

5. PERFORM COMMUNICATIONS SERVICE WORK (TELEPHONE, FIBER OPTIC LINES, AND CABLE TELEVISION) IN ACCORDANCE WITH FAIRPOINT COMMUNICATION AND TIME WARNER CABLE (SPECTRUM) REQUIREMENTS. OBTAIN APPROVAL FROM FAIRPOINT AND TIME WARNER CABLE (SPECTRUM) PRIOR TO CONSTRUCTION.

6. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF UTILITY SERVICE CONDUIT, PADS, MANHOLES AND HANDHOLES IDENTIFIED ON THE PLANS TO ACCOMMODATE ELECTRIC AND WATER SERVICES. CENTRAL MAINE POWER WILL BE RESPONSIBLE FOR INSTALLATION OF THE TRANSFORMER, UTILITY POLES AND PRIMARY SERVICE CABLES.

7. PERFORM GAS SERVICE WORK IN ACCORDANCE WITH UNITIL REQUIREMENTS. OBTAIN APPROVAL FROM UNITIL PRIOR TO CONSTRUCTION.

8. PERFORM ALL STORM DRAIN AND SANITARY SEWER WORK IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN RECOMMENDATIONS.

PHASING, CONSTRUCTION ACCESS AND CONSTRUCTION MANAGEMENT NOTES

1. EXCEPT FOR SITE ACCESS VIA THE WOODED AREAS ON THE SOUTH SIDE OF THE PLAYGROUND AND THE VICINITY OF THE PROPOSED BUILDING AND FROM THE END OF PURCHAS STREET, ALL PHASE 1 BUS, VEHICLE, AND PEDESTRIAN ACCESS SHALL UTILIZE EXISTING SITE ACCESS POINTS. COORDINATE WORK SO THAT PHASE I WORK DURING 2017-2018 SCHOOL YEAR OCCURS ONLY WITHIN FENCED AREAS AND DOES NOT OBSTRUCT EXISTING VEHICULAR ACCESS TO/FROM WARWICK STREET AND ORONO ROAD OR PEDESTRIAN ACCESS FROM PINECREST STREET AND GODFREY STREET. LOCATE PHASE I CONSTRUCTION FENCE AS INDICATED TO MAINTAIN EMERGENCY VEHICLE ACCESS TO THE SOUTH AND EST SIDES OF THE EXISTING SCHOOL.

2. SPACE AVAILABLE FOR CONTRACTOR PARKING, STAGING, LAYDOWN, AND STOCKPILE/STORAGE ON THE SITE IS MINIMAL DUE TO THE PHASING OF THE PROJECT, COORDINATE TIMING OF DELIVERIES AND STOCKPILING OF MATERIAL TO MINIMIZE THE AMOUNT OF CONSTRUCTION MATERIALS STORED ON SITE, ESPECIALLY DURING THE SECOND HALF OF PHASE I (THE 2017-2018 SCHOOL YEAR). EXCEPT IN AREAS DESIGNATED ON THE DRAWINGS, COORDINATE ALL CONTRACTOR PARKING, STAGING, LAYDOWN, AND STOCKPILE/STORAGE LOCATIONS WITH THE ARCHITECT PRIOR TO BEING USED.

3. SEE SHEET CP101 FOR ADDITIONAL PHASING, CONSTRUCTION ACCESS AND CONSTRUCTION MANAGEMENT INFORMATION.

4. PARKING OF PERSONAL VEHICLES AND CONSTRUCTION EQUIPMENT IN SAGAMORE VILLAGE, ON ORONO ROAD AND ON WARWICK STREET IS PROHIBITED WITHOUT WRITTEN PERMISSION FROM PORTLAND HOUSING AUTHORITY (SAGAMORE VILLAGE) AND THE CITY OF PORTLAND.

5. IDLING OF CONSTRUCTION EQUIPMENT AND DELIVERY VEHICLES IN OFF SITE AREAS IS PROHIBITED WITHOUT WRITTEN PERMISSION FROM PORTLAND HOUSING AUTHORITY (SAGAMORE VILLAGE) AND THE CITY OF PORTLAND.

6. DO NOT PERFORM TREE CLEARING ACTIVITIES BETWEEN JUNE 1ST AND JULY 31ST.

7. PHASE 1 CONSTRUCTION ACCESS IS ANTICIPATED TO BE FROM PURCHAS STREET. PHASE 2 CONSTRUCTION ACCESS IS ANTICIPATED TO BE FROM WARWICK STREET AND ORONO ROAD. PROVIDE STABILIZED CONSTRUCTION ENTRANCES/EXITS AT ALL EXIT POINTS USED BY CONSTRUCTION EQUIPMENT.

8. SOME WORK SHOWN HEREIN REQUIRES ACCESSING ABUTTING PROPERTIES. THE ARCHITECT HAS OBTAINED PERMISSION FOR THIS WORK. PROVIDE ADEQUATE NOTIFICATION PRIOR TO PERFORMING THE WORK (SEE NOTIFICATION REQUIREMENTS, THIS SHEET).

9. MAINTAIN ACCESS TO/FROM WARWICK STREET TO THE HOUSE LOCATED AT 67 LOMOND STREET AT ALL TIMES DURING CONSTRUCTION UNLESS WRITTEN PERMISSION FROM ABUTTING PROPERTY OWNERS IS OBTAINED TO TEMPORARILY BLOCK ACCESS TO THEIR PROPERTY.

NOTIFICATION REQUIREMENTS:

IN ADDITION TO THE NOTIFICATION REQUIREMENTS IN THE PROJECT SPECIFICATIONS, PROVIDE THE FOLLOWING NOTIFICATIONS. DO NOT PROCEED WITH OUT ACKNOWLEDGMENT THAT THE NOTIFICATION HAS BEEN RECEIVED AND AUTHORIZATION TO PROCEED HAS BEEN GRANTED:

1. INSPECTION OF WATER MAINS AND TEMPORARY WATER SERVICE: PROVIDE WRITTEN NOTIFICATION TO PWD, OWNER AND ARCHITECT AT LEAST 5 BUSINESS DAYS IN ADVANCE OF BEGINNING ANY ASSOCIATED WITH TEMPORARY OR PERMANENT WATER MAINS OR APPURTENANCES.

2. WATER SERVICE INTERRUPTIONS: PROVIDE WRITTEN NOTIFICATION TO PWD, OWNER AND ARCHITECT AT LEAST 4 BUSINESS DAYS IN ADVANCE OF INTERRUPTING WATER SERVICE. PWD WILL NOTIFY ALL OTHER AFFECTED PARTIES (HOMEOWNERS).

3. INSTALLATION OF SEWER AND STORM DRAIN LINES: NOTIFY CITY OF PORTLAND DEPARTMENT OF PUBLIC SERVICES ONCE FINAL CONNECTIONS HAVE BEEN MADE, THE LINE HAS BEEN BACKFILLED, AND ACCESS IS AVAILABLE TO ALLOW FOR CAMERA INSPECTION OF THE LINES TO CONFIRM COMPLIANCE WITH CITY OF PORTLAND STANDARDS AND SPECIFICATIONS.

4. INSTALLATION OF GAS MAINS: NOTIFY UNITIL AT LEAST 15 BUSINESS DAYS IN ADVANCE OF REQUIRING GAS MAIN INSTALLATION TO COORDINATE TRENCH EXCAVATION. INSTALLATION OF PIPES AND CONNECTIONS ARE BY UNITIL AND NOT IN CONTRACT. BACKFILL TRENCH ONCE UNITIL HAS INSTALLED AND TESTED PIPING AND CONNECTIONS AS REQUIRED.

5. SEWER SERVICE INTERRUPTIONS: PROVIDE WRITTEN NOTIFICATION TO OWNER AND ARCHITECT AT LEAST 5 BUSINESS DAYS IN ADVANCE OF INTERRUPTING SEWER SERVICE.

6. ABANDONING EXISTING STORM DRAIN AND SEWER LINES: PROVIDE WRITTEN NOTICE TO THE OWNER, ARCHITECT AND CITY OF PORTLAND DEPARTMENT OF PUBLIC SERVICES SEWER MAINTENANCE DIVISION AT LEAST 4 BUSINESS DAYS IN ADVANCE OF ABANDONING THE LINE. THE CITY WILL PROVIDE CAMERA INSPECTION SERVICES TO VERIFY THE LOCATION OF THE MAIN AND ALLOCATE ONE HOUR TO ASSIST THE ABANDONMENT PROCESS IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS.

7. OIL TANK REMOVAL: PROVIDE WRITTEN NOTIFICATION TO THE DEP, PORTLAND FIRE DEPARTMENT, OWNER AND ARCHITECT LEAST 10 BUSINESS DAYS PRIOR TO COMMENCING TANK REMOVAL OPERATIONS.

8. ELECTRIC AND COMMUNICATIONS SERVICE INTERRUPTIONS: NOTIFY OWNER, ARCHITECT, CMP, FAIRPOINT COMMUNICATIONS, AND TIME WARNER CABLE (SPECTRUM) AT LEAST 10 BUSINESS DAYS PRIOR TO ANY SERVICE INTERRUPTIONS.

9. TEMPORARY UTILITIES, RELOCATED UTILITY POLES AND INSTALLATION OF OVERHEAD ELECTRICAL AND COMMUNICATIONS SERVICE (TEMPORARY AND PERMANENT): NOTIFY CMP, FAIRPOINT COMMUNICATIONS, AND TIME WARNER CABLE (SPECTRUM) IN ACCORDANCE WITH THEIR WRITTEN REQUIREMENTS. NOTIFY OWNER AND ARCHITECT AT LEAST 10 BUSINESS DAYS PRIOR TO INSTALLATION.

10. LIGHTING INSTALLATIONS IN PUBLIC WAYS: NOTIFY THE OWNER, ARCHITECT, CITY OF PORTLAND, AND CMP WHEN LIGHTING HAS BEEN INSTALLED AND READY FOR OPERATION SO THAT THE LIGHTS CAN BE INSPECTED.

11. EXISTING PLAYGROUND EQUIPMENT, SCHOOL SIGN AND SITE FURNISHING REMOVAL: PROVIDE WRITTEN NOTICE TO OWNER AND ARCHITECT AT LEAST 15 BUSINESS DAYS PRIOR TO REMOVAL.

SOIL NOTES

1. REFER TO THE GEOTECHNICAL REPORT IN THE PROJECT SPECIFICATIONS FOR ADDITIONAL GEOTECHNICAL REQUIREMENTS.

2. THE EXISTING SUBGRADE SOILS CONSIST OF A THIN LAYER SURFICIAL FILLS AND NATIVE SANDS OVERLYING A DEEP GLACIOMARINE DEPOSIT THAT BECOMES SOFT AT DEPTHS OF 8 TO 13 FEET BELOW THE EXISTING GROUND SURFACE AND A WATER TABLE ELEVATION OF APPROXIMATELY 5 FEET BELOW THE EXISTING GROUND SURFACE. USE SHEET/SHORING AND DEWATERING TECHNIQUES IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS FOR ALL EXCAVATIONS, ESPECIALLY BELOW GROUNDWATER ELEVATION AND WITHIN THE SOFT CLAY LAYER. ALL DEWATERING ACTIVITIES SHALL ALSO BE IN ACCORDANCE WITH MAINE DEP REQUIREMENTS.

3. IN ADDITIONAL TO THE REQUIREMENTS INDICATED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS, USE THE FOLLWOING MATERIALS FOR FILL AND BACKFILL:

   a. COMMON BORROW: USE AS FILL IN LANDSCAPED AREAS ALONG THE ACCESS ROAD FROM LOMOND STREET.

   b. GRANULAR BORROW: USE AS FILL AND BACKFILL IN PAVED AREAS, AND STONEDUST AND GRAVEL AREAS.

   c. GRANULAR BORROW FOR UNDERWATER BACKFILL: USE IN LOW LYING OR WET AREAS THAT CANNOT BE ADEQUATELY DEWATERED (DAYLIGHT TO THE TOW OF FILL WHEN USED IN EMBANKMENT AND WETLAND FILL AREAS) AND AS FIRST 2 FEET OF BACKFILL IN FORMER UTILITY TRENCHES.

   d. GRANULAR BORROW FOR EMBANKMENT CONSTRUCTION: USE AS REMAINDER OF BACKFILL IN FORMER UTILITY TRENCHES.

   e. STRUCTURAL FILL: FILL TO REPAIR SOFT AREAS AND BACKFILL AT SLABS, FOUNDATIONS, AND FOOTINGS.

   f. CRUSHED STONE: BENEATH FOOTINGS AND FOR UNDERDRAIN AGGREGATE.

4. REFER TO THE FOUNDATION PREP AND DRAIN DETAIL FOR ADDITIONAL EXCAVATION AND BACKFILL REQUIREMENTS ASSOCIATED WITH BUILDING FOOTINGS AND FOUNDATIONS.

LEGEND

- 147.37'S / 145.55'F — EXISTING GRADE SPOT ELEVATION / FINISHED GRADE SPOT ELEVATION
- 3 — KEY NOTE
- 124 — EXISTING CONTOUR LINE
- 124 — FINISH GRADE LINE
- MATCH LINE
- PHASING LINE
- EXISTING PROPERTY LINE
- EXISTING WATER EASEMENT LINE
- EXISTING EDGE OF WETLAND
- EXISTING BUILDING LINE
- BUILDING LINE
- x x — EXISTING CHAIN LINK FENCE
- EDGE OF ASPHALT CONCRETE PAVEMENT
- EXISTING EDGE OF ASPHALT CONCRETE PAVEMENT
- EDGE OF EXISTING GRAVEL
- EDGE OF GRAVEL
- CURB LINE
- E — EXISTING UTILITIES ABANDONED IN-PLACE (CUT AND CAP)
- REMOVALS (DRAWINGS CD101 AND CD102 ONLY)
- SAWCUT
- FENCE
- EXISTING LIMITS OF CLEARING
- LIMITS OF CLEARING
- EXISTING TREE
- EXISTING SHRUB
- SHRUB
- DECIDUOUS TREE
- SS(8") — SANITARY SEWER LINE (SIZE AS NOTED)
- ESS(4") — EXISTING SANITARY SEWER LINE (SIZE AS NOTED)
- ESD(12") — EXISTING STORM DRAIN LINE (SIZE AS NOTED)
- EUE(2-2") — EXISTING UNDERGROUND ELECTRIC LINE (SIZE AND NUMBER AS NOTED, IF KNOWN)
- EW(6") — EXISTING WATER LINE (SIZE AS NOTED)
- EOU — EXISTING OVERHEAD UTILITY LINE
- EOE — EXISTING OVERHEAD ELECTRIC
- OE/C — EXISTING OVERHEAD ELECTRIC AND COMMUNICATION LINES
- OU — EXISTING ELECTRIC AND TELEPHONE LINES
- SD(12") — STORM DRAIN LINE WITH FLOW DIRECTION ARROW
- FD(4") — FOUNDATION DRAIN LINE
- UD(4") — UNDERDRAIN LINE
- UUD(4") — UPPER UNDERDRAIN LINE
- FLARED END
- UE(2-5") — UNDERGROUND ELECTRIC LINES (SIZE AND NUMBER AS NOTED)
- UL — UNDERGROUND LIGHTING LINE (SIZE AS NOTED)
- UE/C — UNDERGROUND ELECTRIC AND COMMUNICATIONS LINE
- W(2") — WATER LINE
- UG — UNDERGROUND NATURAL GAS LINE
- CF — CONSTRUCTION FENCE (PHASE 1)
- SF — SILT FENCE
- RSF — REINFORCED SILT FENCE
- DRAINAGE FLOW ARROW
- EXISTING UTILITY POLE
- UTILITY POLE
- EXISTING CATCH BASIN
- CATCH BASIN
- EXISTING SEWER MANHOLE
- SEWER MANHOLE
- EXISTING FLAGPOLE
- FLAGPOLE
- EXISTING FREE STANDING LIGHT FIXTURE
- BOLLARD
- EXISTING FIRE HYDRANT
- FIRE HYDRANT
- SURVEY MONUMENT
- DRAIN MANHOLE
- FOUNDATION DRAIN CLEANOUT
- ELECTRICAL HANDHOLE
- GH — GROUND HYDRANT
- T — TRANSFORMER AND PAD
- EXISTING WATER SHUT-OFF VALVE
- WATER SHUT-OFF VALVE
- FREE STANDING LIGHT FIXTURE
- TRAFFIC FLOW ARROW
- TRAFFIC SIGN (TEXT GIVEN AT SIGN LOCATION)
- RIP RAP
- UTILITY POINT OF CONNECTION
- B-1 — SOIL TEST BORING LOCATION
- TP-1 — SOIL TEST PIT LOCATION

ABBREVIATIONS

%	PERCENT
#	NUMBER
±	PLUS OR MINUS
℄	CENTERLINE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
ABAN	ABANDONED
ADA	AMERICAN'S WITH DISABILITIES ACT
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
BOC	BOTTOM OF CURB
BOW	BOTTOM OF WALL
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
CB	CATCH BASIN
CF	CONSTRUCTION FENCE
CJ	CONTROL JOINT
CLR	CLEAR
CMP	CENTRAL MAINE POWER
CO	CLEAN OUT
CONC	CONCRETE
CONT	CONTINUOUS
DEP	DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIA	DIAMETER
DHHS	DEPARTMENT OF HEALTH AND HUMAN SERVICES
DMH	DRAIN MANHOLE
E	EAST
EA	EACH
GEN	EMERGENCY GENERATOR
ECB	EXISTING CATCH BASIN
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EQ	EQUAL
ESMH	EXISTING SEWER MANHOLE
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EW	EACH WAY
EXIST	EXISTING
FD	FOUNDATION DRAIN
FFE	FINISH FLOOR ELEVATION
FL	FLANGED
FLG	FIELD LOK GASKET
FP	FLAG POLE
FO	FUEL OIL
FT	FEET, FOOT
Fy	YIELD STRENGTH
GAL	GALLON
GALV	GALVANIZED
HC	HANDICAP
IN	INCH(ES)
INV	INVERT
IPT	IRON PIPE THREAD
IRR	IRRIGATION WATER LINE
L	LENGTH
LBS	POUNDS
MAG	MAGNETIC
MAX	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
MTL	METAL
MIN	MINIMUM
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NUMBER
NPT	NATIONAL PIPE THREAD TAPERED THREAD
OC	ON CENTER
OD	OUTSIDE DIAMETER
OE&C	OVERHEAD ELECTRIC AND COMMUNICATIONS
OZ	OUNCES
PC	POINT OF CURVATURE
POC	POINT ON CURVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	PRESSURE TREATED, POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PWD	PORTLAND WATER DISTRICT
R	RADIUS
REINF	REINFORCED, REINFORCING
RGS	RIGID GALVANIZED STEEL
ROW	RIGHT-OF-WAY
RSF	REINFORCED SILT FENCE
S	SOUTH
SD	STORM DRAIN
SF	SILT FENCE
SIM	SIMILAR
SMH	SEWER MANHOLE
SQ	SQUARE
SF,SQ FT	SQUARE FEET
STA	STATION
SS	SANITARY SEWER
T	TRANSFORMER
TBM	TEMPORARY BENCH MARK
TEMP	TEMPORARY
TP	TEST PIT
TOC	TOP OF CURB
TOW	TOP OF WALL
TW	TOP OF WALL
TYP	TYPICAL
UC	UNDERGROUND COMMUNICATIONS
UD	UNDERDRAIN
UE	UNDERGROUND ELECTRIC LINES
UP	UTILITY POLE
VC	VITREOUS CLAY, VERTICAL CURVE
W/	WIDTH, WATER, WEST,WITH
WWF	WELDED WIRE FABRIC

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE — JONAH DeWATERS No 12273 — LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JSD
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
LIST OF DRAWINGS, NOTES, LEGEND AND ABBREVIATIONS

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-001
SHEET NO. 9 OF 55

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GRID NORTH
(NAD83)

GODFREY STREET
PURCHASE STREET
POE STREET
LOMOND STREET
WARWICK STREET
RIGGS STREET
DORSET STREET
ORONO ROAD (TWO WAY)
CEDARHURST LANE
CAPISIC BROOK

EXISTING WOODED AREA
EXISTING CITY OF PORTLAND SEWER/STORM DRAINAGE EASEMENT
EXISTING PROPERTY LINE (TYP)
EXISTING PORTLAND WATER DISTRICT RIGHT-OF-WAY (TYP)
TEST PIT (TYP)
EXISTING WETLAND (TYP)
EXISTING TRAIL (TYP)
EDGE OF EXISTING WOODS (TYP)
EXISTING GRAVEL ROAD
EXISTING RIGHT-OF-WAY (TYP)
PHASE LINE (SEE SHEET CP101, TYP)
EXISTING PLAYGROUND AREA
EXISTING TURF (TYP)
EXISTING PAVED AREA (USED FOR PLAYGROUND)
EXISTING MULCH PLANTING AREA
EXISTING JERSEY BARRIERS
EXISTING MAIN ENTRANCE
EXISTING HALL SCHOOL
(1 STORY, ±54,600 SF FOOTPRINT)
EXISTING BUS DROP OFF
EXISTING PARENT DROP OFF
EXISTING SCHOOL EXIT
EXISTING BICYCLE RACKS (34 SPACES)
EXISTING PLANTING AREA
EXISTING PAVEMENT (TYP)
EXISTING STAFF/VISITOR PARKING AREA (63 SPACES, INCLUDING 3 ACCESSIBLE SPACES)
EXISTING SCHOOL ENTRANCE (ONE WAY)
SETBACK (TYP)
APPROXIMATE PROPERTY LINE (TYP)
PROPOSED SCHOOL OUTLINE (TYP)
EXISTING BASEBALL FIELD
EXISTING STORM DRAIN OUTFALL
EXISTING WETLAND (TYP)
EXISTING WOODED AREA
EXISTING GRAVEL WALK
SOIL BORING (TYP)
TRAFFIC FLOW (TYP)
EXISTING TRAIL (TYP)
EXISTING WATER FLOW DIRECTION (TYP)
UNDISTURBED VEGETATED BUFFER (TYP)
NRPA PERMIT-BY-RULE ZONE (TYP)
NRPA INDIVIDUAL PERMIT ZONE (TYP)
PHASE IA
PHASE IB
PHASE II
100-YEAR FLOOD LINE
SHORE LAND ZONE
STREAM PROTECTION ZONE
75' SETBACK
50' BUFFER
25' BUFFER

TP-301 TP-302 TP-303 TP-304 TP-305 TP-306 TP-307 TP-308 TP-309 TP-310
TP-SWS1 TP-SWS2 TP-SWS3 TP-SWS4 TP-SWS5 TP-SWS6 TP-SWS7
B-101 B-102 B-103 B-104 B-105 B-106 B-107 B-108 B-109 B-110 B-111 B-112 B-113 B-114 B-201 B-202 B-203 B-204 B-205 B-206 B-208 B-209 B-210 B-211 B-212 B-213

275–C–44 N/F ERIC M. & DONNA E. BOLBECK 3385/84
275–C–13,14,15 25 & 26 N/F DUC VAN OHU 21614/332
275–C–27 & 28 N/F PROSTHETIC ORTHOTIC CENTER OF NEW ENGLAND,LLC 12333/291
TM 275–C–22, 23, 24 N/F CARL H. OLSEN & JULIA OLSEN 2325/181
275–C–29 & 30 N/F CITY OF PORTLAND 6783/224 & 1955/259
275–C–49, 50 &51 N/F CITY OF PORTLAND
275–C–52 & 53 N/F BARBARA & DEAN TRUITT 31850/115
275–C–54 & 55 N/F LESLIE J. & JANE K. TAYLOR 20001/186
275–C–56 CITY OF PORTLAND
275–C–57 & 62 N/F MARY JO KEENAN 12911/189
275–C–58 & 59 N/F HERBERT A. & KATHRYN A. ECKER III 30296/328
275–C–60 & 61 N/F ALEXANDRA CONROY 27368/10
275–C–63 & 64 N/F JOHN E. II & PAULA J. STEELE 24819/104
275–C–65 & 66 N/F COLBY DUFOUR 31426/201
275–C–67 N/F ROBERT C. HANS 8540/151
275–C–68 N/F ROBERT C. HANS 8540/151
275–C–72 & 73 N/F MAGDA ADRIEN–DARLING 28755/66
275–C–74 & 75 N/F JAMES E. & KELLI A. HEFFLEY 20403/147
275–C–76 N/F CITY OF PORTLAND
275–C–77 & 78 N/F JULIA & DAVID O'DONNELL 30659/167
275–C–79 N/F CITY OF PORTLAND
275–C–80 N/F NATHAN B. TURNER 29703/349
275–D–1–2–6 TO 15–16–17 TO 20–25 N/F 959 BRIGHTON AVENUE LLC 31255/142
SAGAMORE VILLAGE 274–G–1 275–C–46–100 PORTLAND HOUSING AUTHORITY
SAGAMORE VILLAGE 275–C–47 276–E–4–5 PORTLAND HOUSING AUTHORITY
273–D–5 N/F DALE COURT CONDOMINIUM
273–M–4,9 N/F ERENEST E. & BEVERLY E. SHOREY 27073/60
276–A–26,47 N/F PETER J. & KRISTINA McCABE 21480/346
276–A–16 N/F KELLY J. FARQUHAR 11106/28
276–A–13 N/F BRENDA A. & JOSEPH E. TURCOTTE 13793/208
276–A–23 N/F MORGAN N. CHASE 27805/269
276–A–22 N/F JOHN H. O'LEARY et.ux. 13524/143
276–A–21 N/F ZORAM & JULIE–BETH BLANCAS–RUIZ 28657/177
276–A–3 N/F CAROLYN J. GALLANT 12733/163
276–A–19 N/F DONALD E. & ARLN L. KENT 8365/268

1 CX101 OVERALL EXISTING CONDITIONS SITE PLAN
SCALE: 1"=50'

ZONING DIMENSIONAL REQUIREMENTS:
ZONE: R-3, STREAM PROTECTION ZONE (WITHIN 75 FT OF CAPISIC BROOK)
EXISTING/PROPOSED USE: ELEMENTARY SCHOOL (CONDITIONAL USE IN R-3 ZONE)

	REQUIRED	PROVIDED
LOT SIZE	2 AC	21.2 AC
STREET FRONTAGE	50 FT	246 FT (ALONG WARWICK STREET)
FRONT YARD SETBACK	25 FT	± 400 FT
REAR YARD SETBACK	25 FT	± 39 FT
SIDE YARD SETBACK (2 STORY)	14 FT	± 34 FT
LOT COVERAGE	35%	23%
LOT WIDTH	65 FT	± 713 FT
STRUCTURE HEIGHT	35 FT	32 FT
MAXIMUM FLOOR AREA FOR PLACES OF ASSEMBLY*	9,000 SF	11,056 SF

*A WAIVER WILL BE REQUESTED FOR THE MAXIMUM ASSEMBLY SPACE AREA (SEE PROJECT NARRATIVE)

NOTE:
SEE SHEETS CP101,CD101,CD102,CS101,CS102,CU101 AND CU102 FOR PHASING, TEMPORARY UTILITY, AND CONSTRUCTION SEQUENCING INFORMATION.

GRAPHIC SCALE
50' 25' 0 50' 100'
1"=50'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: OVERALL EXISTING CONDITIONS SITE PLAN

STATE OF MAINE JONAH DeWATERS No. 12273 LICENSED PROFESSIONAL ENGINEER

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

OAK POINT ASSOCIATES
ARCHITECTURE ▪ ENGINEERING ▪ PLANNING
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DRAWING NO. CX101
SHEET NO. 10 OF 53

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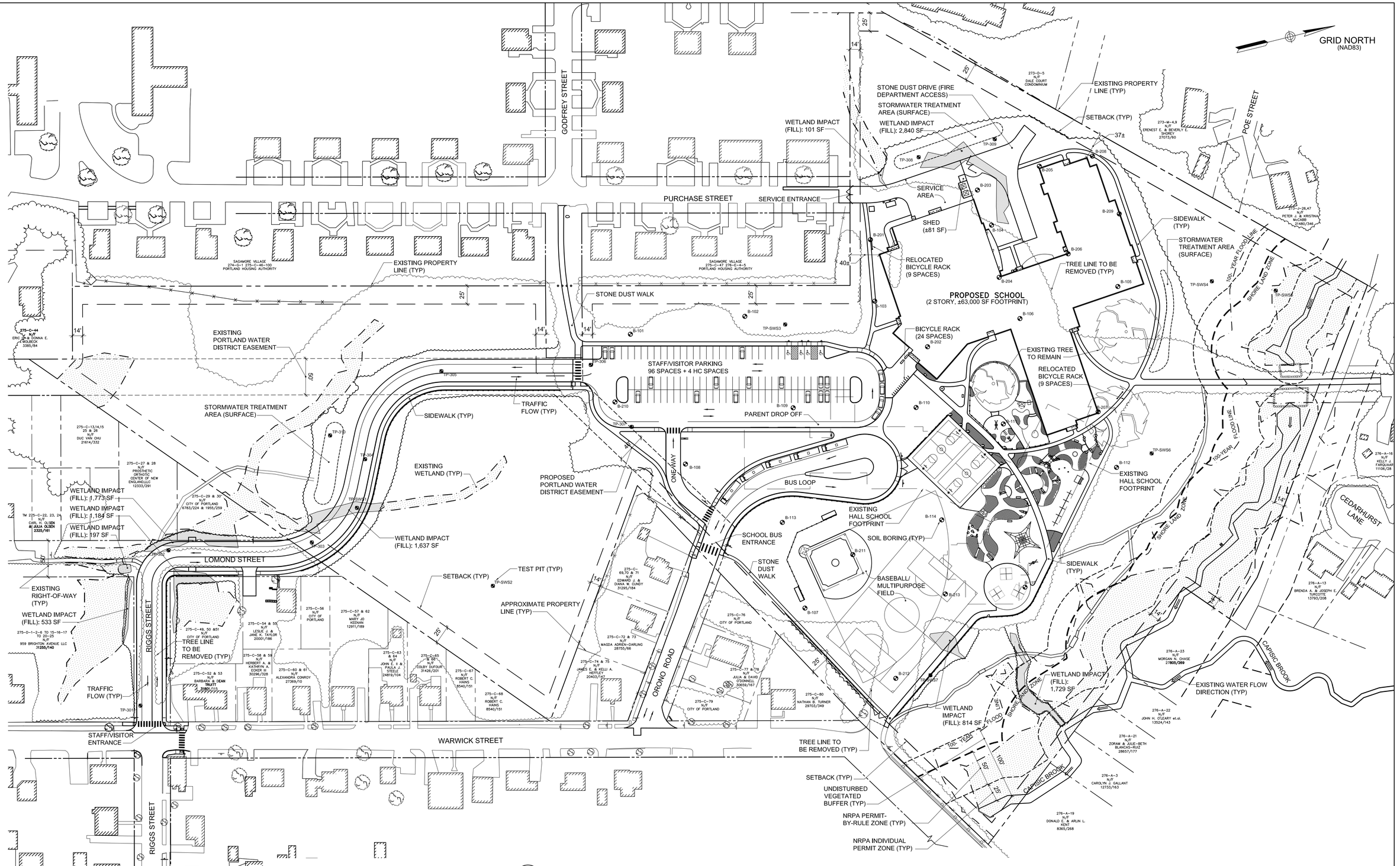

1 CO101 OVERALL SITE PLAN
SCALE: 1"=50'

TRANSPORTATION REQUIREMENTS:

GENERAL INFORMATION

PROPOSED NUMBER OF CLASS ROOMS	40
ASSEMBLY SPACE SIZE (GYM AND CAFETERIA)	11,056 SF
PROPOSED FULL TIME EQUIVALENT STAFF	79
SCHOOL CAPACITY	558 STUDENTS

REQUIRED PARKING CALCULATIONS

NORMAL SCHOOL DAYS	40 SPACES (1 SPACE PER CLASSROOM)
ASSEMBLIES**	89 SPACES (1 SPACE PER 125 SF OF FLOOR AREA)
NUMBER OF SPACES REQUIRED	89 SPACES (GREATER OF SCHOOL DAYS AND ASSEMBLY SPACE)

**ASSEMBLIES ARE NOT ANTICIPATED TO BE HELD DURING NORMAL SCHOOL HOURS

PROVIDED PARKING CALCULATIONS

1 SPACE PER FULL TIME EQUIVALENT STAFF***	81 SPACES
VISITOR SPACES***	15 SPACES
ACCESSIBLE SPACES (PER ADA REGULATIONS)	4 SPACES
TOTAL NUMBER OF PARKING SPACES PROVIDED	100 SPACES

***STATE OF MAINE DEPARTMENT OF EDUCATION REQUIREMENT

BICYCLE PARKING CALCULATIONS

EXISTING BICYCLE PARKING	36 SPACES
REQUIRED BICYCLE PARKING	20 SPACES (2 PER 10 PARKING SPACES)
PROVIDED PARKING CALCULATION	42 SPACES

ZONING DIMENSIONAL REQUIREMENTS:

ZONE: R-3, STREAM PROTECTION ZONE (WITHIN 75 FT OF CAPISIC BROOK)
EXISTING/PROPOSED USE: ELEMENTARY SCHOOL (CONDITIONAL USE IN R-3 ZONE)

	REQUIRED	PROVIDED
LOT SIZE	2 AC	21.2 AC
STREET FRONTAGE	50 FT	246 FT (ALONG WARWICK STREET)
FRONT YARD SETBACK	25 FT	± 400 FT
REAR YARD SETBACK	25 FT	± 39 FT
SIDE YARD SETBACK (2 STORY)	14 FT	± 34 FT
LOT COVERAGE	35%	23%
LOT WIDTH	65 FT	± 713 FT
STRUCTURE HEIGHT	35 FT	32 FT
MAXIMUM FLOOR AREA FOR PLACES OF ASSEMBLY*	9,000 SF	11,056 SF

*A WAIVER WILL BE REQUESTED FOR THE MAXIMUM ASSEMBLY SPACE AREA (SEE PROJECT NARRATIVE)

GRAPHIC SCALE
1"=50' (50' 25' 0 50' 100')
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG: OVERALL SITE PLAN

JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

OAK POINT ASSOCIATES
DRAWING NO. CO101
SHEET NO. 11 OF 53
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

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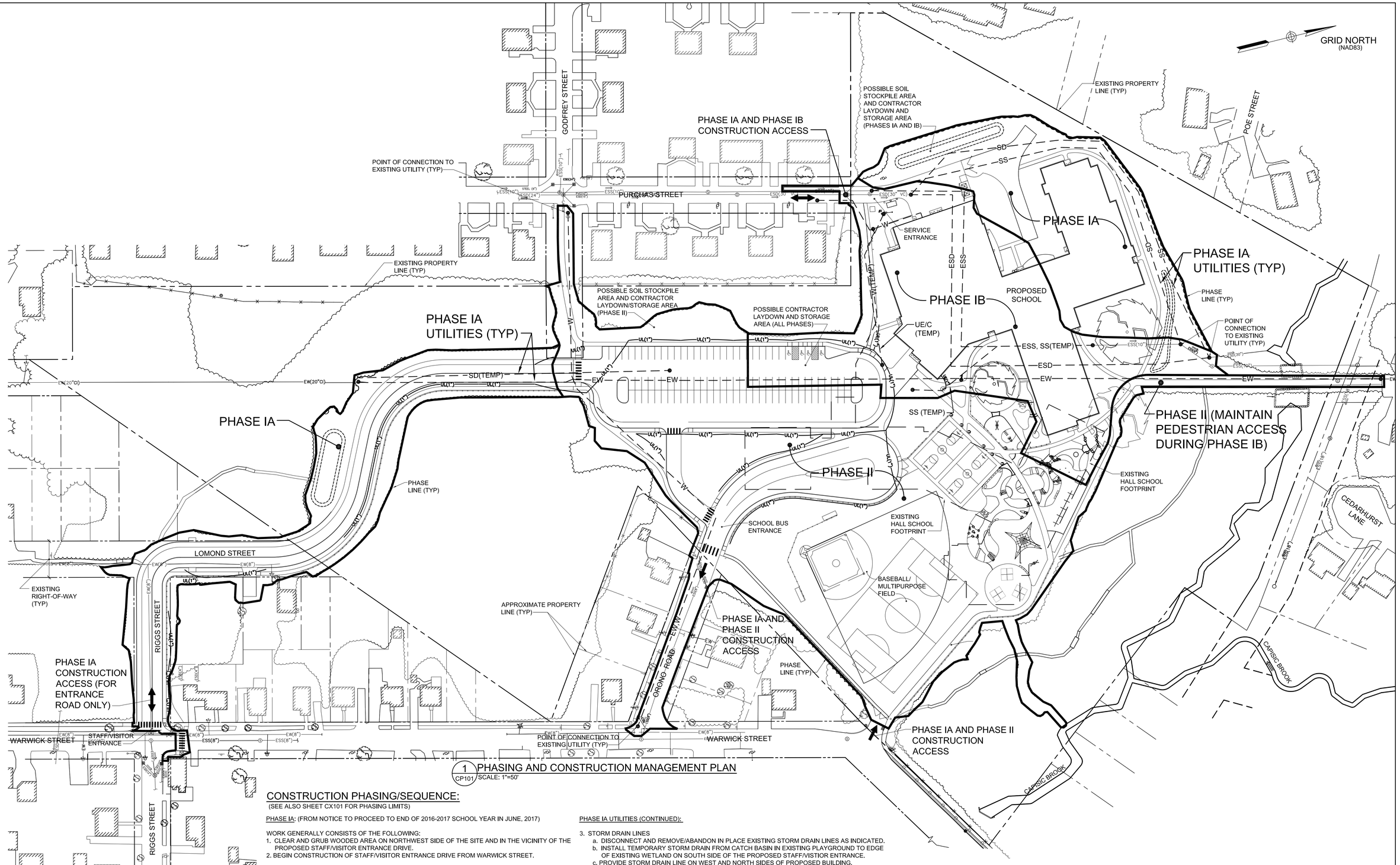

1 CP101 PHASING AND CONSTRUCTION MANAGEMENT PLAN
SCALE: 1"=50'

CONSTRUCTION PHASING/SEQUENCE:

(SEE ALSO SHEET CX101 FOR PHASING LIMITS)

PHASE IA: (FROM NOTICE TO PROCEED TO END OF 2016-2017 SCHOOL YEAR IN JUNE, 2017)

WORK GENERALLY CONSISTS OF THE FOLLOWING:
1. CLEAR AND GRUB WOODED AREA ON NORTHWEST SIDE OF THE SITE AND IN THE VICINITY OF THE PROPOSED STAFF/VISITOR ENTRANCE DRIVE.
2. BEGIN CONSTRUCTION OF STAFF/VISITOR ENTRANCE DRIVE FROM WARWICK STREET.

PHASE IA UTILITIES: (FROM NOTICE TO PROCEED TO END OF 2016-2017 SCHOOL YEAR IN JUNE, 2017)

WORK GENERALLY CONSISTS OF THE FOLLOWING:
1. WATER LINES
   a. DISCONNECT AND REMOVE/ABANDON IN PLACE EXISTING WATER MAINS AS INDICATED.
   b. PROVIDE WATER LINE FROM PURCHAS STREET TO WARWICK STREET AND CONNECT HOUSES ON ORONO ROAD TO IT. PROVIDE TEMPORARY WATER SERVICE IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS FOR HOUSES ON ORONO ROAD AND WESSEX STREET AS NECESSARY TO LIMIT INTERRUPTION OF WATER SUPPLY.
   c. INSTALL FIRE AND DOMESTIC LINES TO VICINITY OF PROPOSED BUILDING. PROVIDE TEMPORARY WATER SERVICE TO EXISTING SCHOOL BY CONNECTING TO PROPOSED FIRE PROTECTION LINE. DO NOT INTERRUPT WATER SERVICE TO EXISTING SCHOOL BUILDING WITHOUT OWNER'S WRITTEN PERMISSION.
2. SEWER LINES
   a. DISCONNECT AND REMOVE/ABANDON IN PLACE EXISTING SEWER MAINS AS INDICATED.
   b. INSTALL TEMPORARY SEWER SERVICE FROM EXISTING SCHOOL BUILDING TO PORTIONS OF SEWER MAIN TO REMAIN. COORDINATE SERVICE INTERRUPTIONS TO EXISITNG SCHOOL BUILDING WITH OWNER AND ARCHITECT.
   c. PROVIDE SEWER MAIN ON WEST AND NORTH SIDES OF PROPOSED BUILDING.

PHASE IA UTILITIES (CONTINUED):

3. STORM DRAIN LINES
   a. DISCONNECT AND REMOVE/ABANDON IN PLACE EXISTING STORM DRAIN LINES AS INDICATED.
   b. INSTALL TEMPORARY STORM DRAIN FROM CATCH BASIN IN EXISTING PLAYGROUND TO EDGE OF EXISTING WETLAND ON SOUTH SIDE OF THE PROPOSED STAFF/VISTIOR ENTRANCE.
   c. PROVIDE STORM DRAIN LINE ON WEST AND NORTH SIDES OF PROPOSED BUILDING.
4. ELECTRIC/COMMUNICATIONS LINES
   A. DISCONNECT AND REMOVE OVERHEAD ELECTRIC/COMMUNICATIONS LINES AS INDICATED.
   B. INSTALL TEMPORARY ELECTRIC/COMMUNICATIONS SERVICE TO EXISTING SCHOOL BUILDING. COORDINATE SERVICE INTERRUPTIONS TO EXISITNG SCHOOL BUILDING WITH OWNER AND ARCHITECT.

PHASE IB: (FROM COMPLETION OF PHASE IA WORK TO END OF 2017-2018 SCHOOL YEAR IN JUNE, 2017)

WORK GENERALLY CONSISTS OF THE FOLLOWING:
1. REMOVE NORTHWEST PORTION OF EXISTING SCHOOL BUILDING AND CONSTRUCT TEMPORARY EXTERIOR WALL.
2. BEGIN CONSTRUCTION OF PROPOSED SCHOOL AND SITE AMENITIES ON WEST SIDE OF THE SITE.
3. PROVIDE UTILITY CONNECTIONS TO PROPOSED BUILDING AS INDICATED.

PHASE II: (FROM END OF 2017-2018 SCHOOL YEAR IN JUNE, 2018 TO BEGINNING OF 2018-2019 SCHOOL YEAR IN SEPTEMBER, 2018)

WORK GENERALLY CONSISTS OF THE FOLLOWING:
1. DEMOLISH EXISTING SCHOOL BUILDING
2. REMOVE/ABANDON IN PLACE EXISTING UTILITIES (INCLUDING TEMPORARY UTILITIES) AS INDICATED
3. CONSTRUCT REMAINDER OF SITE AMENITIES.
4. COMPLETE CONSTRUCTION OF PROPSED BUILDING.

GRAPHIC SCALE
50' 25' 0 50' 100'
1"=50'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
1	11/18/16	REVISE WETLAND IMPACTS	JSD

REVISIONS

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: PHASING AND CONSTRUCTION MANAGEMENT PLAN

JONAH DeWATERS No. 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

OAK POINT ASSOCIATES
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DRAWING NO. CP101
SHEET NO. 12 OF 53

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EXISTING SEWER/DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	RIM ELEVATION	INVERT IN (SIZE)	INVERT OUT (SIZE)	NOTES
ECB1	64.88	60.7 (12")	60.6 (12")	
ECB2	66.18	60.6 (12")	±50.2	INVERT BASED ON CL INVERT
ECB3	64.78	57.5	57.4 (12")	
-	-	57.6 (12")	-	
ECB4	63.99	58.2 (6")	59.3 (12")	
ECB5	64.76	60.4 (6")	60.1 (12")	
-	-	60.3 (6")	-	
ECB6	63.62	59.7 (12")	59.6 (12")	
ECB7	62.79	-	-	UNABLE TO OPEN
ECB8	64.68	61.4 (6")	61.0 (6")	OUTLET INVERT BASED ON HOOD ELEVATION
ECB9	63.97	-	60.4	
ECB10	63.91	-	60.2	
ECB11	60.54	-	58.70 (12")	
ECB12	60.49	-		BURIED CATCH BASIN
EDMH1	65.32	56.90 (12")	±49.2	INVERT BASED ON CL INVERT
-	-	±58.24 (6")	-	
-	-	±58.62 (8")	-	
EDMH2	62.88	±48.96	±48.71 (30")	INVERT BASED ON CL INVERT
-	-	-	48.79	
EDMH3	58.62	-	50.53 (8" OR 10")	
ESMH1	65.37	-	±54.87	INVERT BASED ON CL INVERT
ESMH2	66.31	53.9 (10")	53.8 (10")	
ESMH3	-	-	-	COVER BURIED
ESMH4	60.75	51.4 (10")	51.3 (8")	
ESMH5	54.28	46.28 (6")	±41.53	INVERT BASED ON CL INVERT
ESMH6	65.30	-	-	
ESMH7	65.00	59.6 (6")	58.6 (8")	
-	-	58.7 (8")	-	
-	-	59.4	-	
ESMH8	65.29	55.29 (8")	54.39	DROP MANHOLE
		57.09 (8")		

KEYNOTES: (THIS SHEET ONLY.)

1. EXISTING ASPHALT CONCRETE PAVEMENT.
2. EXISTING GRAVEL/STONE DUST WALK.
3. EXISTING WALKING TRAIL.
4. EXISTING ASPHALT CONCRETE SIDEWALK.
5. EXISTING TURFGRASS/MEADOW.
6. EXISTING WOODED AREA.
7. EXISTING CHAIN LINK FENCE.
8. EXISTING PLAYGROUND EQUIPMENT.
9. EXISTING TREE TO REMAIN (APPROXIMATE DIAMETER AS INDICATED).
10. EXISTING RIP RAP.
11. EXISTING PLANTING BED.
12. EXISTING ERODED CHANNEL.
13. EXISTING BICYCLE RACKS.
14. EXISTING 8,000 GALLON UNDERGROUND FIBER GLASS FUEL OIL TANK.
15. EXISTING SEWER/STORM DRAINAGE STRUCTURE. NUMBER INDICATED WITH KEYNOTE.
16 - 19. NOT USED.
20. SILT FENCE. SEE DETAIL 1/C-502.
21. REINFORCED SILT FENCE. SEE DETAIL 2/C-502.
22. SEDIMENT CONTROL WATTLE. SEE DETAIL 3/C-502.
23. CATCH BASIN INLET PROTECTION. SEE DETAIL 5/C-502.
24. POSSIBLE CONTRACTOR STORAGE/SOIL STOCKPILE LOCATION.
25. CONSTRUCTION FENCE. PROVIDE 6' TALL CHAIN LINK FENCING WITH DRIVEN POSTS IN LIEU OF MOVABLE FENCE PANELS WHERE INDICATED WITH "CLF". SEE DETAIL 4/C-505 (SIM).
26. STABILIZED CONSTRUCTION ENTRANCE. SEE DETAIL 6/C-502.
27. TREE PROTECTION FENCE. SEE DETAIL 2/CD104.
28. DISCONNECT AND REMOVE EXISTING METAL SWING SET SUPPORT POLE AT BOLTED FITTING. PROVIDE TEMPORARY SUPPORT AS NECESSARY TO INSTALL STORM DRAIN LINE. REINSTALL SUPPORT POLE AFTER STORM DRAIN LINE IS INSTALLED.
29. PRUNE ALL EXISTING TREE BRANCHES WITHIN 10' OF PROPOSED BUILDING. COORDINATE TREE PRUNING WITH CERTIFIED ARBORIST AND CITY OF PORTLAND ARBORIST.
30. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE PAVEMENT, ± 4" THICK.
31. NOT USED.
32. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE SIDEWALK, ± 2" THICK.
33. REMOVE EXISTING SIDEWALK BENEATH TREE OVERHANG BY HAND. DO NOT DAMAGE EXISTING TREE OR TREE ROOTS DURING SIDEWALK REMOVAL.
34. REMOVE EXISTING STONE DUST SURFACE/WALK, ± 4" THICK.
35. CLEAR EXISTING WOODED AREA AND GRUB OUT STUMPS. SEQUENCE WORK TO ENSURE TREE CLEARING IS NOT PERFORMED BETWEEN JUNE 1 AND JULY 31.
36. REMOVE EXISTING TREE (APPROXIMATE DIAMETER AS INDICATED). SEE ALSO SHEET CD104.
37. STRIP AND STOCKPILE EXISTING TOPSOIL, ± 4" THICK.
38. REMOVE EXISTING WOOD CHIP PLAYGROUND SERVICE, ± 3" THICK.
39. REMOVE EXISTING GRAVEL SURFACE, ± 4" THICK.
40. NOT USED.
41. STRIP EXISTING TOPSOIL AND ORGANIC MATERIAL AND FILL EXISTING WETLAND WITH 12" MINIMUM THICKNESS LAYER OF COMPACTED GRANULAR BORROW FOR UNDERWATER BACKFILL, THEN FILL TO SUBGRADE ELEVATION WITH GRANULAR BORROW.
42 - 43. NOT USED.
44. REMOVE EXISTING TIMBER CURB/EDGING.
45 - 50. NOT USED.
51. REMOVE EXISTING BOLLARD AND CONCRETE BASE.
52 - 53. NOT USED.
54. REMOVE EXISTING LIGHT POLE AND CONCRETE BASE.
55. REMOVE EXISTING METAL GUARD RAIL.
56. REMOVE EXISTING CHAIN LINK FENCE (HEIGHT AS INDICATED).
57 - 60. NOT USED.
61. REMOVE EXISTING BASKETBALL HOOP AND METAL POST SET IN CONCRETE BASE. REMOVE CONCRETE, CLEAN POSTS, AND STORE FOR REINSTALLATION.
62. REMOVE EXISTING JERSEY BARRIER DURING WATER LINE INSTALLATION. REINSTALL AFTER WATER LINE HAS BEEN INSTALLED AND BACKFILLED. SEE SHEET CU101.
63. NOT USED.
64. REMOVE EXISTING WOOD BENCH.
65. NOT USED.
66. STRIP EXISTING TURF GRASS UNDER TREE CANOPY BY HAND. DO NOT DAMAGE EXISTING TREE OR TREE ROOTS DURING TURF GRASS REMOVAL.
67. REMOVE EXISTING LANDSCAPE BOULDER (± 0.75 CY) AND STORE FOR REINSTALLATION.
68. REMOVE PORTION OF EXISTING BUILDING AND PROVIDE EXTERIOR WALL. SEE SHEET AD101.
69. REMOVE EXISTING UNDERDRAIN LINES AS NECESSARY FOR WATER MAIN INSTALLATION.
70. NOT USED.
71. REMOVE EXISTING ±16' LONG x ±8' WIDE x ±8' DEEP PRECAST CONCRETE GRIT CHAMBER.
72. CUT AND REMOVE EXISTING SEWER LINE. PREP CUT ENDS FOR CONNECTION TO PROPOSED SEWER LINES/STRUCTURE WHERE INDICATED. BACKFILL TRENCH WITH 2' THICK (MINIMUM) LAYER OF GRANULAR BORROW UNDERWATER BACKFILL, THEN FILL TO SUBGRADE WITH GRANULAR BARROW FOR EMBANKMENT CONSTRUCTION.
73. CUT AND REMOVE EXISTING STORM DRAIN LINE/ UNDER DRAIN LINE. PROVIDE CAP/PLUG ON END OF LINE TO REMAIN OR PREP CUT ENDS FOR CONNECTION TO PROPOSED STORM DRAIN LINE/STRUCTURE WHERE INDICATED. BACKFILL TRENCH WITH 2' THICK (MINIMUM) LAYER OF GRANULAR BORROW UNDERWATER BACKFILL, THEN FILL TO SUBGRADE WITH GRANULAR BARROW FOR EMBANKMENT CONSTRUCTION.
74. REMOVE EXISTING SEWER/STORM DRAINAGE STRUCTURE. EXISTING STRUCTURE NUMBER INDICATED WITH KEYNOTE.
75 - 76. NOT USED.
77. CAP/PLUG EXISTING STORM DRAIN LINE, FILL WITH FLOWABLE FILL AND ABANDON IN PLACE. IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS. NOTIFY ARCHITECT AT LEAST 72 HOURS PRIOR TO PERFORMING WORK.
78. PLUG EXISTING MANHOLE PENETRATION.
79. REMOVE EXISTING RIP RAP (D_{50}=6").
80. CUT AND REMOVE EXISTING WATER LINE. COORDINATE SHUT OFF AND DISCONNECTION OF WATER LINE WITH PORTLAND WATER DISTRICT. CAP ENDS OF WATER LINE TO REMAIN IN ACCORDANCE IN PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS.
81. CAP EXISTING WATER LINE AND ABANDON IN PLACE. CAP ENDS OF WATER LINE TO REMAIN IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS.
82. REMOVE EXISTING WATER VALVE.
83. REMOVE EXISTING FIRE HYDRANT.
84. REMOVE EXISTING WATER LINE MARKER POST.
85. PROVIDE TEMPORARY WATER SERVICE AFTER WATER LINE IS DISCONNECTED. TEMPORARY SERVICE SHALL BE IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS. SEE NOTIFICATION NOTES, SHEET C-001 AND SEE SHEET CU101 AND CU104 FOR TEMPORARY WATER LINE ROUTING.
86. PROVIDE TEMPORARY LINE STOP IN EXISTING WATER LINE TO ENABLE WATER LINE TO BE CUT AND CAPPED (NO EXISTING SHUT OFF VALVE IS AVAILABLE TO ISOLATE EXISTING WATER LINES) IN ACCORDANCE WITH MANUFACTURER'S AND PORTLAND WATER DISTRICT'S WRITTEN RECOMMENDATIONS. REMOVE LINE STOP ONCE CUT END OF LINE IS CAPPED AND JOINT RESTRAINT HAS BEEN INSTALLED (SEE SHEET CU101).
87. REMOVE EXISTING WATER VALVE.
88. CUT AND REMOVE PORTION OF EXISTING WATER MAIN AT EXISTING ORONO ROAD WATER MAIN CONNECTION AND PREP ENDS TO REMAIN FOR CONNECTION TO PROPOSED WATER LINE (SEE SHEET CU101). SEQUENCE WORK TO LIMIT DISRUPTIONS TO LESS THAN 8 HOURS. SEE NOTIFICATION NOTES, SHEET C-001.
89. REPLACEMENT WATER LINE AND APPURTENANCES IN PURCHAS STREET TO BE PROVIDED BY PORTLAND WATER DISTRICT ARE NOT IN CONTRACT UNLESS INDICATED OTHERWISE. COORDINATE TIMING OF PHASE 1 WATER LINE WORK TO COINCIDE WITH THIS WATER LINE WORK.
90. DISCONNECT AND REMOVE EXISTING OVERHEAD ELECTRIC AND COMMUNICATION LINES. COORDINATE DISCONNECTION WITH OWNER, CMP, TIME WARNER CABLE AND FAIRPOINT COMMUNICATIONS. SEE NOTIFICATION NOTES, SHEET C-001.
91 - 92. NOT USED.
93. REMOVE EXISTING UTILITY POLE AND PROVIDE TEMPORARY OVERHEAD ELECTRIC/COMMUNICATIONS LINES TO EXISTING SCHOOL (SEE SHEET CU101). COORDINATE REMOVAL AND INSTALLATION OF TEMPORARY SERVICES WITH CMP. SEE NOTIFICATION NOTES, SHEET C-001.

NOTES:

1. SEE SHEET CD104 FOR ADDITIONAL TREE REMOVALS AND PRESERVATION OF EXISTING TREES TO REMAIN.
2. SEE SHEET CD105 FOR ADDITIONAL REMOVALS ASSOCIATED WITH WATER MAIN WORK.

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

1 CD101 NORTH REMOVALS SITE PLAN-PHASE 1
SCALE: 1"=40'

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE PUBLIC SCHOOL PROJECT
TITLE: PORTLAND PUBLIC SCHOOLS NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME (CHART 275, BLOCK C048, LOT 001)
TITLE THIS DWG: NORTH REMOVALS SITE PLAN - PHASE I

JONAH DeWATERS No. 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

NO.	DATE	DESCRIPTION	BY
REVISIONS			

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CD101
SHEET NO. 13 OF 53

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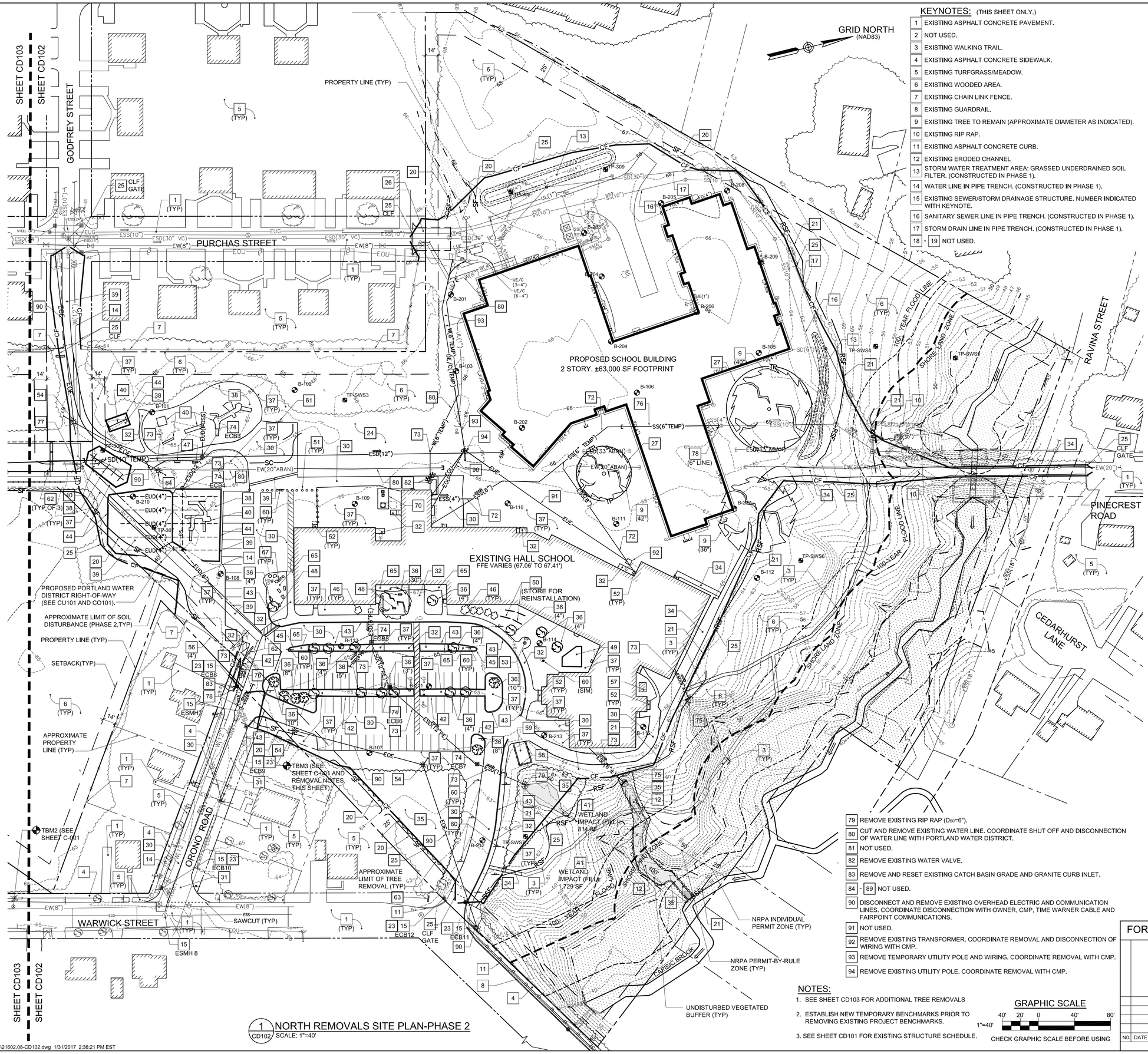

1 CD102 NORTH REMOVALS SITE PLAN-PHASE 2
SCALE: 1"=40'

KEYNOTES: (THIS SHEET ONLY.)

1. EXISTING ASPHALT CONCRETE PAVEMENT.
2. NOT USED.
3. EXISTING WALKING TRAIL.
4. EXISTING ASPHALT CONCRETE SIDEWALK.
5. EXISTING TURFGRASS/MEADOW.
6. EXISTING WOODED AREA.
7. EXISTING CHAIN LINK FENCE.
8. EXISTING GUARDRAIL.
9. EXISTING TREE TO REMAIN (APPROXIMATE DIAMETER AS INDICATED).
10. EXISTING RIP RAP.
11. EXISTING ASPHALT CONCRETE CURB.
12. EXISTING ERODED CHANNEL
13. STORM WATER TREATMENT AREA: GRASSED UNDERDRAINED SOIL FILTER. (CONSTRUCTED IN PHASE 1).
14. WATER LINE IN PIPE TRENCH. (CONSTRUCTED IN PHASE 1).
15. EXISTING SEWER/STORM DRAINAGE STRUCTURE. NUMBER INDICATED WITH KEYNOTE.
16. SANITARY SEWER LINE IN PIPE TRENCH. (CONSTRUCTED IN PHASE 1).
17. STORM DRAIN LINE IN PIPE TRENCH. (CONSTRUCTED IN PHASE 1).
18. - 19. NOT USED.
20. SILT FENCE. SEE DETAIL 1/C-502.
21. REINFORCED SILT FENCE. SEE DETAIL 2/C-502.
22. SEDIMENT CONTROL WATTLE. SEE DETAIL 3/C-502.
23. CATCH BASIN INLET PROTECTION. SEE DETAIL 5/C-502.
24. POSSIBLE CONTRACTOR STORAGE/SOIL STOCKPILE LOCATION.
25. CONSTRUCTION FENCE. PROVIDE 6' TALL CHAIN LINK FENCING WITH DRIVEN POSTS IN LIEU OF MOVABLE FENCE PANELS WHERE INDICATED WITH "CLF". SEE DETAIL 4/C-505 (SIM).
26. STABILIZED CONSTRUCTION ENTRANCE. SEE DETAIL 6/C-502.
27. TREE PROTECTION FENCE. SEE DETAIL 2/CD104.
28. - 29. NOT USED.
30. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE PAVEMENT, ± 4" THICK.
31. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE PAVEMENT, ± 4" THICK AND 6" OF MATERIAL BENEATH PAVEMENT.
32. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE SIDEWALK, ± 2" THICK.
33. NOT USED.
34. REMOVE EXISTING STONE DUST SURFACE/WALK, ± 4" THICK.
35. CLEAR EXISTING WOODED AREA AND GRUB OUT STUMPS. SEQUENCE WORK TO ENSURE TREE CLEARING IS NOT PERFORMED BETWEEN JUNE 1 AND JULY 31.
36. REMOVE EXISTING TREE (APPROXIMATE DIAMETER AS INDICATED). SEE ALSO SHEET CD103.
37. STRIP AND STOCKPILE EXISTING TOPSOIL, ± 4" THICK.
38. REMOVE EXISTING WOOD CHIP PLAYGROUND SURFACE, ± 3" THICK AND EXISTING UNDERDRAINS
39. REMOVE EXISTING GRAVEL SURFACE, ± 4" THICK.
40. REMOVE EXISTING PLAYGROUND EQUIPMENT SET ON CONCRETE POSTS AND DELIVER EQUIPMENT TO LOCATION SELECTED BY OWNER. SEE NOTIFICATION NOTES, SHEET C-001.
41. STRIP EXISTING TOPSOIL AND ORGANIC MATERIAL AND FILL EXISTING WETLAND WITH 12" MINIMUM THICKNESS LAYER OF COMPACTED GRANULAR BORROW FOR UNDERWATER BACKFILL, THEN FILL TO SUBGRADE ELEVATION WITH GRANULAR BORROW.
42. REMOVE EXISTING GRANITE CURB.
43. REMOVE EXISTING ASPHALT CONCRETE CURB.
44. REMOVE EXISTING TIMBER CURB/EDGING.
45. REMOVE EXISTING PRECAST CONCRETE CURB.
46. REMOVE EXISTING SHRUB.
47. REMOVE EXISTING WOODEN BENCH WITH METAL FRAME.
48. REMOVE AND SALVAGE EXISTING GRANITE BENCH. SEE NOTIFICATION NOTES, SHEET C-001.
49. REMOVE EXISTING PLANTING BED AND TIMBER BORDER.
50. REMOVE EXISTING BICYCLE RACK SET ON CONCRETE POSTS AND PROVIDE BICYCLE RACK TO OWNER OR CLEAN AND STORE FOR REINSTALLATION (NEW LOCATIONS SHOWN ON CS102 AND LS101). SEE NOTIFICATION NOTES, SHEET C-001.
51. REMOVE EXISTING BOLLARD AND CONCRETE BASE.
52. REMOVE EXISTING REINFORCED CONCRETE STOOP.
53. REMOVE EXISTING FLAGPOLE AND CONCRETE BASE.
54. REMOVE EXISTING LIGHT POLE AND CONCRETE BASE.
55. NOT USED.
56. REMOVE EXISTING CHAIN LINK FENCE (HEIGHT AS INDICATED).
57. REMOVE EXISTING STORAGE SHED AND REINFORCE CONCRETE SLAB, ± 8" THICK.
58. REMOVE EXISTING WOOD STOCKADE FENCE.
59. REMOVE EXISTING REINFORCED CONCRETE DUMPSTER PAD, ± 8" THICK.
60. REMOVE EXISTING SIGN AND METAL SIGNPOST.
61. REMOVE EXISTING BASKETBALL HOOP AND METAL POST SET IN CONCRETE BASE.
62. REMOVE EXISTING JERSEY BARRIER.
63. REMOVE EXISTING SCHOOL SIGN AND (2) METAL POSTS SET IN CONCRETE BASES.
64. NOT USED.
65. REMOVE EXISTING MULCH, ± 6" THICK.
66. NOT USED.
67. REMOVE EXISTING LANDSCAPE BOULDER AND STORE FOR REINSTALLATION.
68. TEMPORARY EXTERIOR WALL.
69. NOT USED.
70. REMOVE EXISTING 8,000 GALLON UNDERGROUND FIBERGLASS FUEL OIL TANK, INCLUDING ANY REMAINING SLUDGE AND FUEL OIL REMAINING IN THE TANK. REMOVE TANK AND PROVIDE SITE ASSESSMENT IN ACCORDANCE WITH MAINE DEP CHAPTER 611, "RULES FOR UNDERGROUND OIL STORAGE FACILITIES," SECTION 11 AND APPENDIX P. SEE NOTIFICATION REQUIREMENTS SHEET C-001.
71. NOT USED.
72. CUT AND REMOVE EXISTING SEWER LINE. PREP CUT ENDS FOR CONNECTION TO PROPOSED SEWER LINES/STRUCTURE WHERE INDICATED.
73. CUT AND REMOVE EXISTING STORM DRAIN LINE/ UNDER DRAIN LINE. PROVIDE CAP/PLUG ON END OF LINE TO REMAIN OR PREP CUT ENDS FOR CONNECTION TO PROPOSED STORM DRAIN LINE/STRUCTURE WHERE INDICATED.
74. REMOVE EXISTING SEWER/DRAINAGE STRUCTURE. EXISTING STRUCTURE NUMBER INDICATED WITH KEYNOTE. SEE SHEET CD101.
75. REMOVE EXISTING REINFORCED CONCRETE HEADWALL AND REFILL DEPRESSION AT STORM DRAIN OUTLET WITH COMMON FILL AND 6" PLANTING SOIL.
76. CAP/PLUG EXISTING SEWER LINE, FILL WITH PUMPED GROUT AND ABANDON IN PLACE.
77. CAP/PLUG EXISTING STORM DRAIN LINE, FILL WITH PUMPED GROUT AND ABANDON IN PLACE IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS. SEE NOTIFICATION REQUIREMENTS, SHEET C-001.
78. PLUG EXISTING MANHOLE PENETRATION.
79. REMOVE EXISTING RIP RAP (D_{50}=6").
80. CUT AND REMOVE EXISTING WATER LINE. COORDINATE SHUT OFF AND DISCONNECTION OF WATER LINE WITH PORTLAND WATER DISTRICT.
81. NOT USED.
82. REMOVE EXISTING WATER VALVE.
83. REMOVE AND RESET EXISTING CATCH BASIN GRADE AND GRANITE CURB INLET.
84. - 89. NOT USED.
90. DISCONNECT AND REMOVE EXISTING OVERHEAD ELECTRIC AND COMMUNICATION LINES. COORDINATE DISCONNECTION WITH OWNER, CMP, TIME WARNER CABLE AND FAIRPOINT COMMUNICATIONS.
91. NOT USED.
92. REMOVE EXISTING TRANSFORMER. COORDINATE REMOVAL AND DISCONNECTION OF WIRING WITH CMP.
93. REMOVE TEMPORARY UTILITY POLE AND WIRING. COORDINATE REMOVAL WITH CMP.
94. REMOVE EXISTING UTILITY POLE. COORDINATE REMOVAL WITH CMP.

NOTES:

1. SEE SHEET CD103 FOR ADDITIONAL TREE REMOVALS
2. ESTABLISH NEW TEMPORARY BENCHMARKS PRIOR TO REMOVING EXISTING PROJECT BENCHMARKS.
3. SEE SHEET CD101 FOR EXISTING STRUCTURE SCHEDULE.

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: NORTH REMOVALS SITE PLAN - PHASE 2

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CD102
SHEET NO. 14 OF 53

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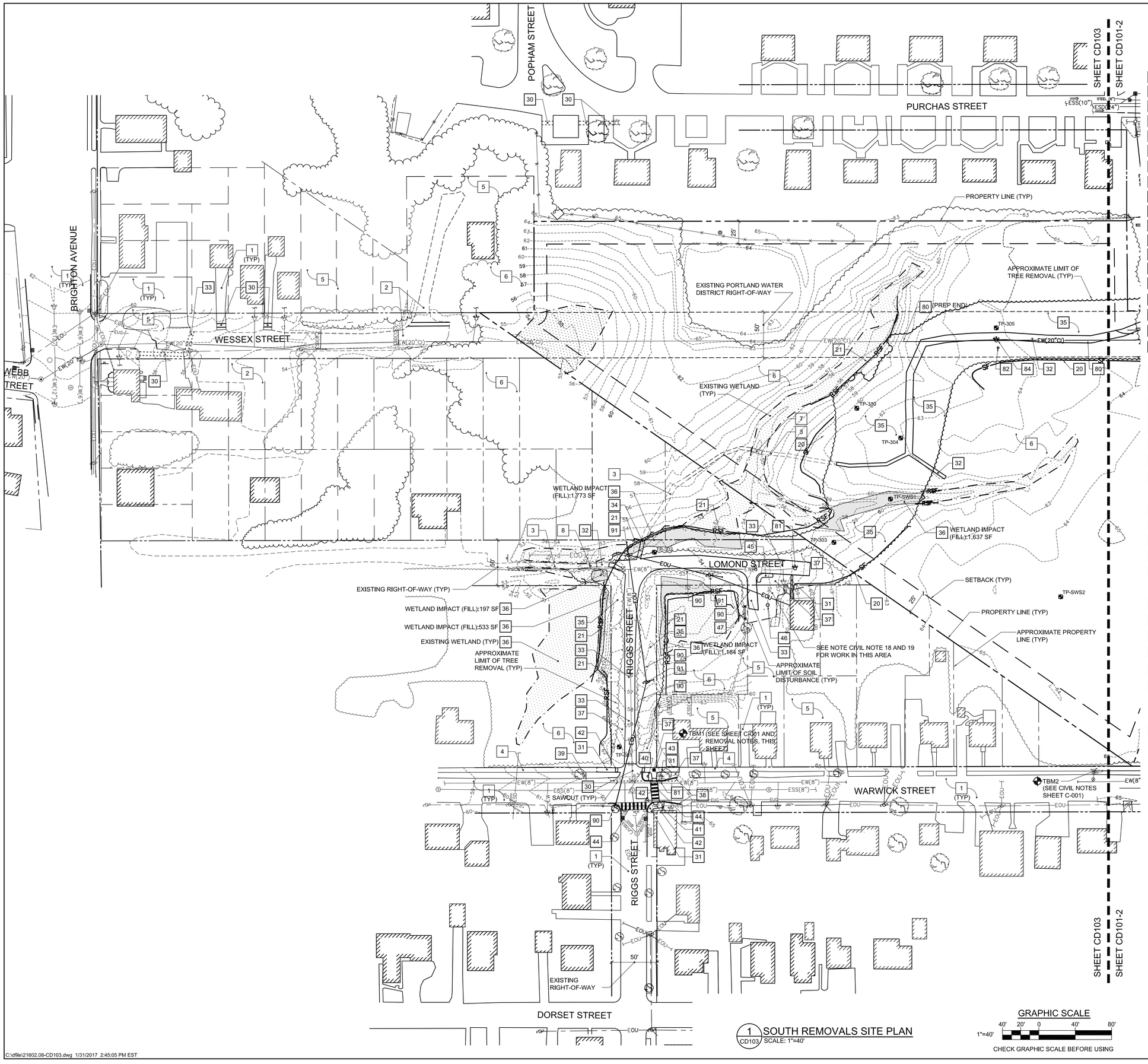

GRID NORTH (NAD83)

KEYNOTES: (THIS SHEET ONLY.)

1. EXISTING ASPHALT CONCRETE PAVEMENT.
2. EXISTING GRAVEL ROAD/DRIVEWAY.
3. EXISTING WALKING TRAIL.
4. EXISTING ASPHALT CONCRETE SIDEWALK.
5. EXISTING TURF GRASS/MEADOW.
6. EXISTING WOODED AREA.
7. EXISTING WOODEN FOOTBRIDGE.
8 - 19. NOT USED.
20. SILT FENCE. SEE DETAIL 1/C-502.
21. REINFORCED SILT FENCE. SEE DETAIL 2/C-502.
22. SEDIMENT CONTROL WATTLE. SEE DETAIL 3/C-502.
23 - 29. NOT USED.
30. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE PAVEMENT, +/- 4" THICK.
31. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE SIDEWALK, +/- 2" THICK.
32. REMOVE EXISTING GRAVEL WALKING TRAIL, +/- 4" THICK.
33. STRIP EXISTING STONE GRAVEL DRIVE, +/- 6" THICK.
34. REMOVE EXISTING WOODEN FOOTBRIDGE.
35. CLEAR EXISTING WOODED AREA AND GRUB OUT STUMPS. SEQUENCE WORK TO ENSURE TREE CLEARING IS NOT PERFORMED BETWEEN JUNE 1 AND JULY 31.
36. STRIP EXISTING TOPSOIL AND ORGANIC MATERIAL AND FILL EXISTING WETLAND WITH 12" MINIMUM THICKNESS LAYER OF COMPACTED GRANULAR BORROW FOR UNDERWATER BACKFILL, THEN FILL TO SUBGRADE ELEVATION WITH GRANULAR BORROW.
37. STRIP AND STOCKPILE EXISTING TOPSOIL, +/- 4" THICK.
38. REMOVE EXISTING GRANITE CURB.
39. REMOVE EXISTING WEEDS/BRUSH FROM VICINITY OF EXISTING SIGN AND STREET TREE.
40. REMOVE EXISTING SIGN AND METAL POST.
41. REMOVE EXISTING STREET SIGN FROM TOP OF METAL SIGN POST AND STORE FOR REINSTALLATION.
42. REMOVE EXISTING TACTILE WARNING PANEL SET IN CONCRETE (+/- 4" THICK).
43. REMOVE AND SALVAGE EXISTING SURVEY MARKER CONSISTING OF A BRASS PLUG SET IN CONCRETE INSIDE OF A CAST IRON ENCLOSURE WITH A CAST IRON COVER.
44. REMOVE EXISTING CROSSWALK MARKINGS USING HIGH PRESSURE WATER, SAND BLASTING, SOLVENT OR OTHER METHOD APPROVED BY THE MAINE DEPARTMENT OF TRANSPORTATION. DO NOT ALLOW MATERIAL REMOVED OR MATERIALS USED DURING THE REMOVAL PROCESS TO BE RELEASED INTO THE ENVIRONMENT.
45. REMOVE EXISTING MULCH PLANTING BED.
46. REMOVE EXISTING TREE STUMP.
47. REMOVE EXISTING FENCE.
48 - 79. NOT USED.
80. CUT AND REMOVE EXISTING WATER LINE. COORDINATE SHUT OFF AND DISCONNECTION OF WATER LINE WITH PORTLAND WATER DISTRICT. PREP END OF WATER LINE TO REMAIN FOR CONNECTION TO PROPOSED WATER LINE. PROVIDE TEMPORARY WATER SERVICE AS INDICATED ON SHEETS CD105 AND CU103.
81. ADJUST VALVE BOX TO MEET FINISH GRADES INDICATED ON CG102
82. SALVAGE EXISTING WATER LINE MARKER POST AND DELIVER TO PORTLAND WATER DISTRICT OFFICE (225 DOUGLASS STREET, PORTLAND, ME)
83. NOT USED.
84. REMOVE EXISTING AIR RELEASE VALVE.
85 - 89. NOT USED.
90. DISCONNECT AND REMOVE EXISTING OVERHEAD ELECTRIC AND COMMUNICATION LINES. COORDINATE DISCONNECTION WITH OWNER, CMP, TIME WARNER CABLE AND FAIRPOINT COMMUNICATIONS. PROVIDE TEMPORARY POWER AND COMMUNICATIONS SERVICE TO RESIDENCE AND MINIMIZE OUTAGES. NOTIFY PROPERTY OWNERS AT LEAST 10 BUSINESS DAYS PRIOR TO ANY UTILITY DISRUPTION.
91. REMOVE EXISTING UTILITY POLE. COORDINATE POLE REMOVAL WITH CMP.

REMOVAL NOTES:

1. SEE SHEET CD104 FOR ADDITIONAL TREE REMOVALS AND PRESERVATION OF EXISTING TREES TO REMAIN.
2. SEE SHEET CD105 FOR ADDITIONAL REMOVALS ASSOCIATED WITH WATER MAIN WORK.
3. ESTABLISH NEW TEMPORARY BENCHMARKS PRIOR TO REMOVING EXISTING PROJECT BENCHMARKS.

1 CD103 SOUTH REMOVALS SITE PLAN
SCALE: 1"=40'

GRAPHIC SCALE
1"=40'
40' 20' 0 40' 80'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK 034B, LOT 001)

TITLE THIS DWG: SOUTH REMOVALS SITE PLAN-PHASE 1

STATE OF MAINE JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JSD
CHECKED BY: MMV
DATE: 01/31/17

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CD103
SHEET NO. 15 OF 53

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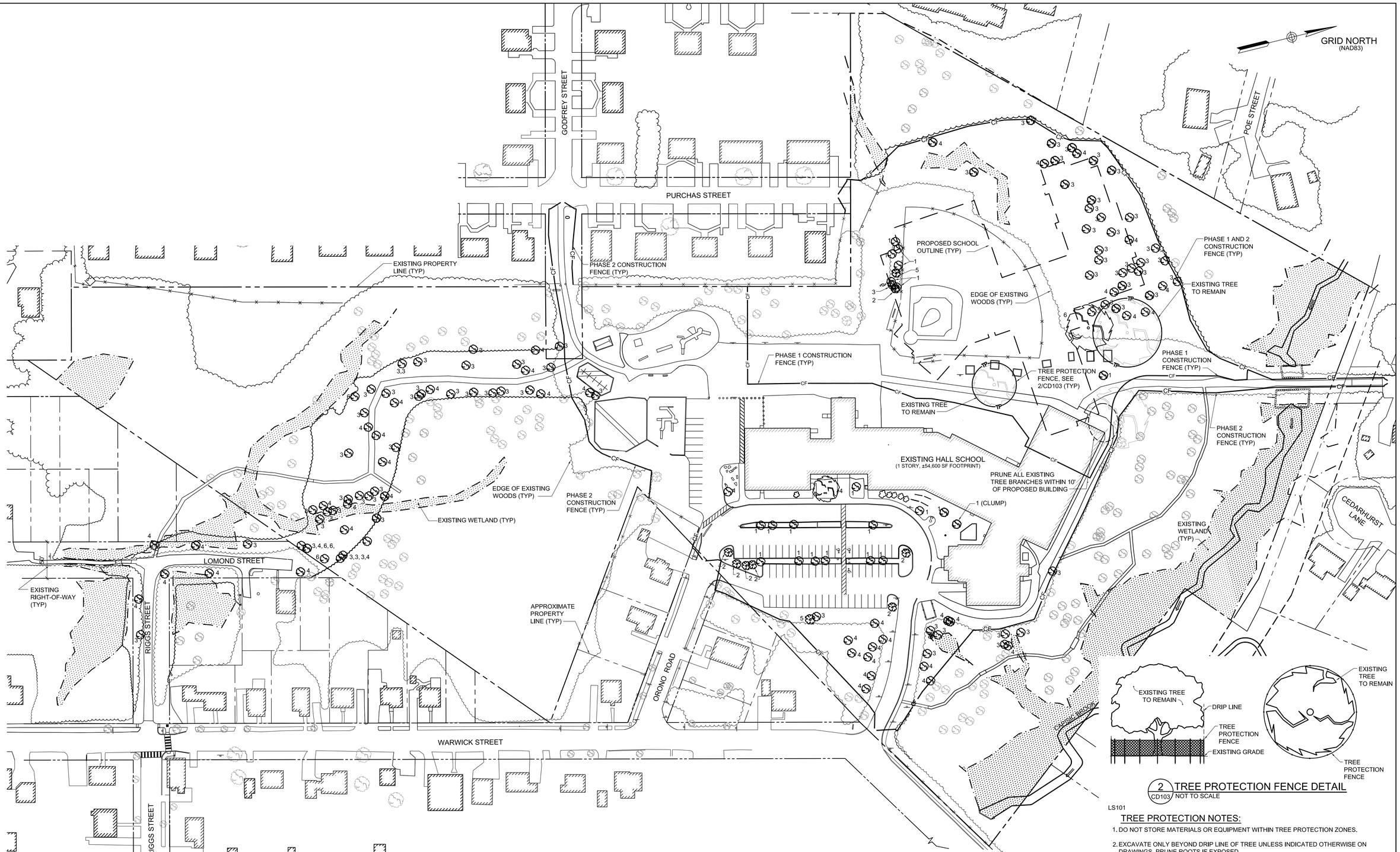

1 CD104 TREE REMOVAL AND PRESERVATION PLAN
SCALE: 1"=50'

2 CD103 TREE PROTECTION FENCE DETAIL
NOT TO SCALE

LS101

TREE PROTECTION NOTES:
1. DO NOT STORE MATERIALS OR EQUIPMENT WITHIN TREE PROTECTION ZONES.
2. EXCAVATE ONLY BEYOND DRIP LINE OF TREE UNLESS INDICATED OTHERWISE ON DRAWINGS. PRUNE ROOTS IF EXPOSED.
3. DIRECT VEHICLE EXHAUST AWAY FROM TREE PROTECTION ZONES.
4. HAND EXCAVATE WITHIN TREE PROTECTION ZONES WHERE EXCAVATION IS INDICATED ON DRAWINGS.
5. COORDINATE ALL REQUIRED ROOT CUTTING WITH A CERTIFIED ARBORIST.
6. REMOVE DEAD OR DAMAGED BRANCES AS DIRECTED BY CITY OF PORTLAND ARBORIST.

LEGEND:
EXISTING TREES TO REMAIN WITH GREATER THAN 16" DBH (WOODED AREAS) AND GREATER THAN 10" DBH (OPEN AREAS)

TREES TO BE REMOVED:

1. DECIDUOUS TREE, DIAMETER: LESS THAN 16"
2. CONIFER, DIAMETER: LESS THAN 16"
3. DECIDUOUS TREE, DIAMETER: 16" - 23"
4. DECIDUOUS TREE, DIAMETER: 24" - 35"
5. CONIFER, DIAMETER: 24" - 35"
6. DECIDUOUS TREE, DIAMETER: GREATER THAN 36"

NOTES:
1. PRIOR TO ANY TREE CLEARING, CONDUCT A PRE-CONSTRUCTION MEETING AT THE SITE TO DISCUSS THE TREE CLEARING REQUIREMENTS WITH THE OWNER, ARCHITECT AND THE CITY OF PORTLAND ARBORIST.
2. SEQUENCE WORK TO ENSURE TREE CLEARING IS NOT PERFORMED BETWEEN JUNE 1 AND JULY 31.
3. SEE SHEETS CD101-CD103 AND CD105 FOR ADDITIONAL REMOVALS.
4. PERFORM ALL TREE AND ROOT PRUNING AS DIRECTED BY A CERTIFIED ARBORIST.

GRAPHIC SCALE
1"=50' — 50' 25' 0 50' 100'

CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JONAH DaVITERS No 12273 LICENSED PROFESSIONAL SURVEYOR STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK 034B, LOT 001)

TITLE THIS DWG.
TREE REMOVAL AND PRESERVATION PLAN

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CD104
SHEET NO. 16 OF 53

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GRID NORTH
(NAD83)

SHEET CS103
SHEET CS101

GODFREY STREET

PURCHAS STREET

ORONO ROAD

WARWICK STREET

POE STREET

RAVINA STREET

PINECREST ROAD

CEDARHURST LANE

PROPOSED SCHOOL BUILDING
2 STORY, ±63,000 SF FOOTPRINT

MAIN ENTRANCE

EXISTING HALL SCHOOL
FFE VARIES (67.06' TO 67.41')

APPROXIMATE LIMIT OF SOIL DISTURBANCE (PHASE 1,TYP)

APPROXIMATE LIMIT OF SOIL DISTURBANCE (TYP)

PROPERTY LINE (TYP)

SETBACK(TYP)

100- YEAR FLOOD LINE

SHORE LAND ZONE

EXISTING WATER FLOW DIRECTION (TYP)

CAPISIC BROOK

NRPA INDIVIDUAL PERMIT ZONE (TYP)

NRPA PERMIT-BY-RULE ZONE (TYP)

UNDISTURBED VEGETATED BUFFER (TYP)

1 CS101 NORTH SITE PLAN-PHASE 1
SCALE: 1"=40'

GRAPHIC SCALE
1"=40'
40' 20' 0 40' 80'
CHECK GRAPHIC SCALE BEFORE USING

KEYNOTES: (THIS SHEET ONLY.)

1. CONSTRUCTION FENCE: PROVIDE 6' TALL CHAIN LINK FENCING WITH DRIVEN POSTS IN LIEU OF MOVABLE FENCE PANELS WHERE INDICATED WITH "CLF". SEE DETAIL 4/C-505 (SIM)
2. PROTECT EXISTING TREE TO REMAIN. SEE SHEET CD104.
3. EXISTING ASPHALT CONCRETE PAVEMENT.
4. EXISTING GRAVEL/STONE DUST WALK.
5. EXISTING ASPHALT CONCRETE SIDEWALK.
6. EXISTING TURFGRASS/MEADOW.
7. EXISTING WOODED AREA.
8. EXISTING PLAYGROUND EQUIPMENT.
9. EXISTING PLANTING BED.
10. GRAVEL SURFACE. SEE DETAIL 5/C-503 (SIM, WITH AGGREGATE BASE SURFACE IN LIEU OF STONEDUST).
11. ASPHALT CONCRETE PAVEMENT (BINDER COURSE ONLY-PROVIDE WEARING COURSE IN PHASE 2). SEE DETAIL 1/C-503 (SIM).
12. - 13. NOT USED.
14. TIPDOWN CONCRETE CURB. SEE DETAIL 10/C-503.
14. CONCRETE CURB. SEE DETAIL 10/C-503.
15. - 16. NOT USED.
17. ASPHALT CONCRETE SIDEWALK. SEE DETAIL 5/C-503.
18. - 19. NOT USED.
20. STONE DUST ACCESS ROAD. SEE DETAIL 2/C-503.
21. STORM WATER TREATMENT AREA: GRASSED UNDERDRAINED SOIL FILTER, SEE SHEET CG101, SEE DETAIL 1/C-510.
22. - 29. NOT USED.
30. REINFORCED CONCRETE STOOP. SEE DETAIL 5/SB501.
31. DUMPSTER PAD AND ENCLOSURE, SEE DETAIL 2/C-505.
32. REINFORCED CONCRETE PAD. SEE DETAIL 3/C-505.
33. TRANSFORMER PAD.
34. - 35. NOT USED.
36. BOLLARD. SEE DETAIL 13/C-503.
37. - 38. NOT USED.
39. CHAIN LINK FENCE (HEIGHT AS INDICATED). SEE DETAIL 6/C-504.
40. - 46. NOT USED.
47. WOOD GUARDRAIL. SEE DETAIL 2/C-504.
48. JERSEY BARRIERS LOCATED AT END OF ASPHALT CONCRETE PAVEMENT TO BE INSTALLED IN PHASE 1.
49. REINSTALL EXISTING LANDSCAPE BOLDER. SEE DETAIL 10/L-501.
50. POSSIBLE CONTRACTOR STORAGE/STOCKPILE LOCATION.
51. CRUSHED STONE SURFACE. MATCH EXISTING THICKNESS, +/- 4". SEE DETAIL 5/C-503 (SIM).
52. STONEDUST WALK. SEE DETAIL 5/C-503.

NOTES:

1. SEE SHEET CL101 FOR LAYOUT INFORMATION.
2. SEE CM101 FOR PAVEMENT MARKING AND SIGNAGE INFORMATION.

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE
JONAH DeVASTERS
No. 12273
LICENSED PROFESSIONAL ENGINEER

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: NORTH SITE PLAN-PHASE 1

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CS101
SHEET NO. 17 OF 53

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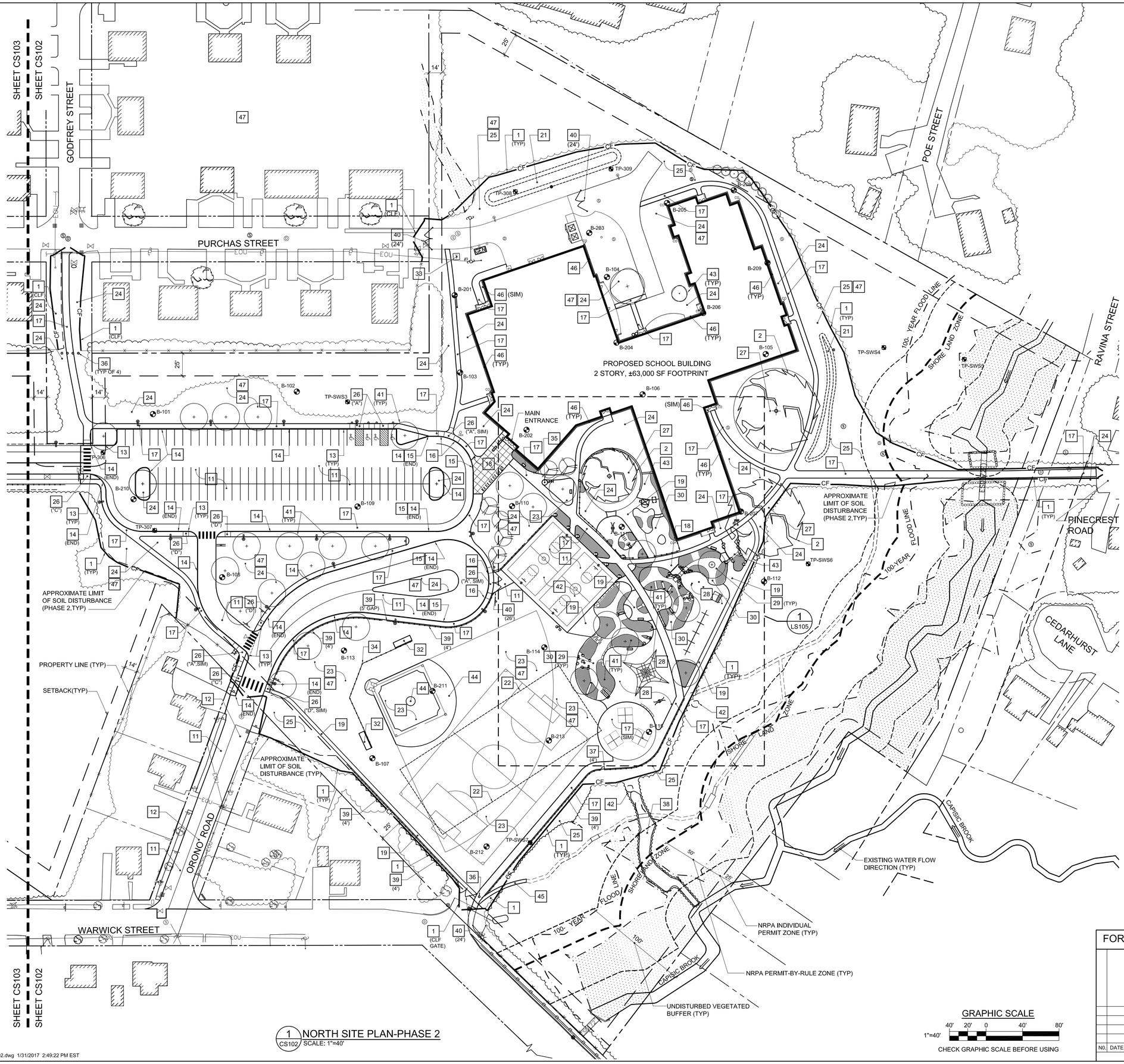

KEYNOTES: (THIS SHEET ONLY.)

1. CONSTRUCTION FENCE: PROVIDE 6' TALL CHAIN LINK FENCING WITH DRIVEN POSTS IN LIEU OF MOVABLE FENCE PANELS WHERE INDICATED WITH "CLF". SEE DETAIL 4/C-505 (SIM)
2. PROTECT EXISTING TREE TO REMAIN.
3. - 10. NOT USED.
11. ASPHALT CONCRETE PAVEMENT. SEE DETAIL 1/C-503.
12. PARTIAL-DEPTH ASPHALT CONCRETE: 6" THICK AGGREGATE BASE COURSE, 2-1/2" ASPHALT CONCRETE BINDER COURSE AND 1-1/2" ASPHALT CONCRETE WEARING COURSE. SEE DETAIL 1/C-503 (SIM).
13. TIPDOWN CONCRETE CURB. SEE DETAIL 10/C-503.
14. VERTICAL CONCRETE CURB. SEE DETAIL 10/C-503.
15. VERTICAL GRANITE CURB. SEE DETAIL 12/C-503.
16. TIPDOWN GRANITE CURB. SEE DETAIL 12/C-503.
17. ASPHALT CONCRETE SIDEWALK. SEE DETAIL 5/C-503.
18. CONCRETE SIDEWALK. SEE DETAIL 6/C-503.
19. STONEDUST SURFACE. SEE DETAIL 5/C-503.
20. NOT USED.
21. STORM WATER TREATMENT AREA: GRASSED UNDERDRAINED SOIL FILTER (INSTALLED IN PHASE 1). SEE SHEET CG101 AND DETAIL 1/C-510.
22. STORMWATER TREATMENT AREA: SUBSURFACE SAND FILTER. SEE SHEET CG101 AND DETAIL 2/C-510.
23. TURFGRASS-6" PLANTING SOIL AND SOD.
24. TURFGRASS-6" PLANTING SOIL, SEED (GENERAL LAWN SEED MIX), FERTILIZER AND MULCH ALL DISTURBED AREAS UNLESS INDICATED OTHERWISE.
25. MEADOW-6" PLANTING SOIL, SEED (RESTORATION AREA SEED MIX), FERTILIZER AND MULCH.
26. ACCESSIBLE CURB CUT (TYPE AS INDICATED). SEE DETAIL 1/C-504.
27. 6" THICK MULCH (UNDER CANOPY OF TREES TO REMAIN).
28. 6" THICK SAFE SURFACE. SEE DETAIL 4/L-501.
29. PLAYMOUND.
30. SUPERHUMUS MULCH SURFACE.
31. DUMPSTER PAD AND ENCLOSURE. SEE DETAIL 2/C-505.
32. REINFORCED CONCRETE PAD AND 15' BENCH (NOT IN CONTRACT).
33. TRANSFORMER PAD. SEE DETAIL 5/C-508.
34. CHAIN LINK FENCE BACKSTOP. SEE DETAIL 5/C-506.
35. 35' FLAGPOLE ON CONCRETE BASE. SEE DETAIL 1/C-505.
36. BOLLARD. SEE DETAIL 13/C-503.
37. CHAIN LINK FENCE GATE (CLEAR OPENING AS INDICATED). SEE DETAIL 6/C-504.
38. RIPRAP SWALE. SEE SHEET CG101, SEE DETAIL 9/C-502 (SIM).
39. CHAIN LINK FENCE (HEIGHT AS INDICATED). SEE DETAIL 6/C-504.
40. LEAF GATE (CLEAR OPENING AS INDICATED). SEE DETAIL 5/C-504.
41. TREE/SHRUB PLANTING.
42. REFILL DEPRESSION FROM FORMER STORM DRAIN OUTLET WITH GRANULAR BORROW AND PROVIDE 6" TOPSOIL, SEED (RESTORATION AREA SEED MIX), FERTILIZER AND MULCH.
43. SAND PLAY SURFACE.
44. SKINNED INFIELD AND PITCHERS MOUND. SEE DETAILS 7/C-504 AND 8-C-504.
45. WALKING TRAIL. SEE DETAIL 3/C-503.
46. MOW STRIP. SEE DETAIL 11/C-503.
47. POSSIBLE SNOW STORAGE AREA.

NOTES:

1. SEE SHEET CL101 FOR LAYOUT INFORMATION.
2. SEE SHEET CM101 FOR PAVEMENT MARKING AND SIGNAGE INFORMATION.

1 CS102 NORTH SITE PLAN-PHASE 2
SCALE: 1"=40'

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JONAH DeWATERS No. 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
NORTH SITE PLAN-PHASE 2

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CS102
SHEET NO. 18 OF 53

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GRID NORTH
(NAD83)

KEYNOTES: (THIS SHEET ONLY.)

1 - 9 NOT USED.

10 ASPHALT CONCRETE PAVEMENT. SEE DETAIL 1/C-503.

11 CONCRETE CURB WITH 7" REVEAL. SEE DETAIL 10/C-503.

12 VERTICAL GRANITE CURB WITH 7" REVEAL. SEE DETAIL 12/C-503.

13 TIPDOWN GRANITE CURB (7' LONG). SEE DETAIL 10/C-503 (SIM).

14 ASPHALT CONCRETE SIDEWALK. SEE DETAIL 5/C-503.

15 WALKING TRAIL. SEE DETAIL 3/C-503.

16 ACCESSIBLE CURB CUT (TYPE AS INDICATED). SEE DETAIL 1/C-504.

17 TURFGRASS-6" PLANTING SOIL, SEED (GENERAL LAWN SEED MIX), FERTILIZER AND MULCH ALL DISTURBED AREAS UNLESS INDICATED OTHERWISE.

18 MEADOW-6" PLANTING SOIL, SEED (RESTORATION AREA SEED MIX), FERTILIZER AND MULCH.

19 WOOD GUARD RAIL. SEE DETAIL 2/C-504.

20 DETECTABLE WARNING PANEL. SEE DETAIL 9/C-503.

21 STORM WATER TREATMENT AREA: GRASSED UNDERDRAINED SOIL FILTER, SEE SHEET CG102. AND DETAIL 1/C-510.

22 STORM WATER TREATMENT AREA: TREE BOX FILTER, SEE SHEET CG102 AND DETAIL 3/C-509.

23 PIPE INLET PROTECTION. SEE SHEET CG102. SEE DETAIL 9/C-502 (SIM).

24 PIPE OUTLET PROTECTION.SEE SHEET CG102. SEE DETAIL 9/C-502.

25 SURVEY MARKER POST. ENGAGE A PROFESSIONAL LAND SURVEYOR TO ESTABLISH VERTICAL AND HORIZONTAL POSITION OF MARKER ON CITY OF PORTLAND DATUM (VERTICAL AND HORIZONTAL). PROVIDE CERTIFIED (STAMPED) PLANS OF LOCATION TO ARCHITECT AND CITY OF PORTLAND. SEE DETAIL 9/C-504.

26 ENGAGE A PROFESSIONAL LAND SURVEYOR TO RESET EXISTING DAMAGED PROPERTY MARKER.

27 POSSIBLE SNOW STORAGE AREA.

PURCHAS STREET
WESSEX STREET
BRIGHTON AVENUE
LOMOND STREET
RIGGS STREET
WARWICK STREET
DORSET STREET
EXISTING RIGHT-OF-WAY (TYP)
EXISTING WETLAND (TYP)
PROPERTY LINE (TYP)
SETBACK (TYP)
APPROXIMATE PROPERTY LINE (TYP)
APPROXIMATE LIMIT OF SOIL DISTURBANCE (TYP)
EDGE OF RESTORATION AREA, SEED MIX (TYP)
TP-301
TP-302
TP-303
TP-304
TP-305
TP-310
TP-SWS1
TP-SWS2
SHEET CS103
SHEET CS101-2

1 CS103 SOUTH SITE PLAN-PHASE 1
SCALE: 1"=40'

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

NOTES:
1. SEE SHEET CL102 FOR LAYOUT INFORMATION.
2. SEE SHEET CM101 FOR PAVEMENT MARKING AND SIGNAGE INFORMATION.

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
REVISIONS			

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: SOUTH SITE PLAN-PHASE 1

JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CS103
SHEET NO. 19 OF 53

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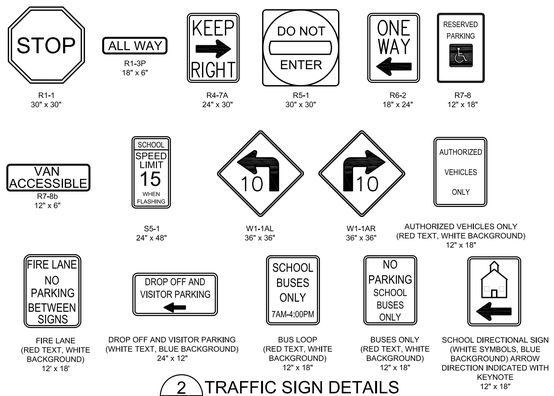
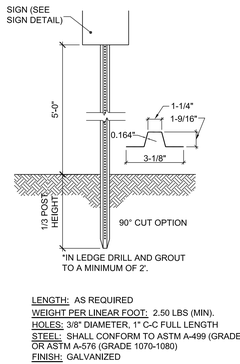
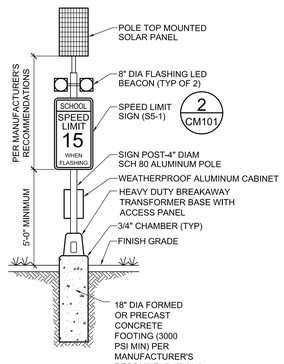


2 CM101 TRAFFIC SIGN DETAILS
CM101,C-504 NOT TO SCALE



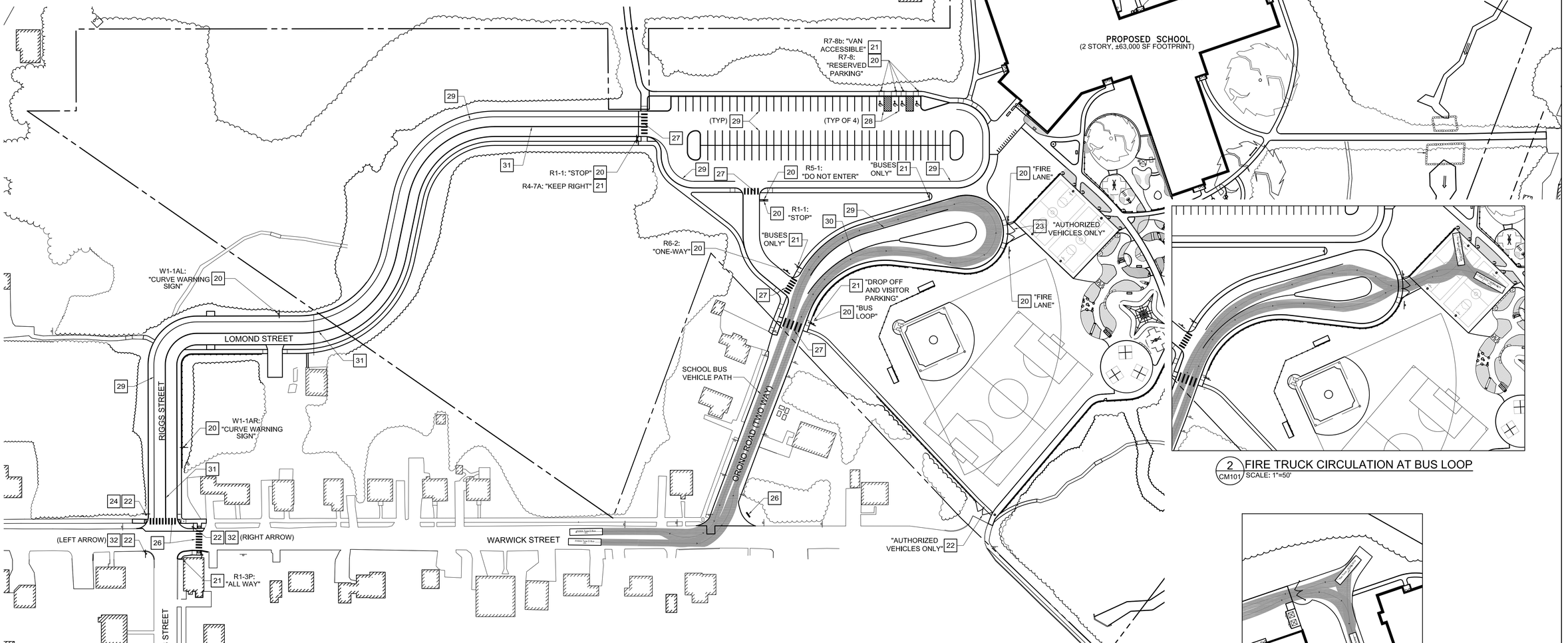
LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN).
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080)
FINISH: GALVANIZED

3 CM101 POST DETAIL
CM101,C-504 NOT TO SCALE



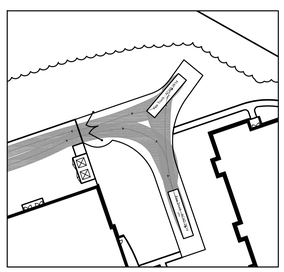
NOTES:
1. SIGN SELECTED SHALL BE APPROVED IN WRITING BY ARCHITECT.
2. SOLAR PANEL HEIGHT AND ORIENTATION PER MANUFACTURER'S RECOMMENDATIONS.
3. BREAKAWAY TRANSFORMER BASE SHALL CONFORM WITH MEDOT AND AASHTO STANDARDS. THE BASE SHALL BE MOUNTED TO THE CONCRETE BASE PER MANUFACTURER'S RECOMMENDATIONS.
4. SIGN SELECTED SHALL CONFORM TO MUTCD AND INSTITUTE OF TRANSPORTATION ENGINEER'S STANDARDS AND BE CRASH TESTED AND ACCEPTED BY NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM 350.
5. PROVIDE 365-DAY PROGRAMMABLE TIMER WITH AT LEAST 4 ON/OFF SEQUENCES PER DAY.

4 CM101 SPEED LIMIT BEACON (SOLAR)
CM101 NOT TO SCALE



1 CM101 PAVEMENT MARKING, SIGNAGE, AND SITE CIRCULATION PLAN
SCALE: 1"=50'

2 CM101 FIRE TRUCK CIRCULATION AT BUS LOOP
SCALE: 1"=50'



3 CM101 FIRE TRUCK CIRCULATION AT REAR OF BUILDING
SCALE: 1"=50'

KEYNOTES: (THIS SHEET ONLY)

1 - 19 NOT USED.

20 TRAFFIC SIGN AND POST. SIGN TYPE INDICATED WITH KEYNOTE. SEE DETAILS 2/CM101 AND 3/CM101.

21 TRAFFIC SIGN AFFIXED ON POST BENEATH MAIN SIGN. SIGN TYPE INDICATED WITH KEYNOTE. SEE DETAIL 2/CM101.

22 "STOP" SIGN (R1-1) AND POST WITH "ALL WAY" (R1-3P) SIGN AFFIXED BENEATH STOP SIGN. SEE DETAIL 2/CM101.

23 TRAFFIC SIGN AFFIXED TO LEAF GATE. SIGN TYPE INDICATED WITH KEYNOTE. SEE DETAILS 2/CM101 AND 5/C-504.

24 REINSTALL EXISTING STREET SIGN ON TOP OF NEW SIGN POST.

25 SOLAR SCHOOL ZONE BEACON. SEE DETAIL 4/CM101.

26 SCHOOL SIGN.

27 CROSSWALK. SEE DETAIL 4/C-504.

28 PAVEMENT MARKING: ACCESSIBLE PARKING SPACE. SEE DETAIL 3/C-504.

29 PAVEMENT MARKING: 4" WIDE, WHITE

30 PAVEMENT MARKING: 4" WIDE, YELLOW

31 PAVEMENT MARKING: 4" WIDE, DOUBLE YELLOW

32 SCHOOL DIRECTIONAL SIGN (AFFIXED TO POST BENEATH STOP SIGN). SEE DETAIL 2/CM101.

GRAPHIC SCALE
1"=50' 50' 25' 0 50' 100'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG: PAVEMENT MARKING, SIGNAGE, AND SITE CIRCULATION PLAN

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

STATE OF MAINE JONAH DeWATERS No. 12273 LICENSED PROFESSIONAL ENGINEER

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CM101
SHEET NO. 20 OF 53

C:\dfile\21602.08-CM101.dwg 1/31/2017 10:24:35 PM EST

GRID NORTH
(NAD83)

SHEET CL102
SHEET CL101
GODFREY STREET
PURCHAS STREET
STORMWATER TREATMENT AREA (SEE SHEET CG101)
POE STREET
PROPOSED SCHOOL BUILDING
2 STORY, ±63,000 SF FOOTPRINT
STORMWATER TREATMENT AREA (SEE SHEET CG101)
100- YEAR FLOOD LINE
SHORE LAND ZONE
RAVINA STREET
PINECREST ROAD
CEDARHURST LANE
PROPERTY LINE (TYP)
SETBACK(TYP)
TBM3 FORMER LOCATION (SEE SHEET C-001, CD101 AND NOTE 1, THIS SHEET)
ORONO ROAD
STORMWATER TREATMENT AREA (SEE SHEET CG101)
CAPISIC BROOK
EXISTING WATER FLOW DIRECTION (TYP)
WARWICK STREET
NRPA INDIVIDUAL PERMIT ZONE (TYP)
NRPA PERMIT-BY-RULE ZONE (TYP)
UNDISTURBED VEGETATED BUFFER (TYP)
SHEET CL102
SHEET CL101

1 CL101 NORTH SITE LAYOUT PLAN
SCALE: 1"=40'

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

NOTES:
1. ESTABLISH NEW TEMPORARY BENCHMARKS PRIOR TO REMOVING EXISTING PROJECT BENCHMARKS.

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JONAH DeWALTERS No. 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE, THIS DWG.: NORTH SITE LAYOUT PLAN

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CL101
SHEET NO. 21 OF 53

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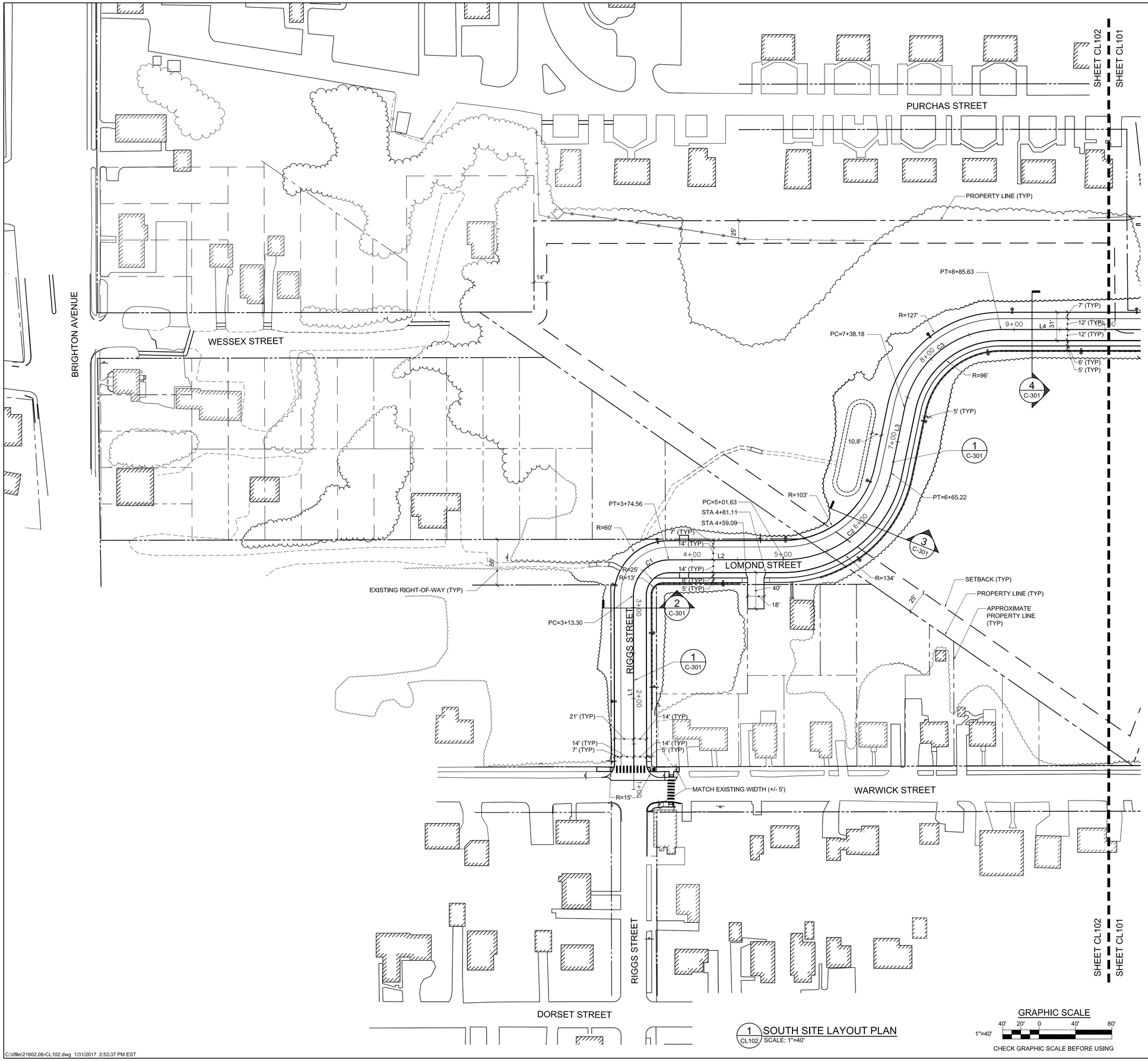

ENTRANCE ROAD LINE TABLE		
LINE	LENGTH	BEARING
L1	213.30	N76°07'01"W
L2	127.07	N13°52'59"E
L3	72.95	N64°13'31"W
L4	179.23	N14°00'00"E

ENTRANCE ROAD CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA ANGLE
C1	61.26	39.00	90°00'00"
C2	163.59	120.00	78°06'30"
C3	147.45	108.00	78°13'31"

1 CL102 SOUTH SITE LAYOUT PLAN
SCALE: 1"=40'

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE
JONAH DeWATERS
No. 12273
LICENSED
PROFESSIONAL ENGINEER

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG:
SOUTH SITE LAYOUT PLAN

OAK POINT ASSOCIATES
DRAWING NO. CL102
SHEET NO. 22 OF 53
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

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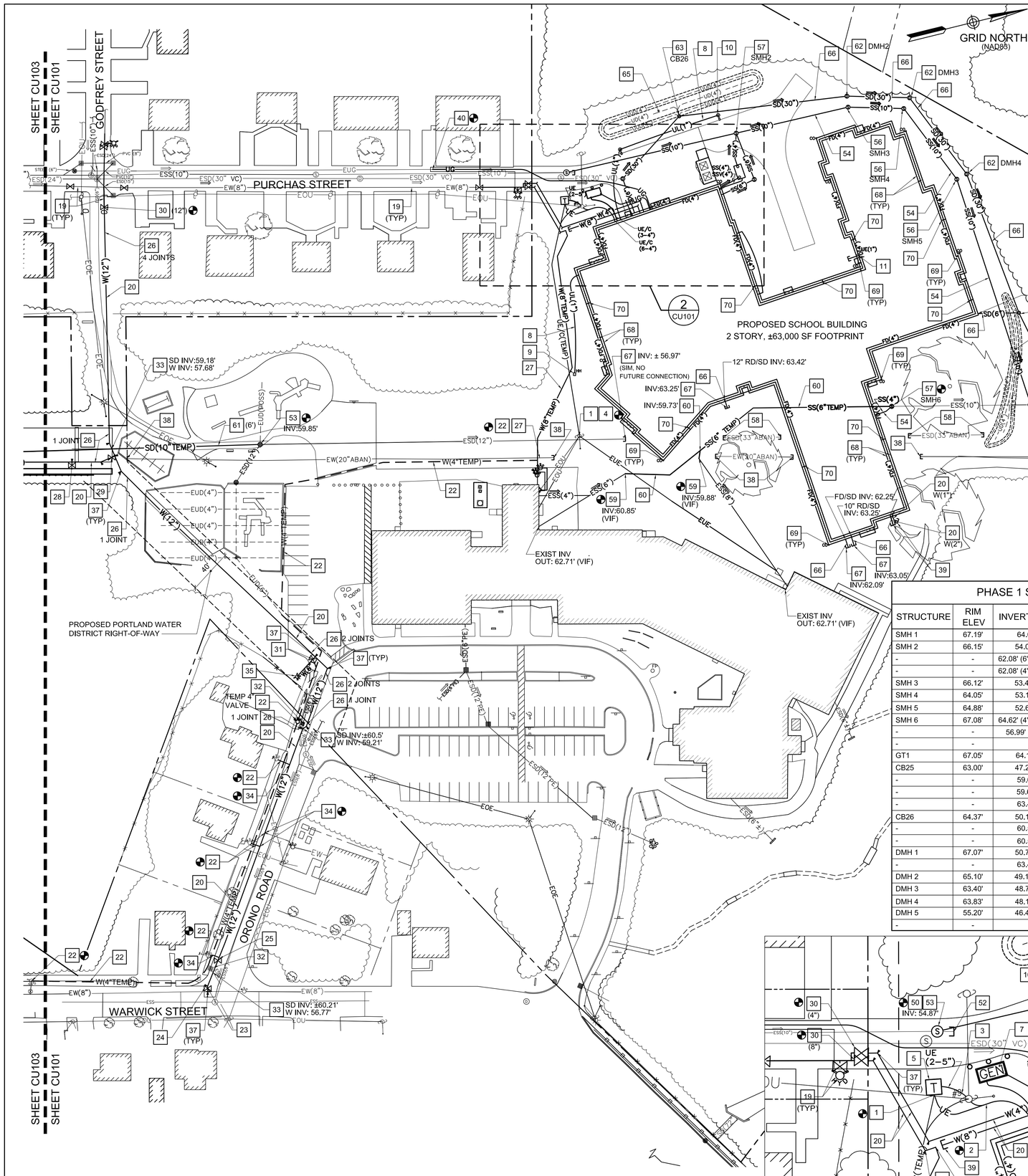

1 NORTH UTILITY PLAN-PHASE 1
CU101 SCALE: 1"=40'

2 SERVICE ENTRANCE UTILITY PLAN-PHASE 1
CU101 SCALE: 1"=20'

KEYNOTES: (THIS SHEET ONLY.)

ELECTRIC/COMMUNICATIONS

1. TEMPORARY ELECTRIC AND COMMUNICATIONS LINES. PROVIDE TRENCH FOR ELECTRIC AND COMMUNICATION LINES WITH 36" MIN COVER AND BACKFILL TRENCH ONCE WIRING HAS BEEN INSTALLED. WIRING AND CONNECTIONS BY CMP, FAIRPOINT COMMUNICATIONS, AND TIME WARNER CABLE (SPECTRUM). SEE NOTIFICATION NOTES, SHEET C-001.
2. MULTIPLE CONDUIT RISERS ON UTILITY POLE WITH STANDARD CMP STANDOFF BRACKETS IN ACCORDANCE WITH ILLUSTRATION NO. 28 OF THE CMP "HANDBOOK OF STANDARD REQUIREMENTS FOR ELECTRIC SERVICE AND METER INSTALLATIONS." PROVIDE ALL MATERIALS AND INSTALL FIRST SECTION TO ± 6' ABOVE GRADE (REMAINING INSTALLATION AND CONNECTIONS NOT IN CONTRACT AND SHALL BE PERFORMED BY CMP).
3. ELECTRIC SERVICE (PRIMARY), IN CONDUIT TRENCH. SEE DETAIL 3/C-508
4. COMMUNICATIONS SERVICE LINE IN CONDUIT TRENCH. SEE DETAIL 3/C-508
5. CONCRETE TRANSFORMER PAD. TRANSFORMER INSTALLATION AND WIRING FROM TRANSFORMER TO UTILITY POLE BY CMP. COORDINATE INSTALLATION WITH CMP. SEE DETAIL 5/C-508.
6. UNDERGROUND ELECTRIC (SECONDARY)/COMMUNICATIONS LINE IN CONDUIT TRENCH). SEE DETAIL 3/C-508.
7. STANDBY EMERGENCY GENERATOR ON REINFORCED CONCRETE PAD. SEE ELECTRICAL SHEETS AND DETAIL 3/C-505.
8. UNDERGROUND LIGHTING LINE IN CONDUIT TRENCH. SEE DETAIL 3/C-508.
9. LIGHTING HANDHOLE. PROVIDE PENETRATIONS FOR PHASE 2 LIGHTING CONNECTIONS. SEE DETAIL 4/C-508.
10. LIGHT POLE ON PRECAST CONCRETE BASE. SEE DETAIL 6/C-506.
11. EMPTY UNDERGROUND CONDUIT IN CONDUIT TRENCH (FOR FUTURE POND).
12 - 18. NOT USED.

WATER

19. REPLACEMENT WATER LINE AND APPURTENANCES IN PURCHAS STREET TO BE PROVIDED BY PORTLAND WATER DISTRICT ARE NOT IN CONTRACT UNLESS INDICATED OTHERWISE. COORDINATE TIMING OF PHASE 1 WATER LINE WORK TO COINCIDE WITH THIS WATER LINE WORK.
20. WATER LINE IN PIPE TRENCH. PROVIDE 3' SEPARATION BETWEEN DOMESTIC AND FIRE PROTECTION SERVICES IN SAME TRENCH. SEE DETAIL 1/C-507.
21. BLOW-OFF VALVE (SIZE AS INDICATED). SEE DETAIL 4/C-506.
22. 4" DIAMETER TEMPORARY WATER LINE (CERTAINTEED CERTA-LOK YELLOWMINE, AQUAMINE BY VICTAULIC COMPANY, OR APPROVED EQUAL). CONNECT TEMPORARY LINE TO FIRE HYDRANT AND CONNECT SERVICES TO TEMPORARY LINE. BURY LINE 12" MIN BELOW GRADE AT ROADWAY AND DRIVEWAY CROSSINGS. INSTALL LINE AND MAKE CONNECTIONS IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS. SEE NOTIFICATION NOTES, SHEET C-001.
23. CUT EXISTING WATER LINE MAIN AND PROVIDE 8" SWIVEL TEE AND 8" GATE VALVE. SEQUENCE WORK TO LIMIT DISRUPTIONS TO LESS THAN 8 HOURS. SEE NOTIFICATION NOTES, SHEET C-001 AND DETAIL 5/C-508.
24. 11.25 DEGREE BEND, APPROXIMATELY 5' FROM WATER MAIN CONNECTION.
25. 8"x12" INCREASER AND 12" GATE VALVE, APPROXIMATELY 25' FROM WATER MAIN CONNECTION. SEE DETAIL 2/C-506.
26. PROVIDE MECHANICAL JOINT RESTRAINT (FIELD LOK GASKET) ON SLIP JOINTS AT BEND. NUMBER OF JOINTS REQUIRING RESTRAINT INDICATED WITH KEYNOTE.
27. TEMPORARY WATER LINE IN PIPE TRENCH. CONNECT TEMPORARY LINE TO PERMANENT WATER LINE FROM PURCHAS STREET ONCE ARCHITECT AND PORTLAND WATER DISTRICT HAVE APPROVED REMOVAL OF THE 4" OVER LAND TEMPORARY LINE. CONNECT TEMPORARY LINE TO END OF PERMANENT LINE WITH RESTRAINED MECHANICAL JOING COUPLING IN ACCORDANCE WITH PORTLAND WATER DISTRICT REQUIREMENTS.
28. AIR RELEASE VALVE. SEE DETAIL 6/C-506.
29. 12"x12" FLANGED VALVE AND 12"x12"x12" FLANGED TEE. SEE DETAIL 2/C-506 (SIM).
30. CONNECT GATE VALVE TO END OF WATER MAIN. COORDINATE TIMING OF INSTALLATION WITH PORTLAND WATER DISTRICT (WATER MAIN AT CONNECTION TO BE CONSTRUCTED BY PORTLAND WATER DISTRICT). VALVE SIZE INDICATED WITH KEYNOTE. SEE DETAIL 2/C-506 (SIM).
31. 12"x12"x6" SWIVEL TEE AND 6" GATE VALVE. SEE DETAIL 2/C-506.
32. PROVIDE 1' SEPARATION BETWEEN WATER MAIN AND CATCH BASINS.
33. PROVIDE 6" MINIMUM SEPARATION AT STORMDRAIN/WATER LINE CROSSING. INVERT ELEVATIONS INDICATED WITH KEYNOTE.
34. CONNECT EXISTING RESIDENTIAL WATER SERVICE LINE TO MAIN. PROVIDE 1" COPPER PIPING BETWEEN EXISTING SHUT OFF AND WATER MAIN. CONNECTIONS TO MAIN SHALL BE IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN INSTRUCTIONS.
35. FIRE HYDRANT. SEE DETAIL 3/C-506.
36. PROVIDE TEMPORARY LINE STOP IN EXISTING WATER LINE TO ENABLE WATER LINE TO BE CUT AND CAPPED (NO EXISTING SHUT OFF VALVE IS AVAILABLE TO ISOLATE EXISTING WATER LINES) IN ACCORDANCE WITH MANUFACTURER'S AND PORTLAND WATER DISTRICT'S WRITTEN RECOMMENDATIONS. REMOVE LINE STOP ONCE CUT END OF LINE IS CAPPED AND JOINT RESTRAINT HAS BEEN INSTALLED. SEE SHEET CD101.
37. JOINT RESTRAINT. SEE DETAIL 5/C-506.
38. CAP EXISTING WATER LINE AND ABANDON IN PLACE. CAP ENDS OF WATER LINE TO REMAIN IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS. SEE NOTIFICATION NOTES SHEET C-001.
39. CAP WATER LINE FOR PHASE 2 CONNECTION TO WATER LINE.

GAS

40. GAS LINE IN PIPE TRENCH, PROVIDE TRENCH EXCAVATION AND RE-FILL ONLY. INSTALLATION OF GAS PIPING, CONNECTIONS TO EXISTING GAS MAIN AND GAS METER ON BUILDING AND ALL REQUIRED TESTING BY UNITIL (NOT IN CONTRACT). SEE NOTIFICATION NOTES, SHEET C-001 AND DETAIL 1/C-507.
41 - 49. NOT USED.

SANITARY SEWER/STORM DRAINAGE (SEE ALSO CG101)

50. EXISTING SEWER MANHOLE. REMOVE FRAME AND COVER AND RESET RIM TO ELEVATION 66.00'
EXISTING RIM ELEVATION: 65.37'
CENTERLINE OF EXISTING CHANNEL: 54.87'
51. EXISTING SEWER MANHOLE.
EXISTING RIM ELEVATION: 60.75'
INVERT IN: 51.4'
INVERT OUT: 51.3'
52. PLUG EXISTING MANHOLE PENETRATION.
53. CORE HOLE IN EXISTING MANHOLE/CATCH BASIN (INVERT ELEVATION AS INDICATED). SEE DETAIL 3/C-507
54. SANITARY SEWER LINE IN PIPE TRENCH. SEE DETAIL 1/C-507.
55. GREASE TRAP. SEE SANITARY STRUCTURE SCHEDULE, THIS SHEET. SEE DETAIL 1/C-508
56. SEWER MANHOLE. SEE SANITARY STRUCTURE SCHEDULE, THIS SHEET. SEE DETAIL 2/C-507
57. DROP MANHOLE. SEE SANITARY STRUCTURE SCHEDULE, THIS SHEET. SEE DETAIL 4/C-507
58. FILL EXISTING SANITARY SEWER/STORM DRAIN LINE WITH PUMPED GROUT, CAP/PLUG ENDS OF LINE TO REMAIN AND ABANDON IN PLACE IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS. SEE NOTIFICATION NOTES, SHEET C-001.
59. CONNECT TO EXISTING SANITARY SEWER LINES WITH SHIELDED FLEXIBLE COUPLING. (INVERT ELEVATION AS INDICATED). SEE DETAIL 3/C-507 (SIM).
60. TEMPORARY SEWER LINE IN PIPE TRENCH. SEE DETAIL 1/C-507. PROVIDE PIPE MATERIAL MEETING THE CITY OF PORTLAND'S WRITTEN REQUIREMENTS.
61. TEMPORARY STORM DRAIN LINE IN PIPE TRENCH. SEE DETAIL 1/C-507. PROVIDE PIPE MATERIAL MEETING THE CITY OF PORTLAND'S WRITTEN REQUIREMENTS.
62. DRAIN MANHOLE. SEE STRUCTURE SCHEDULE, THIS SHEET AND DETAIL 1/C-507.
63. CATCH BASIN. SEE STRUCTURE SCHEDULE, THIS SHEET AND DETAIL 1/C-509.
64. CONNECT TO EXISTING STORM DRAIN LINE (LINE SIZE AND TYPE AS INDICATED) WITH DRAIN MANHOLE. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET AND DETAIL 3/C-507.
65. STORMWATER TREATMENT AREA (GRASSED UNDERDRAINED SOIL FILTER). SEE SHEET CG101 AND DETAIL 1/C-510.
66. STORM DRAIN LINE IN PIPE TRENCH. FOR THE 30" LINE, PROVIDE PIPE MATERIAL MEETING CITY OF PORTLAND'S WRITTEN REQUIREMENTS. SEE DETAIL 1/C-507.
67. CAP STORM DRAIN LINE FOR FUTURE CONNECTION TO STORM DRAIN SYSTEM (PHASE 2). INVERT ELEVATION AS NOTED.
68. FOUNDATION DRAIN. SEE DETAIL 6/C-508.
69. FOUNDATION DRAIN CLEANOUT. SEE DETAIL 7/C-508.
70. SLEEVE OR CORE FOUNDATION WALL AT INV: 64.58'. SEE DETAIL 6/C-508.

PHASE 1 SANITARY/STORM DRAIN STRUCTURE SCHEDULE

STRUCTURE	RIM ELEV	INVERT IN (SIZE)	INVERT OUT (SIZE)	REMARKS
SMH 1	67.19'	64.08' (6")	63.98' (6")	RIM 2" ABOVE FINISHED GRADE
SMH 2	66.15'	54.08' (10")	53.98' (10")	DROP MANHOLE (DROPS FROM SMH1, GT1)
-	-	62.08' (6"), 54.66' (6")	-	FROM SMH1
-	-	62.08' (4"), 54.74' (4")	-	FROM GT1
SMH 3	66.12'	53.45' (10")	53.35' (10")	RIM 2" ABOVE FINISHED GRADE
SMH 4	64.05'	53.10' (10")	53.00' (10")	RIM 2" ABOVE FINISHED GRADE
SMH 5	64.88'	52.60' (10")	52.50' (10")	RIM 2" ABOVE FINISHED GRADE
SMH 6	67.08'	64.62' (4"), 52.09' (4")	51.99' (10")	DROP MANHOLE. (DROPS FROM SS OUT AT BLDG)
-	-	56.99' (6" TEMP)	-	RIM 2" ABOVE FINISHED GRADE. VERIFY INV OUT
-	-	-	-	IN FIELD (INV IN SHALL BE 0.1' ABOVE INV OUT).
GT1	67.05'	64.16' (4")	63.99' (4")	COORDINATE INV OUT W/ GREASE TRAP SELECTED
CB25	63.00'	47.25' (30")	47.15' (30")	FROM DMH4
-	-	59.67' (4")	-	PROVIDE BALL VALVE ON OUTLET
-	-	59.67' (4")	49.06' (30")	OUTER DRAINS
-	-	63.48' (6")	48.63' (30")	FOUNDATION DRAIN WITH BACKWATER VALVE
CB26	64.37'	50.16' (30")	50.06' (30")	FROM DMH1
-	-	60.56' (4")	-	PROVIDE BALL VALVE ON OUTLET
-	-	60.56' (4")	-	OUTER DRAINS
DMH 1	67.07'	50.70' (30")	50.60 ' (30")	CONNECT TO EXISTING 30" PIPE
-	-	63.48' (6")	-	FOUNDATION DRAIN WITH BACKWATER VALVE
DMH 2	65.10'	49.16' (30")	49.06' (30")	
DMH 3	63.40'	48.73' (30")	48.63' (30")	RIM 2" ABOVE FINISHED GRADE
DMH 4	63.83'	48.13' (30")	48.03' (30")	RIM 2" ABOVE FINISHED GRADE
DMH 5	55.20'	46.49' (30")	46.39' (30")	RIM 2" ABOVE FINISHED GRADE.
-	-	-	-	CONNECT TO EXISTING 30" PIPE

NOTES:

1. SEE SHEETS CD101 AND CD102 FOR EXISTING SEWER AND DRAINAGE STRUCTURE INFORMATION.
2. SEE SHEET CG101 FOR ADDITIONAL STORM DRAINAGE INFORMATION.
3. SEE SHEET CU104 FOR ADDITIONAL WORK ASSOCIATED WITH WATER MAIN INSTALLATION.

GRAPHIC SCALES

1"=40': 40' 20' 0 40' 80'

1"=20': 20' 10' 0 20' 40'

CHECK GRAPHIC SCALES BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: NORTH UTILITY PLAN-PHASE 1

JONAH DeVASTERS No. 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
NO. | DATE | DESCRIPTION | BY
REVISIONS
NO.
DATE: 01/31/17

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CU101
SHEET NO. 23 OF 53

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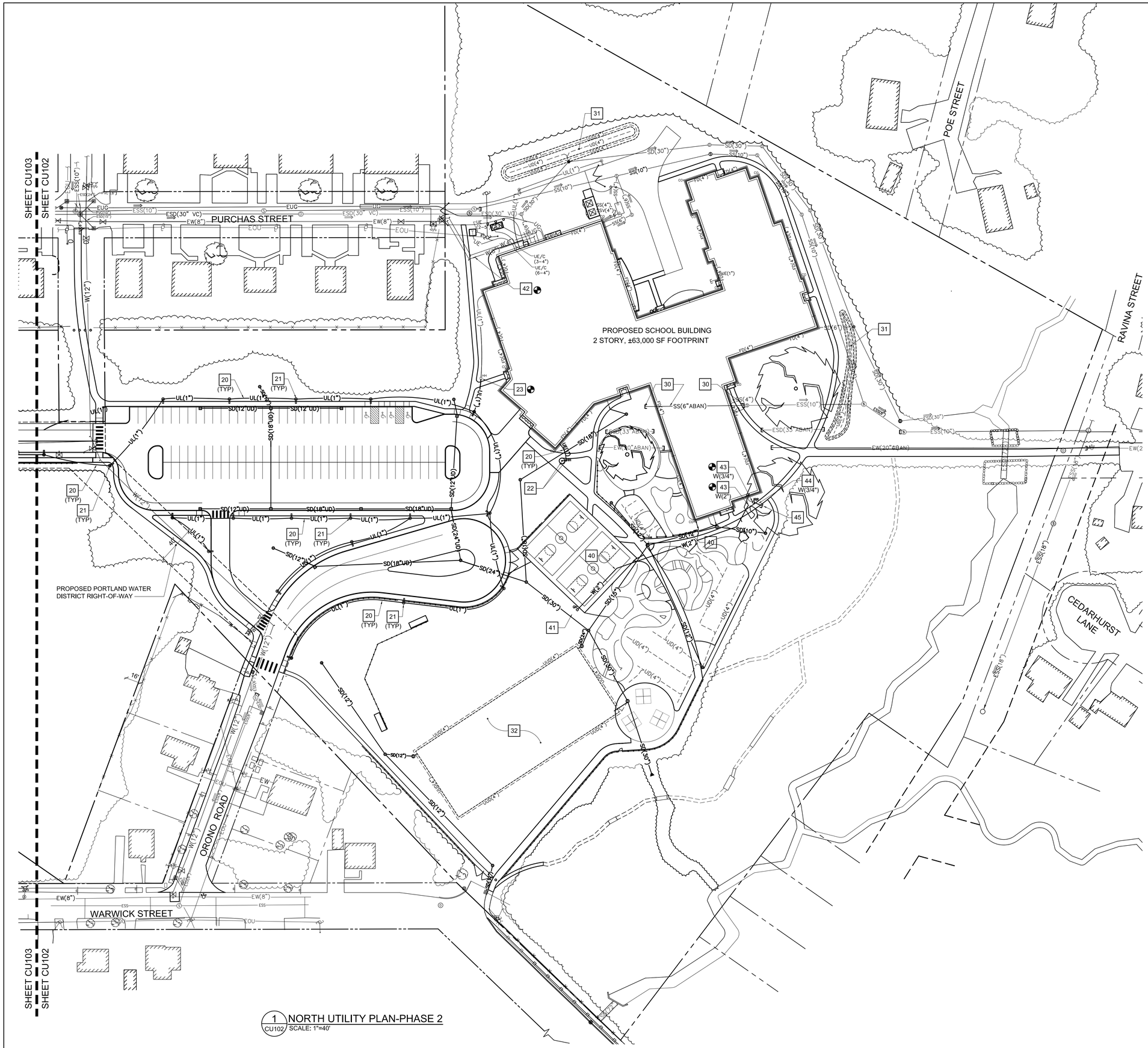

1 CU102 NORTH UTILITY PLAN-PHASE 2
SCALE: 1"=40'

KEYNOTES: (THIS SHEET ONLY.)

ELECTRIC/COMMUNICATIONS

20 UNDERGROUND LIGHTING LINE IN CONDUIT TRENCH. SEE DETAIL 2/C-508.

21 LIGHT POLE ON PRECAST CONCRETE BASE. SEE DETAIL 6/C-505.

22 LIGHTED FLAGPOLE AND HANDHOLE. SIZE HANDHOLE IN ACCORDANCE WITH FLAGPOLE LIGHTING MANUFACTURER'S WRITTEN REQUIREMENTS TO ACCOMMODATE LIGHTING TRANSFORMERS (±2'x2'-6"). SEE DETAILS 1/C-505 AND 4/C-508.

23 CONNECT TO EXISTING LIGHTING CONDUIT IN EXISTING LIGHTING HANDHOLE (INSTALLED IN PHASE 1).

24 - 29 NOT USED.

SANITARY SEWER/ STORM DRAINAGE (SEE ALSO CG101)

30 FILL TEMPORARY SANITARY SEWER/STORM DRAIN LINE WITH PUMPED GROUT. CAP/PLUG ENDS OF LINE TO REMAIN AND ABANDON IN PLACE IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS. SEE NOTIFICATION NOTES, SHEET C-001.

31 STORMWATER TREATMENT AREA (GRASSED UNDERDRAINED SOIL FILTER). SEE DETAIL 1/C-510.

32 STORMWATER TREATMENT AREA (SUBSURFACE SAND FILTER) SEE DETAIL 2/C-510.

33 - 39 NOT USED.

WATER

40 WATER LINE IN PIPE TRENCH. SEE DETAIL 1/C-507.

41 GROUND HYDRANT. SEE DETAIL 8/C-507.

42 CONNECT WATER PIPING BETWEEN BUILDING AND WATER LINE AT FORMER TEMPORARY WATER LINE LOCATION WITH RESTRAINED MECHANICAL JOINT COUPLING IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS.

43 CONNECT WATER LINE TO STUB INSTALLED IN PHASE 1.

44 IRRIGATION LINE IN PIPE TRENCH.

45 IRRIGATION BOX CONTAINING SOLENOID VALVE, VACUUM BREAKER AND CONTROLLER FOR FUTURE WATER FEATURE.

NOTES:

1. SEE SHEETS CD101 AND CD102 FOR EXISTING SEWER AND DRAINAGE STRUCTURE INFORMATION.
2. SEE SHEET CG101 FOR STORM DRAINAGE INFORMATION.

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

JONAH DeWATERS No. 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
NORTH UTILITY PLAN-PHASE 2

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CU102
SHEET NO. 24 OF 53

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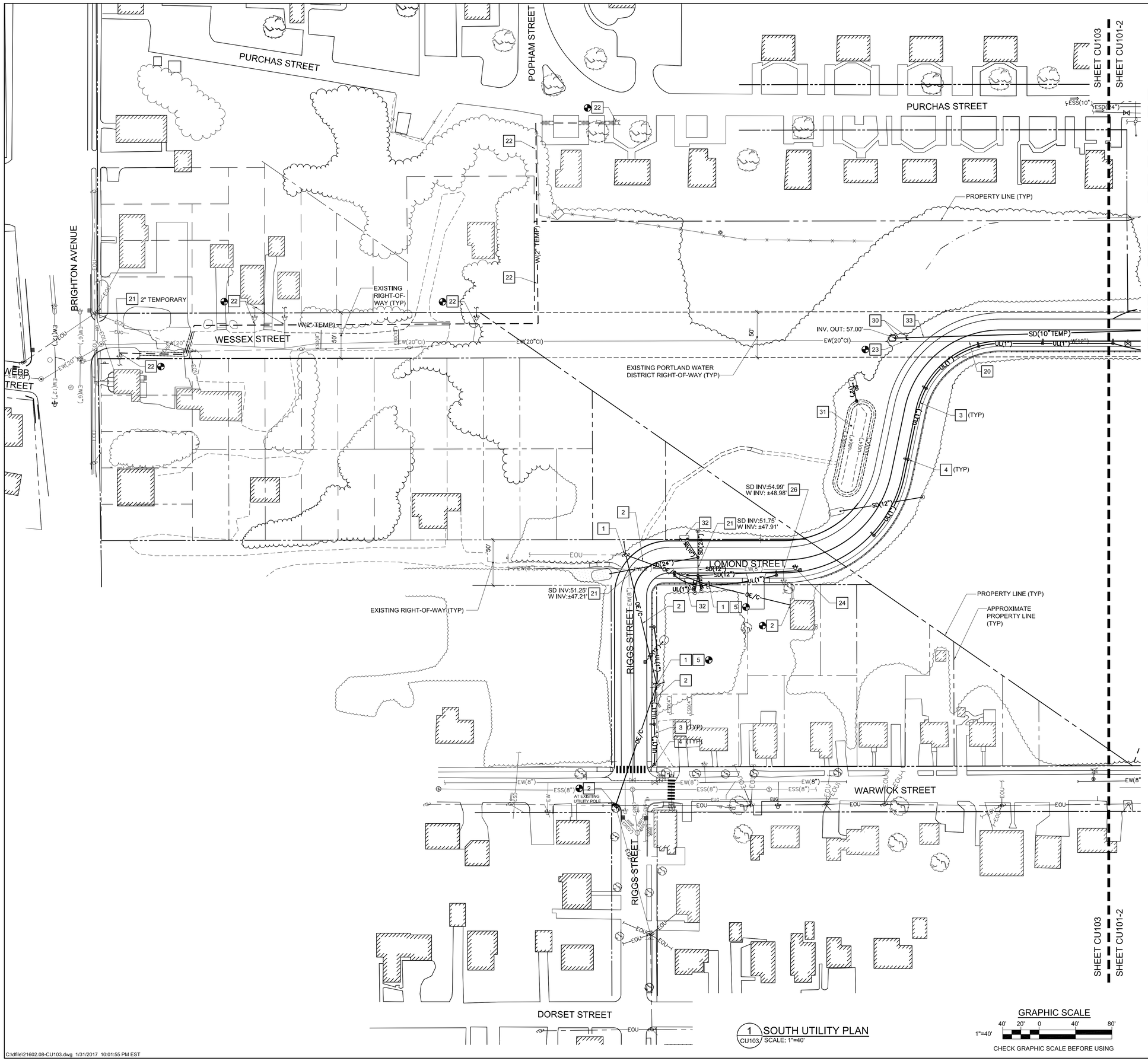

KEYNOTES: (THIS SHEET ONLY.)

ELECTRIC/COMMUNICATIONS

1. UTILITY POLE (BY CMP). COORDINATE INSTALLATION WITH CMP, FAIRPOINT COMMUNICATIONS AND TIME WARNER CABLE. SEE NOTIFICATION NOTES, SHEET C-001.
2. OVERHEAD ELECTRIC AND COMMUNICATIONS SERVICE. COORDINATE WITH CMP FAIRPOINT COMMUNICATIONS AND TIME WARNER CABLE. PROVIDE TEMPORARY POWER AND COMMUNICATIONS SERVICE TO RESIDENCE AND MINIMIZE OUTAGE DURATION. SEE NOTIFICATION NOTES, SHEET C-001.
3. UNDERGROUND LIGHTING LINE IN CONDUIT TRENCH. SEE DETAIL 2/C-508.
4. LIGHT POLE ON PRECAST CONCRETE BASE. SEE DETAIL 6/C-505.
5. CONNECT LIGHTPOLE TO ELECTRICAL CONNECTION ON UTILITY POLE. COORDINATE INSTALLATION WITH CMP. SEE NOTIFICATION NOTES, SHEET C-001.
6. - 19. NOT USED.

WATER

20. WATER LINE IN PIPE TRENCH. SEE DETAIL 1/C-507
21. PROVIDE 6" MINIMUM SEPERATION AT STORMDRAIN/WATER LINE CROSSING. INVERT ELEVATIONS INDICATED WITH KEYNOTE.
22. 4" DIAMETER TEMPORARY WATER LINE (CERTAINTEED CERTA-LOK YELLOWMINE, AQUAMINE BY VICTAULIC COMPANY, OR APPROVED EQUAL). CONNECT TEMPORARY LINE TO FIRE HYDRANT AND CONNECT SERVICES TO TEMPORARY LINE. BURY LINE 12" MIN BELOW GRADE AT ROADWAY AND DRIVEWAY CROSSINGS. INSTALL LINE AND MAKE CONNECTIONS IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS, SEE NOTIFICATION NOTES SHEET C-001.
23. 20" x 12" DECREASER.
24. ADJUST VALVE BOX TO MEET FINISH GRADES INDICATED ON CG102.
25. PROVIDE 1' SEPERATION BETWEEN WATER MAIN AND CATCH BASINS.
26. - 29. NOT USED.

STORM DRAINAGE (SEE ALSO CG102)

30. ONCE PHASE 2 WORK BEGINS AND PLAYGROUND IS REMOVED, REMOVE PIPE OUTLET PROTECTION AND CUT AND REMOVE PORTION OF TEMPORARY STORM DRAIN LINE. FILL PORTION OF STORM DRAIN LINE TO REMAIN WITH PUMPED GROUT. CAP/PLUG ENDS OF LINE AND ABANDON IN PLACE IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS. SEE NOTIFICATION NOTES, SHEET C-001.
31. STORMWATER TREATMENT AREA (GRASSED UNDERDRAINED SOIL FILTER). SEE SHEETS CU101, CG102 AND DETAIL 1/C-510.
32. STORMWATER TREATMENT AREA (TREE BOX FILTER). SEE TREATMENT AREA SCHEDULE, SHEET CG102 AND DETAIL 3/C-509.
33. TEMPORARY STORM DRAIN LINE IN PIPE TRENCH. SEE DETAIL 1/C-507.

NOTES:

1. SEE SHEET CG101 FOR STORM DRAINAGE INFORMATION.
2. SEE SHEET CU104 FOR ADDITIONAL WORK ASSOCIATED WITH WATER MAIN INSTALLATION.

1 CU103 SOUTH UTILITY PLAN
SCALE: 1"=40'

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG: SOUTH UTILITY PLAN-PHASE 1

STATE OF MAINE
JONAH DeWATERS
No 12273
LICENSED
PROFESSIONAL SURVEYOR

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CU103
SHEET NO. 25 OF 53

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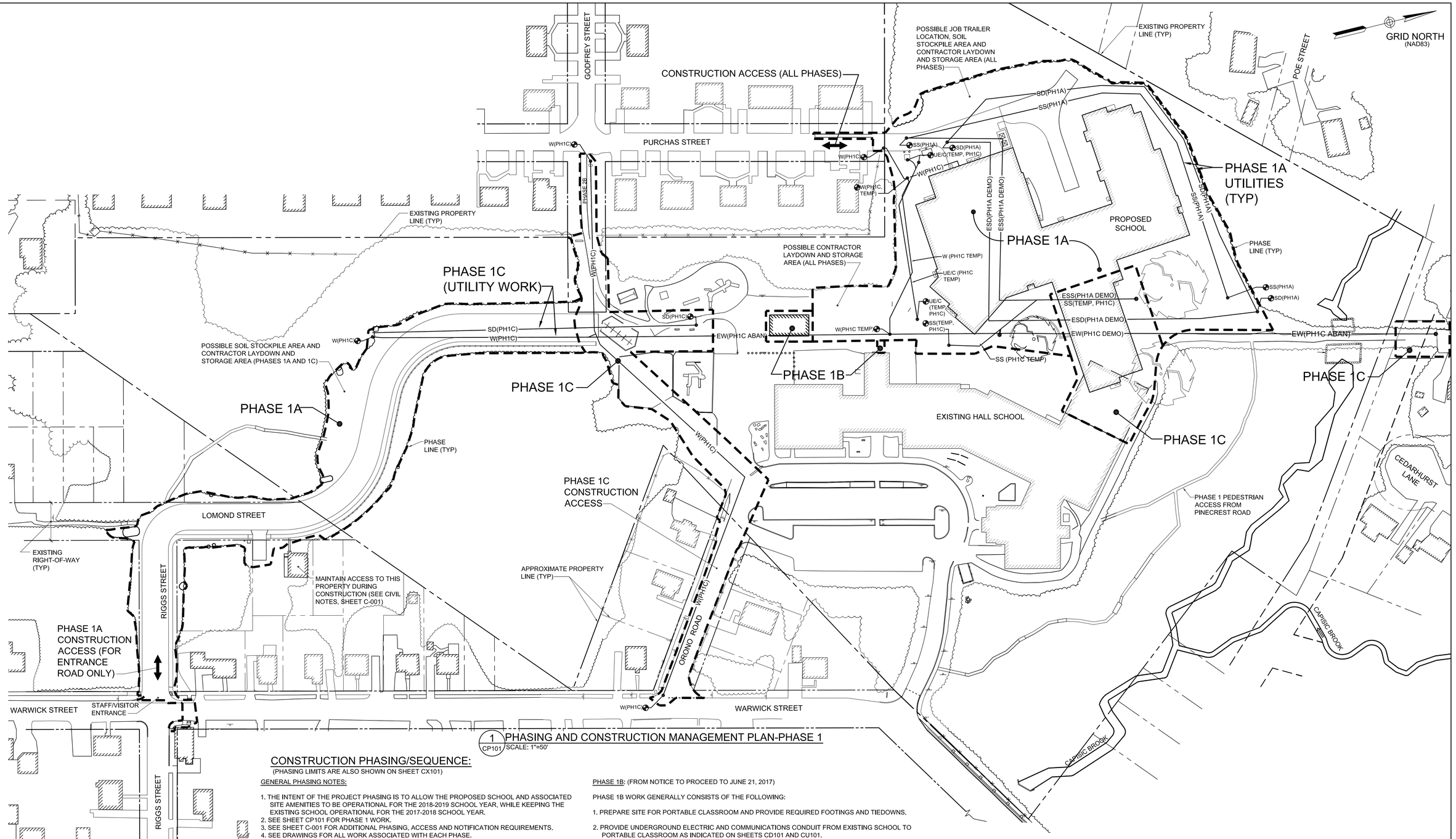

1 CP101 PHASING AND CONSTRUCTION MANAGEMENT PLAN-PHASE 1
SCALE: 1"=50'

CONSTRUCTION PHASING/SEQUENCE:

(PHASING LIMITS ARE ALSO SHOWN ON SHEET CX101)

GENERAL PHASING NOTES:

1. THE INTENT OF THE PROJECT PHASING IS TO ALLOW THE PROPOSED SCHOOL AND ASSOCIATED SITE AMENITIES TO BE OPERATIONAL FOR THE 2018-2019 SCHOOL YEAR, WHILE KEEPING THE EXISTING SCHOOL OPERATIONAL FOR THE 2017-2018 SCHOOL YEAR.
2. SEE SHEET CP101 FOR PHASE 1 WORK.
3. SEE SHEET C-001 FOR ADDITIONAL PHASING, ACCESS AND NOTIFICATION REQUIREMENTS.
4. SEE DRAWINGS FOR ALL WORK ASSOCIATED WITH EACH PHASE.
5. PROVIDE STABILIZED CONSTRUCTION ENTRANCES/EXITS AT ALL EXIT POINTS USED BY CONSTRUCTION EQUIPMENT.
6. COORDINATE TIMING AND DURATION OF ALL SERVICE INTERRUPTIONS WITH THE OWNER AND ARCHITECT. MINIMIZE SERVICE INTERRUPTIONS TO LESS THAN 7 BUSINESS DAYS UNLESS APPROVED IN WRITING BY THE OWNER.

PHASE 1A : (FROM NOTICE TO PROCEED TO AUGUST 18, 2017)

PHASE 1A WORK GENERALLY CONSISTS OF THE FOLLOWING:

1. GRUB STUMPS FROM CLEARED AREAS ON NORTHWEST SIDE OF THE SITE AND IN THE VICINITY OF THE PROPOSED ENTRANCE ROAD (TREE CLEARING BY CITY OF PORTLAND, NOT IN CONTRACT).

2. BEGIN CONSTRUCTION OF STAFF/VISITOR ENTRANCE DRIVE FROM WARWICK STREET VIA RIGGS STREET AND LOMOND STREET, INCLUDING ALL SITE AMENITIES.

3. BEGIN CONSTRUCTION OF PROPOSED BUILDING (EXCEPT FOR FOOTINGS WITHIN PHASE 1C AREA)

4. BEGIN SEWER LINE CONSTRUCTION :
   a. DISCONNECT AND REMOVE/ABANDON IN PLACE EXISTING SEWER MAINS AS INDICATED ON SHEET CD101. DO NOT PERFORM WORK THAT EFFECTS SEWER SERVICE TO THE EXISTING BUILDING UNTIL PHASE 1C
   b. PROVIDE SEWER MAIN ON WEST AND NORTH SIDES OF PROPOSED BUILDING AS INDICATED ON SHEET CU101.

5. BEGIN STORM DRAIN LINE CONSTRUCTION:
   a. DISCONNECT AND REMOVE/ABANDON IN PLACE EXISTING STORM DRAIN LINES AS INDICATED ON SHEET CD101.
   b. PROVIDE STORM DRAIN LINE ON WEST AND NORTH SIDES OF PROPOSED BUILDING AS INDICATED ON SHEET CU101.

5. INSTALL NATURAL GAS LINE FROM END OF EXISTING NATURAL GAS LINE IN PURCHAS STREET TO PROPOSED BUILDING AS INDICATED ON SHEET CU101. COORDINATE INSTALLATION WITH UNITIL.

PHASE 1B: (FROM NOTICE TO PROCEED TO JUNE 21, 2017)

PHASE 1B WORK GENERALLY CONSISTS OF THE FOLLOWING:

1. PREPARE SITE FOR PORTABLE CLASSROOM AND PROVIDE REQUIRED FOOTINGS AND TIEDOWNS.

2. PROVIDE UNDERGROUND ELECTRIC AND COMMUNICATIONS CONDUIT FROM EXISTING SCHOOL TO PORTABLE CLASSROOM AS INDICATED ON SHEETS CD101 AND CU101.

3. INSTALL PORTABLE CLASSROOM AND WIRING (BY OWNER - NOT IN CONTRACT). COORDINATE TIMING OF ITEMS 1 AND 2 TO ENSURE ADEQUATE TIME FOR OWNER TO PROVIDE PORTABLE CLASSROOM AND WIRING PRIOR TO THE BEGINNING OF THE 2017-2018 SCHOOL YEAR.

PHASE 1C: (JUNE 26, 2017 TO AUGUST 18, 2017)

PHASE 1C WORK GENERALLY CONSISTS OF THE FOLLOWING:

1. REMOVE PORTION OF EXISTING SCHOOL BUILDING AND PROVIDE TEMPORARY EXTERIOR WALL AS INDICATED ON SHEETS AD101 AND AT101.

2. REMOVE PORTION OF EXISTING SCHOOL BUILDING AND PROVIDE TEMPORARY EXTERIOR WALL AS INDICATED ON SHEETS AD101 AND AT101.

3. INSTALL TEMPORARY STORM DRAIN FROM CATCH BASIN IN EXISTING PLAYGROUND TO EDGE OF EXISTING WETLAND ON SOUTH SIDE OF THE PROPOSED STAFF/VISTIOR ENTRANCE AS INDICATED ON SHEETS CD101, CD103, CU101 AND CU103.

4. INSTALL TEMPORARY SEWER SERVICE FROM EXISTING SCHOOL BUILDING TO PORTIONS OF SEWER MAIN TO REMAIN AS INDICATED ON SHEETS CD101 AND CU101.

5. BEGIN ELECTRIC AND COMMUNICATIONS LINE INSTALLATION:
   a. COORDINATE WITH CMP TO PROVIDE TRANSFORMER AND REPLACEMENT UTILITY POLE AS INDICATED ON SHEETS CD101 AND CU101.
   b. DISCONNECT AND REMOVE OVERHEAD ELECTRIC/COMMUNICATIONS LINES AS INDICATED ON SHEET CD101.
   c. INSTALL TEMPORARY AND PERMANENET ELECTRIC/COMMUNICATIONS SERVICE TO EXISTING SCHOOL BUILDING AS INDICATED ON SHEETS CD101 AND CU101.

6. BEGIN WATER LINE CONSTRUCTION:
   a. DISCONNECT AND REMOVE/ABANDON IN PLACE EXISTING WATER MAINS AS INDICATED ON SHEETS CD101 AND CD105.
   b. PROVIDE WATER LINE FROM PURCHAS STREET TO WARWICK STREET AND CONNECT HOUSES ON ORONO ROAD TO IT AS INDICATED ON SHEETS CU101 AND CU104. PROVIDE TEMPORARY WATER SERVICE IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS FOR HOUSES ON ORONO ROAD AND WESSEX STREET AS NECESSARY TO LIMIT INTERRUPTION OF WATER SUPPLY AS INDICATED ON SHEET CD105.
   c. INSTALL FIRE AND DOMESTIC LINES TO VICINITY OF PROPOSED BUILDING AS INDICATED ON SHEET CU101. PROVIDE TEMPORARY WATER SERVICE TO EXISTING SCHOOL BY CONNECTING TO PROPOSED FIRE PROTECTION LINE AS INDICATED ON SHEETS CD105 AND CU101.

GRAPHIC SCALE

50' 25' 0 50' 100'

1"=50'

CHECK GRAPHIC SCALE BEFORE USING

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE 3/17/17

DRAWN BY: JSD
CHECKED BY: JLG
NO.
DATE: 03/17/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: PHASING AND CONSTRUCTION MANAGEMENT PLAN-PHASE 1

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CP101
SHEET NO. 25 OF 312

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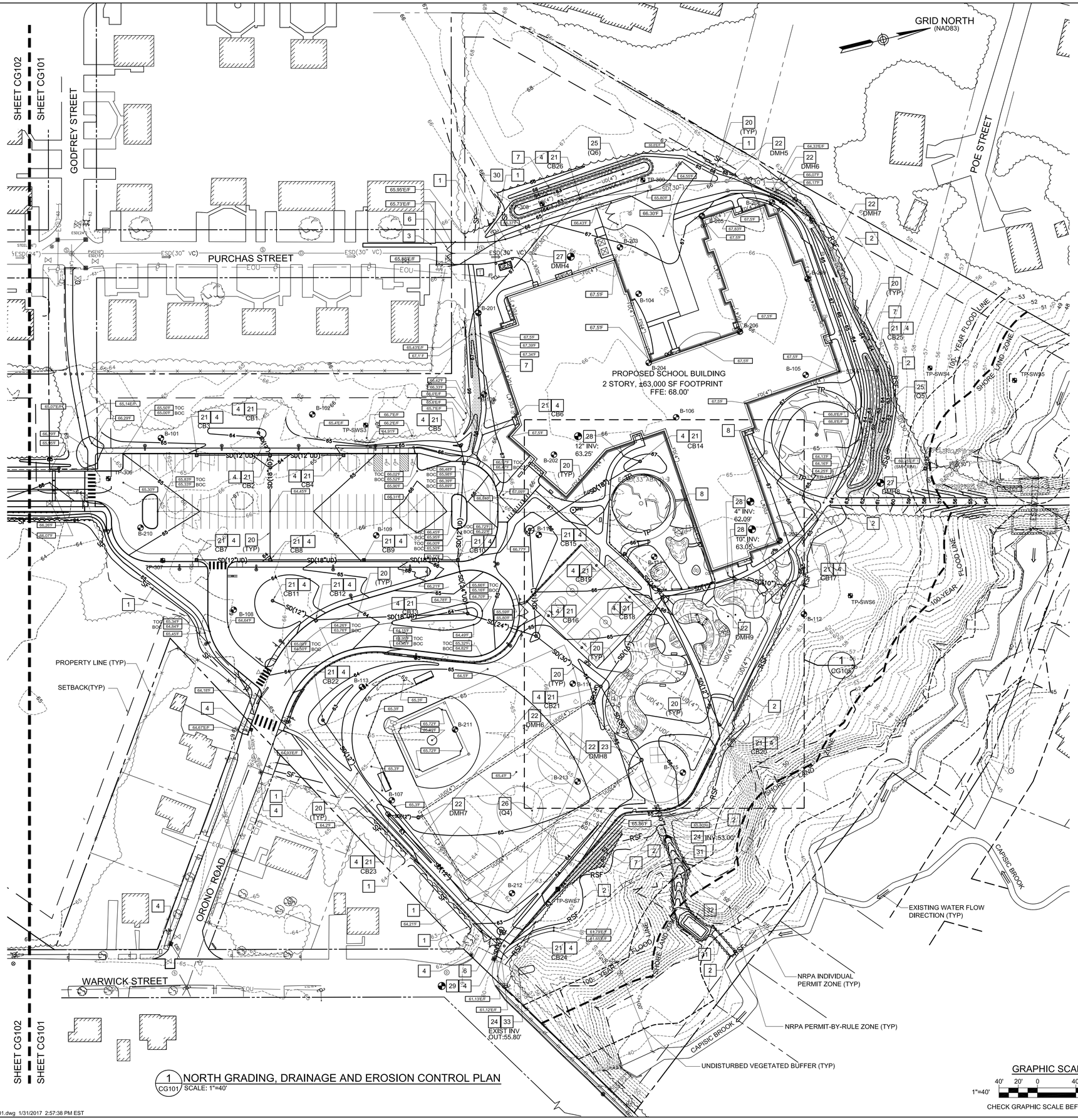

KEYNOTES: (THIS SHEET ONLY.)

1. SILT FENCE. SEE DETAIL 1/C-502
2. REINFORCED SILT FENCE. SEE DETAIL 2/C-502
3. SEDIMENT CONTROL WATTLE. SEE DETAIL 3/C-502
4. CATCH BASIN INLET PROTECTION. SEE DETAIL 5/C-502
5. POSSIBLE SOIL STOCKPILE LOCATION.
6. STABILIZED CONSTRUCTION ENTRANCE. SEE DETAIL 6/C-502
7. EROSION CONTROL BLANKET. SEE DETAIL 7/C-502
8. TREE PROTECTION FENCE. SEE DETAIL 2/CD104
9. - 19 NOT USED.
20. STORM DRAIN LINE IN PIPE TRENCH. PROVIDE PERFORATED PIPE WHERE LINE IS INDICATED WITH "UD". SEE DETAIL 1/C-507
21. CATCH BASIN. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET. SEE DETAIL 1/C-509
22. DRAIN MANHOLE. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET AND DETAIL 2/C-507
23. SAND FILTER OVERFLOW/DIVERSION MANHOLE. SEE DETAIL 3/C-510.
24. FLARED END SECTION (INVERT AS NOTED).
25. STORMWATER TREATMENT AREA (GRASSED UNDERDRAINED SOIL FILTER). SEE DETAIL 1/C-510
26. STORMWATER TREATMENT AREA (SUBSURFACE SAND FILTER). SEE DETAIL 2/C-510.
27. CONNECT TO EXISTING STORM DRAIN LINE (LINE SIZE AND TYPE AS INDICATED) WITH DRAIN MANHOLE. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET AND DETAIL 3/C-507
28. CONNECT TO STORM DRAIN LINE (INSTALLED IN PHASE 1). PIPE SIZE AND INVERT AS NOTED. SEE DETAIL 3/C-507 (SIM)
29. CORE EXISTING CATCH BASIN AT ELEVATION: 57.54' AND CONNECT STORM DRAIN LINE. SEE DETAIL 3/C-507
30. REMOVE EXISTING MANHOLE FRAME AND COVER AND RESET RIM TO ELEVATION: 66.00'.
31. RIPRAP SWALE. BOTTOM WIDTH = 4', D_{50}=6". SEE DETAIL 9/C-502 (SIM)
32. PIPE OUTLET PROTECTION . SEE DETAIL 9/C-502
    BOTTOM WIDTH = 8' (OVERALL WIDTH = 12')
    BOTTOM LENGTH = 20' (OVERALL LENGTH = 30')
    D_{50} = 10"
33. PIPE OUTLET PROTECTION . SEE DETAIL 9/C-502
    BOTTOM WIDTH = 3' (OVERALL WIDTH = 7')
    BOTTOM LENGTH = 8' (OVERALL LENGTH = 13')
    D_{50} = 5"

DRAINAGE STRUCTURE SCHEDULE**

STRUCTURE	NORMAL FINISH GRADE AT RIM	RIM ELEVATION	INVERT IN (SIZE)	INVERT OUT (SIZE)	REMARKS
CB1	63.95	63.85	-	60.85 (12")	
CB2*	63.85	63.75	60.81 (12")	60.71 (18")	FROM CB1
-	-	-	60.81 (12")	-	FROM CB3
-	-	-	60.81 (12")	-	FROM CB4
CB3*	64.47	64.37	-	61.37 (12")	
CB4*	64.58	64.48	-	61.48 (12")	
CB5	63.92	63.82	-	60.82 (12")	
CB6*	65.40	65.30	60.56 (12")	60.46 (12")	
CB7*	64.50	64.40	-	61.40 (12")	
CB8*	63.94	63.84	60.16 (18")	59.81 (18")	FROM CB2
-	-	-	60.16 (12")	-	FROM CB7
CB9*	65.03	64.93	59.67 (18")	59.57 (18")	
CB10*	65.16	65.06	59.08 (12")	58.98 (24")	6' DIAMETER, FROM CB6, PROVIDE HOOD ON OUTLET PIPE
-	-	-	59.08 (12")	-	FROM CB9
CB11	63.00	62.90		59.82 (12")	
CB12*	63.23	63.13	59.57 (12")	59.47 (18")	
CB13*	63.55	63.45	58.69 (24")	58.59 (30")	6' DIAMETER, FROM CB10, PROVIDE HOOD ON OUTLET PIPE
-	-	-	58.69 (18")	-	FROM CB12
CB14	66.43	66.33	62.85 (12")	62.75' (12")	ROOF DRAIN
CB15	64.90	64.80	61.39 (12")	61.29 (12")	FROM CB14
CB16	63.92	63.82	58.21 (30")	58.11 (30")	FROM CB13, PROVIDE HOOD ON OUTLET PIPE
-	-	-	60.18 (12")		FROM CB15
CB17	64.61	64.61	-	61.78 (10")	
CB18	65.64	65.54	60.36 (12")	60.26 (15")	FROM CB20
-	-	-	60.36 (12")	-	FROM DMH9
-	-	-	60.93 (12")	-	FROM CB19
-	-	-	63.31 (4")	-	FROM PLAYGROUND UNDERDRAINS
CB19	65.67	65.57	-	62.15 (12")	
CB20	65.55	65.45	63.22 (4")	61.89 (12")	FROM PLAYGROUND UNDERDRAINS
-	-	-	63.22 (4")	-	FROM PLAYGROUND UNDERDRAINS
CB21	63.56	63.46	57.21 (30")	57.11 (24")	8' DIAMETER, INV OUT TO DMH6, INV IN FROM CB16
-	-	-	-	57.11 (30")	INV OUT TO DMH8 (OVERFLOW), INV IN FROM CB18
CB22	62.59	62.49	-	59.49 (12")	
CB23	62.50	62.40	57.74 (12")	57.64 (12")	FROM CB22
-	-	-	57.74 (12")	-	FROM CB24
CB24	61.85	61.75	-	58.65 (12")	TO CB23
-	-	-	-	58.75 (12")	OVERFLOW TO EXISTING CATCH BASIN
DMH6	64.02	64.02	56.92 (24")	56.82 (24")	6' DIAMETER, INV OUT TO PRE-TREATMENT ROW
-	-	-	-	57.82 (12")	TO MODULAR BOX CHAMBERS
DMH7	65.16	65.16	56.92 (12")	56.82 (12")	6' DIAMETER, INV OUT TO PRE-TREATMENT ROW
-	-	-	-	57.82 (12")	TO MODULAR BOX CHAMBERS
DMH8	65.56	65.56	55.16 (30")	53.95 (30")	6' DIAMETER W/ WEIR (SEE 3/C-510), FROM CB20
-	-	-	56.82 (12")	-	OVERFLOW FROM SAND FILTER
-	-	-	54.05 (4")	-	SAND FILTER OUTER UNDERDRAINS
-	-	-	54.05 (6")	-	SAND FILTER UNDERDRAINS, PROVIDE BALL VALVE ON OUTLET
DMH9	67.52	67.52	61.24 (10")	61.14 (12")	FROM CB17
-	-	-	61.98 (4")	-	FOUNDATION DRAIN WITH BACKWATER VALVE
-	-	-	62.98 (10")	-	ROOF DRAIN

*PROVIDE SUMP SKIMMER INSIDE ALL CATCH BASINS IN PAVED AREAS
**SEE SHEET CU101 FOR CB25, CB26 AND DMH1 THROUGH DMH5 (INSTALLED IN PHASE 1)

1 CG101 NORTH GRADING, DRAINAGE AND EROSION CONTROL PLAN
SCALE: 1"=40'

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
REVISIONS			

JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG:
NORTH GRADING, DRAINAGE
AND EROSION CONTROL PLAN

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CG101
SHEET NO. 26 OF 53

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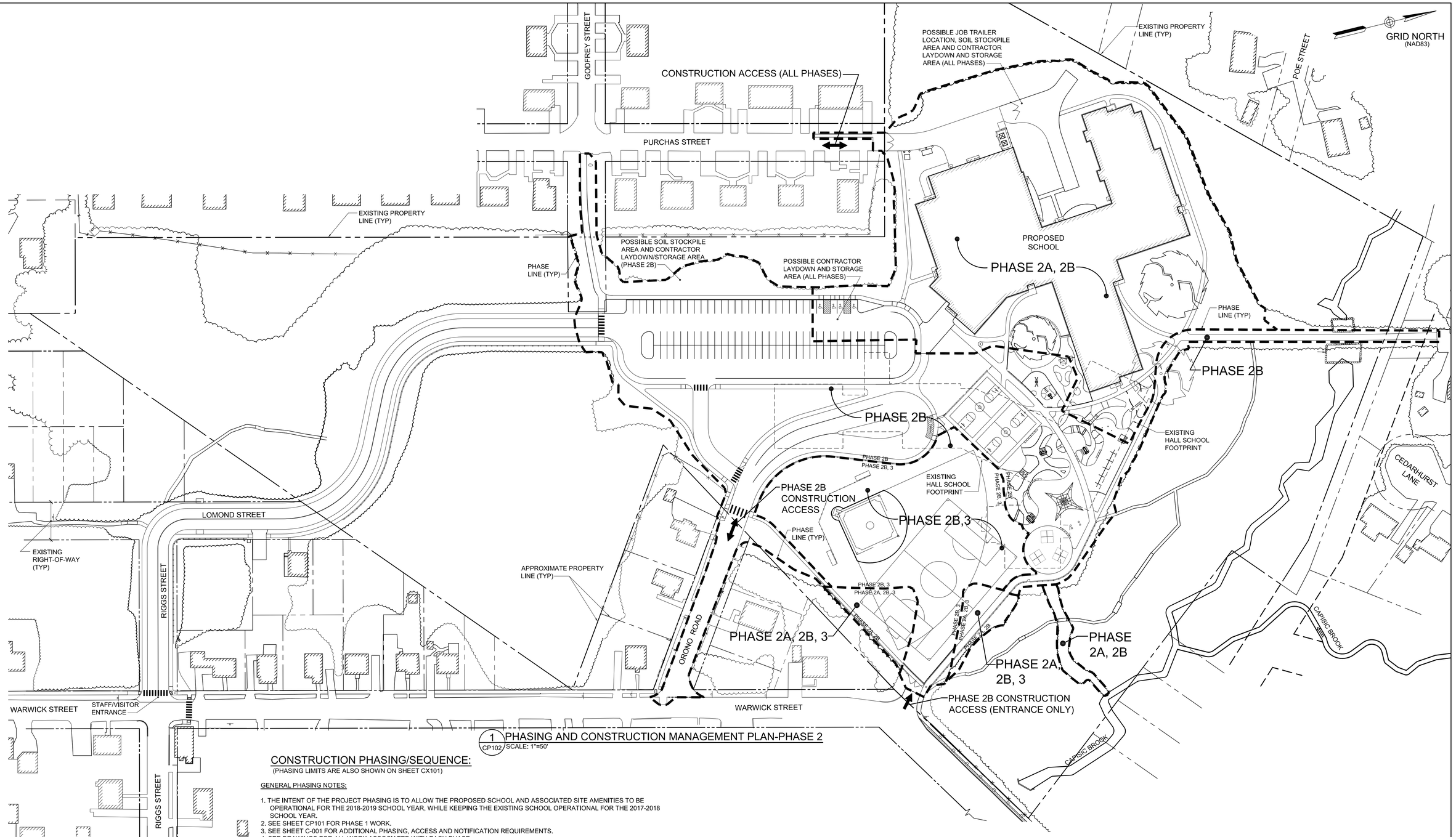

1 CP102 PHASING AND CONSTRUCTION MANAGEMENT PLAN-PHASE 2
SCALE: 1"=50'

CONSTRUCTION PHASING/SEQUENCE:

(PHASING LIMITS ARE ALSO SHOWN ON SHEET CX101)

GENERAL PHASING NOTES:

1. THE INTENT OF THE PROJECT PHASING IS TO ALLOW THE PROPOSED SCHOOL AND ASSOCIATED SITE AMENITIES TO BE OPERATIONAL FOR THE 2018-2019 SCHOOL YEAR, WHILE KEEPING THE EXISTING SCHOOL OPERATIONAL FOR THE 2017-2018 SCHOOL YEAR.
2. SEE SHEET CP101 FOR PHASE 1 WORK.
3. SEE SHEET C-001 FOR ADDITIONAL PHASING, ACCESS AND NOTIFICATION REQUIREMENTS.
4. SEE DRAWINGS FOR ALL WORK ASSOCIATED WITH EACH PHASE.
5. PROVIDE STABILIZED CONSTRUCTION ENTRANCES/EXITS AT ALL EXIT POINTS USED BY CONSTRUCTION EQUIPMENT.

PHASE 2A: (AUGUST 18, 2017 TO JUNE 26, 2018)

WORK GENERALLY CONSISTS OF THE FOLLOWING:
1. CONTINUE CONSTRUCTION OF PROPOSED SCHOOL AND SITE AMENITIES ON WEST SIDE OF THE SITE.
2. REMOVE TREES IN PHASE II CONSTRUCTION AREA IN SPRING 2018. COORDINATE TREE REMOVAL ACTIVITIES SO THEY OCCUR WHEN SCHOOL IS NOT IN SESSION, SUCH AS WEEKENDS OR SCHOOL VACATIONS (FEBRUARY OR APRIL VACATION). DO NOT CLEAR TREES BETWEEN JUNE 1 AND JULY 31 WITHOUT WRITTEN APPROVAL FROM ARCHITECT.

PHASE 2B: (JUNE 26, 2018 TO AUGUST 24, 2018)

WORK GENERALLY CONSISTS OF THE FOLLOWING:
1. DEMOLISH EXISTING SCHOOL BUILDING
2. REMOVE/ABANDON IN PLACE EXISTING UTILITIES (INCLUDING TEMPORARY UTILITIES) AS INDICATED
3. CONSTRUCT REMAINDER OF SITE AMENITIES.
4. COMPLETE CONSTRUCTION OF PROPOSED BUILDING.
5. COMPLETE CONSTRUCTION OF ALL REMAINING ITEMS INDICATED IN THE CONTRACT DRAWINGS.
6. COMPLETE ANY UNFINISHED CONSTRUCTION INDICATED IN PHASE 1 AREA.
7. SAND FILTER

PHASE 3: (JUNE 26, 2018 TO OCTOBER 1, 2018)

1. SOD AND FINAL SEEDING.

GRAPHIC SCALE
1"=50' 50' 25' 0 50' 100'
CHECK GRAPHIC SCALE BEFORE USING

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER 3/17/17

DRAWN BY: JSD
CHECKED BY: JLG
NO.
DATE: 03/17/17

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG.: PHASING AND CONSTRUCTION MANAGEMENT PLAN-PHASE 2

OAK POINT ASSOCIATES
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231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CP102
SHEET NO. 26 OF 312

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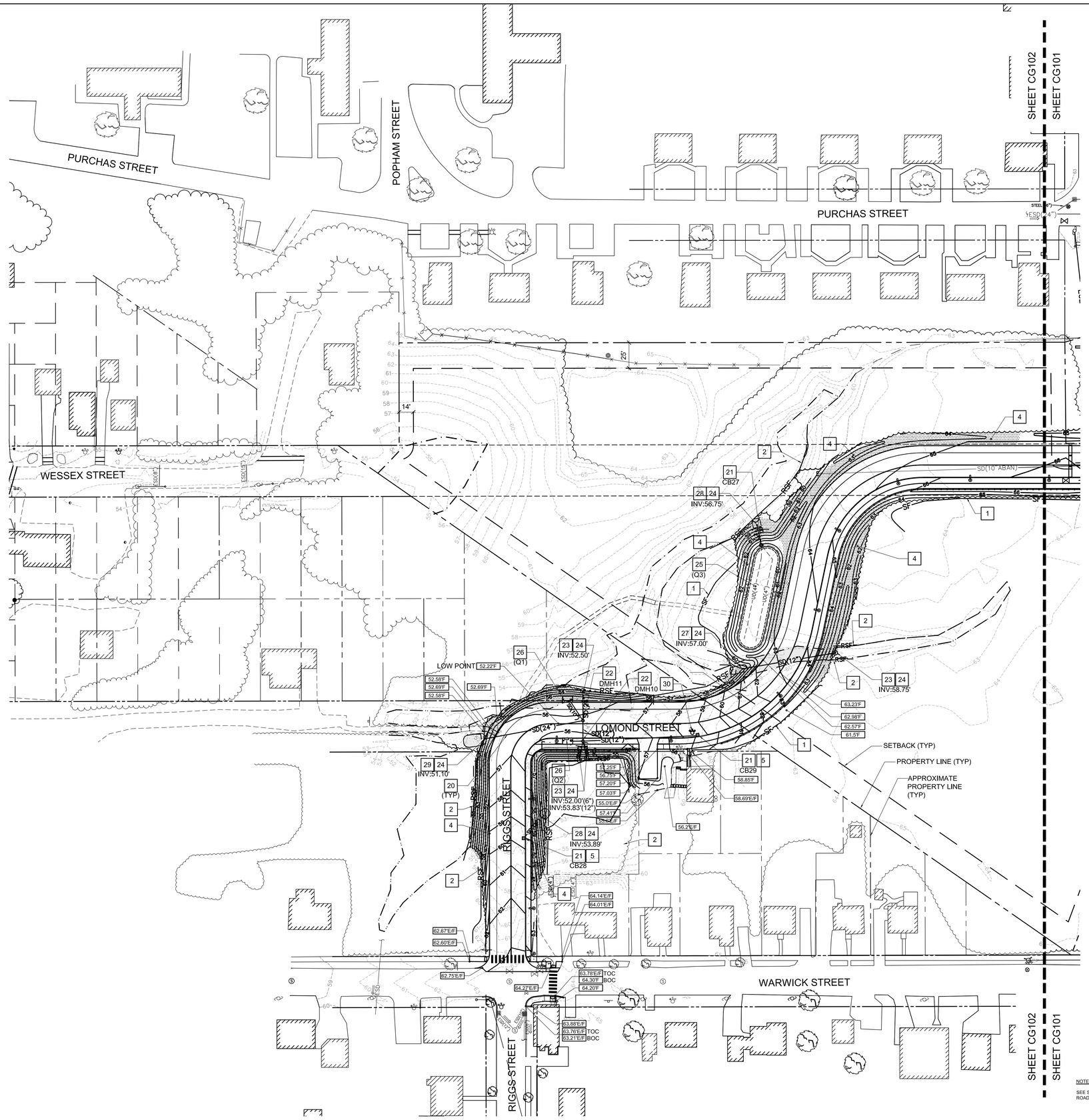

GRID NORTH
(NAD83)

KEYNOTES: (THIS SHEET ONLY.)

1. SILT FENCE. SEE DETAIL 1/C-502
2. REINFORCED SILT FENCE. SEE DETAIL 2/C-502
3. SEDIMENT CONTROL WATTLE. SEE DETAIL 3/C-502
4. EROSION CONTROL BLANKET. SEE DETAIL 5/C-502
5. CATCH BASIN INLET PROTECTION. SEE DETAIL 6/C-502
6. - 19. NOT USED.
20. STORM DRAIN LINE IN PIPE TRENCH. SEE DETAIL 1/C-507
21. CATCH BASIN. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET AND DETAIL 1/C-509. PROVIDE CURB INLETS FOR CATCH BASINS IN RIGGS AND LOMOND STREET. SEE DETAIL 2/C-509
22. DRAIN MANHOLE. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET AND DETAIL 2/C-507
23. PIPE INLET PROTECTION, 5'x5', D_{50}=6", 12" THICK. SEE DETAIL 9/C-502 (SIM)
24. FLARED END SECTION (INVERT AS NOTED).
25. STORMWATER TREATMENT AREA (GRASSED UNDERDRAINED SOIL FILTER). SEE DETAIL 1/C-510
26. 6' x 8' STORMWATER TREATMENT (TREE BOX FILTER). SEE TREATMENT AREA SCHEDULE, THIS SHEET AND DETAIL 3/C-509
27. PIPE OUTLET PROTECTION . SEE DETAIL 9/C-502
    BOTTOM WIDTH = 4' (OVERALL WIDTH = 7')
    BOTTOM LENGTH = 10' (OVERALL LENGTH = 17.5')
    D_{50} = 8"
28. PIPE OUTLET PROTECTION . SEE DETAIL 9/C-502
    BOTTOM WIDTH = 3' (OVERALL WIDTH = 7')
    BOTTOM LENGTH = 4' (OVERALL LENGTH = 8')
    D_{50} = 5"
29. PIPE OUTLET PROTECTION . SEE DETAIL 9/C-502
    BOTTOM WIDTH = 12' (OVERALL WIDTH = 8')
    BOTTOM LENGTH = 12' (OVERALL LENGTH = 22')
    D_{50} = 10"
30. ADJUST VALVE BOX TO RIM ELEVATION 58.50'

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	NORMAL FINISH GRADE AT RIM	RIM ELEVATION	INVERT IN (SIZE)	INVERT OUT (SIZE)	REMARKS
CB27	61.00	61.00	57.17(4")	57.07 (12")	PROVIDE BALL VALVE ON OUTLET
			57.17(4")		OUTER UNDERDRAINS
CB28	59.54	59.29	-	55.54 (12")	CURB INLET. SEE DETAIL 4/C-509
CB29	58.59	58.34	-	54.99 (12")	CURB INLET. SEE DETAIL 4/C-509
DMH10	56.40	56.40	51.90(10")	51.80 (12")	FROM Q2
-	-	-	51.90(12")	-	FROM CB23
-	-	-	51.90(12")	-	FROM CULVERT INLET
-	-	-	51.90(6")	-	FROM CULVERT INLET
DMH11	56.17	56.17	51.70(10")	51.60 (24")	FROM Q1
-	-	-	51.70(12")	-	FROM DMH10
-	-	-	51.70(24")	-	FROM CULVERT INLET

TREE BOX FILTER SCHEDULE

FILTER	GUTTER GRADE AT INLET	UNDERDRAIN INVERT	OUTLET INVERT	SIZE
Q1	55.59	52.15	52.07	8 x 6
Q2	55.80	52.36	52.28	6 x 4

NOTE:
SEE SHEET C-301 FOR ADDITIONAL ACCESS ROAD GRADING INFORMATION.

1 CG102 SOUTH GRADING DRAINAGE AND EROSION CONTROL PLAN
SCALE: 1"=40'

GRAPHIC SCALE
1"=40' 40' 20' 0 40' 80'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
SOUTH GRADING, DRAINAGE
AND EROSION CONTROL PLAN

JONAH DAVIS WATERS No. 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CG102
SHEET NO. 27 OF 53

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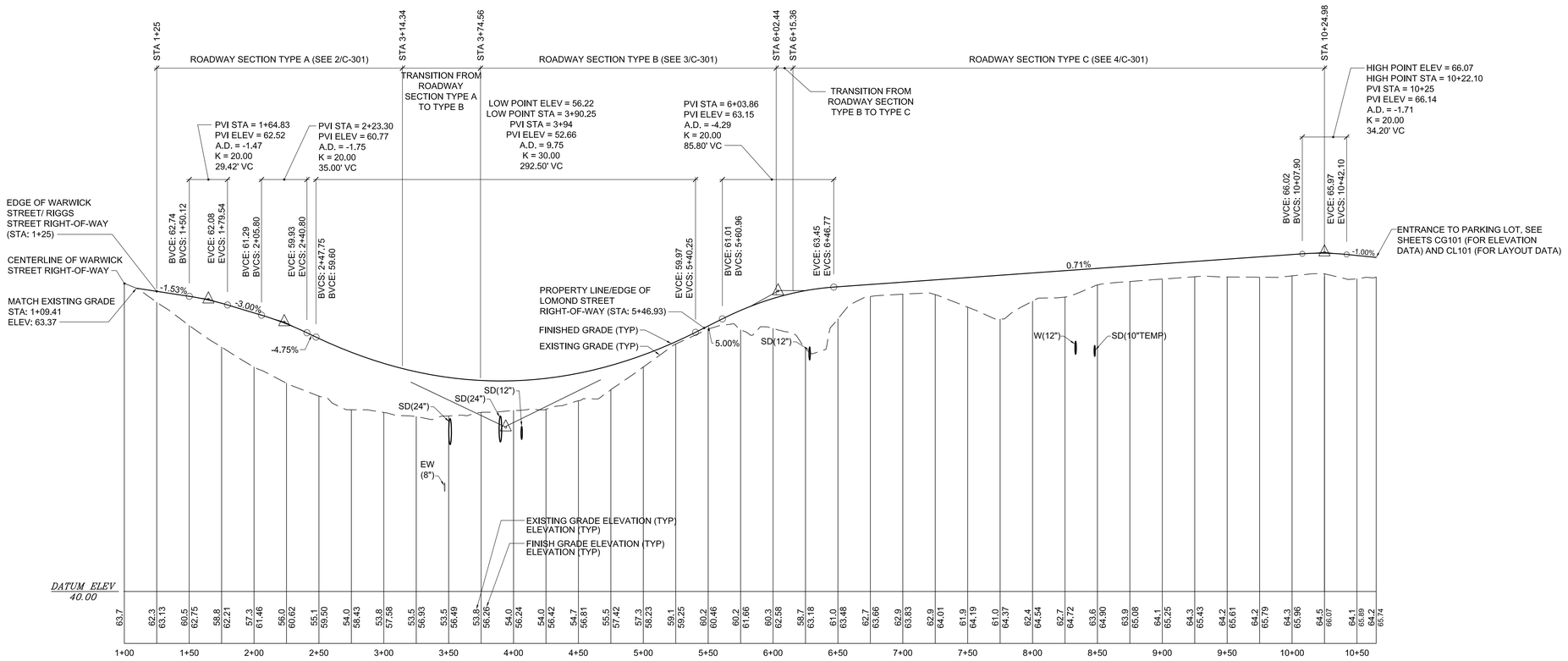
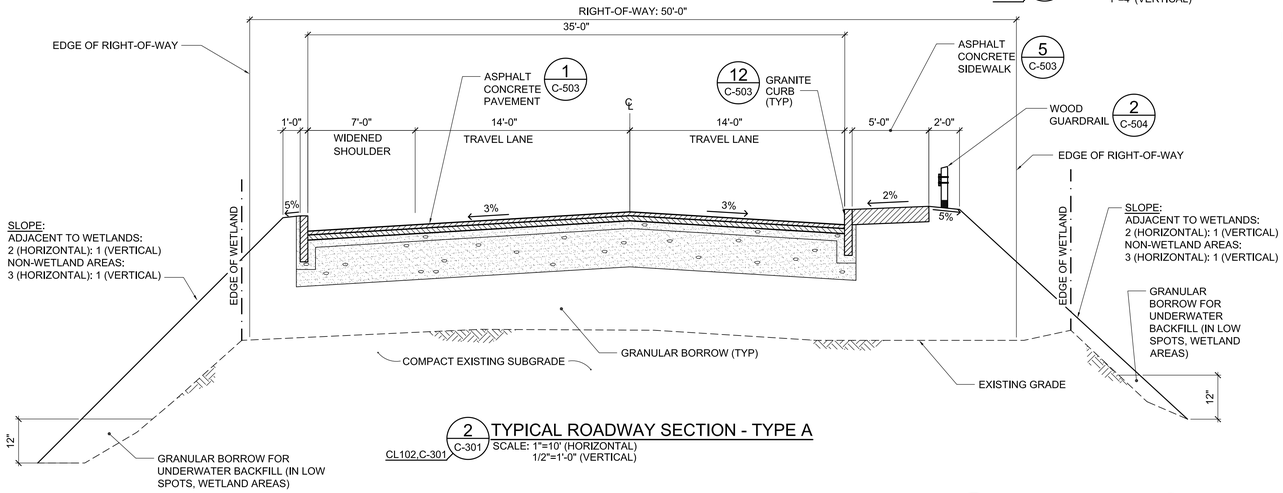


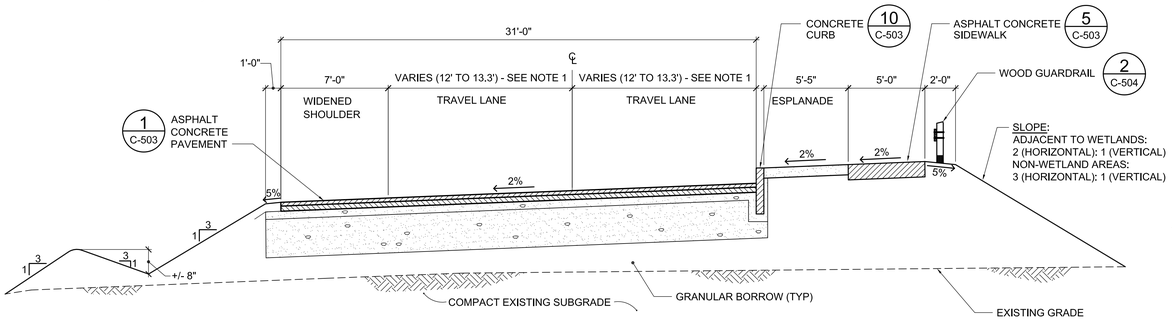
1 CL102 C-301 ENTRANCE ROAD PROFILE

SCALE: 1"=40' (HORIZONTAL)
1"=4' (VERTICAL)



2 CL102,C-301 C-301 TYPICAL ROADWAY SECTION - TYPE A

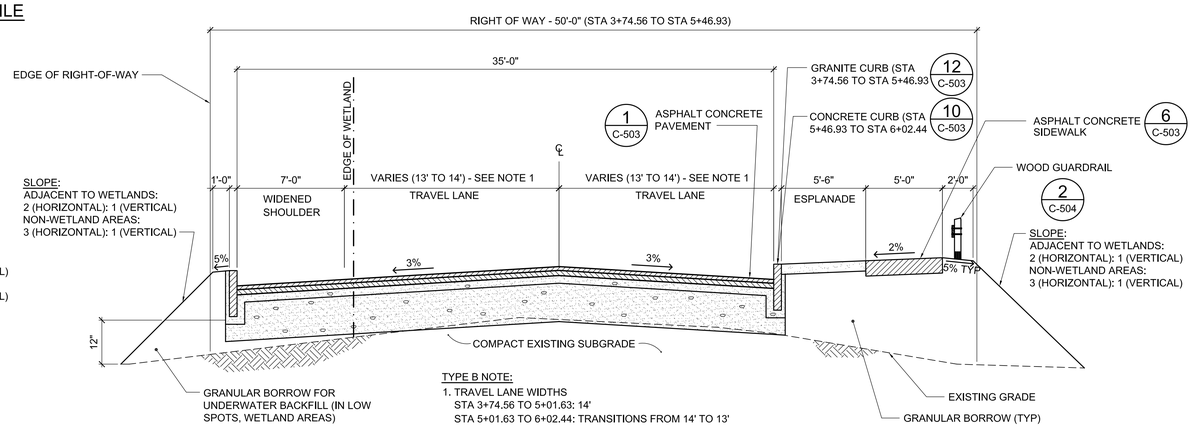
SCALE: 1"=10' (HORIZONTAL)
1/2"=1'-0" (VERTICAL)



4 CL103,C-301 C-301 TYPICAL ROADWAY SECTION - TYPE C

SCALE: 1"=10' (HORIZONTAL)
1/2"=1'-0" (VERTICAL)

TYPE C NOTE:
1. TRAVEL LANE WIDTHS
STA 6+15.36 TO 6+65.22: TRANSITIONS 13.3' TO 12'
STA 6+65.22 TO 10+24.98: 12'

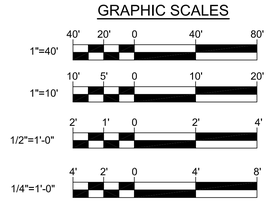


TYPE B NOTE:
1. TRAVEL LANE WIDTHS
STA 3+74.56 TO 5+01.63: 14'
STA 5+01.63 TO 6+02.44: TRANSITIONS FROM 14' TO 13'

3 CL102,C-301 C-301 TYPICAL ROADWAY SECTION - TYPE B

SCALE: 1"=10' (HORIZONTAL)
1/2"=1'-0" (VERTICAL)

GRAPHIC SCALES



CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
ACCESS ROAD PROFILE AND CROSS SECTIONS

JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-301
SHEET NO. 28 OF 53

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EROSION AND SEDIMENT CONTROL NOTES

A. GENERAL NOTES

1. DURING CONSTRUCTION AND THEREAFTER, IMPLEMENT EROSION CONTROL MEASURES AS INDICATED AND SPECIFIED. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES".

2. IMPLEMENT ALL NECESSARY MEASURES TO CONTROL EROSION AND SEDIMENTATION FROM THE PROJECT SITE AS REQUIRED PURSUANT TO THE MAINE EROSION AND SEDIMENTATION CONTROL LAW.

3. LIMIT AREAS OF EXPOSED SOILS TO THOSE AREAS THAT WILL ACTIVELY BE WORKED. TEMPORARILY STABILIZE ANY AREA OF DISTURBED SOIL THAT REMAINS UNWORKED FOR MORE THAN 14 DAYS USING TEMPORARY MULCHING (IF THE SOIL WILL BE PERMANENTLY STABILIZED WITHIN 30 DAYS) OR TEMPORARY SEEDING AND MULCHING (IF THE SOIL WILL NOT BE PERMANENTLY STABILIZED WITHIN 30 DAYS). PERMANENTLY STABILIZE ANY AREA OF DISTURBED SOIL BROUGHT TO FINAL GRADE WITHIN 7 DAYS. DISTURBED SOILS DO NOT INCLUDE COMPACTED STRUCTURAL FILLS USED FOR ROADS, PARKING LOTS, AND BUILDING FOUNDATIONS.

4. STABILIZE AREAS WITHIN 75 FEET OF WETLANDS WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO A STORM EVENT, WHICHEVER COMES FIRST.

5. TEMPORARY EROSION CONTROL MEASURES INCLUDE THE USE OF EROSION CONTROL DEVICES. TEMPORARY SEEDING AND MULCHING, CONSTRUCTION PHASING, AND PROVISIONS FOR STABILIZING INACTIVE AREAS. PERMANENT EROSION CONTROL MEASURES INCLUDE THE USE OF EROSION CONTROL BLANKETS, RIPRAP OUTLET PROTECTION, AND PERMANENT SEEDING AND MULCHING.

6. PROVIDE INLET PROTECTION FOR EACH CATCH BASIN ON THE SAME DAY THAT BACKFILL IS PLACED AROUND THE CATCH BASIN.

7. PROVIDE PLANTING SOIL, SEED, FERTILIZER AND MULCH ON ALL DISTURBED AREAS NOT OTHERWISE SPECIFIED, PERMANENT SEEDING SHALL BE ACCOMPLISHED BETWEEN THE DATES OF APRIL 15 AND SEPTEMBER 15 UNLESS LATER DATES ARE APPROVED BY THE OWNER/ARCHITECT. WATER ALL VEGETATED AREAS AS NECESSARY TO ESTABLISH A VIGOROUS TURF.

B. INSPECTION AND MAINTENANCE

1. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION AND STORMWATER CONTROL MEASURES, AREAS USED FOR STORAGE THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE PROJECT AREA AT LEAST ONCE A WEEK AND BEFORE AND AFTER EACH STORM EVENT GREATER THAN 0.5 INCH, PRIOR TO COMPLETION OF PERMANENT STABILIZATION. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM (MPDES) STANDARDS SHALL CONDUCT THE INSPECTION. THIS PERSON SHALL BE IDENTIFIED IN THE INSPECTION LOG. IF BEST MANAGEMENT PRACTICES (BMPs) NEED TO BE MODIFIED OR IF ADDITIONAL BMPs ARE NECESSARY, IMPLEMENTATION SHALL BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES SHALL BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

2. A LOG (REPORT) SHALL BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES. MAJOR OBSERVATIONS SHALL INCLUDE: BMPs THAT NEED TO BE MAINTAINED; LOCATION(S) OF BMPs THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION; AND LOCATION(S) WHERE ADDITIONAL BMPs ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION. FOLLOW-UP TO CORRECT DEFICIENCIES OR ENHANCE CONTROLS SHALL ALSO BE INDICATED IN THE LOG AND DATED, INCLUDING WHAT ACTION WAS TAKEN AND WHEN.

3. MAINTAIN ALL EROSION CONTROL MEASURES FOR THE LIFE OF THE PROJECT AND UNTIL PERMANENT STABILIZATION OF THE ENTIRE SITE IS ESTABLISHED. PERMANENT STABILIZATION SHALL CONSIST OF AT LEAST 90-PERCENT VEGETATION, PAVEMENT, GRAVEL BASE, OR RIPRAP.

4. SEDIMENT ACCUMULATIONS SHALL BE REMOVED FROM SILT FENCES, HAY BALE BARRIERS, AND STONE CHECK DAMS WHEN THE SEDIMENT DEPTH APPROACHES 6 INCHES.

5. INSPECT THE VICINITY OF THE TREATMENT AREAS, EMBANKMENTS AND STORM DRAIN LINE OUTFALLS WEEKLY AND AFTER EACH STORM EVENT. PROMPTLY SEED AND MULCH ALL EROSION AND AREAS OF EXPOSED SOILS.

6. PROTECT ALL STABILIZED AREAS FROM EROSION AND IMMEDIATELY REPAIR/REVEGETATE ERODED AREAS.

7. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES WITHIN 30 DAYS AFTER THE TRIBUTARY AREA HAS BEEN PERMANENTLY STABILIZED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.

C. SEQUENCE OF CONSTRUCTION

1. PHASE CONSTRUCTION TO DISTURB THE LEAST PRACTICAL AREA AT A TIME. CONSTRUCTION IS EXPECTED TO BEGIN IN THE SPRING 2017 AND BE COMPLETED BY FALL 2018. INITIAL OPERATIONS INCLUDE LAYOUT OF CLEARING LIMITS AND INSTALLATION OF SILT FENCE AS INDICATED ON REMOVALS SITE PLAN AND GRADING PLAN (DRAWINGS CD101-CD102, AND CG101-CG102).

2. CLEAR TREES, GRUB OUT STUMPS, AND STRIP TOPSOIL. REMOVE ALL WOODY DEBRIS FROM THE PROJECT SITE OR GRIND AND USE AS EROSION CONTROL ON SITE. STRIP TOPSOIL AS SHOWN ON REMOVALS SITE PLAN (DRAWINGS CD101-2). PROVIDE SILT FENCE DOWNGRADE OF ALL STOCKPILES AND COVER STOCKPILES WITH MULCH.

3. COMMENCE LARGE-SCALE EARTH MOVING OPERATIONS AND INSTALL EROSION CONTROL BLANKETS AND STONE CHECK DAMS AS SWALES AND OTHER AREAS ARE ESTABLISHED.

4. CONTINUE WITH OTHER UTILITY (WATER, ELECTRICAL, ETC.) AND BUILDING CONSTRUCTION. PROVIDE VEGETATION, TEMPORARY SEEDING, MULCHING, OR OTHER SURFACE TREATMENTS AS INDICATED IMMEDIATELY UPON ESTABLISHMENT OF FINISH GRADES.

D. EXCAVATION DEWATERING

1. IF DEWATERING OF EXCAVATIONS IS NECESSARY, UTILIZE BAG-TYPE DEWATERING FILTERS OR OTHER APPROVED METHODS. LOCATE DEWATERING SEDIMENT FILTERS AT LEAST 100' FROM A WETLAND OR WATERBODY.

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2. USE TEMPORARY SEDIMENT BASIN AND MDEP-APPROVED FLOCCULANT TO REMOVE CLAY FROM SEDIMENT.

3. EXCAVATIONS FOR STORMWATER TREATMENT AREAS CAN BE USED FOR TEMPORARY SEDIMENT BASINS. REMOVE ACCUMULATED SEDIMENT PRIOR TO INSTALLING TREATMENT AREA COMPONENTS.

E. DITCH AND CULVERT STABILIZATION

1. STABILIZE ANY SECTION OF DITCH, SWALE, OR CHANNEL BROUGHT TO FINAL GRADE WITH A RIPRAP LINING OR PROPERLY INSTALLED EROSION CONTROL BLANKETS (USED OVER PERMANENT SEEDING) WITHIN 24 HOURS.

2. USE STONE CHECK DAMS, HAYBALES AND TEMPORARY MULCHING IN ANY ROUGH-GRADED DITCH THAT WILL NOT BE FINAL GRADED AND PERMANENTLY STABILIZED WITHIN THE NEXT 7 DAYS. PUT THE STONE CHECK DAMS AND MULCHING IN PLACE WITHIN 48 HOURS OR PRIOR TO ANY RAINFALL.

3. INSTALL RIPRAP OUTLET PROTECTION AND RIPRAP SWALES WITHIN 24 HOURS OF PLACING A CULVERT.

F. SOIL STOCKPILE STABILIZATION

1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 30 DAYS SHALL BE COVERED WITH HAY MULCH (AT 90 LBS HAY/1000 SF) OR COVERED WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

2. SEED SOIL AND FILL STOCKPILES EXPECTED TO REMAIN LONGER THAN 30 DAYS WITH A CONSERVATION MIX OF ANNUAL RYE GRASS (AT 0.9 LBS/1000 SF) AND HAY MULCHED (AT 90 LBS HAY/1000 SF) WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

3. INSTALL A SEDIMENT BARRIER AROUND (E.G. HAY-BALE BARRIER OR SILT FENCING) ALL SOIL AND FILL STOCKPILES AT THE DOWNHILL EDGE OF THE STOCKPILE TO TRAP SEDIMENTS.

G. TEMPORARY SEEDING

1. BEDDING - REMOVE STONES AND TRASH WITHIN THE SEEDING AREA. TILL THE SOIL TO A DEPTH OF ABOUT 3" TO PREPARE SEED BED AND MIX THE FERTILIZER INTO THE SOIL.

2. FERTILIZER -UNIFORMLY SPREAD FERTILIZER OVER THE AREA PRIOR TO BEING TILLED INTO THE SOIL. A 10-10-10 MIX OF FERTILIZER SHALL BE APPLIED AT A RATE OF 300 POUNDS PER ACRE (OR 7 LBS/1,000 SF).

3. SEED MIXTURE - USE ANY OF THE FOLLOWING IN UPLAND AREAS:

SEEDING RATES

SPECIES	PER ACRE	PER 1,000 S.F.	DATES	DEPTH
WINTER RYE	112 LBS	2.5 LBS	8/15 - 9/5	1 IN
OATS	80 LBS	2.0 LBS	SPRING - 5/15	1 IN
ANNUAL RYEGRASS	40 LBS	1.0 LBS	4/15 - 9/15 WITH MULCH	0.25 IN

4. MULCHING FOR TEMPORARY SEEDING - WHERE IT IS IMPRACTICAL TO INCORPORATE FERTILIZER AND SEED INTO MOIST SOIL, MULCH THE SEEDED AREA TO FACILITATE GERMINATION. MULCH IN THE FORM OF HAY OR STRAW SHALL BE APPLIED AT A RATE OF 70 TO 90 LBS PER 1,000 SF.

H. MULCHING

USE TEMPORARY MULCHING ON SLOPES, CHANNELS, OTHER EROSION PRONE AREAS, AND ALL EXPOSED SOILS THAT CANNOT RECEIVE PERMANENT COVER WITH 14 DAYS OF DISTURBANCE. MULCH SHALL ALSO BE USED FOLLOWING TEMPORARY AND PERMANENT SEEDING AS SPECIFIED. USE MULCH ANCHORS ON SLOPES GREATER THAN 5% IN FALL (PAST SEPTEMBER 15 AND OVER WINTER TO APRIL 15).

MULCH TYPE	RATE PER 1000 SF	USE AND COMMENTS
HAY OR STRAW	70 TO 90 LBS	SHALL BE DRY AND FREE OF MOLD, MAY BE USED WITH PLANTINGS
WOOD CHIPS OR BARK MULCH	480 TO 920 LBS	USED MOSTLY WITH TREES AND SHRUB PLANTINGS
JUTE AND FIBROUS MATTING	PER MANUFACTURERS' SPECIFICATIONS	USE ON SLOPES, SWALES, AND OTHER EROSION-PRONE AREAS
CRUSHED STONE 1/4" TO 1-1/2"	SPREAD MORE THAN 1/2" THICK	EFFECTIVE IN CONTROLLING WIND AND WATER EROSION

I. TEMPORARY EROSION CONTROL BLANKET SPECIFICATIONS

1. EXCELSIOR EROSION CONTROL BLANKET SHALL CONSIST OF A MACHINE PRODUCED MAT OF CURLED WOOD EXCELSIOR COVERED WITH EITHER A 3 BY 1 INCH WEAVE OF TWISTED CRAFT PAPER OR A 2 BY 1 INCH BIODEGRADABLE EXTRUDED PLASTIC MESH. THE MAT SHALL BE OF CONSISTENT THICKNESS WITH FIBERS EVENLY DISTRIBUTED THROUGHOUT. 80 PERCENT OF THE FIBERS SHALL BE OVER 6 INCHES IN LENGTH. MINIMUM WIDTH: 48 INCHES, MINIMUM WEIGHT: 0.8 POUNDS PER SQUARE YARD.

2. STRAW-COCONUT EROSION CONTROL BLANKET SHALL CONSIST OF A MACHINE PRODUCED MAT OF 70 PERCENT WHEAT STRAW AND 30 PERCENT COCONUT FIBER WITH PHOTODEGRADABLE NETTING ON BOTH SIDES AND SEWN TOGETHER WITH COTTON THREAD. MINIMUM WIDTH: 48 INCHES, MINIMUM WEIGHT: 0.75 POUNDS PER SQUARE YARD.

J. EXTENDED USE EROSION CONTROL BLANKET SPECIFICATION

1. JUTE EROSION CONTROL BLANKETS SHALL BE OF UNIFORM PLAIN WEAVE SINGLE JUTE YARN AVERAGING APPROXIMATELY 130 POUNDS PER SPINDLE OF 14,400 YARDS. THE YARN SHALL BE LOOSELY TWISTED AND WOVEN INTO 48 INCH WIDE BLANKETS WITH A MINIMUM AVERAGE WEIGHT OF 1.0 POUNDS PER SQUARE YARD.

K. WINTER STABILIZATION

THE WINTER CONSTRUCTION PERIOD IS FROM NOVEMBER 1 THROUGH APRIL 15. IF THE SITE, OR ANY PORTION OF THE SITE, IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15th, PROTECT THE SITE WITH OVER-WINTER STABILIZATION:

1. DISTURBED SOILS - BY SEPTEMBER 15th, SEED AND MULCH ALL DISTURBED SOILS ON THE SITE. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

   a. STABILIZE THE SOIL WITH TEMPORARY VEGETATION - BY OCTOBER 1st, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN PARAGRAPH 3c, BELOW.

2. DITCHES AND CHANNELS - CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS BY NOVEMBER 15th. CONSTRUCT AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS BY SEPTEMBER 15th. IF THE CONTRACTOR FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 15th, THEN THE TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER:

   a. INSTALL A SOD LINING IN THE DITCH - LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1st. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH ANCHORING STAPLES, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING SOD AT THE BASE OF THE DITCH WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD FROM SLOUGHING DURING FLOW CONDITIONS.

   b. INSTALL A STONE LINING IN THE DITCH - LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 15th. MEDIAN STONE SIZE FOR STONE LINED DITCHES SHALL BE 4". IF NECESSARY, REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING TO PREVENT THE STONE LINING FROM REDUCING THE DITCH'S CROSS-SECTIONAL AREA.

3. DISTURBED SLOPES - THIS STANDARD APPLIES TO ALL SLOPES GREATER THAN 15 PERCENT. SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15th. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15th, TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

   a. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS - BY OCTOBER 1st SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED HAY MULCH OVER THE SEEDING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1ST, THEN COVER THE SLOPE WITH A LAYER OF WOOD-WASTE COMPOST AS DESCRIBED IN PARAGRAPH 2c BELOW.

   b. STABILIZE THE SLOPE WITH SOD - STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1st. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. DO NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

   c. STABILIZE THE SLOPE WITH WOOD-WASTE COMPOST - PLACE A SIX-INCH LAYER OF WOOD-WASTE COMPOST ON THE SLOPE BY NOVEMBER 15th. DO NOT USE WOOD-WASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

   d. STABILIZE THE SLOPE WITH RIPRAP - PLACE A LAYER OF RIPRAP ON SLOPES BY NOVEMBER 15. MEDIAN STONE SIZE SHALL BE 4".

   b. STABILIZE THE SOIL WITH SOD - STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1st. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

   c. STABILIZE THE SOIL WITH MULCH - BY NOVEMBER 15th, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH NETTING OR OTHER METHOD TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

L. PERMANENT SEEDING

1. SITE PREPARATION - INSTALL NEEDED SURFACE WATER CONTROL MEASURES PRIOR TO SEEDING. GRADE TO PERMIT USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION. PROVIDE ADEQUATE DRAINAGE WHERE INTERNAL WATER MOVEMENT MAY CAUSE SEEPS OR SLIPPAGE BEFORE SEEDING IS WELL ESTABLISHED.
2. BEDDING - STONES, TRASH, ROOTS, AND OTHER DEBRIS THAT WILL INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHALL BE REMOVED. WHERE FEASIBLE, THE SOIL SHALL BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL. WHEN PRACTICAL, PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE. PROVIDE THE BEST CONDITIONS POSSIBLE FOR SEEDING.

3. FERTILIZER - LIME AND FERTILIZER SHALL BE APPLIED EVENLY OVER THE AREA PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHALL BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM SHALL BE APPLIED:
   a. GROUND LIMESTONE AT A RATE OF 138 LBS PER 1,000 SF (3 TONS PER ACRE)
   10-20-20 FERTILIZER OR EQUIVALENT AT 18.4 LBS PER 1,000 SF (800 LBS PER ACRE)
   WORK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF 4" EITHER BEFORE OR DURING THE FINAL SEEDBED PREPARATIONS.

4. SEED MIXTURE: SEE SPECIFICATIONS AND DRAWINGS CS101-CS102 FOR SEEDING MIXTURES AND LOCATIONS OF SEED MIXTURE TYPES.

M. RIPRAP SPECIFICATION

1. ALL RIPRAP AND STONE FOR CHECK DAMS AND STONE LININGS SHALL CONSIST OF SOUND, DURABLE ROCK WHICH WILL NOT DISINTEGRATE BY EXPOSURE TO WATER OR WEATHER. ANGULAR FIELD STONE, ROUGH QUARRY STONE OR BLASTED LEDGE ROCK MAY BE USED. THE MEDIAN STONE SIZE SHALL BE AS INDICATED. THE MAXIMUM STONE SIZE SHALL BE TWICE THE MEDIAN SIZE. INCLUDE ENOUGH SMALLER STONES TO FILL THE VOIDS IN THE LARGER STONES.

N. OFF-SITE VEHICLE TRACKING

1. LIMIT VEHICLE ACCESS TO THE CONSTRUCTION AREA THE LOCATIONS INDICATED ON DRAWINGS CD101-2 AND CG101-2. PROVIDE A STABILIZED CONSTRUCTION ENTRANCE AT EACH LOCATION AS INDICATED.

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2. PHASE 1 CONSTRUCTION ACCESS IS ANTICIPATED TO BE FROM PURCHAS STREET. PHASE 2 CONSTRUCTION ACCESS IS ANTICIPATED TO BE FROM WARWICK STREET AND ORONO ROAD. PROVIDE STABILIZED CONSTRUCTION ENTRANCES AT ALL ENTRANCE/EXIT POINTS USED BY CONSTRUCTION EQUIPMENT.

O. HOUSEKEEPING

1. COLLECT AND STORE ALL WASTE MATERIALS IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER. DO NOT BURY CONSTRUCTION WASTE MATERIALS ON SITE.

2. DISPOSE OF ALL HAZARDOUS WASTE MATERIALS IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER.

3. COLLECT ALL SANITARY WASTE FROM THE PORTABLE UNITS AS NECESSARY (APPROXIMATELY ONCE PER PER WEEK) BY AN EXPERIENCED SANITARY WASTE MANAGEMENT CONTRACTOR.

4. STORE ALL MATERIALS KEPT ON SITE IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINER AND IF POSSIBLE UNDER A ROOF OR OTHER ENCLOSURE. STORE ONLY SUFFICIENT AMOUNTS OF MATERIALS TO COMPLETE THE JOB.

5. DISPOSE OF SURPLUS MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND STATE AND FEDERAL CODES.

6. MONITOR ALL CONSTRUCTION RELATED EQUIPMENT AND VEHICLES FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE LEAKAGE.

7. DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER FROM CONCRETE TRUCKS IN A CONTAINED AREA ON SITE.

8. CLEAN UP ALL SPILLS IMMEDIATELY AFTER DISCOVERY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED METHODS. KEEP MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP IN A DESIGNATED MATERIAL STORAGE AREA ON SITE, INCLUDING, BUT BE NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS. REPORT SPILLS OF TOXIC OR HAZARDOUS MATERIALS TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY IMMEDIATELY REGARDLESS OF THE SIZE.

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE — JONAH DeVRIES No 12273 — LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JSD
CHECKED BY: JSD
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK 034B, LOT 001)

TITLE THIS DWG: EROSION AND SEDIMENTATION CONTROL NOTES

DRAWING NO. C-501
SHEET NO. 29 OF 53

OAK POINT ASSOCIATES
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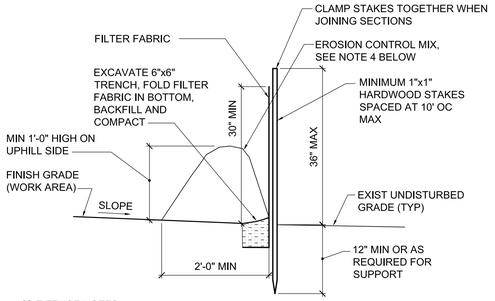
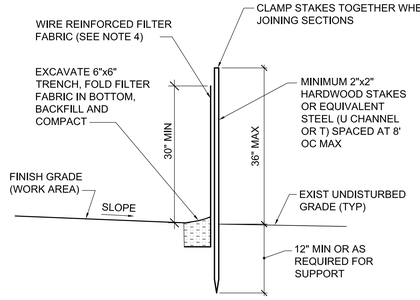


SILT FENCE NOTES:

1. REMOVE SEDIMENT DEPOSITS WHEN DEPOSITS EXCEED 6" IN DEPTH.
2. INSPECT SILT FENCES AFTER EACH RAINFALL AND ALL NECESSARY REPAIRS/REPLACEMENT MADE IMMEDIATELY.
3. REMOVE SILT FENCES AFTER SATISFACTORY VEGETATIVE COVER IS ESTABLISHED. PROVIDE PLANTING SOIL, FINISH GRADE, SEED AND MULCH DISTURBED AREAS.
4. EROSION CONTROL MIX MAY BE USED IN LIEU OF SILT FENCE AT LOCATIONS APPROVED BY ARCHITECT OR TO SUPPLEMENT EROSION CONTROL MEASURES ADJACENT TO WOODED AREAS AND WETLANDS. PROVIDE TREE PROTECTION FENCE AT EDGE OF CLEARING IF EROSION CONTROL MIX IS USED INSTEAD OF SILT FENCE.

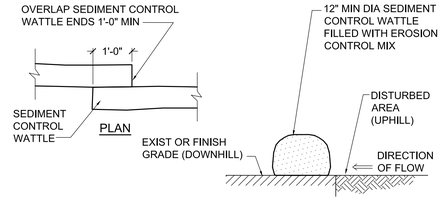
1 C-502 TYP SILT FENCE DETAIL
CD101,CD102,CD103, CG101,CG102,C-502 — NOT TO SCALE



SILT FENCE NOTES:

1. REMOVE SEDIMENT DEPOSITS WHEN DEPOSITS EXCEED 6" IN DEPTH.
2. INSPECT SILT FENCES AFTER EACH RAINFALL AND ALL NECESSARY REPAIRS/REPLACEMENT MADE IMMEDIATELY.
3. REMOVE SILT FENCES AFTER SATISFACTORY VEGETATIVE COVER IS ESTABLISHED. PROVIDE PLANTING SOIL, FINISH GRADE, SEED AND MULCH DISTURBED AREAS.
4. REINFORCING MESH SHALL HAVE 6" MAX OPENING AND BE EITHER INDUSTRIAL POLYPROPYLENE OR STEEL MESH (14 GAUGE MIN).

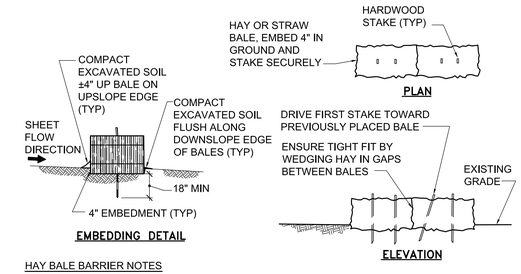
2 C-502 REINFORCED SILT FENCE DETAIL
CD101,CD102,CD103, CG101,CG102 — NOT TO SCALE



SEDIMENT CONTROL WATTLE NOTES:

1. MANUFACTURE SEDIMENT CONTROL WATTLES FOR THE PURPOSE OF TEMPORARY SEDIMENT CONTROL AND INSTALL ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS.
2. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE THIRD THE WATTLE HEIGHT.
3. SEDIMENT CONTROL WATTLES SHALL REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.
4. SECURE SEDIMENT CONTROL WATTLES IN PLACE TO PREVENT MOVEMENT AND UNDERMINING OF WATTLE.
5. EROSION CONTROL MIX SHALL CONSIST OF AT LEAST 80% WELL GRADED ORGANIC MATERIAL INCLUDING SHREDDED OR COMPOSTED BARK OR STUMP GRINDINGS. EROSION CONTROL MIX SHALL CONFORM TO MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS.

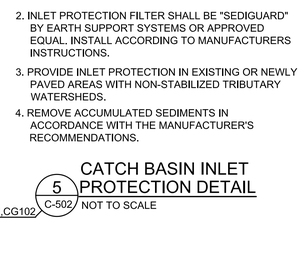
3 C-502 TYP SEDIMENT CONTROL WATTLE DETAIL
CD101,CD102,CD103, CG101,CG102,C-502 — NOT TO SCALE



HAY BALE BARRIER NOTES

1. INSTALL HAY BALE BARRIERS FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE, WITH THE ENDS FLARED UPSLOPE.
2. INSPECT HAY BALE BARRIERS IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. MAKE ALL NECESSARY REPAIRS/REPLACEMENTS IMMEDIATELY.
3. REMOVE SEDIMENT DEPOSITS WHEN DEPOSITS EXCEED ONE QUARTER THE HEIGHT OF THE BARRIER.
4. REMOVE HAY BALE BARRIERS AFTER SATISFACTORY VEGETATIVE COVER IS ESTABLISHED UPSLOPE. PROVIDE PLANTING SOIL, FINISH GRADE, SEED AND MULCH AREA DISTURBED FROM BARRIER REMOVAL.

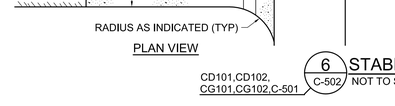
4 C-502 TYP HAY BALE BARRIER DETAIL
C-501 — NOT TO SCALE



INLET PROTECTION NOTES:

1. IN-BASIN BAG FILTERS SHALL BE "SILT-CATCH" BY DGI INDUSTRIES OR APPROVED EQUAL. INSTALL ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. INLET PROTECTION FILTER SHALL BE "SEDIGUARD" BY EARTH SUPPORT SYSTEMS OR APPROVED EQUAL. INSTALL ACCORDING TO MANUFACTURERS INSTRUCTIONS.
3. PROVIDE INLET PROTECTION IN EXISTING OR NEWLY PAVED AREAS WITH NON-STABILIZED TRIBUTARY WATERSHEDS.
4. REMOVE ACCUMULATED SEDIMENTS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

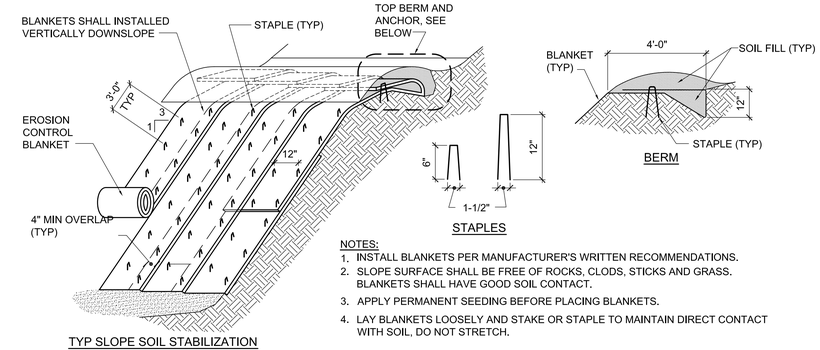
5 C-502 CATCH BASIN INLET PROTECTION DETAIL
CD101,CD102,CG101,CG102 — NOT TO SCALE



EXIT SPECIFICATIONS:

1. STONE FOR A STABILIZED CONSTRUCTION EXIT SHALL BE 2"-3" STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED EXIT SHALL NOT BE LESS THAN 50 FEET.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED EXIT SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE EXIT SHALL NOT BE LESS THAN THE FULL WIDTH OF THE EXIT WHERE INGRESS OR EGRESS OCCURS OR 20 FEET, WHICH EVER IS GREATER.
5. SEPARATION GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION EXIT SHALL BE PIPED BENEATH THE EXIT. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO EXISTING PAVEMENT MUST BE REMOVED PROMPTLY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO EXIT ONTO EXISTING PAVEMENT. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH 2"-3" CRUSHED STONE. WASH WATER SHALL BE COLLECTED AND DIRECTED TO A SEDIMENT TRAPPING DEVICE SYSTEM.

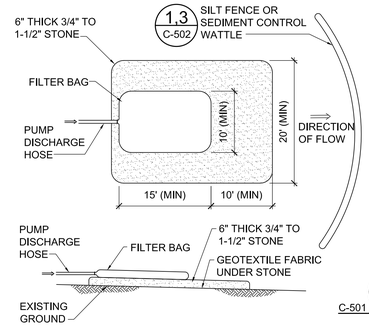
6 C-502 STABILIZED CONSTRUCTION EXIT DETAIL
CD101,CD102, CG101,CG102,C-501 — NOT TO SCALE



NOTES:

1. INSTALL BLANKETS PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. BLANKETS SHALL HAVE GOOD SOIL CONTACT.
3. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL, DO NOT STRETCH.

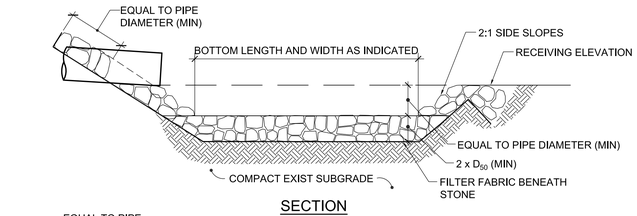
7 C-502 EROSION CONTROL BLANKET DETAIL
CG101,CG102 — NOT TO SCALE



SEDIMENT FILTER NOTES:

1. LOCATE DEWATERING SEDIMENT FILTERS A MINIMUM OF 100 FEET FROM ANY WATER BODY OR NATURAL RESOURCE AREA. DEWATERING SEDIMENT FILTERS SHALL BE A NON-WOVEN GEOTEXTILE FABRIC WITH THE FOLLOWING MINIMUM PROPERTIES:
   a. WEIGHT IN ACCORDANCE WITH ASTM D3776: 8 OZ/YARD
   b. GRAB TENSILE STRENGTH IN ACCORDANCE WITH ASTM D4632: 203 LBS
   c. PUNCTURE RESISTANCE IN ACCORDANCE WITH ASTM D4833: 130 LBS
   d. MULLEN BURST STRENGTH IN ACCORDANCE WITH ASTM D3786: 400 PSI
   e. FLOW RATE IN ACCORDANCE WITH ASTM D4491: 80 GAL/MIN/SF
2. INSTALL, OPERATE AND REMOVE DEWATERING SEDIMENT FILTERS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND PRINTED INSTRUCTIONS.

8 C-502 DEWATERING SEDIMENT FILTER DETAIL
C-501 — NOT TO SCALE



OUTLET PROTECTION NOTES:

1. IN DEFINED CHANNELS, APRON SHALL EXTEND FULL WIDTH OF BOTTOM AND UP TO A MINIMUM OF 1'-6" UP THE BANK OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
2. SEE DRAWINGS CG101 AND CG102 FOR LOCATIONS, INLET PIPE DIAMETER, OVERALL LENGTH AND WIDTH, BOTTOM LENGTH AND WIDTH, AND D_{50}.

9 C-502 TYP PIPE OUTLET PROTECTION DETAIL
CS102,CS103,CG101,CG102 — NOT TO SCALE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME (CHART 275, BLOCK 034B, LOT 001)

TITLE THIS DWG: EROSION AND SEDIMENTATION CONTROL DETAILS

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 01/31/17

OAK POINT ASSOCIATES
ARCHITECTURE ▲ ENGINEERING ▲ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-502
SHEET NO. 30 OF 53

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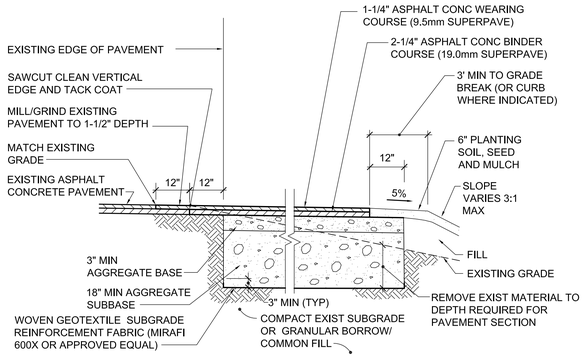
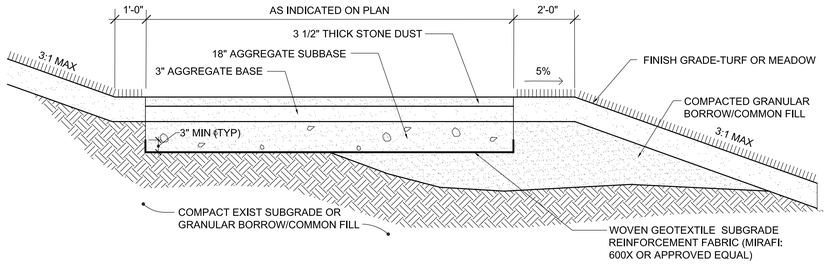


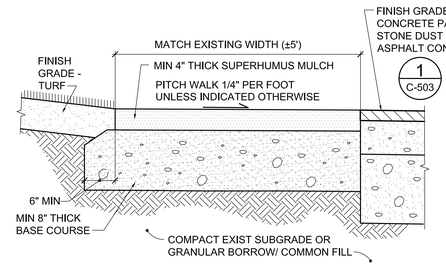
1 C-503 TYP ASPHALT CONCRETE PAVEMENT DETAIL (STANDARD DUTY)

CS101,CS102,CS103,C-301 C-503,C-507,C-508 — NOT TO SCALE



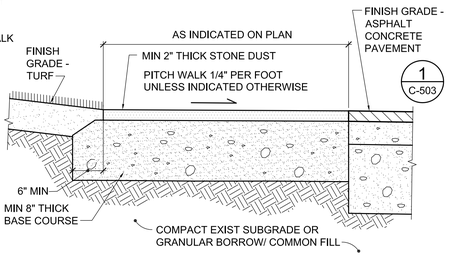
2 C-503 STONEDUST ACCESS ROAD SECTION

CS101,C-503 — NOT TO SCALE



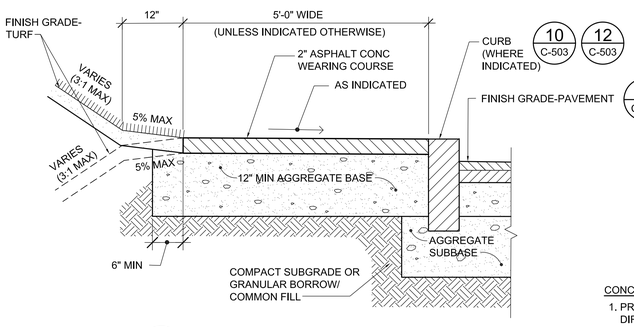
3 C-503 TYP WALKING TRAIL DETAIL

CS102,CS103 — NOT TO SCALE



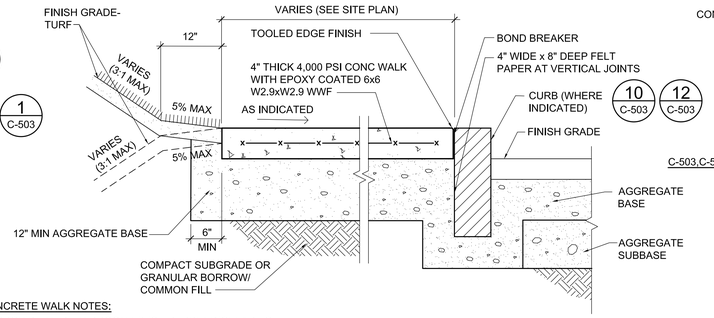
4 C-503 TYP STONE DUST WALK DETAIL

CS101 — NOT TO SCALE



5 C-503 TYP ASPHALT CONCRETE SIDEWALK SECTION

CS101,CS102,CS103,-301 C-503,C-504,C-507 — NOT TO SCALE

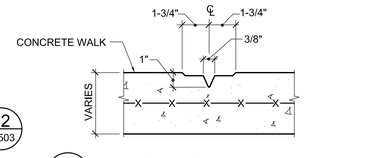


CONCRETE WALK NOTES:

1. PROVIDE MEDIUM BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL.
2. PROVIDE TOOLED CONTROL JOINTS AT 5'-0" TO 6'-0" ON CENTER, EQUALLY SPACED, UNLESS INDICATED OTHERWISE, AND AT ALL EDGES. (7 C-503)
3. PROVIDE EXPANSION JOINTS AT 25'-35' ON CENTER, EQUALLY SPACED UNLESS INDICATED OTHERWISE. (8 C-503)
4. PROVIDE 1/2" PREFORMED FILLER AND JOINT SEALER WHERE WALK ABUTS THE BUILDING AND CURBING.

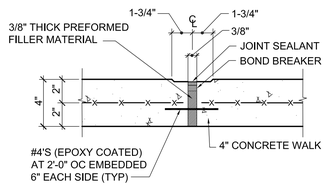
6 C-503 TYPICAL CONCRETE WALK DETAIL

CS102,C-503,L-101,L-501 — NOT TO SCALE



7 C-503 TYP CONTROL JOINT DETAIL

C-503,C-505 — NOT TO SCALE

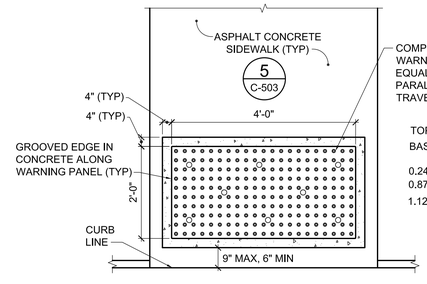


EXPANSION JOINT NOTES:

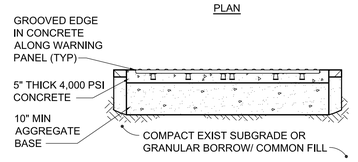
1. TOOLED JOINT SURFACE SHALL BE SMOOTH AND AT A CONSTANT DEPTH.
2. BREAK REINFORCING AT EXPANSION JOINT.

8 C-503 TYP EXPANSION JOINT DETAIL

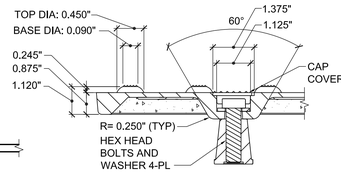
C-503 — NOT TO SCALE



PLAN



TYPICAL SECTION



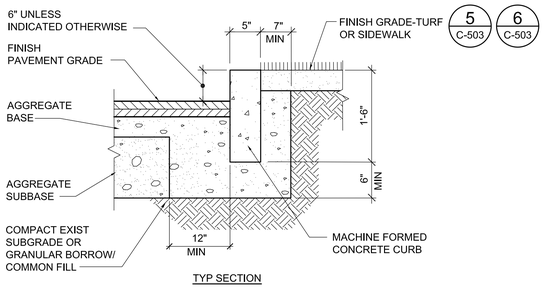
BOLT AND DOME DETAIL

DETECTABLE WARNING PANEL NOTES

1. DETECTABLE WARNING PANELS SHALL CONFORM TO CITY OF PORTLAND'S WRITTEN REQUIREMENTS.
2. DETECTABLE WARNING COLOR SHALL BE FEDERAL YELLOW (#33538).
3. INSTALL PANELS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. CONCRETE SHALL HAVE MEDIUM BROOM FINISH, PERPENDICULAR TO DIRECTION OF TRAVEL. SEAL CONCRETE PRIOR TO INSTALLING PANEL.

9 C-503 TYP DETECTABLE WARNING PANEL DETAIL

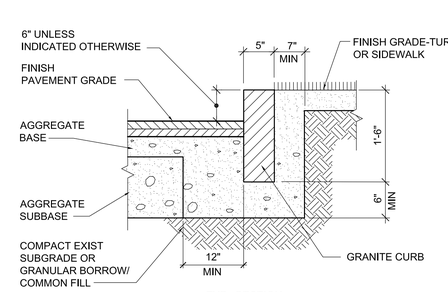
CS103,C-504 — NOT TO SCALE



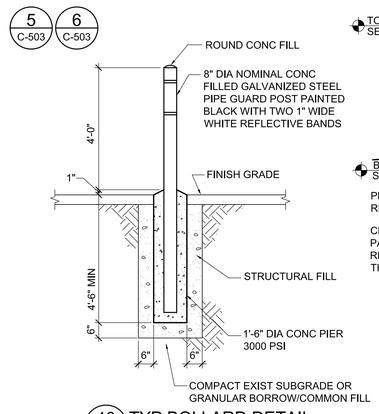
TYP SECTION

CONCRETE CURB NOTES AND CONCRETE SPECIFICATIONS (CURB ONLY)

1. CONFORM WITH ACI 117, ACI 211.1, ACI 301, ACI 302.1R, ACI 305R, ACI 306.1, AND ACI 308.1.
2. CONCRETE MIX DESIGN (CURB);
   a) 28 DAY COMPRESSIVE STRENGTH: 4,000 PSI MINIMUM
   b) WATER/CEMENT RATIO: 0.45 MAXIMUM
   c) SLUMP LIMIT: AS REQUIRED FOR SLIP FORMING.
   d) AGGREGATE SIZE: 3/4 INCH, MAXIMUM
   e) AIR CONTENT: 5% PLUS 2% OR MINUS 1% AT POINT OF DELIVERY
3. REINFORCING: SYNTHETIC MICRO-FIBERS CONFORMING TO ASTM C 1116, TYPE III, UNIFORMLY DISPERSE IN CONCRETE MIXTURE AT MANUFACTURERS RECOMMENDED RATE, BUT NOT LESS THAN 1.5 POUNDS PER CUBIC YARD.
4. CURE CONCRETE IN ACCORDANCE WITH ACI 308.1. CONCRETE NOT PROPERLY CURED WILL NOT BE ACCEPTED.
5. SUBMIT CONCRETE MIX DESIGN IN ACCORDANCE WITH SPECIFICATION SECTION 013300, "SUBMITTAL PROCEDURES". OBTAIN APPROVAL FROM OWNER PRIOR TO ORDERING.
6. SAWCUT 1/8" WIDE CONTROL JOINTS (1.5" DEPTH AT TOP AND EXPOSED FACE OF CURB) AT 10'-0" ON CENTER.

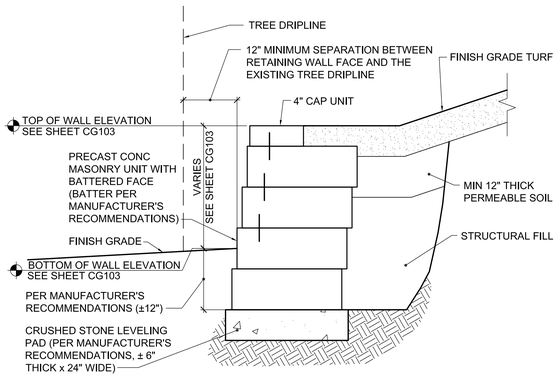


TYP SECTION



13 C-503 TYP BOLLARD DETAIL

CS101,CS102 — NOT TO SCALE

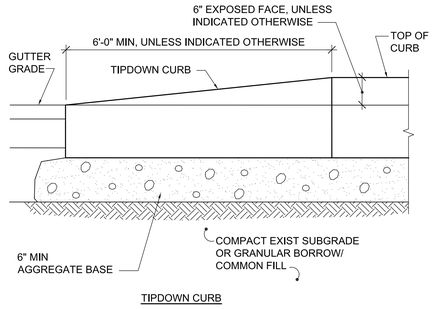


NOTES:

1. INSTALL PRECAST CONCRETE RETAINING WALLS IN CONFORMANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.
2. MASONRY UNITS SHALL BE MACHINE SPLIT FLAT FACE, COLOR - TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL COLOR RANGE.

14 C-503 RETAINING WALL SECTION

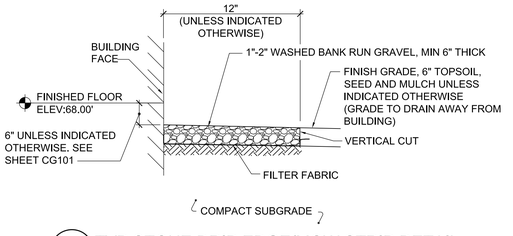
CG103 — NOT TO SCALE



TIPDOWN CURB

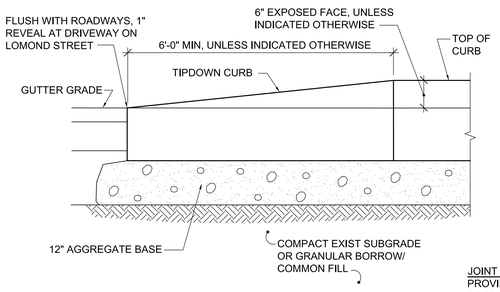
10 C-503 TYP CONCRETE CURB DETAIL

CS101,CS102,CS103, C-503,C-301,C-504 — NOT TO SCALE



11 C-503 TYP STONE DRIP EDGE/MOW STRIP DETAIL

CS102 — NOT TO SCALE



TIPDOWN CURB

12 C-503 TYP GRANITE CURB DETAIL

CS102,CS103,C-301 C-503,C-504,C-509 — NOT TO SCALE

JOINT NOTE:
PROVIDE 4" WIDE x 8 1/2" DEEP FELT PAPER OR FILTER FABRIC AT ALL CURB JOINTS.

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG: SITE DETAILS - 1

JONAH DeWATERS No. 12273 — STATE OF MAINE — LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JSD
CHECKED BY: JSD

NO.	DATE	DESCRIPTION	BY

REVISIONS — DATE: 01/31/17

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-503
SHEET NO. 31 OF 53

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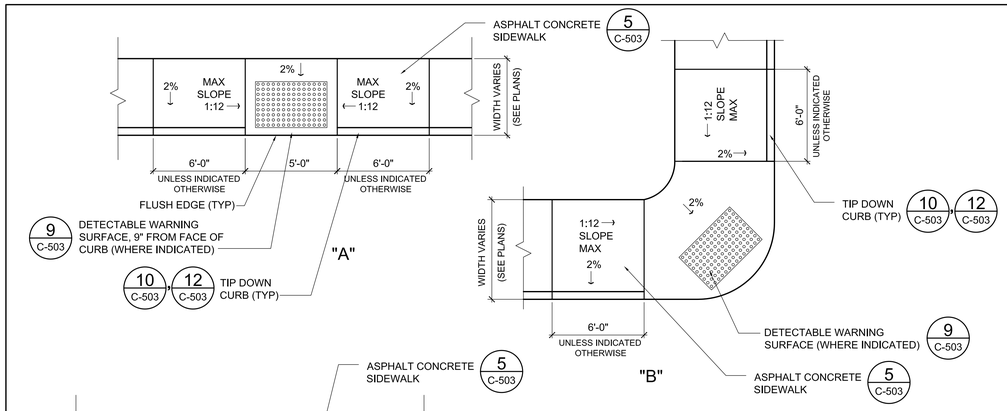
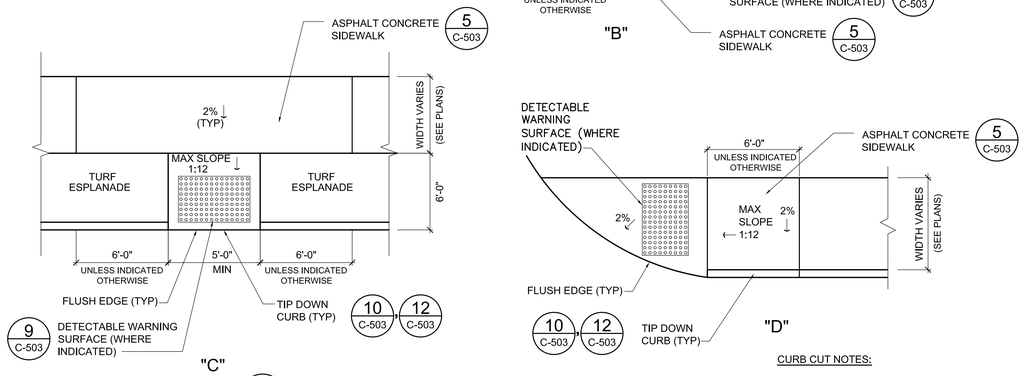
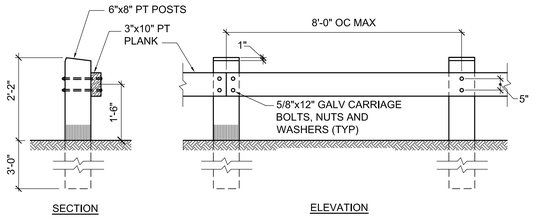




1 CS102,CS103,C-504 C-504 ACCESSIBLE CURB CUT DETAILS
NOT TO SCALE

CURB CUT NOTES:

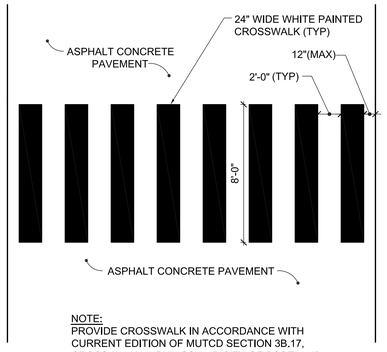
1. CURB CUTS SHALL COMPLY WITH ADA AND CITY OF PORTLAND'S WRITTEN REQUIREMENTS



GUARD RAIL NOTE:

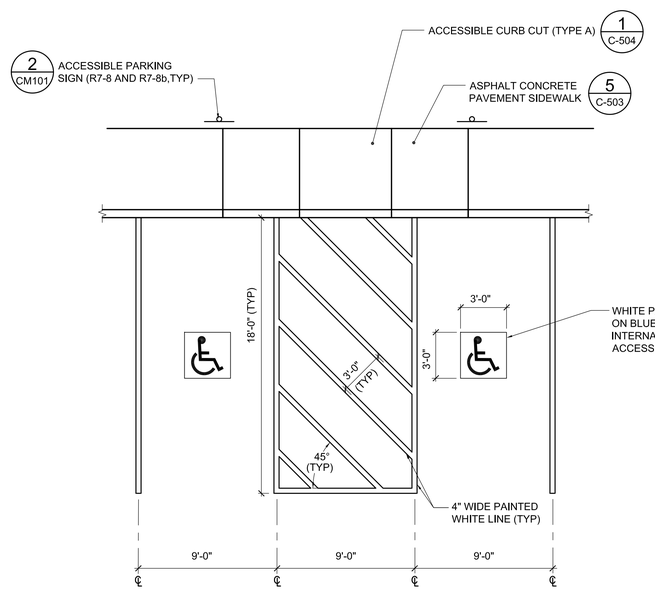
1. GUARD RAIL INSTALLATION SHALL BE IN CONFORMANCE WITH MDOT STANDARD SPECIFICATIONS, SECTION 606.03 AND 710.07, FOR WOOD POSTS.

2 CS101,CS103,C-301 C-504 TYP WOOD GUARD RAIL DETAIL
NOT TO SCALE



NOTE:
PROVIDE CROSSWALK IN ACCORDANCE WITH CURRENT EDITION OF MUTCD SECTION 3B.17, CROSSWALK MARKINGS AND CITY OF PORTLAND TECHNICAL STANDARDS. FIGURE I-22.

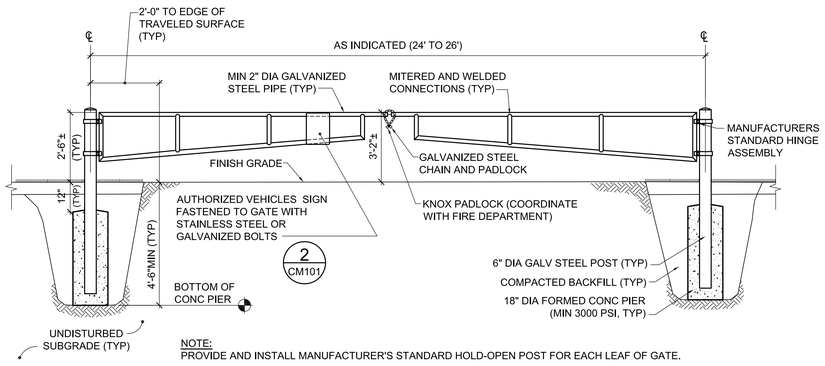
4 CM101 C-504 TYPICAL CROSSWALK DETAIL
NOT TO SCALE



NOTES:

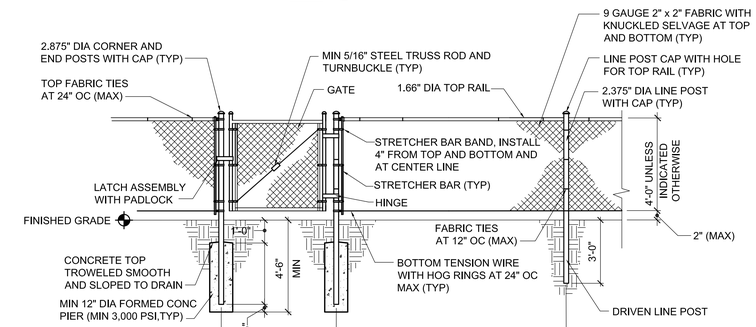
1. SYMBOL AND PARKING STALL SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.
2. ACCESSIBLE PARKING STALL AND AISLE SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. SEE SHEET CG101 FOR GRADING INFORMATION.

3 CM101 C-504 TYP ACCESSIBLE PARKING STALL AND PAVEMENT MARKING
NOT TO SCALE



NOTE:
PROVIDE AND INSTALL MANUFACTURER'S STANDARD HOLD-OPEN POST FOR EACH LEAF OF GATE.

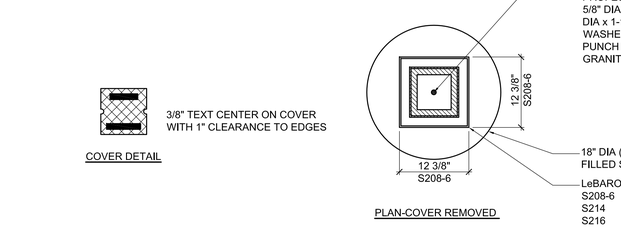
5 CS101,CS102,CM101 C-504 TYP SWING GATE DETAIL
NOT TO SCALE



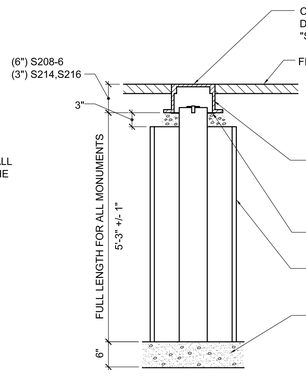
CHAIN LINK FENCE NOTES:

1. ALL POSTS, RAILS, FABRIC AND APPURTENANCES SHALL BE GALVANIZED.
2. WHEN LEDGE IS ENCOUNTERED, STEEL POSTS SHALL BE SET AND GROUTED 12 INCHES DEEP UNLESS THE POSTS PENETRATE THE GROUND TO THE DEPTH INDICATED ON THE DRAWINGS.

6 CS101,CS102 C-504 CHAIN LINK FENCE AND GATE DETAIL
NOT TO SCALE



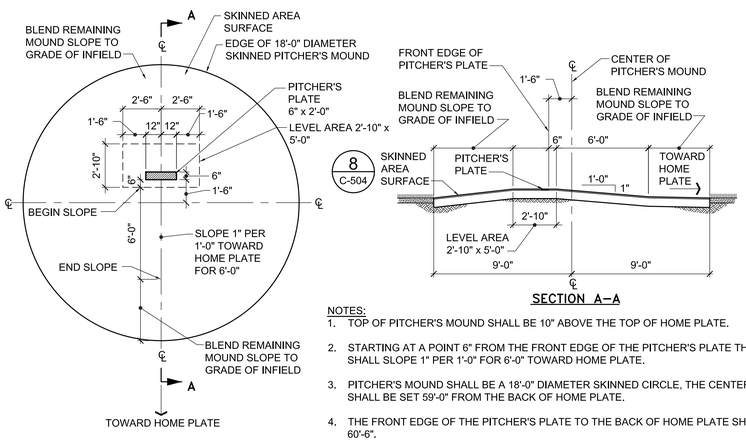
COVER DETAIL



NOTES

1. STREET MONUMENT SHALL COMPLY WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS.
2. ALL MONUMENTS SHALL BE A HARD AND DURABLE GRANITE, OF LIGHT COLOR, WITH A SMOOTH SPLIT APPEARANCE,AND FREE FROM SEAMS WHICH IMPAIR STRUCTURAL INTEGRITY
3. ALL MONUMENTS, EXCEPT FOR IN DESIGNATED AREAS, MAY HAVE SPLIT OR SAWN SIDES. THE BOTTOM SURFACE SHALL BE 7" TO 9" SQUARE, PARALLEL WITH THE TOP SURFACE. THE TOP SURFACE SHALL BE SMOOTH, NOT PREMARKED, 6" SQUARE, AND MARKED BY A MAINE PROFESSIONAL LAND SURVEYOR AFTER BACKFILL AND COMPACTION.
4. ALL MONUMENTS SHALL BE A FULL 5'-3" IN LENGTH, PLUS OR MINUS ONE INCH, UNLESS APPROVED IN WRITING BY THE CITY OF PORTLAND.
5. SET THE CENTER OF THE MONUMENT WITHIN 1" OF THE SURVEY POINT.

9 CS103 C-504 GRANITE STREET MONUMENT DETAILS
NOT TO SCALE

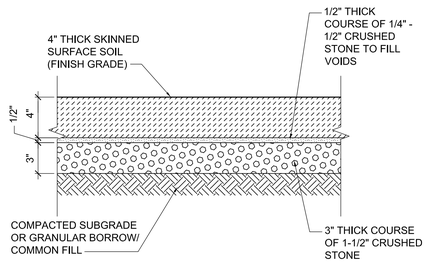


SECTION A–A

NOTES:

1. TOP OF PITCHER'S MOUND SHALL BE 10" ABOVE THE TOP OF HOME PLATE.
2. STARTING AT A POINT 6" FROM THE FRONT EDGE OF THE PITCHER'S PLATE THE MOUND SHALL SLOPE 1" PER 1'-0" FOR 6'-0" TOWARD HOME PLATE.
3. PITCHER'S MOUND SHALL BE A 18'-0" DIAMETER SKINNED CIRCLE, THE CENTER OF WHICH SHALL BE SET 59'-0" FROM THE BACK OF HOME PLATE.
4. THE FRONT EDGE OF THE PITCHER'S PLATE TO THE BACK OF HOME PLATE SHALL BE 60'-6".
5. REFERENCE MATERIAL: NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFHS) 'COURT AND FIELD DIAGRAM GUIDE'.

7 CS102 C-504 PITCHER'S MOUND DETAIL
NOT TO SCALE



8 CS102,C-504 C-504 TYP SKINNED INFIELD SECTION
NOT TO SCALE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE — JONAH DeWATERS No 12273 — LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JSD
CHECKED BY: JSD
DATE: 01/31/17

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
LOCATION: NEW FRED P. HALL ELEMENTARY SCHOOL, 23 ORONO ROAD, PORTLAND, ME (CHART 275, BLOCK 0048, LOT 001)
TITLE THIS DWG: SITE DETAILS - 2

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-504
SHEET NO. 32 OF 53

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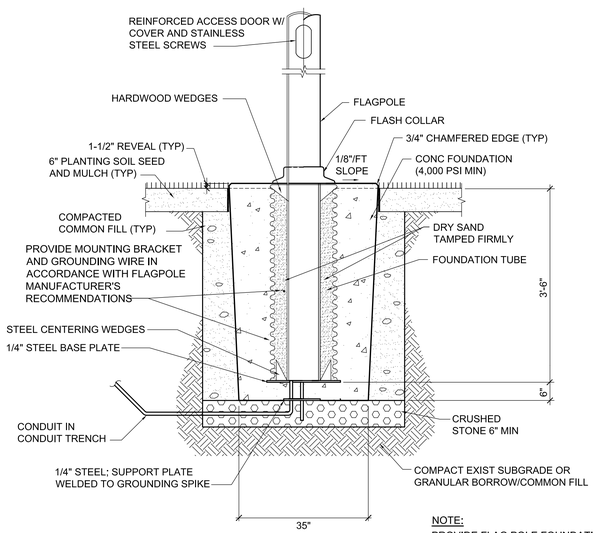
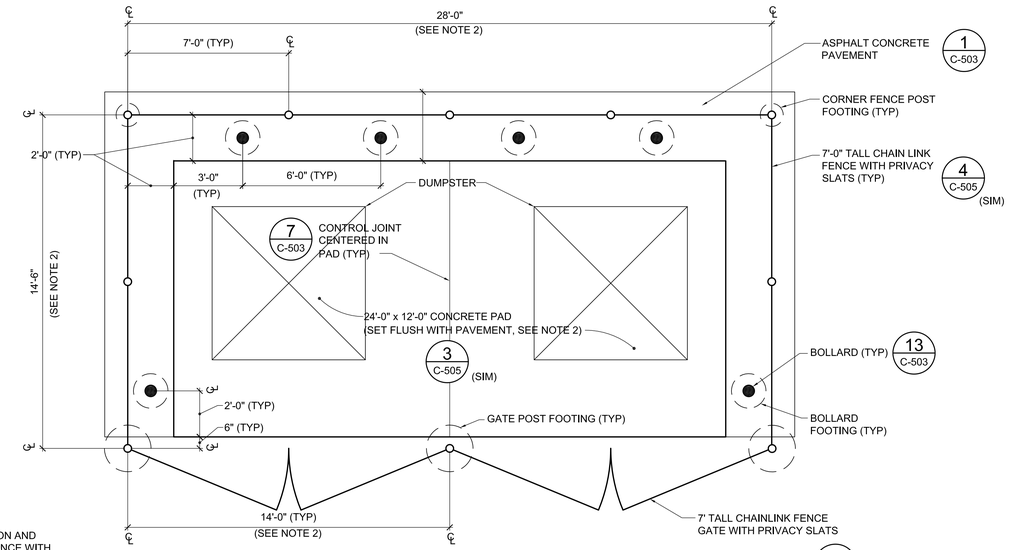


NOTE:
PROVIDE FLAG POLE FOUNDATION AND LIGHTING CONDUIT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS

1 C-505 FLAGPOLE FOUNDATION DETAIL

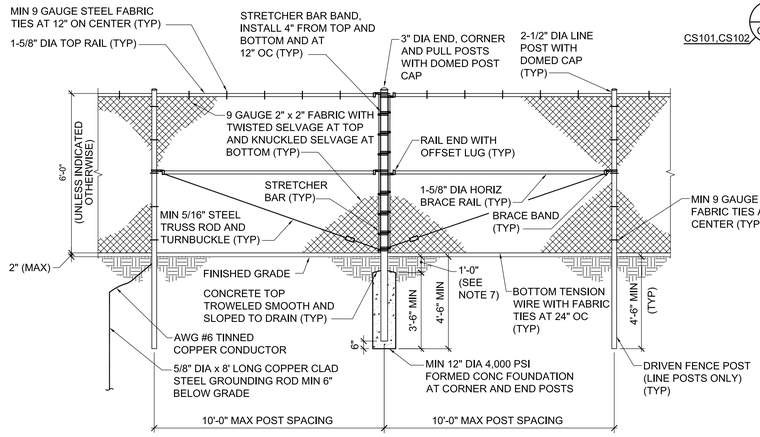
CS101,CS102,CU102 — NOT TO SCALE



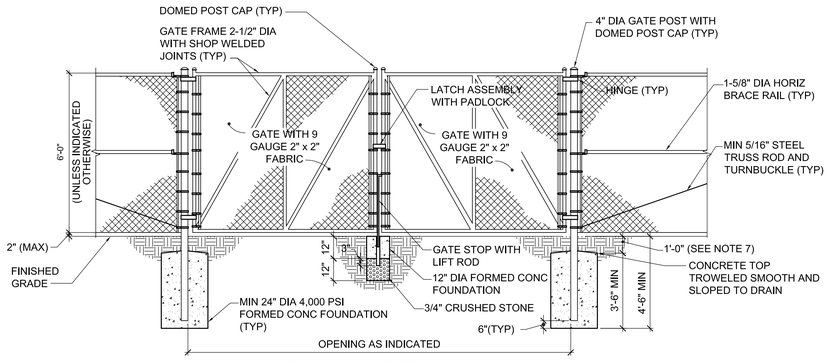
NOTE:
1. DUMPSTER ENCLOSURE (GATE AND FENCE) SHALL BE 7' TALL CHAINLINK FENCE WITH BLACK PRIVACY SLATS DIAGONALLY WOVEN INTO FABRIC.
2. DIMENSIONS INDICATED ARE APPROXIMATE. COORDINATE FINAL ENCLOSURE WITH MANUFACTURER'S RECOMMENDATIONS BASED ON SIZE OF DUMPSTERS ON SITE (DUMPSTERS PROVIDED BY OWNER).

2 C-505 REINFORCED CONCRETE DUMPSTER PAD AND ENCLOSURE

CS101,CS102 — NOT TO SCALE



CHAIN LINK FENCE

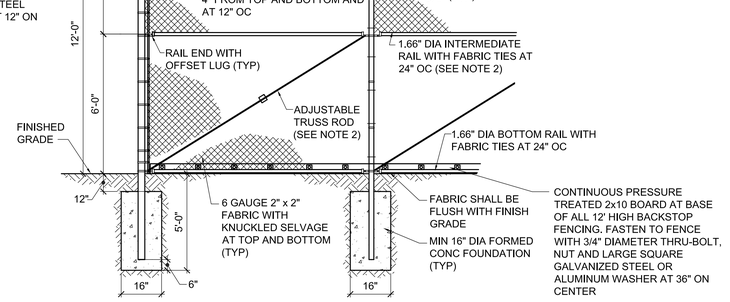


CHAIN LINK FENCE GATE

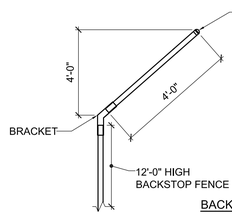
CHAIN LINK FENCE AND GATE NOTES:
1. ALL POSTS, RAILS, FABRIC, TIES AND APPURTENANCES SHALL BE GALVANIZED STEEL.
2. ALL FASTENING AND HINGE HARDWARE SHALL BE SECURED IN PLACE BY PEENING OR WELDING TO PREVENT DISASSEMBLY OF FENCING/GATES.
3. WHEN LEDGE IS ENCOUNTERED, STEEL POSTS SHALL BE SET AND GROUTED 12 INCHES DEEP UNLESS THE POSTS PENETRATE THE GROUND TO THE DEPTH INDICATED ON THE DRAWINGS.
4. CONNECT BONDING JUMPERS BETWEEN GATE POSTS AND FRAMES. BONDING JUMPERS SHALL BE MADE OF ELECTROPLATED OR HOT TIN COATED COPPER TO ENSURE HIGH CONDUCTIVITY.
5. MAKE GROUNDING CONNECTIONS AT BARE METAL POINTS OF CONTACT.
6. PIPE SIZES INDICATED ARE OUTSIDE DIAMETER (FENCE INDUSTRY STANDARD).
7. IN PAVED AREAS, EXTEND CONCRETE FOUNDATIONS TO FINISH GRADE.
8. FOR EACH GATE LEAF, PROVIDE GATE KEEPERS CONSISTING OF 2" DIA x 4'-0" MIN HIGH POST WITH MECHANICAL LATCH SECURING THE FREE END OF THE GATE IN THE FULL OPEN POSITION

4 C-505 CHAIN LINK FENCE AND GATE DETAILS

CD101,CD102,CS101,CS102,C-505 — NOT TO SCALE



BACKSTOP ELEVATION VIEW



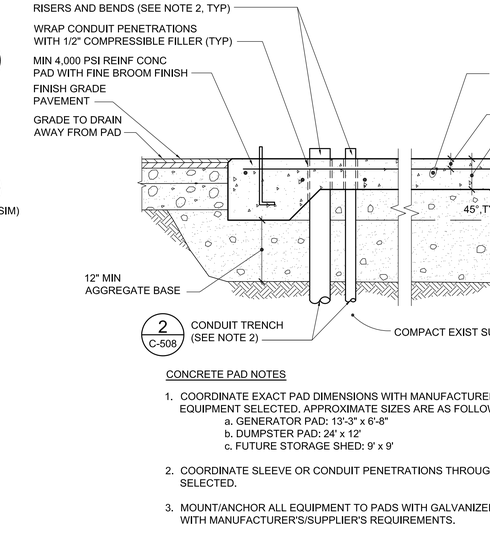
OVERHANG NOTES:
1. BRACKET SHALL BE DESIGN BY FENCE MANUFACTURER TO ADEQUATELY SUPPORT LOAD OF OVERHANG FENCE. ADDITIONAL BRACING OR BRACKETS SHALL BE PROVIDED AS RECOMMENDED BY FENCE MANUFACTURER.
2. SEAL OR CAP OVERHANG POSTS AND ENSURE BRACKET IS WATERTIGHT TO PREVENT WATER FROM ENTERING AND FREEZING THE POST ASSEMBLY.

BACKSTOP OVERHANG DETAIL

BACKSTOP NOTES:
1. ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL.
2. PROVIDE BRACE RAIL, ADJUSTABLE TRUSS ROD, AND BOTTOM RAIL ON ALL END AND CORNER FENCE SECTIONS. PROVIDE TOP, MID, AND BOTTOM RAIL ON ALL 12' HIGH FENCE SECTIONS. PROVIDE TOP AND BOTTOM RAIL ON ALL 6' HIGH FENCE SECTIONS. 4 C-505
3. PROVIDE CONCRETE FOOTINGS FOR ALL 12' HIGH FENCE POSTS. PROVIDE CONCRETE FOOTINGS AT END AND CORNER POSTS (CHANGE IN DIRECTION) FOR ALL 6' HIGH FENCE SECTIONS.
4. POUR CONCRETE FOOTINGS WITH VERTICAL SIDEWALLS.
5. PROVIDE LINE POST TIES AND RAIL TIES OF SUFFICIENT LENGTH TO ALLOW EACH END OF TIE TO BE KNUCKLED BACK AND TWISTED TWICE AROUND ITSELF.

5 C-506 BACKSTOP DETAILS

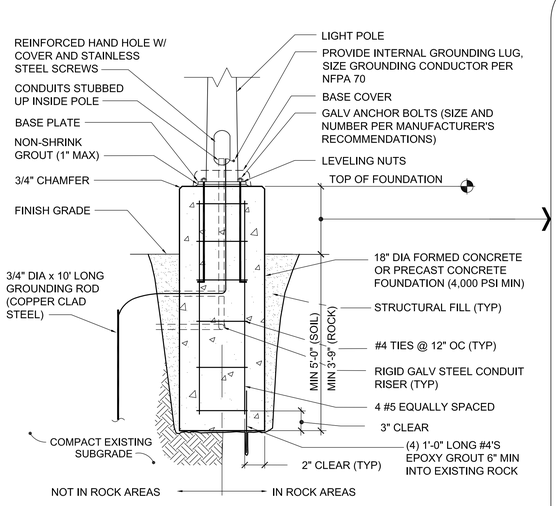
CS102 — NOT TO SCALE



CONCRETE PAD NOTES
1. COORDINATE EXACT PAD DIMENSIONS WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR EQUIPMENT SELECTED. APPROXIMATE SIZES ARE AS FOLLOWS:
   a. GENERATOR PAD: 13'-3" x 6'-8"
   b. DUMPSTER PAD: 24' x 12'
   c. FUTURE STORAGE SHED: 9' x 9'
2. COORDINATE SLEEVE OR CONDUIT PENETRATIONS THROUGH CONCRETE PADS WITH EQUIPMENT SELECTED.
3. MOUNT/ANCHOR ALL EQUIPMENT TO PADS WITH GALVANIZED CONCRETE ANCHORS IN ACCORDANCE WITH MANUFACTURER'S/SUPPLIER'S REQUIREMENTS.
4. ALL CONDUIT BENDS AND CONDUIT PENETRATIONS THROUGH CONCRETE SLABS SHALL BE RIGID GALVANIZED STEEL.

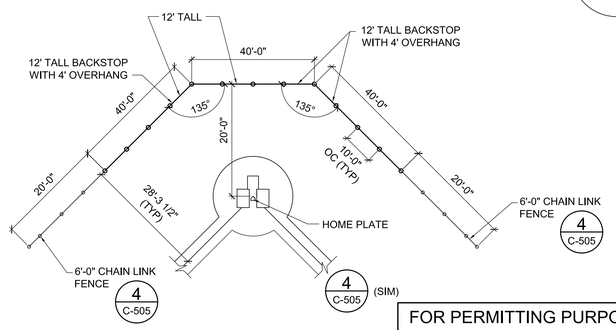
3 C-505 REINFORCED CONCRETE PAD DETAIL

CS101,CS102,CU101,C-505,C-506 — NOT TO SCALE



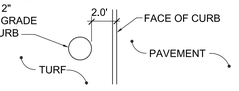
6 C-505 LIGHT POLE/CONC FOUNDATION DETAIL

CU101,CU102,CU103 — NOT TO SCALE



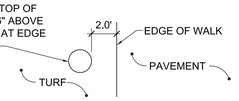
BACKSTOP AND DUGOUT LAYOUT

LIGHT POLE FOUNDATION: TOP OF FOUNDATION 12" ABOVE FINISH GRADE AT BACK OF CURB



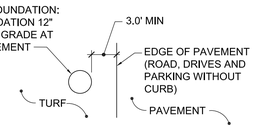
'A' LIGHT POLE AT BACK OF CURB

LIGHT POLE FOUNDATION: TOP OF FOUNDATION 6" ABOVE FINISH GRADE AT EDGE OF WALK



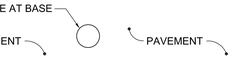
'B' LIGHT POLE AT WALK

LIGHT POLE FOUNDATION: TOP OF FOUNDATION 12" ABOVE FINISH GRADE AT EDGE OF PAVEMENT



'C' LIGHT POLE IN TURF AREA OFF EDGE OF PAVEMENT

LIGHT POLE FOUNDATION: TOP OF FOUNDATION 30" ABOVE FINISH GRADE AT BASE



'D' LIGHT POLE IN PARKING AREA (NO ISLAND)

LIGHT POLE FOUNDATION LOCATION AND HEIGHT ABOVE FINISH GRADE
NOT TO SCALE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: JSD
CHECKED BY: JSD
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK 0048, LOT 001)

TITLE THIS DWG: SITE DETAILS - 3

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-505
SHEET NO. 34 OF 53

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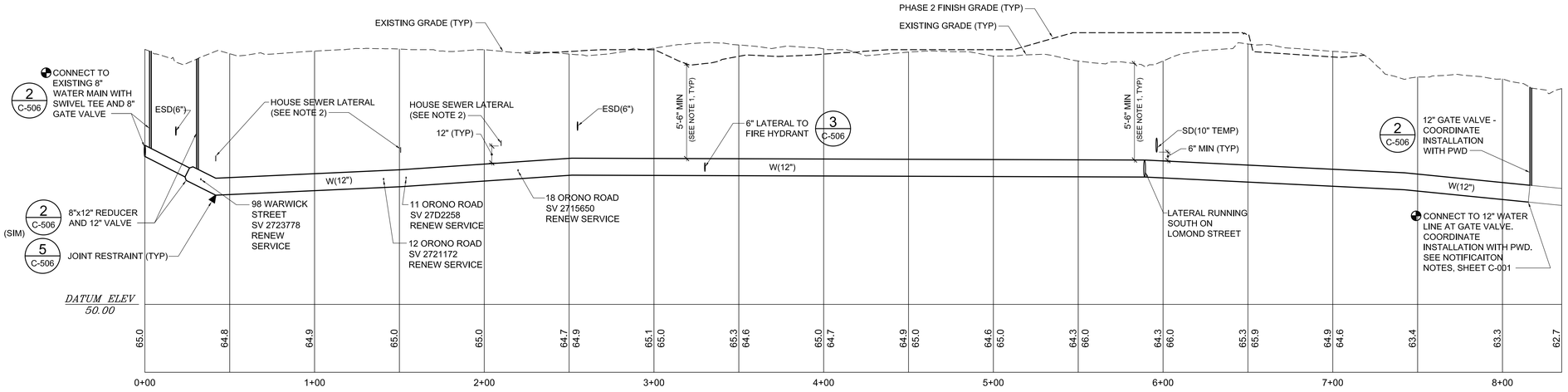
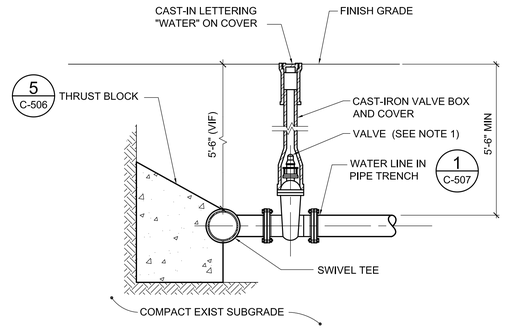


WATER MAIN PROFILE NOTES:

1. PROVIDE 5'-6" MIN COVER OVER WATER MAIN FROM THE LOWER OF THE EXISTING GRADE AND THE PHASE 2 FINISH GRADE. SEE SHEET CG101 FOR ADDITIONAL ELEVATION INFORMATION.
2. LATERALS FROM HOUSES INTO SEWER MAIN INDICATED ARE APPROXIMATE. VERIFY LOCATION AND INVERT ELEVATION PRIOR TO INSTALLING WATER MAIN. PROVIDE 12" MINIMUM SEPARATION BETWEEN SEWER LINES AND WATER MAIN.

1 C-506 WATER MAIN PROFILE

CU101 — SCALE: 1"=30' (HORIZ); 1"=3' (VERT)

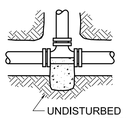


2 C-506 TYP SWIVEL TEE AND VALVE DETAIL

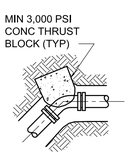
CU101,CU104,C-506 — NOT TO SCALE

GATE VALVE NOTES:

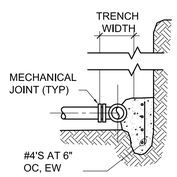
1. VALVE SHALL BE TURN RIGHT TO OPEN.
2. WRAP ALL PIPE AND FITTINGS IN MIN 6 MIL POLYETHYLENE SHEETING AND TAPE SECURELY BEFORE BURYING.
3. VALVES, FITTINGS AND PIPE SHALL CONFORM TO CURRENT PORTLAND WATER DISTRICT STANDARDS.



TYP PLAN VIEW, TEE



TYP PLAN VIEW, BEND, VERTICAL AND HORIZONTAL



TYP SECTION (TEE OR BEND)

THRUST BLOCK SCHEDULE BASED ON 100 PSI WORKING PRESSURE (SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL)						
REACTION TYPE	PIPE SIZE (INCHES)					
	4"	6"	8"	10"	12"	
90° BEND	1.9	4.0	6.8	10.3	14.5	
TEE	1.4	2.8	4.8	7.3	10.3	
45° BEND	1.0	2.2	3.7	5.6	7.9	
22.5° BEND	0.5	1.1	1.9	2.8	4.0	
11.25° BEND	0.3	0.6	1.0	1.4	2.0	

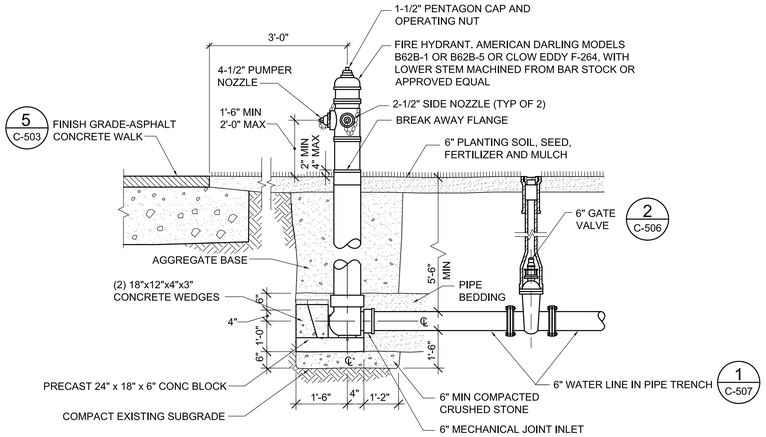
NOTES:
1. FOR OTHER PRESSURES, AREA OF CONCRETE THRUST BLOCKING IS DIRECTLY PROPORTIONAL TO AREAS SHOWN IN ABOVE TABLE.
2. AREA OF THRUST BLOCKS SHOWN ARE BASED ON A MINIMUM SOIL BEARING CAPACITY OF 2,000 POUNDS PER SQUARE FOOT AND 1.5 SAFETY FACTOR. BEARING CAPACITY MAY BE ALTERED BY THE OWNER/ARCHITECT BASED ON CONDITIONS ENCOUNTERED.

THRUST BLOCK NOTES:

1. PROVIDE CONCRETE THRUST BLOCKING IN ACCORDANCE WITH NFPA 24.
2. CONCRETE THRUST BLOCKING (MIN 3,000 PSI) IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, AND PLUGS.
3. PLACE CONCRETE PAVERS OR BRICK IN FRONT OF ALL PLUGS BEFORE PLACING THRUST BLOCKS.
4. WRAP FITTINGS IN POLYETHYLENE PRIOR TO INSTALLATION OF CONCRETE THRUST BLOCKING.
5. PLACE THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND CONCRETE THRUST BLOCK TO UNDISTURBED MATERIAL.
6. EXTEND CONCRETE THRUST BLOCKING THE ENTIRE LENGTH OF THE FITTING. DO NOT COVER ANY PART OF THE JOINT WITH CONCRETE.
7. INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.
8. GRIP-RING RESTRAINT SYSTEMS ARE REQUIRED FOR ALL MECHANICAL JOINTS. THESE SYSTEMS DO NOT REDUCE THE REQUIREMENTS FOR THRUST BLOCKING.
9. PROVIDE ADDITIONAL JOINT RESTRAINT WHERE INDICATED ON DRAWINGS.

5 C-506 TYP JOINT RESTRAINT DETAIL

CU101,CU104,C-506,C-507,FX001 — NOT TO SCALE

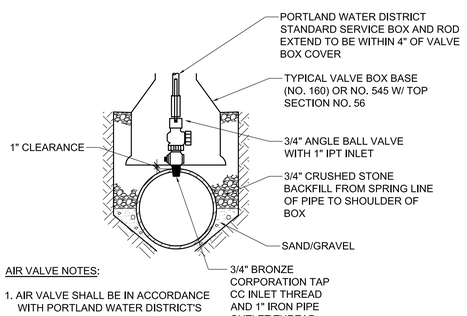


FIRE HYDRANT NOTES:

1. HYDRANT VALVE SHALL BE TURN RIGHT TO OPEN.
2. HYDRANT SHALL HAVE 5 1/4" VALVE OPENING WITH NON-DRAINING BRONZE SEAT THAT IS PERMANENTLY PLUGGED.
3. WRAP ALL PIPE AND FITTINGS IN MIN 6 MIL POLYETHYLENE SHEETING AND TAPE SECURELY BEFORE BURYING.
4. HYDRANT, FITTINGS AND PIPE SHALL CONFORM TO CURRENT PORTLAND WATER DISTRICT STANDARDS.

3 C-506 FIRE HYDRANT DETAIL

CU101,CU104 — NOT TO SCALE

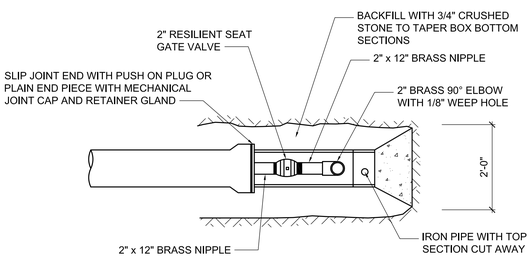


AIR VALVE NOTES:

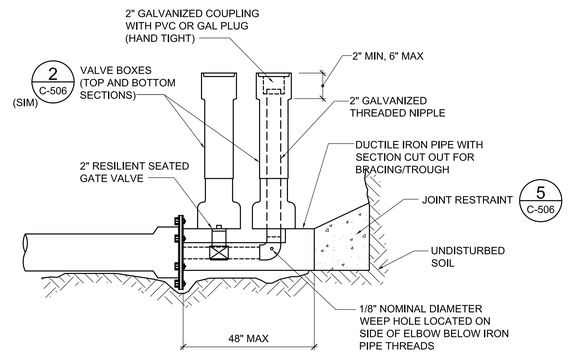
1. AIR VALVE SHALL BE IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS.

6 C-506 TYPICAL AIR VALVE (1")

CU101,CU104 — NOT TO SCALE



TOP VIEW



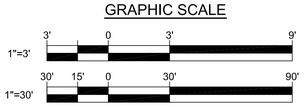
BLOW-OFF VALVE NOTES:

1. BLOW OFF VALVE AND CONNECTIONS SHALL BE IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS.

4 C-506 STANDARD BLOW-OFF VALVE

CU101,CU104 — NOT TO SCALE

GRAPHIC SCALE



CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY

REVISIONS

DRAWN BY: JSD
CHECKED BY: JSD
DATE: 01/31/17

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
LOCATION: NEW FRED P. HALL ELEMENTARY SCHOOL, 23 ORONO ROAD, PORTLAND, ME (CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG: WATER MAIN PROFILE AND WATER DETAILS

JONAH DeWATERS No 12273 — STATE OF MAINE — LICENSED PROFESSIONAL ENGINEER

OAK POINT ASSOCIATES — ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-506
SHEET NO. 35 OF 53

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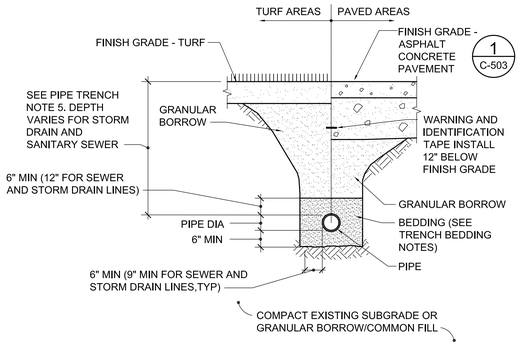
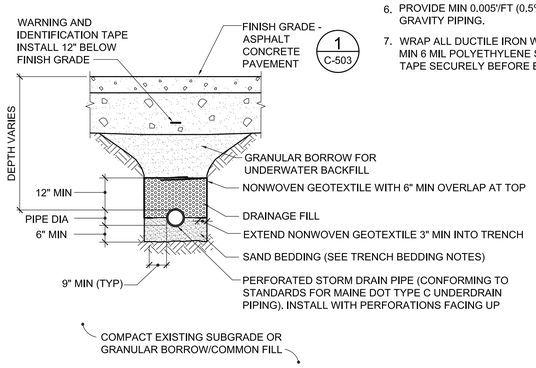


TYPICAL PIPE TRENCH



PERFORATED STORM DRAIN PIPE TRENCH

PIPE TRENCH NOTES:

1. INSTALL THERMOPLASTIC (PVC, HDPE) GRAVITY PIPING IN ACCORDANCE WITH ASTM D 2321. SEE ALSO PIPE TRENCH BEDDING NOTES.
2. INSTALL WATER SUPPLY PIPING IN ACCORDANCE WITH PORTLAND WATER DISTRICT WRITTEN INSTRUCTIONS. BEDDING REQUIRED IS INDICATED IN PIPE TRENCH BEDDING NOTES.
3. ALL EXCAVATION WORK SHALL COMPLY WITH OSHA STANDARDS. TRENCH SIDEWALLS SHALL BE VERTICAL FROM TRENCH BOTTOM TO 12" ABOVE TOP OF PIPE.
4. PROVIDE A MINIMUM OF 6" VERTICAL CLEARANCE BETWEEN CROSSING PIPES.
5. MAINTAIN THE FOLLOWING DEPTH OF COVER FOR EACH SERVICE:

SERVICE	MIN DEPTH OF COVER
WATER SUPPLY	5'-6"
SANITARY SEWER	4'-6"*
NATURAL GAS	3'-0"
STORM DRAIN	AS INDICATED

*WHERE DEPTH OF COVER IS LESS THAN MINIMUM DEPTH, PROVIDE 2" THICK RIGID INSULATION ABOVE AND ON EITHER SIDE OF PIPE (LOCATION AS INDICATED ON SHEET CU101).

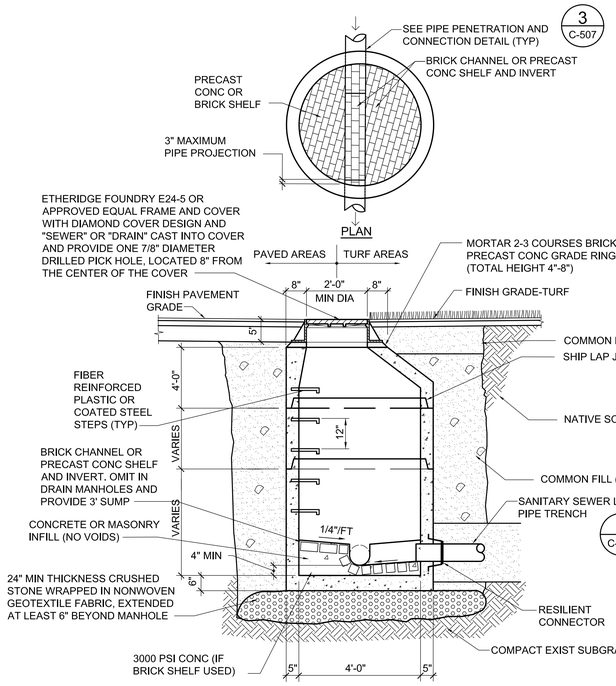
6. PROVIDE MIN 0.005'/FT (0.5%) PITCH ON ALL GRAVITY PIPING.
7. WRAP ALL DUCTILE IRON WATER PIPING IN MIN 6 MIL POLYETHYLENE SHEETING AND TAPE SECURELY BEFORE BURYING.

PIPE TRENCH BEDDING NOTES:

1. PIPE BEDDING SHALL BE ASTM D 2321, CLASS 1B OR II BEDDING, EXCEPT WITH 100 PERCENT PASSING A 1" SIEVE AND GREATER THAN 75 PERCENT PASSING A NO. 4 SIEVE, EXCEPT AS FOLLOWS:
   a. STORM DRAINAGE PIPING: ASTM D 2321, CLASS 1B OR II BEDDING, EXCEPT WITH 100 PERCENT PASSING A 1" SIEVE
   b. SEWER PIPING:
      i. BOTTOM OF TRENCH TO TOP OF PIPE: PROVIDE 3/4" CRUSHED STONE.
      ii. TOP OF PIPE TO 6" MIN ABOVE PIPE: PROVIDE ASTM D 2321 CLASS 1B OR II BEDDING, EXCEPT WITH 100 PERCENT PASSING A 1" SIEVE.
      iii. EXCEPT FOR PERFORATED STORM DRAIN LINES, REPLACE BEDDING WITH NATIVE MATERIAL FOR A 5' SECTION EVERY 200' TO MAINTAIN PERMEABILITY RATE WITH SURROUNDING MATERIAL.

1 PIPE TRENCH DETAILS

CU101,CU102,CU103,CU104,CG101,CG102
C-505,C-506,C-507,C-509,C-510
1 / C-507 NOT TO SCALE

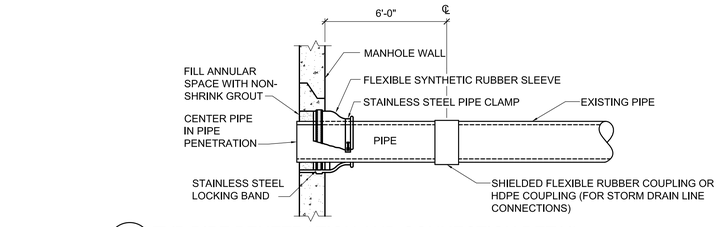


MANHOLE NOTES:

1. MANHOLE FRAME AND COVERS SHALL BE IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS, AND FIGURES II-1, II-4, II-5, AND II-6 OF THE MOST RECENT VERSION OF THE CITY OF PORTLAND TECHNICAL MANUAL.
2. CONCRETE: 5,000 PSI AFTER 28 DAYS.
3. PROVIDE REINFORCING TO ACHIEVE AASHTO HS-20 LOADING CLASSIFICATION (32,000 POUND AXLE LOAD).
4. SHIPLAP JOINTS SHALL BE SEALED WITH 2 STRIPS OF 1" DIA BUTYL RUBBER SEALANT.
5. PROVIDE LOCK JOINT FLEXIBLE PIPE SLEEVES, CAST INTO BASE.
6. EACH CASTING TO HAVE LIFTING HOLES CAST IN. PLUG LIFTING HOLES WITH GROUT AFTER PLACING MANHOLE.
7. PROVIDE MANHOLE STEPS @ 12" OC.
8. INVERT BRICKS SHALL BE LAID ON EDGE.
9. APPLY WATERPROOFING COATING TO EXTERIOR SURFACE OF ALL SEWER MANHOLES.
10. EXCAVATE TO SUBGRADE IN SOFT GRAY CLAY AND NATIVE BROWN SILTY CLAYS USING A SMOOTH-EDGE BUCKET.

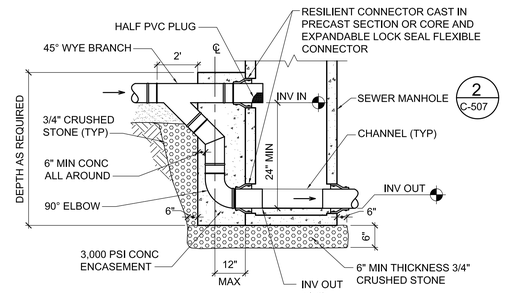
2 TYP MANHOLE DETAIL

CU101,CG101,CG102,C-507,C-510
2 / C-507 NOT TO SCALE



3 TYP PIPE PENETRATION AND CONNECTION DETAIL

CU101,CG101,C-507
3 / C-507 NOT TO SCALE

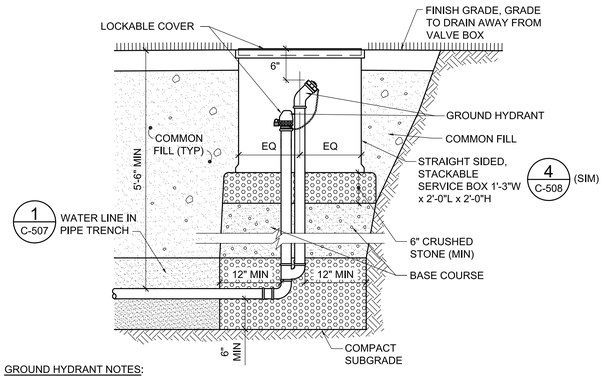


NOTES:

1. FOR ADDITIONAL REQUIREMENTS, SEE DETAIL 2/C-507.
2. DROP MANHOLE SHALL CONFORM TO CITY OF PORTLAND'S WRITTEN REQUIREMENTS (TECHNICAL MANUAL FIGURE II-3)

4 DROP MANHOLE DETAIL

CU101
4 / C-507 NOT TO SCALE



GROUND HYDRANT NOTES:

1. PROVIDE FREEZE PROOF SANITARY GROUND HYDRANT WITH VACUUM BREAKER AND BACKFLOW PREVENTION.
2. INSTALL GROUND HYDRANT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

8 TYPICAL GROUND HYDRANT DETAIL

CU102
8 / C-507 NOT TO SCALE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF MAINE — JONAH DeWATERS No. 12273 — LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JSD
CHECKED BY: JSD
DATE: 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
LOCATION: NEW FRED P. HALL ELEMENTARY SCHOOL, 23 ORONO ROAD, PORTLAND, ME (CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG: UTILITY DETAILS - 1

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-507
SHEET NO. 35 OF 53

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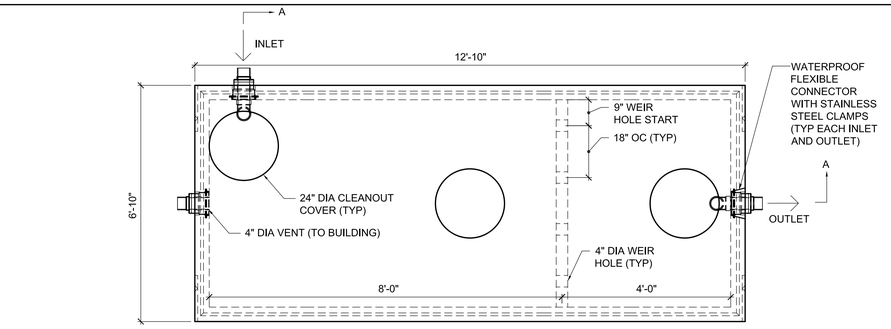
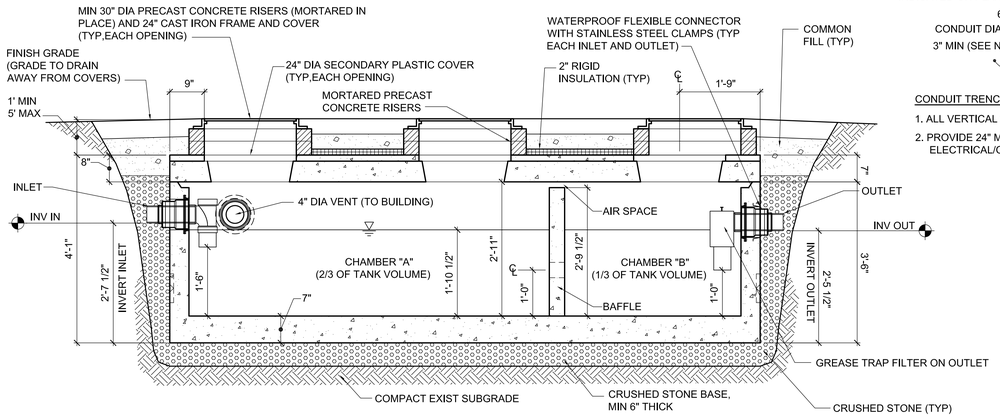




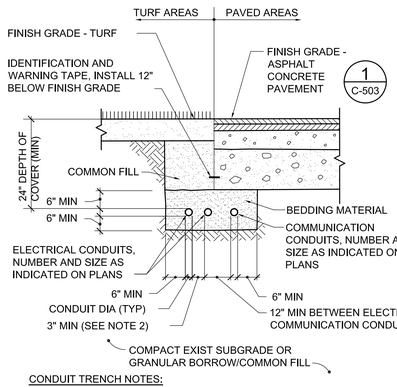
SECTION A-A

GREASE TRAP NOTES:

1. GREASE TRAP SHALL CONFORM TO CITY OF PORTLAND'S WRITTEN REQUIREMENTS (TECHNICAL MANUAL FIGURE II-19).
2. DIMENSIONS INDICATED ARE BASED ON ONE MANUFACTURER AND ARE APPROXIMATE.
3. CONCRETE SHALL BE MINIMUM 5000 PSI 28-DAY COMPRESSIVE STRENGTH.
4. PROVIDE REINFORCING TO ACHIEVE AASHTO HS-20 LOADING CLASSIFICATION (32,000 POUND AXLE LOAD).
5. TEES SHALL BE SCHEDULE 40 PVC WITH SOLVENT CEMENT JOINTS.
6. KEYED JOINTS SHALL BE SEALED WITH BUTYL RUBBER SEALANT.
7. PRECAST CONCRETE GREASE TRAP SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C1227.

1 1,000 GALLON GREASE TRAP DETAIL

CU101 — C-508 — NOT TO SCALE

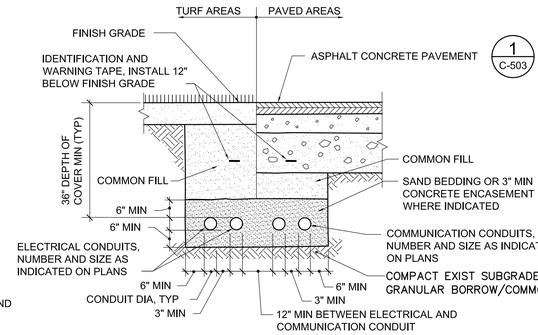


CONDUIT TRENCH NOTES:

1. ALL VERTICAL CONDUIT BENDS AND RISERS SHALL BE RIGID GALV STEEL.
2. PROVIDE 24" MIN SEPARATION BETWEEN GAS LINES AND ELECTRICAL/COMMUNICATIONS CONDUITS.

2 CONDUIT TRENCH DETAIL

C-508 — NOT TO SCALE

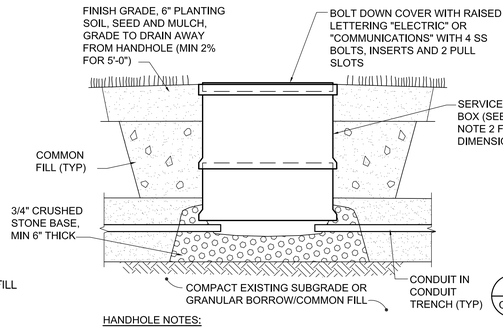


SERVICE LINE TRENCH NOTES:

1. CONFORM TO LOCAL UTILITY COMPANY REQUIREMENTS FOR MATERIALS AND INSTALLATION OF UNDERGROUND SERVICE ENTRANCE.
2. PROVIDE 24" MIN SEPARATION BETWEEN GAS LINES AND ELECTRICAL/COMMUNICATIONS CONDUITS.

3 ELECTRIC AND COMMUNICATIONS SERVICE TRENCH DETAIL

CU101 — C-508 — NOT TO SCALE

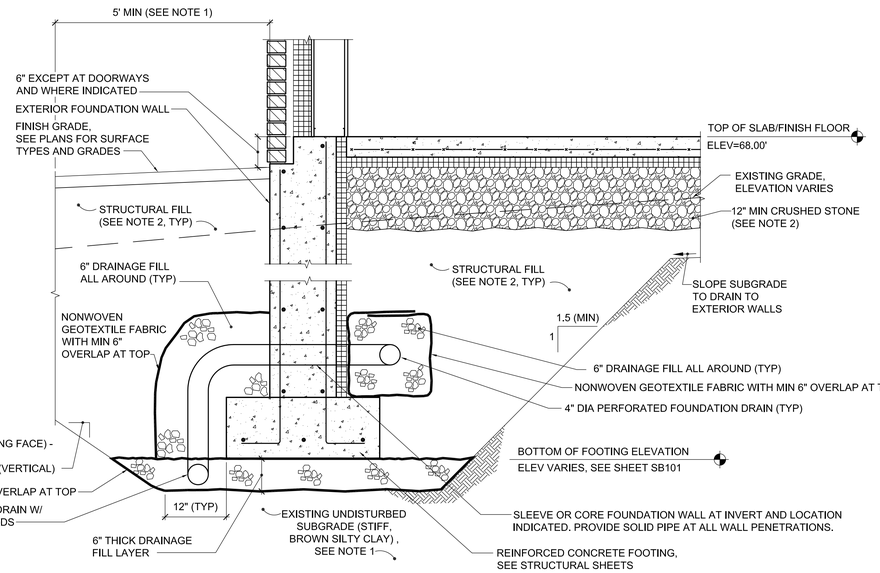


HANDHOLE NOTES:

1. HANDHOLE BODIES 2'-0" DEEP AND LESS SHALL BE ONE PIECE CONSTRUCTION.
2. APPROXIMATE SERVICE BOX DIMENSIONS ARE AS FOLLOWS:
   a. LIGHTING CONDUIT: 18" x 18" x 2'-0" HIGH
   b. ELECTRICAL/COMMUNICATIONS CONDUIT: 2'-6" x 2'-6" x 2'-0" HIGH

4 TYP HANDHOLE DETAIL

CU101,CU102,C-507 — C-508 — NOT TO SCALE

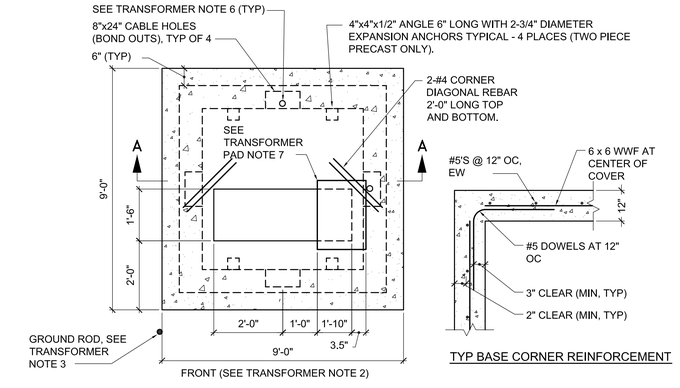


NOTES:

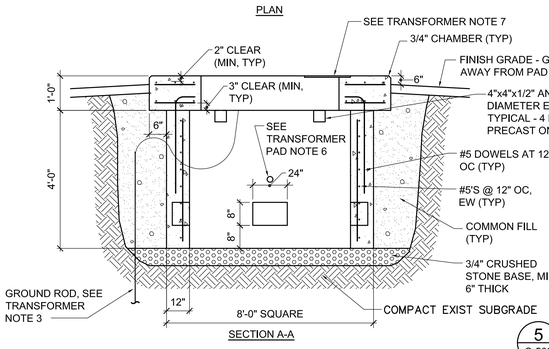
1. EXISTING FOOTING SUBGRADE SOILS ARE SUSCEPTIBLE TO WEAKENING IF WET OR DISTURBED. EXCAVATE FOR FOOTINGS USING A SMOOTH-EDGED BUCKET TO PREVENT DISTURBANCE. IF SUBGRADE BECOMES WET OR DISTURBED, OVER-EXCAVATE AND RE-FILL WITH SUITABLE MATERIAL AS DIRECTED BY THE OWNER/ARCHITECT AT NO COST TO THE OWNER.
2. BACKFILL WITH STRUCTURAL FILL WITHIN 12" OF FOOTINGS AND 5' OF FOUNDATION WALLS. PROVIDE 12" MIN CRUSHED STONE BENEATH ALL INTERIOR SLABS.
3. MAXIMUM PARTICLE SIZE IN ANY MATERIAL WITHIN 12" OF FOOTINGS, FOUNDATION WALLS AND FLOOR SLABS SHALL BE 3".

6 TYP FOUNDATION PREPARATION AND DRAIN DETAIL

CU101,C-508,SB501,SB502 — C-508 — NOT TO SCALE



TYP BASE CORNER REINFORCEMENT

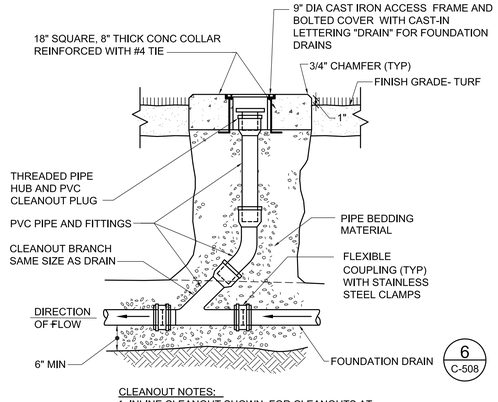


TRANSFORMER PAD NOTES:

1. TRANSFORMER PAD SHALL COMPLY WITH ILLUSTRATION NO. 25, "LARGE (9'x9') THREE PHASE TRANSFORMER FOUNDATION" OF THE "CENTRAL MAINE POWER HANDBOOK OF REQUIREMENTS FOR ELECTRIC SERVICE AND METER INSTALLATIONS."
2. "FRONT" DENOTES THE SIDE ON WHICH THE ACCESS DOORS ARE LOCATED.
3. PROVIDE A 3/4" DIA. x 8' LONG COPPER CLAD GROUND ROD. INSTALL 6" IN FRONT OF THE LEFT FRONT CORNER OF THE FOUNDATION. THE TOP OF THE GROUND ROD SHALL BE 6" BELOW FINAL GRADE. A GROUND WIRE SHALL BE INSTALLED FROM THE GROUND ROD THROUGH THE CABLE HOLE AT THE BOTTOM OF THE PAD. 20' OF GROUND WIRE SHALL BE PROVIDED SO THAT IT CAN BE INSTALLED THROUGH THE TWO GROUNDING LUGS AND CONNECTED TO THE NEUTRAL SPADE.
4. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 PSI @ 28 DAYS. FOR CAST-IN-PLACE EARLY HIGH STRENGTH MAY BE USED WITH A MINIMUM OF SEVEN DAY CURE TIME. REINFORCING STEEL SHALL BE Fy = 60KSI
5. FOR PRECAST UNITS: THE PRECAST SUPPLIER SHALL PROVIDE LIFTING LUGS IN THE SLAB (FOUNDATION) AND BASE; THE PRECAST SUPPLIER SHALL ASSEMBLE THE SLAB TO THE BASE PRIOR TO SHIPPING TO THE SITE TO ENSURE THAT THE SLAB AND BASE FIT PROPERLY (WITH NO ROCKING OF THE SLAB EVIDENT).
6. PULLING EYE INSERT, FOR USE WITH 3/4" NATIONAL COURSE THREAD EYE-BOLT (RICHMOND LCB-1 OR EQUIVALENT) LOCATED OPPOSITE EACH CABLE HOLE AND 2' FROM BOTTOM.
7. USE A 24"x24"x1/4" THICK GALVANIZED STEEL PLATE TO COVER A PORTION OF THE CABLE HOLE WHEN THE TRANSFORMER DOES NOT COMPLETELY COVER IT. CUT THE STEEL PLATE TO FIT, IF NECESSARY. GALVANIZE ALL CUT EDGES OF THE PLATE.

5 TRANSFORMER PAD DETAIL

CS101,CU101 — C-508 — NOT TO SCALE



CLEANOUT NOTES:

1. INLINE CLEANOUT SHOWN. FOR CLEANOUTS AT THE END OF LINES, PROVIDE 45 DEGREE BEND IN LIEU OF WYE.

7 FOUNDATION DRAIN CLEANOUT DETAIL

CU101 — C-508 — NOT TO SCALE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
LOCATION: NEW FRED P. HALL ELEMENTARY SCHOOL, 23 ORONO ROAD, PORTLAND, ME (CHART 275, BLOCK 034B, LOT 001)

TITLE THIS DWG: UTILITY DETAILS - 2

STATE OF MAINE — JONAH DeWATERS No 12273 — LICENSED PROFESSIONAL ENGINEER

DRAWN BY: JSD
CHECKED BY: JSD
DATE: 01/31/17

DRAWING NO. C-508
SHEET NO. 36 OF 53

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

OAK POINT ASSOCIATES — ARCHITECTURE ● ENGINEERING ● PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

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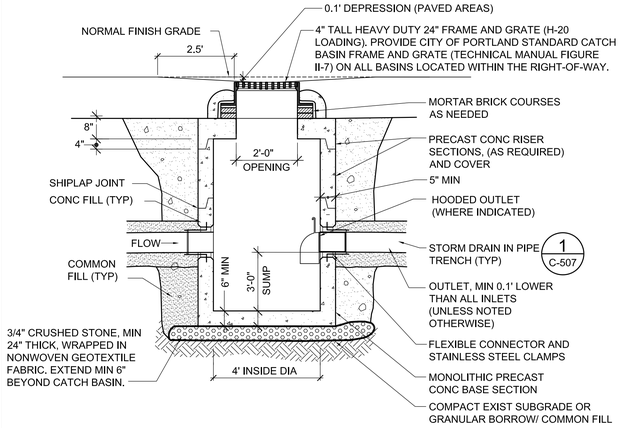
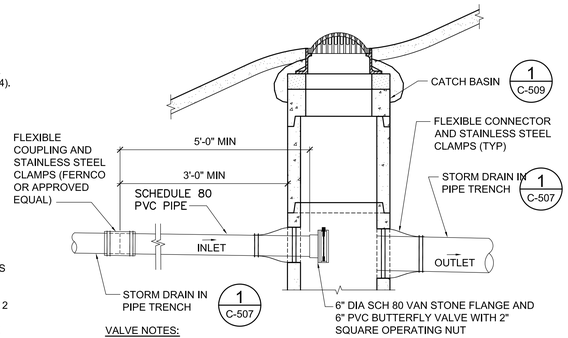


1 C-509 TYPICAL CATCH BASIN DETAIL

CU101,CG101,CG102, C-509,C-510 NOT TO SCALE

CATCH BASIN NOTES:

1. CATCH BASINS SHALL CONFORM TO CITY OF PORTLAND'S WRITTEN REQUIREMENTS (TECHNICAL MANUAL FIGURES II-2 AND II-4).
2. CONCRETE SHALL BE MIN F'c=5,000 PSI.
3. PROVIDE REINFORCING TO ACHIEVE AASHTO HS-20 LOADING CLASSIFICATION (32,000 POUND AXLE LOAD).
4. CATCH BASINS SHALL CONFORM TO ASTM C478, UNLESS INDICATED OTHERWISE.
5. PROVIDE PIPE PENETRATIONS AS INDICATED ON PLANS.
6. SHIPLAP JOINTS SHALL HAVE 2 STRIPS OF 1" DIA BUTYL RUBBER SEALANT, RAM-NEK GASKET OR APPROVED EQUAL.
7. PROVIDE LOCK JOINT FLEXIBLE PIPE SLEEVES, CAST IN OR GASKET WITH EXPANSION SLEEVE.
8. EACH CASTING TO HAVE LIFTING HOLES CAST IN. PLUG LIFTING HOLES WITH GROUT AFTER PLACING MANHOLE.
9. PROVIDE REMOVABLE HYDROCARBON ABSORBING SOCK (SUMP SKIMMER) IN ALL CATCH BASINS LOCATED IN PAVED AREAS EXCEPT ON RIGGS STREET AND LOMOND STREET UNLESS INDICATED OTHERWISE.

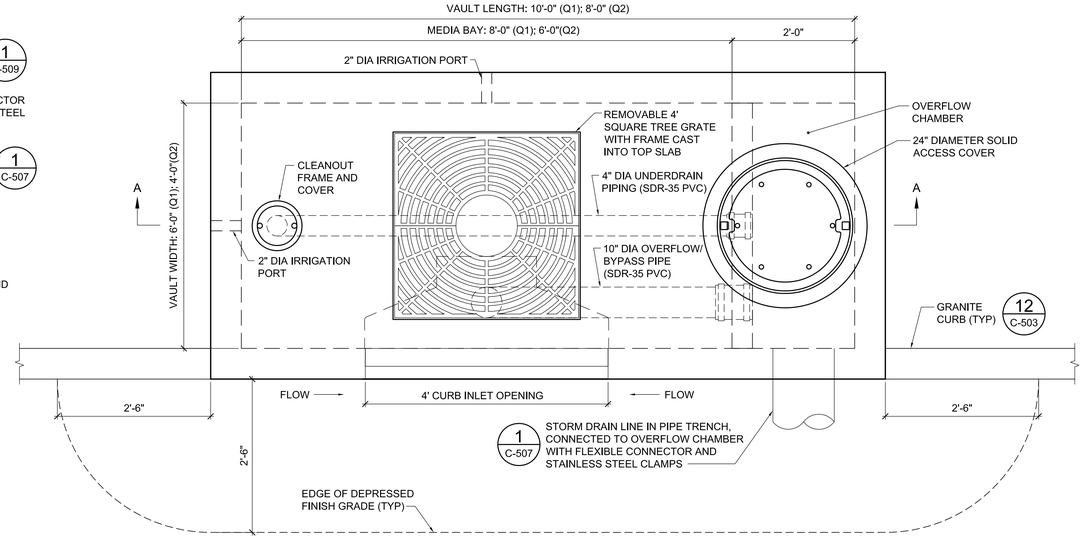


VALVE NOTES:

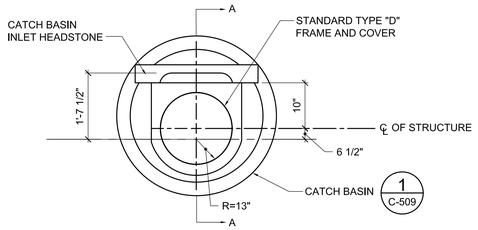
1. ALIGN VALVE SO THAT OPERATING NUT CAN BE ACCESSED USING A STANDARD 2" SQUARE DRIVE OPERATOR WITHOUT ENTERING THE CATCH BASIN.
2. VALVE SHALL BE STANDARD PVC BUTTERFLY VALVE, ETHYLENE PROPYLENE DIENE TERPOLYMER (EPDM) SEAT, WITH 2" SQUARE OPERATING NUT (SPEARS MANUFACTURING COMPANY VALVE NUMBER 722301-060, OR APPROVED EQUAL).

2 C-509 TYP VALVE DETAIL

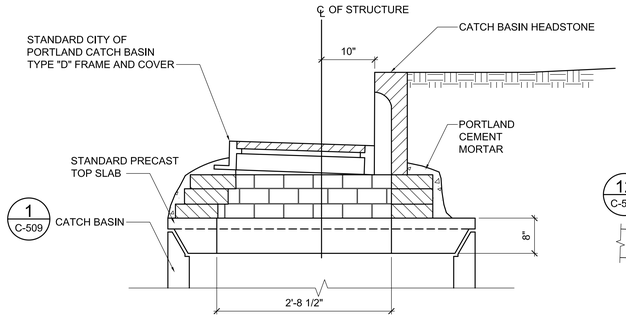
CU101,CG101,CG102,C-510 NOT TO SCALE



PLAN VIEW

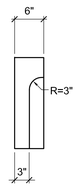


PLAN VIEW
COVER,FRAME AND STONE

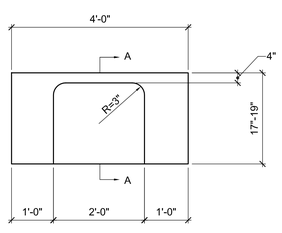


CATCH BASIN INLET SECTION A-A

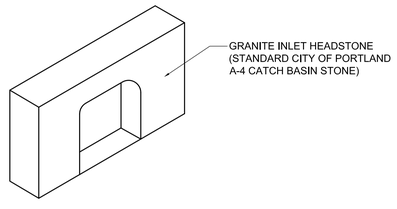
PRECAST CONCRETE CATCH BASIN - TYPE "E"



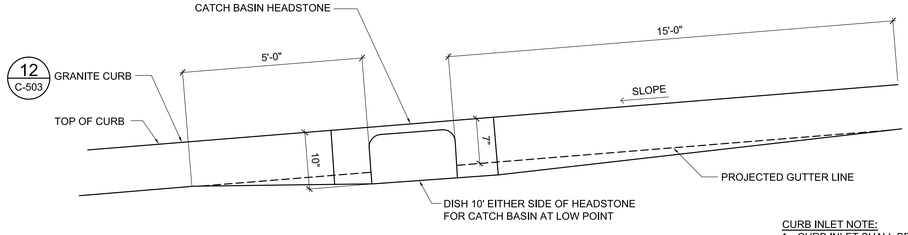
SECTION A-A



FRONT VIEW



4' GRANITE HEADSTONE FOR CATCH BASIN INLET



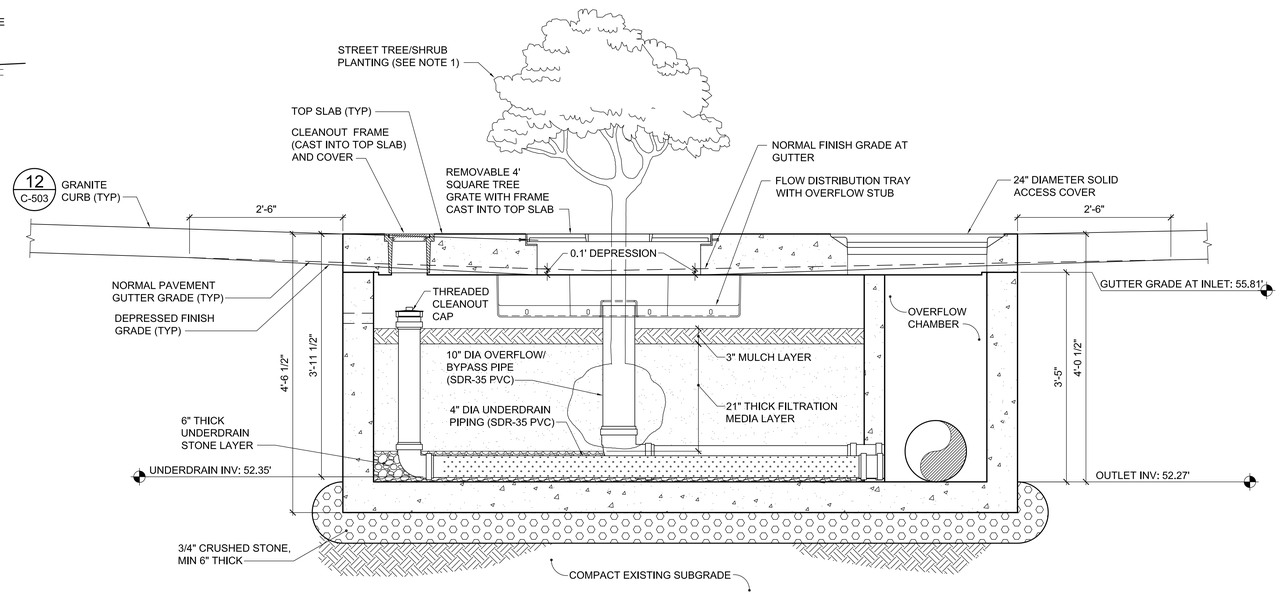
TYPICAL PAVEMENT GRADING ON SLOPES FOR CATCH BASIN AND INLET

CURB INLET NOTE:

1. CURB INLET SHALL BE ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS (TECHNICAL MANUAL FIGURES II-2, II-7, II-10, AND II-11)

4 C-509 CURB INLET DETAILS

CG102 NOT TO SCALE



SECTION A-A

TREE BOX FILTER NOTES:

1. COORDINATE TREE/SHRUB SELECTION WITH MANUFACTURER'S RECOMMENDATIONS AND CITY OF PORTLAND REQUIREMENTS.
2. BASIS OF DESIGN PRODUCT: (Q1) FILTERRA FTIBC-C 8x6 AND FTIBC-C 6x4. ALTERNATE TREE BOX FILTERS SELECTED SHALL BE APPROVED FOR USE BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION. PROVIDE WRITTEN DOCUMENTATION OF DEP APPROVAL PRIOR TO INSTALLATION.
3. DIMENSIONS INDICATED ARE BASED ON ONE MANUFACTURER. COORDINATE FINAL DIMENSIONS WITH MANUFACTURER'S RECOMMENDATIONS FOR PRODUCT SELECTED.
4. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS. COORDINATE COMMISSIONING OF UNITS WITH MANUFACTURER AND ARCHITECT.

3 C-509 TREE BOX FILTER DETAILS

CG102,CS103,CU103 NOT TO SCALE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: JSD
CHECKED BY: JSD
DATE: 01/31/17

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK 024B, LOT 001)

TITLE THIS DWG: UTILITY DETAILS - 3

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-509
SHEET NO. 37 OF 53

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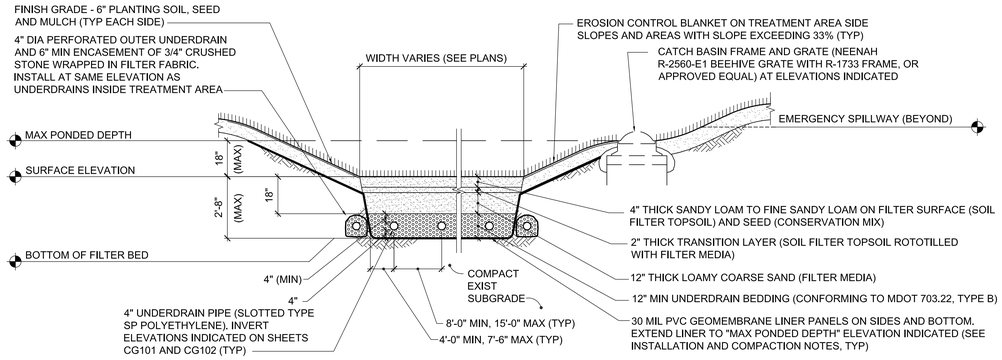


GRASSED UNDERDRAINED SOIL FILTER SCHEDULE										
TREATMENT AREA	SURFACE ELEV	MAXIMUM PONDED ELEV	TOB ELEV	SPILLWAY ELEV	DRAIN STRUCTURE	LINED	BOTTOM OF FILTER BED ELEV	PERIMETER AT BOTTOM	BOTTOM SURFACE AREA	SURFACE AREA AT MAX PONDED ELEV
Q5	62.00	63.00	64.00	63.50	CB25	YES	60.70	289'	718 SF	1615 SF
Q6	62.87	64.37	65.80	65.16	CB26	YES	61.70	307'	1456 SF	2901 SF
Q4	59.50	61.00	62.25	61.75	CB27	YES	57.22	223'	2079 SF	3148 SF

GRASSED UNDERDRAINED SOIL FILTER NOTES

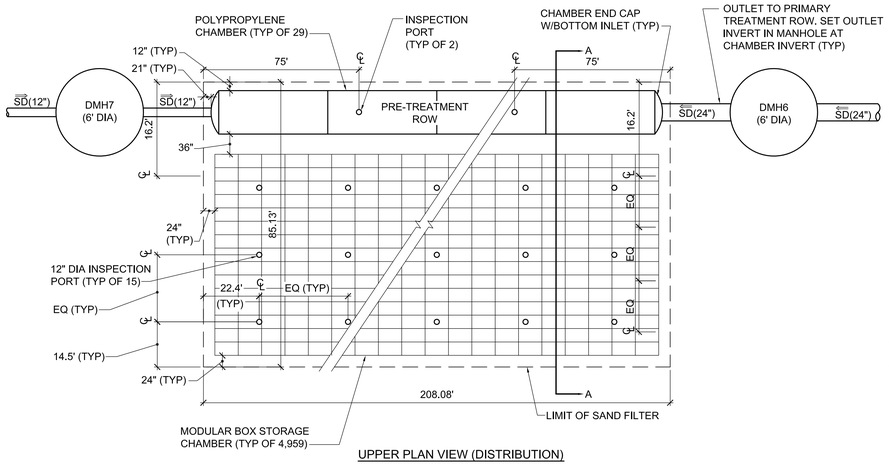
1. PROVIDE THE FOLLOWING SEED MIXTURE OR APPROVED EQUAL ON THE BOTTOM AND SIDES OF ALL TREATMENT AREAS (APPLY SEED MIXTURE AT 23 LB/ACRE OR AS RECOMMENDED BY SEED SUPPLIER):

   35% LITTLE BLUESTEM
   25% INDIAN GRASS
   20% VIRGINIA WILD RYE
   10% BIG BLUESTEM
   5% SWITCH GRASS
   5% CREEPING RED FESCUE

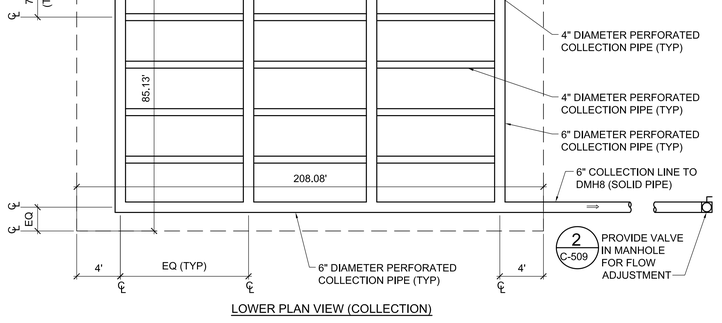
2. FILTER MEDIA AND SOIL TOPSOIL SHALL CONFORM TO THE GRADATIONS INDICATED ON THIS DRAWING AND BE FREE FROM ADMIXTURES OF SUBSOIL, REFUSE, GLASS, STONES GREATER 2", CLODS, ROOTS AND OTHER UNDESIRABLE FOREIGN MATTER.
3. FILTER TOPSOIL SHALL CONTAIN 5%-8% HUMIFIED ORGANIC MATTER.
4. SOIL FILTERS SHALL NOT BE INSTALLED UNTIL THE WATERSHED AREAS THAT DRAIN TO THE FILTERS HAVE BEEN PERMANENTLY STABILIZED WITH 90% VEGETATION OR OTHER FINAL SURFACES HAVE BEEN CONSTRUCTED.

1 GRASSED UNDERDRAINED SOIL FILTER DETAIL

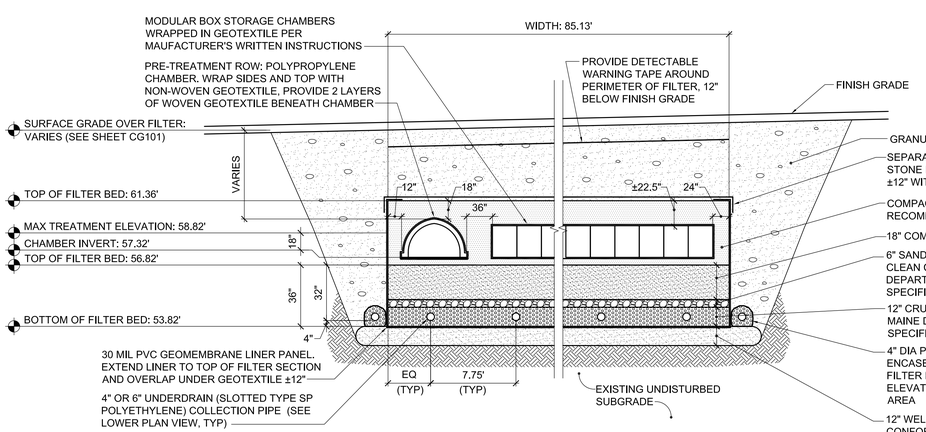
CS101,CS102,CS103,CU101,CU102,CU103,CG101,CG102,LS101 — 1 / C-510 — NOT TO SCALE



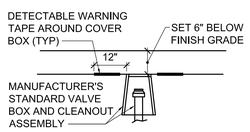
UPPER PLAN VIEW (DISTRIBUTION)



LOWER PLAN VIEW (COLLECTION)



SECTION A-A



TYP INSPECTION PORT DETAIL

UNDERDRAINED SUBSURFACE SAND FILTER NOTES:

1. SEE SOIL AND SAND FILTER INSTALLATION/INSPECTION/MATERIAL NOTES, THIS SHEET.
2. CHAMBERS SELECTED SHALL ACCOMMODATE HS-20 LOADING.
3. DIMENSIONS ARE BASED ON ONE MANUFACTURER. BASIS OF DESIGN IS AS FOLLOWS:
   PRE-TREATMENT CHAMBERS: CULTEC 330XLHD
   MODULAR BOX CHAMBERS: ACF ENVIRONMENTAL R-TANK HD (SINGLE+MINI).
4. REQUIRED STORAGE VOLUME INSIDE CHAMBERS IS AS FOLLOWS:
   PRE-TREATMENT (EFFECTIVE STORAGE AFTER OVERLAP): 52.2 CF PER CHAMBER (38.6 CF AT 18")
   MODULAR BOX CHAMBERS (ASSUMES 95% VOID SPACE): 6.33 CF PER CHAMBER (4.4 CF AT 18")
5. INSTALL CHAMBERS AND CONNECT ALL PIPING TO CHAMBERS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
6. INSTALL INSPECTION AND CLEANOUT PORTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
7. GEOTEXTILES USED AROUND CHAMBERS SHALL CONFORM TO MANUFACTURER'S WRITTEN RECOMMENDATIONS.
8. SEE DRAWING CG101 FOR DRAINAGE STRUCTURE SCHEDULE.

2 UNDERDRAINED SUBSURFACE SAND FILTER DETAILS

CS102,CU102,CG101 — 2 / C-510 — NOT TO SCALE

SOIL AND SAND FILTER INSTALLATION/INSPECTION/MATERIAL NOTES:

INSTALLATION AND COMPACTION

1. INSTALL MATERIALS IN 2" TO 9" LIFTS.
2. COMPACT MATERIALS IN ACCORDANCE WITH ASTM D698 TO THE FOLLOWING LEVELS:
   a. FILTER MEDIA AND TOPSOIL: 80% TO 82% STANDARD PROCTOR
   b. SAND FILTER: 92% TO 95% STANDARD PROCTOR
   c. SAND FILTER TRANSITION LAYER: 90% TO 92% STANDARD PROCTOR
   d. UNDERDRAIN BEDDING: 90% TO 92% STANDARD PROCTOR

CONSTRUCTION INSPECTION/OVERSIGHT

1. THE OWNER SHALL RETAIN THE SERVICES OF AN INSPECTOR (DESIGN ENGINEER) TO INSPECT/OVERSEE THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES. ONCE ALL THE STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTOR (OR OWNER) SHALL NOTIFY THE DEP IN WRITING WITHIN 30 DAYS TO STATE THAT THE POND HAS BEEN COMPLETED. ACCOMPANYING THE NOTIFICATION SHALL BE A LOG OF THE INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION, THE ITEMS INSPECTED ON EACH VISIT, AND THE RESULTS OF THE INSPECTION. INCLUDE IN THE NOTIFICATION TESTING DATA/SIEVE ANALYSIS DATA OF MATERIALS THAT MAKE UP THE SOIL FILTER (TYPE B UNDERDRAIN MATERIAL, FILTER MEDIA AND FILTER TOPSOIL).
2. INSPECTION OF THE FILTER BASIN SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION, WITH REQUIRED REPORTING TO THE DEP, AT A MINIMUM, INSPECTIONS WILL OCCUR:
   a. AFTER PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED;
   b. AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA/FILTER SAND;
   c. AFTER THE FILTER MEDIA/FILTER SAND HAS BEEN INSTALLED.
   d. AFTER THE GRASSED UNDERDRAINED SOIL FILTER HAS BEEN SEEDED.
   e. AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS; AND
   f. ALL MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN IS SUBJECT TO APPROVAL BY THE INSPECTOR AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.
3. NOTIFY THE OWNER/INSPECTOR AT LEAST 72 HOURS PRIOR TO THE ANTICIPATED COMPLETION OF EACH OF THE ITEMS LISTED ABOVE TO COORDINATE TIMING OF INSPECTIONS.
4. UPON COMPLETION OF THE INSTALLATION OF THE SOIL FILTER SYSTEMS (INCLUDING CHAMBERS FOR SAND FILTER) AND THE ESTABLISHMENT OF 90% OF GRASS COVER IN THE GRASSED UNDERDRAINED SOIL FILTER, FLOOD THE VEGETATED BASIN TO THE DESIGN ELEVATIONS INDICATED WITH CLEAN WATER (OR OBSERVE DRAIN DOWN TIME FOLLOWING A BASIN FILLING RAIN). ADJUST THE VALVE ON THE UNDERDRAIN OUTLET TO OBTAIN A 24 TO 48 HOUR DRAIN DOWN TIME. AFTER DRAIN DOWN TIME IS WITHIN LIMITS INDICATED, PROVIDE THE CONTRACTING OFFICER/INSPECTOR WITH FINAL DRAIN DOWN TIME AND DATE(S) THE TEST WAS CONDUCTED. (2 / C-509)

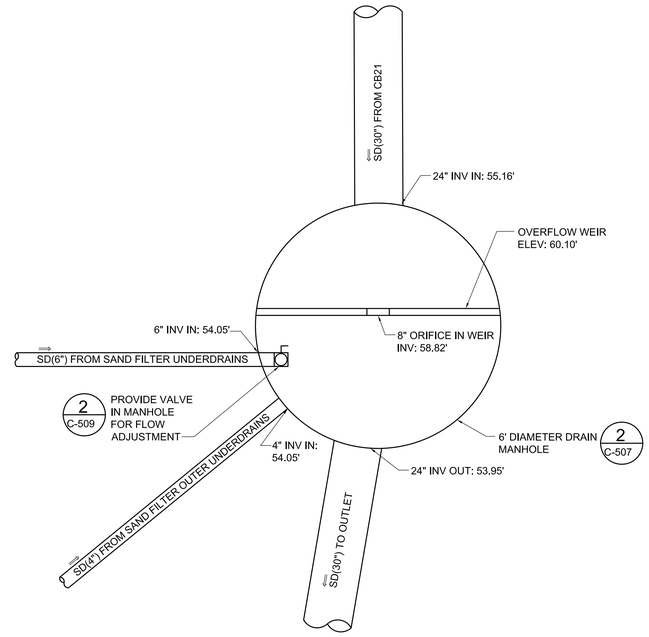
TESTING AND SUBMITTALS

TESTING AND SUBMITTALS: IDENTIFY THE LOCATION OF THE SOURCE OF EACH COMPONENT OF THE SOIL FILTER SYSTEMS. SAMPLES USED FOR ANALYSIS SHALL BE A COMPOSITE OF AT LEAST THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE (SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY). SUBMIT ALL RESULTS OF THE FOLLOWING FIELD AND LABORATORY TESTING TO THE OWNER/ARCHITECT FOR REVIEW AND APPROVAL:

a. PERFORM AND SUBMIT A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES; 1996a) FOR ALL MATERIALS USED TO CONFIRM THE MEET THE REQUIRED GRADATIONS.
b. PERFORM HYDROMETER TEST OF ASTM D422 AND ORGANIC CONTENT DETERMINATION FOR FILTER TOPSOIL AND FILTER MEDIA TO CONFIRM THEY MEET THE REQUIRED CLAY CONTENT AND ORGANIC CONTENT.
c. PERFORM A PERMEABILITY TEST ON THE SOIL FILTER MEDIA AND SOIL FILTER TOPSOIL CONFORMING TO ASTM D2434 WITH THE MIXTURE COMPACTED TO 80-82% OF MAXIMUM DRY DENSITY BASED ON ASTM D698. THE RESULTING PERMEABILITY SHALL BE BETWEEN 2.4 AND 4 INCHES PER HOUR.

MATERIAL GRADATION REQUIREMENTS			
SIEVE SIZE	% PASSING BY WEIGHT		
	FILTER MEDIA	FILTER TOPSOIL	FILTER SAND (MDOT 703.01)
2"	100	100	-
1"	-	-	-
3/4"	-	-	-
1/2"	-	-	-
3/8"	-	-	100
#4	-	75-95	95-100
#8	-	-	80-100
#10	85-100	60-90	-
#16	-	-	50-85
#20	70-100	-	-
#30	-	-	25-60
#40	-	35-85	-
#50	-	-	-
#60	15-40	-	10-30
#100	-	-	2-10
#200	8-15	20-70	0-5 (8-10% PREFERRED)
CLAY	< 2%	< 2%	-

MATERIAL GRADATION REQUIREMENTS (CONTINUED)		
SIEVE SIZE	% PASSING BY WEIGHT	
	MDOT 703.22, TYPE B	MDOT 703.22, TYPE C
2"	-	-
1"	95-100	100
3/4"	-	90-100
1/2"	75-100	-
3/8"	-	0-75
#4	50-100	0-25
#10	-	0-5
#20	15-80	-
#40	-	-
#50	0-15	-
#60	-	-
#200	0-5	-
CLAY	-	-



3 DRAIN MANHOLE 8 DETAIL

CG101,C-510 — 3 / C-510 — NOT TO SCALE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.: UTILITY DETAILS - 4

JONAH DeWATERS No 12273 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

DRAWN BY: JSD
CHECKED BY: JSD
DATE: 01/31/17

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C-510
SHEET NO. 38 OF 53

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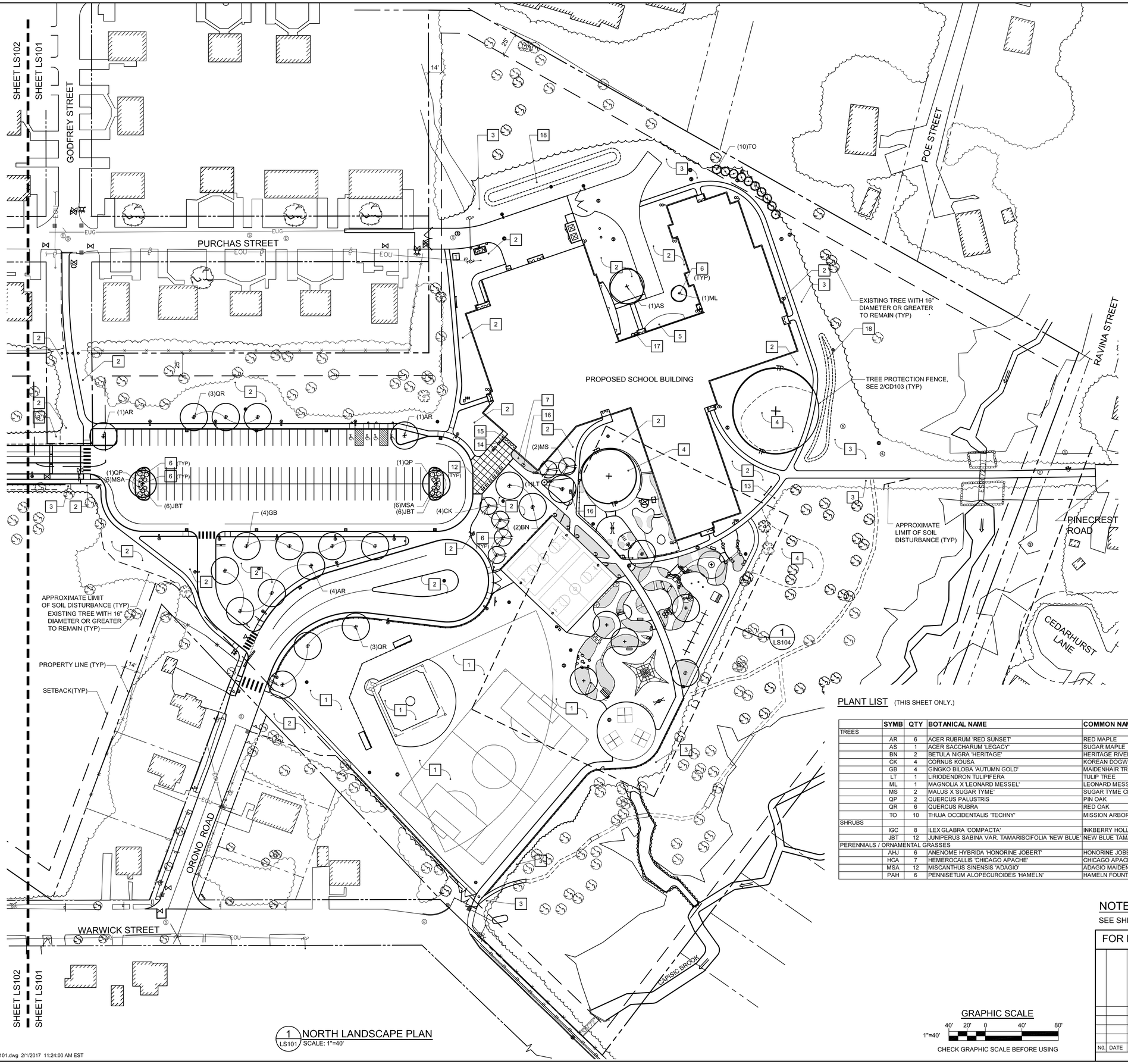

1 LS101 NORTH LANDSCAPE PLAN
SCALE: 1"=40'

GRID NORTH (NAD83)

KEYNOTES: (THIS SHEET ONLY.)

1. TURFGRASS-6" PLANTING SOIL AND SOD.
2. TURFGRASS-6" PLANTING SOIL, SEED (GENERAL LAWN SEED MIX), FERTILIZER AND MULCH ALL DISTURBED AREAS UNLESS INDICATED OTHERWISE.
3. MEADOW-6" PLANTING SOIL, SEED (RESTORATION AREA SEED MIX), FERTILIZER AND MULCH.
4. 6" THICK SHREDDED WOOD CHIPS (UNDER CANOPY OF TREES TO REMAIN).
5. 6" THICK PLANTING SOIL AND 3" SHREDDED BARK MULCH.
6. TREE PLANTING (TREE FURNISHED BY CONTRACTOR, INSTALLED BY OWNER). 1 / L-502
7. MAIN ENTRANCE PLANTINGS. 6 / L-502
8. SHRUB, PERENNIAL AND ORNAMENTAL GRASS PLANTING. 4 / L-502
9. – 11. NOT USED.
12. BICYCLE RACK MOUNTED TO REINFORCED CONCRETE SIDEWALK.
13. RELOCATE SALVAGED BICYCLE RACK ON (2) 12" OD X 48" CONCRETE FOOTINGS.
14. BENCH, TYPE 'A'.
15. TRASH RECEPTACLE.
16. RELOCATE SALVAGED GRANITE BENCH.
17. RAIN BARRELS (BY OWNER).
18. GRASSED, UNDERDRAINED SOIL FILTER. 1 / C-510

PLANT LIST (THIS SHEET ONLY.)

	SYMB	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENT
TREES						
	AR	6	ACER RUBRUM 'RED SUNSET'	RED MAPLE	2.5"-3" CAL.	STRAIGHT TRUNK; DENSE, UNIFORM BRANCHING
	AS	1	ACER SACCHARUM 'LEGACY'	SUGAR MAPLE	2.5"-3" CAL.	STRAIGHT TRUNK; DENSE, UNIFORM BRANCHING
	BN	2	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	2"-2.5" CAL.	SINGLE STEM; DENSE, UNIFORM BRANCHING
	CK	4	CORNUS KOUSA	KOREAN DOGWOOD	10' - 12' HT	MULTI-TRUNK, 3-5 CANES; DENSE, UNIFORM BRANCHING
	GB	4	GINGKO BILOBA 'AUTUMN GOLD'	MAIDENHAIR TREE	2"-2.5" CAL.	STRAIGHT TRUNK; UNIFORM BRANCHING
	LT	1	LIRIODENDRON TULIPIFERA	TULIP TREE	2"-2.5" CAL.	STRAIGHT TRUNK; DENSE, UNIFORM BRANCHING
	ML	1	MAGNOLIA X 'LEONARD MESSEL'	LEONARD MESSEL MAGNOLIA	2"-2.5" CAL.	STRAIGHT TRUNK; DENSE, BALANCED HEAD
	MS	2	MALUS X 'SUGAR TYME'	SUGAR TYME CRABAPPLE	2.5"-3" CAL.	STRAIGHT TRUNK; DENSE, BALANCED HEAD
	QP	2	QUERCUS PALUSTRIS	PIN OAK	2.5"-3" CAL.	STRAIGHT TRUNK; DENSE, UNIFORM BRANCHING
	QR	6	QUERCUS RUBRA	RED OAK	2.5"-3" CAL.	STRAIGHT TRUNK; DENSE, UNIFORM BRANCHING
	TO	10	THUJA OCCIDENTALIS 'TECHNY'	MISSION ARBORVITAE	8'-10' HT	FULL TO GROUND; DENSE FOLIAGE; STRAIGHT
SHRUBS						
	IGC	8	ILEX GLABRA 'COMPACTA'	INKBERRY HOLLY	18"-24" HT	DENSE FORM; WELL ROOTED; PROVIDE (1) MALE FOR POLLINATION
	JBT	12	JUNIPERUS SABINA VAR. TAMARISCIFOLIA 'NEW BLUE'	NEW BLUE TAMARIX JUNIPER	2 GAL.	DENSE BRANCHING; WELL ROOTED, GOOD COLOR
PERENNIALS / ORNAMENTAL GRASSES						
	AHJ	6	ANENOME HYBRIDA 'HONORINE JOBERT'	HONORINE JOBERT WINDFLOWER	1 GAL	WELL ROOTED IN POT; GOOD COLOR
	HCA	7	HEMEROCALLIS 'CHICAGO APACHE'	CHICAGO APACHE DAYLILY	1 GAL	WELL ROOTED IN POT; GOOD COLOR
	MSA	12	MISCANTHUS SINENSIS 'ADAGIO'	ADAGIO MAIDEN GRASS	2 GAL.	FULL IN POT; GOOD COLOR
	PAH	6	PENNISETUM ALOPECUROIDES 'HAMELN'	HAMELN FOUNTAIN GRASS	1 GAL	FULL IN POT; GOOD COLOR

NOTE:

SEE SHEET CD104 FOR TREE REMOVALS.

GRAPHIC SCALE
1"=40' — 40' 20' 0 40' 80'
CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

LICENSED LANDSCAPE ARCHITECT — ALLISON TOWNE DIMATTEO — No. 2403 — STATE OF MAINE — Jan 31, 2017

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG:
NORTH LANDSCAPE PLAN

DRAWN BY: ATD
CHECKED BY: KSP
NO.
DATE: 01/31/17

OAK POINT ASSOCIATES — ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 — 207.283.0193

DRAWING NO. LS101
SHEET NO. 39 OF 53

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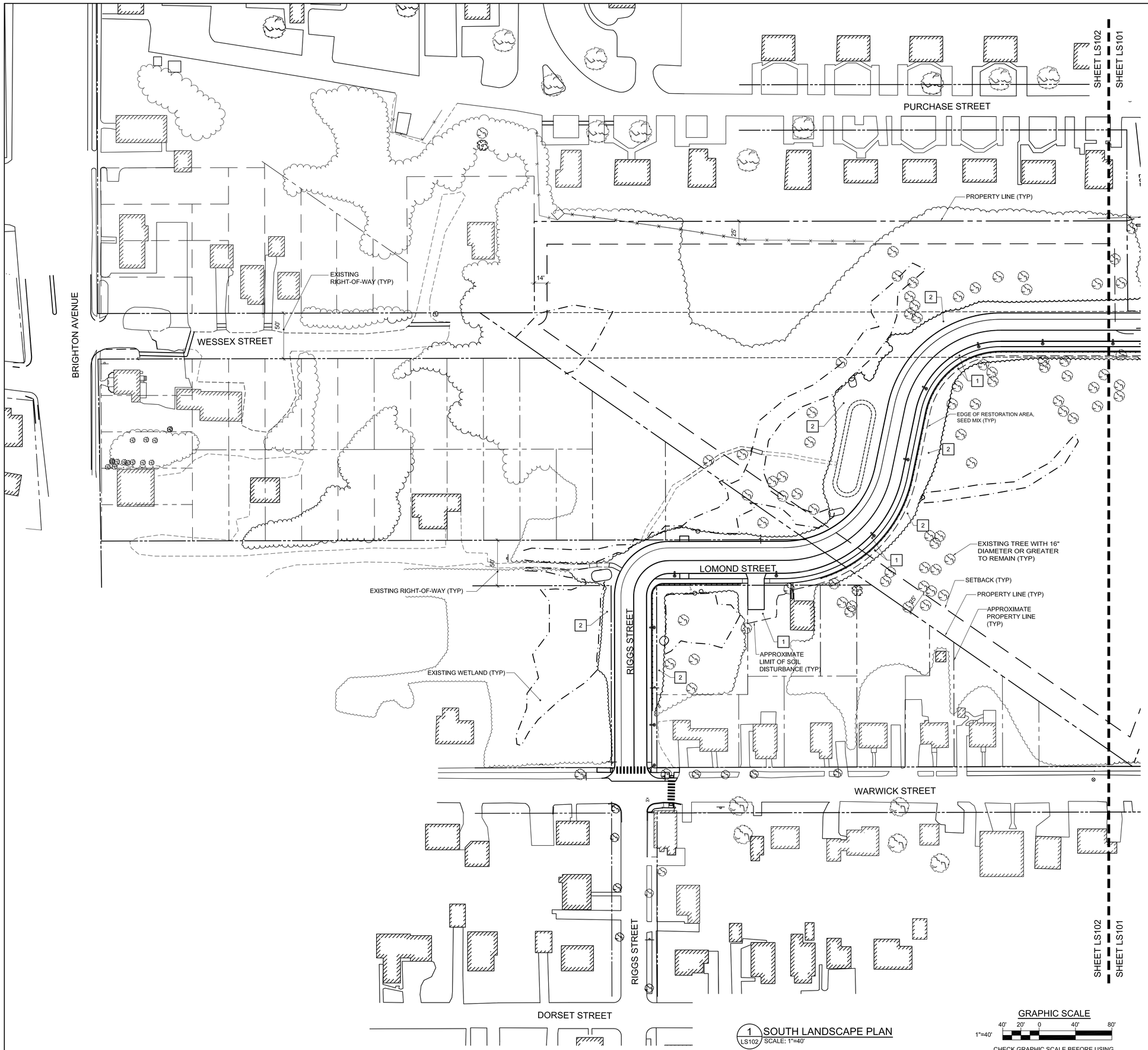

1 SOUTH LANDSCAPE PLAN
LS102 SCALE: 1"=40'

GRAPHIC SCALE
1"=40' 40' 20' 0 40' 80'
CHECK GRAPHIC SCALE BEFORE USING

KEYNOTES: (THIS SHEET ONLY.)

1 TURFGRASS-6" PLANTING SOIL, SEED (GENERAL LAWN SEED MIX), FERTILIZER AND MULCH ALL DISTURBED AREAS UNLESS INDICATED OTHERWISE.

2 MEADOW-6" PLANTING SOIL, SEED (RESTORATION AREA SEED MIX), FERTILIZER AND MULCH.

NOTE:

SEE SHEET CD104 FOR TREE REMOVALS.

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

LICENSED LANDSCAPE ARCHITECT
Jan 31, 2017
ALLISON TOWNE DIMATTEO
No. 2403
STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG.
SOUTH LANDSCAPE PLAN

DRAWN BY: ATD
CHECKED BY: KSP
NO.
DATE: 01/31/17

OAK POINT ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. LS102
SHEET NO. 40 OF 53

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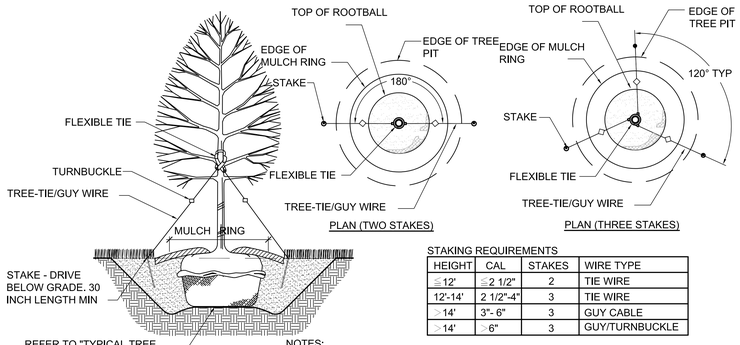


STAKING REQUIREMENTS

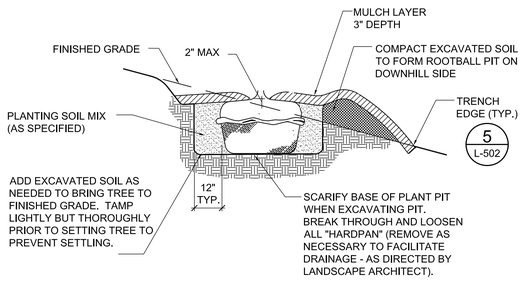
HEIGHT	CAL	STAKES	WIRE TYPE
≦12'	≦2 1/2"	2	TIE WIRE
12'-14'	2 1/2"-4"	3	TIE WIRE
>14'	3"- 6"	3	GUY CABLE
>14'	>6"	3	GUY/TURNBUCKLE

NOTES:
1. SET TREE PLUMB PRIOR TO STAKING.
2. ON MULTI-STEM TREES, ATTACH GUYS TO THE LARGEST TRUNK.
3. ON EVERGREEN TREES, ATTACH GUYS 1/2 WAY UP HEIGHT OF TREE.
4. REMOVE STAKING AND GUYING AFTER ONE YEAR.

1 L-502 LS101 — TREE STAKING AND GUYING
NOT TO SCALE

GENERAL NOTES:

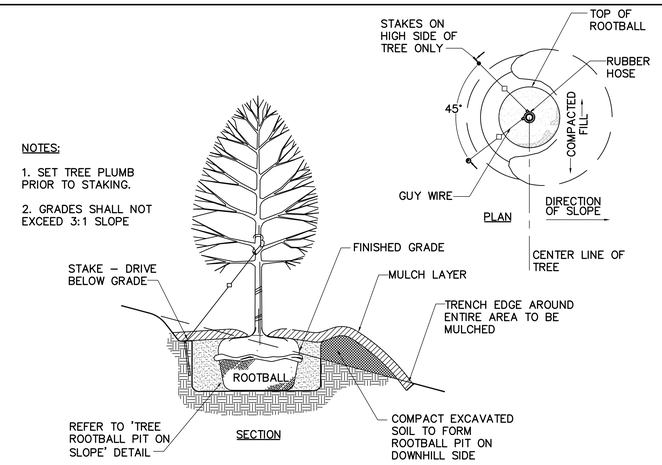
1. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
2. IMMEDIATELY SOAK WITH WATER.
3. DO NOT BREAK ROOTBALL.
4. SET ROOTBALL AT GRADE OR MAX. 2" ABOVE GRADE.
5. IF ROOTBALL IS IN WIRE CAGE, BEND CAGE BACK FROM TOP 1/4 OF BALL.
6. KEEP MULCH 1"-2" AWAY FROM TRUNK AT BASE OF TREE.



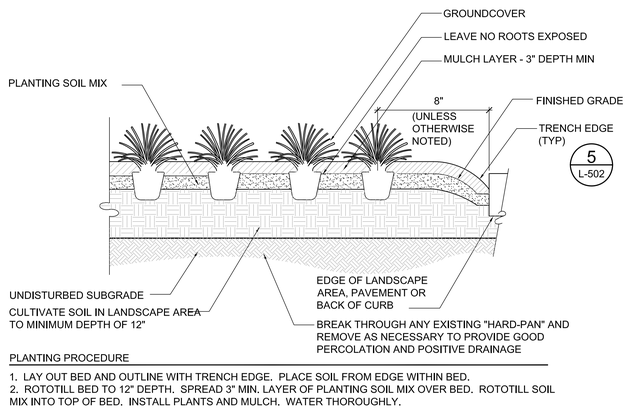
PLANTING PROCEDURE:

1. EXCAVATE ROOTBALL PIT.
2. ADD EXCAVATED SOIL AND TAMP.
3. SET TREE SUCH THAT TOP OF ROOTBALL IS FLUSH WITH OR NO HIGHER THAN 2" ABOVE FINISHED GRADE.
4. BACKFILL W/ SOIL MIX AND WATER IN.
5. COMPLETE BACKFILLING, CONSTRUCT TRENCH EDGE & ADD SPECIFIED MULCH.
6. STAKE AND/OR GUY SECURELY.

2 L-502 LS104 — TREE ROOTBALL ON SLOPE
NOT TO SCALE



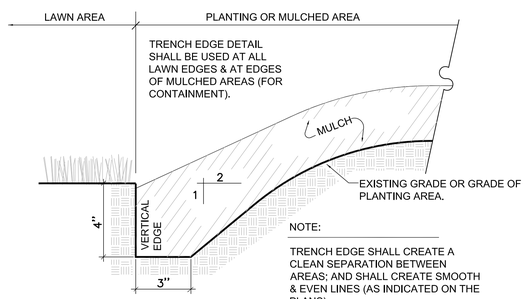
3 L-502 LS104 — TREE ON SLOPE: STAKING AND GUYING
NOT TO SCALE



PLANTING PROCEDURE

1. LAY OUT BED AND OUTLINE WITH TRENCH EDGE. PLACE SOIL FROM EDGE WITHIN BED.
2. ROTOTILL BED TO 12" DEPTH. SPREAD 3" MIN. LAYER OF PLANTING SOIL MIX OVER BED. ROTOTILL SOIL MIX INTO TOP OF BED. INSTALL PLANTS AND MULCH. WATER THOROUGHLY.

4 L-502 LS101, LS104, LS502 — SHRUB, PERENNIAL AND ORNAMENTAL GRASS PLANTING
NOT TO SCALE

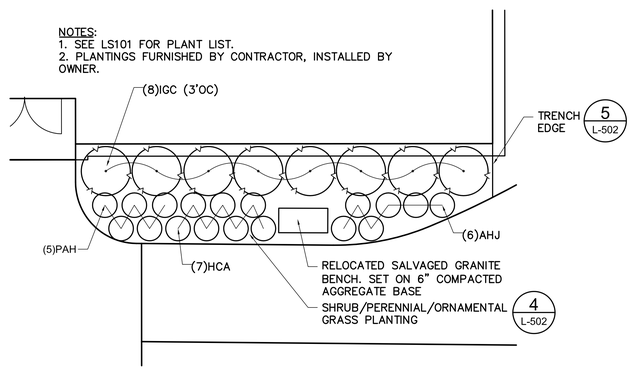


NOTE:

TRENCH EDGE SHALL CREATE A CLEAN SEPARATION BETWEEN AREAS; AND SHALL CREATE SMOOTH & EVEN LINES (AS INDICATED ON THE PLANS).

5 L-502 LS104, L-502 — TRENCH EDGE: SECTION
NOT TO SCALE

NOTES:
1. SEE LS101 FOR PLANT LIST.
2. PLANTINGS FURNISHED BY CONTRACTOR, INSTALLED BY OWNER.



6 L-502 LS101 — PLANTING PLAN: MAIN ENTRANCE
NOT TO SCALE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: ATD
CHECKED BY: KSP
NO.
DATE: 01/31/17

LICENSED LANDSCAPE ARCHITECT — Jan 31, 2017 — ALLISON TOWNE DIMATTEO No. 2403 — STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME
(CHART 275, BLOCK C048, LOT 001)

TITLE THIS DWG: LANDSCAPE DETAILS - 2

OAK POINT ASSOCIATES
ARCHITECTURE ■ ENGINEERING ■ PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. L-502
SHEET NO. 41 OF 53

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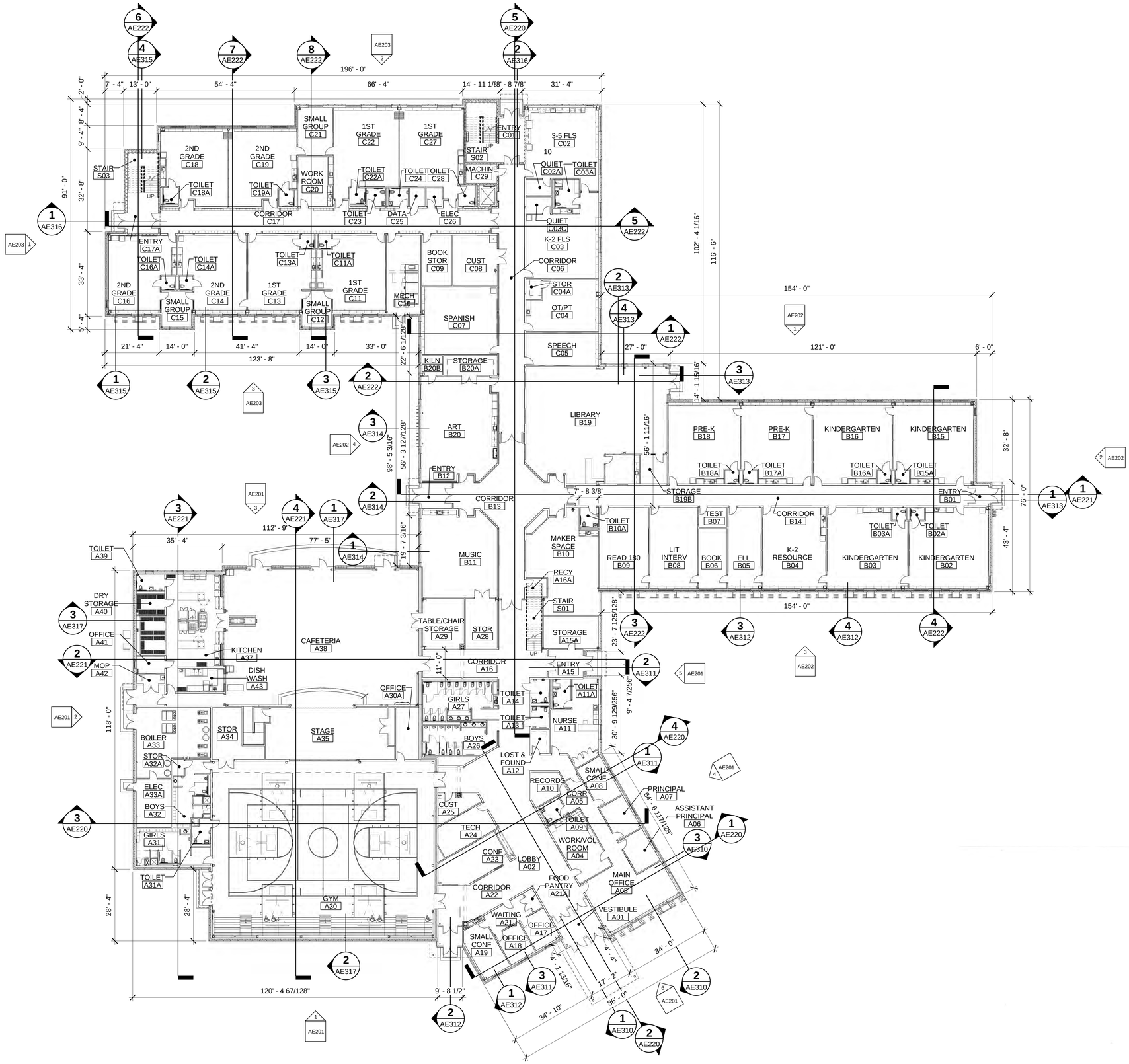

1 FIRST FLOOR REFERENCE PLAN

AE001 SCALE: 1/16" = 1'-0"

PLAN NORTH

GRAPHIC SCALE

16' 8' 0 16' 32'

1/16"=1'-0"

CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
		REVISIONS

DRAWN BY: DEM
CHECK BY: TGB
BY NO.
DATE 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: FIRST FLOOR REFERENCE PLAN

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. AE001
SHEET NO. 42 OF 53

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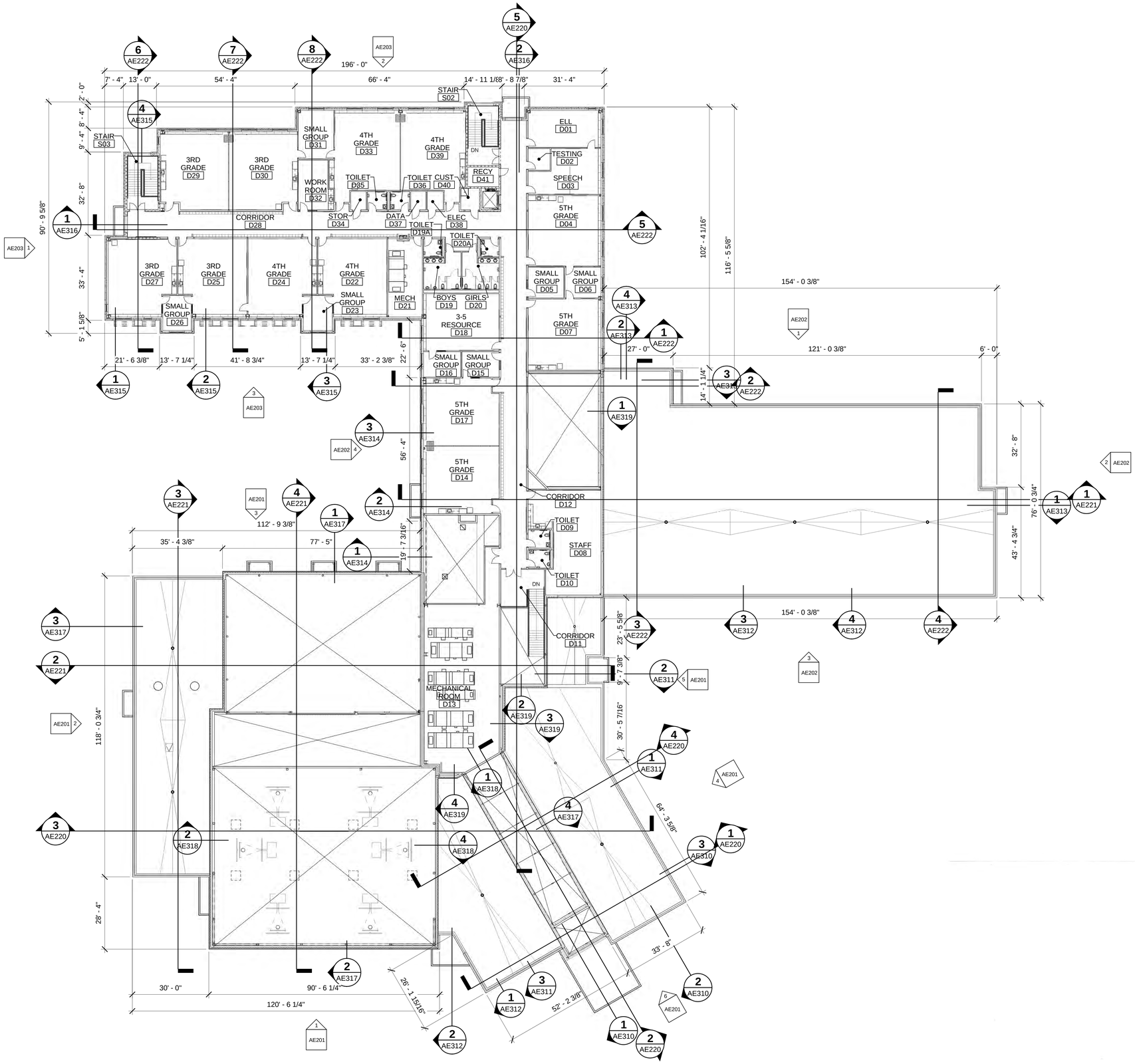

1 SECOND FLOOR REFERENCE PLAN
AE002 SCALE: 1/16" = 1'-0"

PLAN NORTH

GRAPHIC SCALE
16' 8' 0 16' 32'
1/16"=1'-0"
CHECK GRAPHIC SCALE BEFORE USING

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NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: DEM
CHECK BY: TGB
NO.
DATE 01/31/17

REGISTERED ARCHITECT ROBERT C. VILOTSON No. 2891 STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG
SECOND FLOOR REFERENCE PLAN

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. AE002
SHEET NO. 43 OF 53

2/1/2017 1:12:09 PM
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KEYNOTES:

1. 4'-0"x4'-0" MAGNETIC WHITE BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE.
2. 4'-0"x6'-0" MAGNETIC WHITE BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE.
3. 4'-0"x8'-0" MAGNETIC WHITE BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE.
4. 4'-0"x10'-0" MAGNETIC WHITE BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE.
5. 4'-0"x12'-0" MAGNETIC WHITE BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE.
6. 4'-0"x4'-0" MOUNTED CORK BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE. HALLWAYS MOUNT AT 3'-4".
7. 4'-0"x6'-0" MOUNTED CORK BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE. HALLWAYS MOUNT AT 3'-4".
8. 4'-0"x8'-0" MOUNTED CORK BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE. HALLWAYS MOUNT AT 3'-4".
9. 4'-0"x10'-0" MOUNTED CORK BOARD. 2'-0" ABOVE FINISH FLOOR GRADES PRE-K TO SECOND AND 2'-6" GRADES THREE TO FIVE. HALLWAYS MOUNT AT 3'-2".
10. 4'-0"x6'-0" MOUNTED VELCRO BOARD AT 2'-0" ABOVE FINISH FLOOR.
11. 4'-0"x6'-0" MOUNTED VELCRO BOARD AT 2'-6" ABOVE FINISH FLOOR.
12. HEAVY DUTY STANDARDS, BRACKETS, AND SHELVES, WALL TO WALL UNLESS NOTED OTHERWISE. QTY:(5) 1'-6" DEEP SHELVES.
13. HEAVY DUTY STANDARDS, BRACKETS, AND SHELVES, WALL TO WALL UNLESS NOTED OTHERWISE. QTY:(3) 1'-6" DEEP SHELVES.
14. HEAVY DUTY STANDARDS, BRACKETS, AND SHELVES, WALL TO WALL UNLESS NOTED OTHERWISE. QTY:(3) 1'-0" DEEP SHELVES.
15. HEAVY DUTY STANDARDS, BRACKETS, AND SHELVES, WALL TO WALL UNLESS NOTED OTHERWISE. QTY:(5) 1'-0" DEEP SHELVES.
16. 6'-0"x1'-6"x1" THICK FABRIC WRAPPED ACOUSTIC PANEL.
17. 6'-0"x3'-0"x1" THICK FABRIC WRAPPED ACOUSTIC PANEL.
18. 4'-0"x6'-0" ACOUSTICAL PANEL.
19. 4'-0"x8'-0" ACOUSTICAL PANEL.
20. RESIDENTIAL STOVE.
21. RESIDENTIAL DISHWASHER.
22. RESIDENTIAL REFRIGERATOR.
23. RESIDENTIAL WASHER / DRYER.
24. ICE MAKER.
25. MOTORIZED BASKETBALL GOAL AND SUPPORTS, WITH GLASS BACKBOARD.
26. MOTORIZED BASKETBALL GOAL AND SUPPORTS, WITH FIBERGLASS BACKBOARD.
27. OPERABLE PARTITION.
28. ACCESS DOOR SEE X/AEXXX, COORDINATE WITH MECHANICAL HEAT MANIFOLDS.
29. ATHLETIC PAD ACCESS PANEL, SEE X/AEXXX.
30. 12"x12" ACCESS PANEL.
31. PROVIDE EPDM ROOF SYSTEM WITH RIGID INSULATION. SEE DETAIL 1/AE501.
32. PROVIDE EPDM ROOF SYSTEM WITH TAPERED RIGID INSULATION. SEE DETAIL 1/AE501 (SIMILAR).
33. CONTINUOUS SUNSHADE AND LIGHTSHELF. SEE DETAIL 2/AE623.
34. 4'-0"x8'-0" FRP FOR WET WALLS.
35. FE-1 FIRE EXTINGUISHER AND LOCKABLE CABINET.
36. FE-2 FIRE EXTINGUISHER AND WALL MOUNTED HOOK.
37. FE-3 FIRE EXTINGUISHER AND WALL MOUNTED HOOK.
38. FE-4 FIRE EXTINGUISHER AND WALL MOUNTED HOOK.
39. 4'-0"x8'-0" FUTURE INTERACTIVE WHITE BOARD (NIC). PROVIDE BLOCKING AT 6'-0" AFF ON FIRST FLOOR AND 6'-6" AFF ON SECOND FLOOR.
40. COMPUTER ON WHEELS STORAGE AREA (NIC).
41. DOUBLE HEIGHT COAT ROD AND SHELF. SEE DETAIL 11/AE581.
42. OT SWING SUPPORT.
43. ACT CURTAIN, SEE DETAIL 9/AE720.
44. EMERGENCY EYE WASH/SHOWER.
45. MIRROR (SEE TOILET ROOM ACCESSORY SPECIFICATION)
46. PROVIDE BLOCKING FOR OWNER FURNISH LCD SCREEN
47. 4'-0"x10'-0" DISPLAY CASE

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
		REVISIONS

REGISTERED ARCHITECT ROBERT C. VILOTSON No. 2891 STATE OF MAINE

DRAWN BY: JGB
CHECK BY: TGB
BY
NO.
DATE 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE PAGE/DWG: KEYNOTES

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO: AE004

SHEET NO. 44 OF 53

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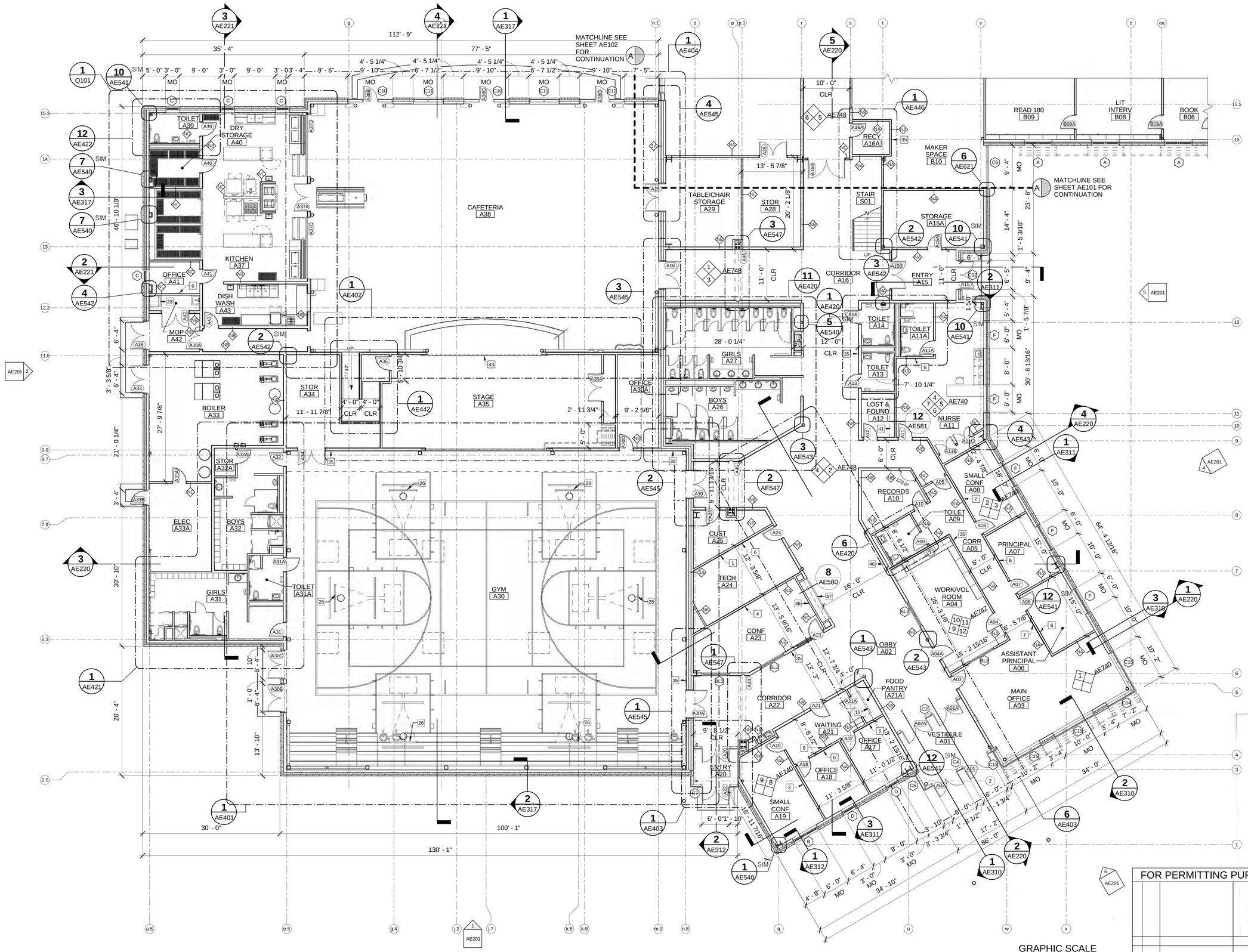
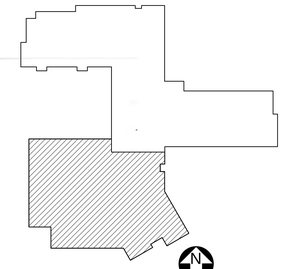
GENERAL NOTES:

1. SEE SHEET AE004 FOR KEYNOTES.
2. SEE SHEET AE003 FOR WALL TYPES.





1 FIRST FLOOR PART PLAN WING A
AE101 SCALE: 1/8" = 1'-0"

GRAPHIC SCALE
1/8"=1'-0"
8' 4' 0 8' 16'
CHECK GRAPHIC SCALE BEFORE USING

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NO.	DATE	DESCRIPTION	BY
		REVISIONS	

ROBERT C. ULLOTSON No. 2891 REGISTERED ARCHITECT STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: FIRST FLOOR PART PLAN WING A

DRAWN BY: JGB
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DATE: 01/31/17

DRAWING NO: AE101
SHEET NO: 45 OF 53

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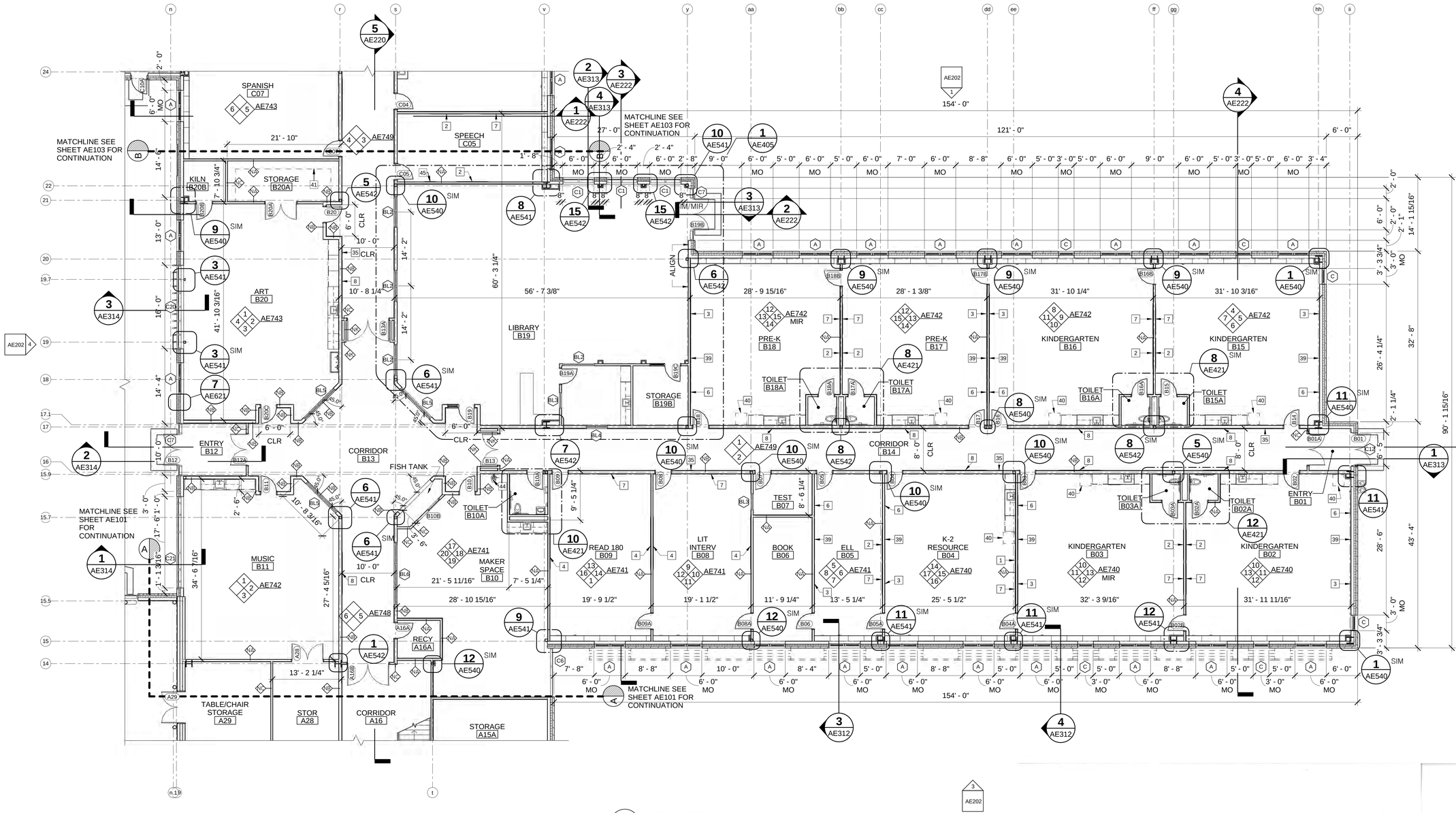
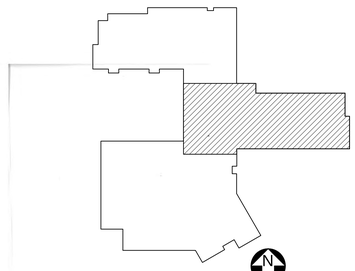
GENERAL NOTES:

1. SEE SHEET AE004 FOR KEYNOTES.
2. SEE SHEET AE003 FOR WALL TYPES.



1 FIRST FLOOR PART PLAN WING B
AE102 SCALE: 1/8" = 1'-0"



KEYPLAN
NOT TO SCALE

PLAN NORTH

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

GRAPHIC SCALE
1/8"=1'-0"
8' 4' 0 8' 16'
CHECK GRAPHIC SCALE BEFORE USING

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

REGISTERED ARCHITECT ROBERT C. LOLOTSON No. 2891 STATE OF MAINE 1/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG.: FIRST FLOOR PART PLAN WING B

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DATE: 01/31/17

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SHEET NO. 46 OF 53

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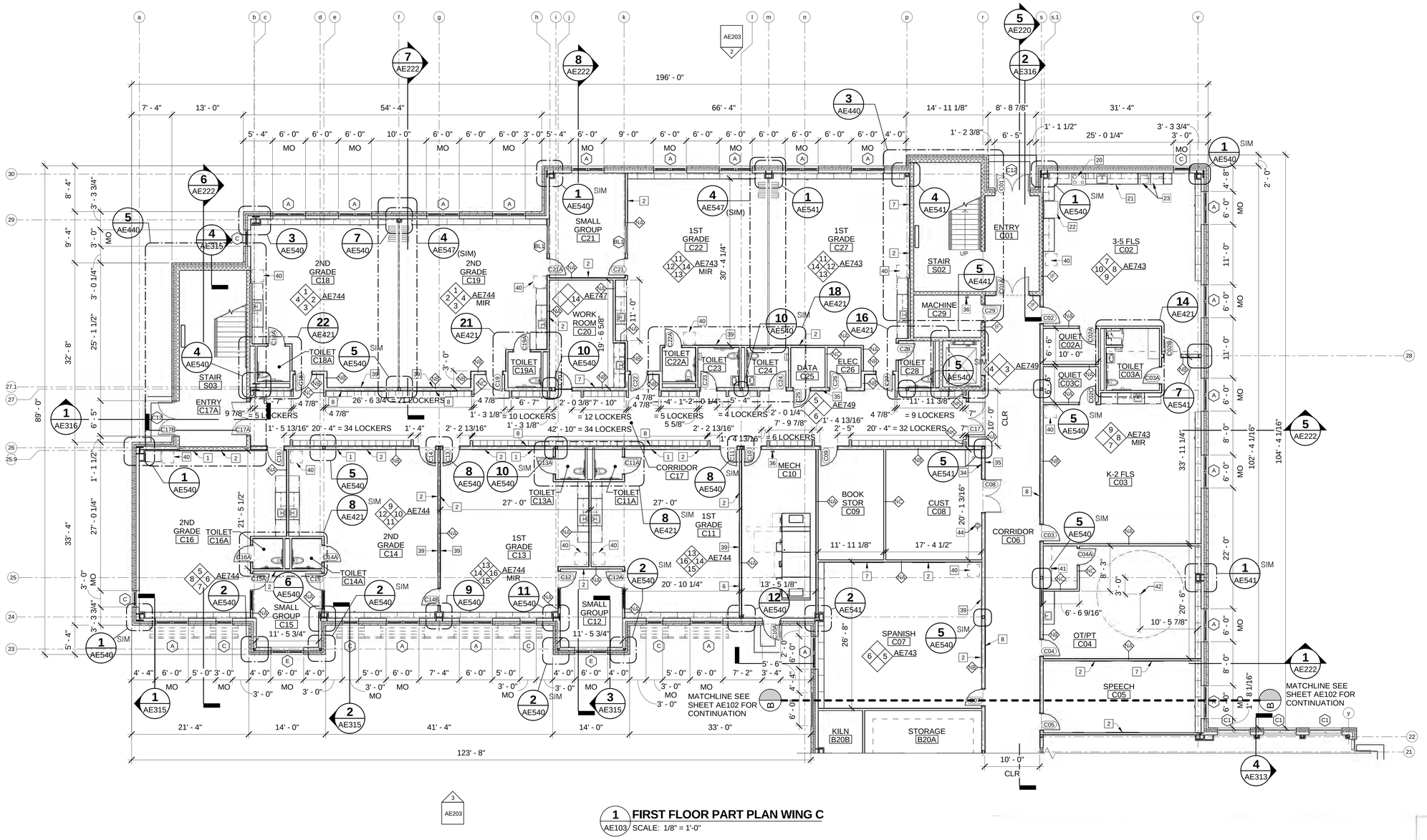
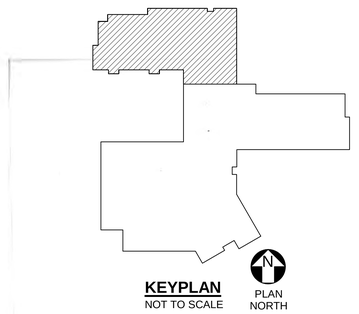
GENERAL NOTES:

1. SEE SHEET AE004 FOR KEYNOTES.
2. SEE SHEET AE003 FOR WALL TYPES.



1 FIRST FLOOR PART PLAN WING C
AE103 SCALE: 1/8" = 1'-0"



KEYPLAN
NOT TO SCALE

PLAN NORTH

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GRAPHIC SCALE
1/8"=1'-0"
8' 4' 0 8' 16'
CHECK GRAPHIC SCALE BEFORE USING

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: DEM
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DATE 01/31/17

ROBERT C. LILOTSON No. 2891 REGISTERED ARCHITECT STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG
FIRST FLOOR PART PLAN WING C

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GENERAL NOTES:

1. SEE SHEET AE004 FOR KEYNOTES.
2. SEE SHEET AE003 FOR WALL TYPES.

SMALL GROUP D31 · 4TH GRADE D33 · 4TH GRADE D39 · WORK ROOM D32 · 3RD GRADE D29 · 3RD GRADE D30 · CORRIDOR D28 · STOR D34 · TOILET D35 · TOILET D36 · DATA D37 · ELEC D38 · CUST D40 · RECY D41 · ELL D01 · TESTING D02 · SPEECH D03 · CORRIDOR D12 · 5TH GRADE D04 · SMALL GROUP D05 · SMALL GROUP D06 · 5TH GRADE D07 · TOILET D19A · TOILET D20A · BOYS D19 · GIRLS D20 · MECH D21 · 3-5 RESOURCE D18 · 3RD GRADE D27 · 3RD GRADE D25 · 4TH GRADE D24 · 4TH GRADE D22 · SMALL GROUP D26 · SMALL GROUP D23 · SMALL GROUP D16 · SMALL GROUP D15 · 5TH GRADE D17 · 5TH GRADE D14 · STAFF D08 · TOILET D09 · TOILET D10 · CORRIDOR D11 · OPEN TO BELOW · MATCHLINE SEE SHEET AE105 FOR CONTINUATION

40' - 2 5/8" = 62 LOCKERS · 42' - 10" = 68 LOCKERS · 25' - 7 3/8" = 40 LOCKERS · 15' - 4" = 50 LOCKERS · 40' - 9 3/4" = 64 LOCKERS

1 SECOND PART PLAN WING D (AE104) SCALE: 1/8" = 1'-0"

KEYPLAN NOT TO SCALE — PLAN NORTH

GRAPHIC SCALE 1/8"=1'-0" (8' 4' 0 8' 16')

CHECK GRAPHIC SCALE BEFORE USING

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ROBERT C. VILOTSON No. 2891 REGISTERED ARCHITECT STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: SECOND FLOOR PART PLAN WING D

DRAWN BY: Author · CHECK BY: Designer · DRAWING NO. AE104 · SHEET NO. 48 OF 53

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
		DATE 01/31/17	

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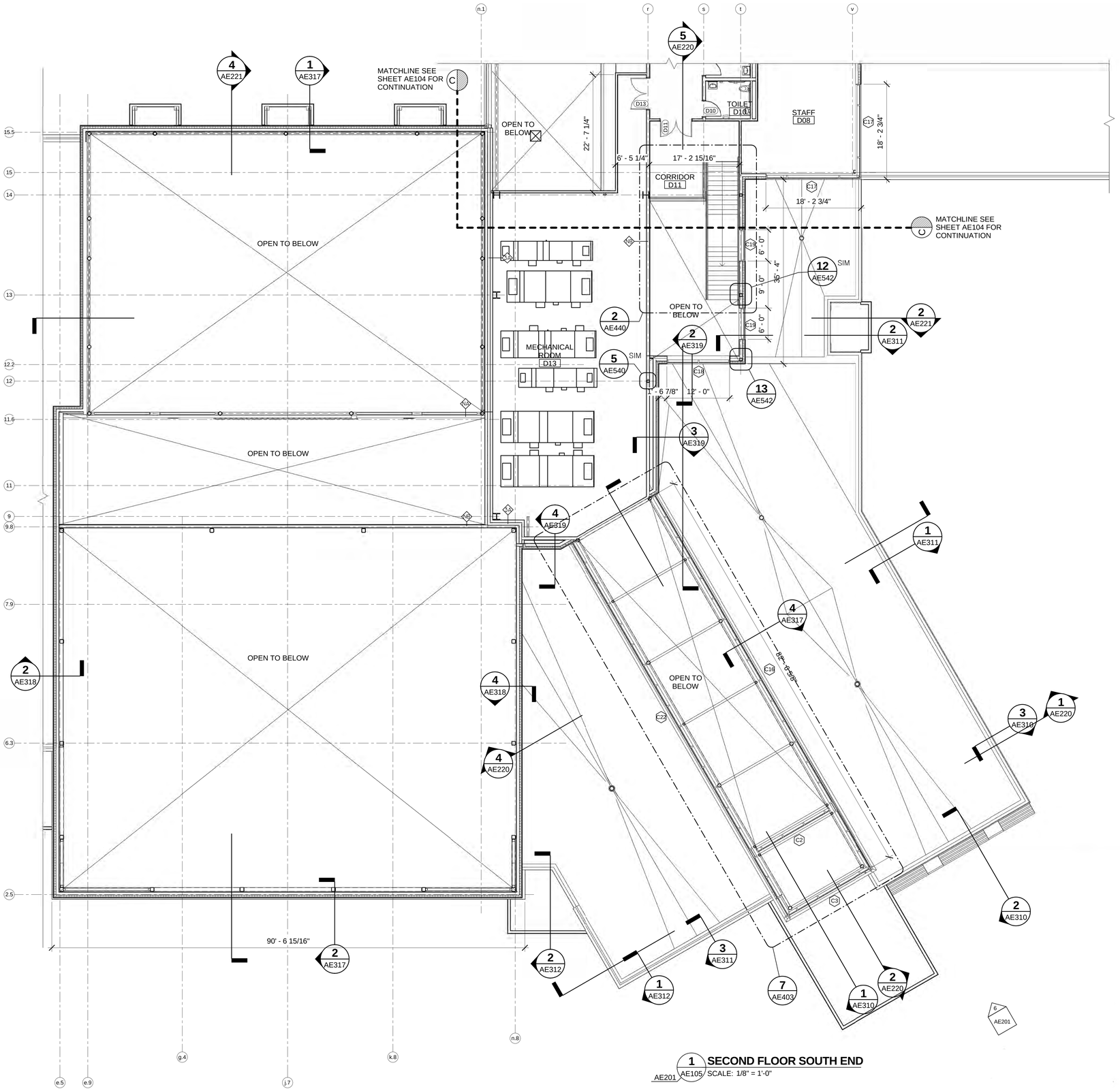

1 SECOND FLOOR SOUTH END
AE201 AE105 SCALE: 1/8" = 1'-0"

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NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: DEM
CHECK BY: TGB
NO.
DATE 01/31/17

ROBERT C. VILLOTSON No. 2891 REGISTERED ARCHITECT STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG
SECOND FLOOR PART PLAN WING D SOUTH END

OAK POINT ASSOCIATES
221 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. AE105
SHEET NO. 49 OF 53

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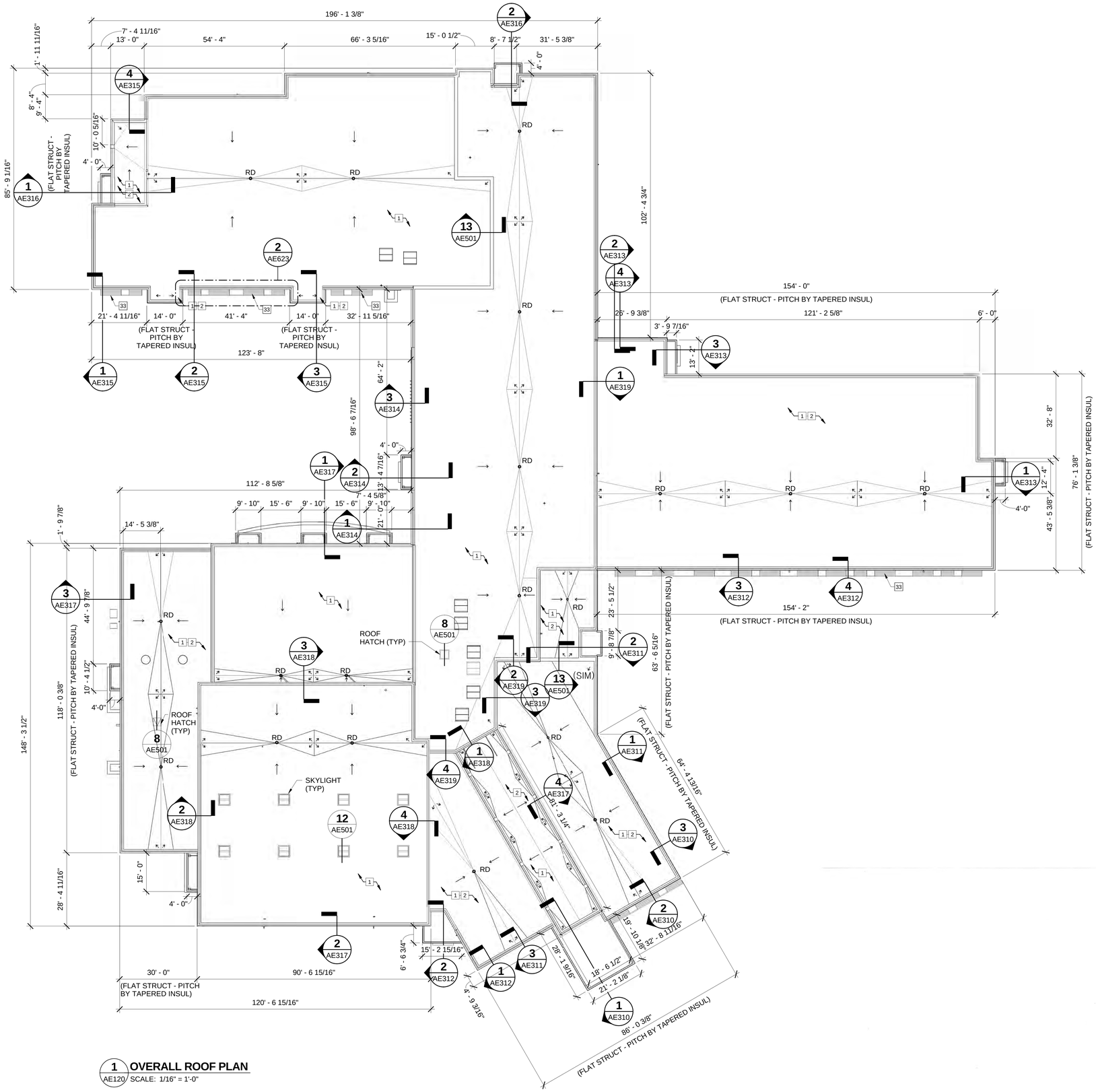

1 OVERALL ROOF PLAN
AE120 SCALE: 1/16" = 1'-0"

ROOF KEYNOTES: (THIS SHEET ONLY)

1 EPDM ROOF SYSTEM SEE DETAIL 1/AE501.

2 TAPERED ROOF INSULATION.

ROOF LEGEND: (THIS SHEET ONLY)

HP HIGH POINT

ROOF DRAIN

ROOF PITCH

SKYLIGHT

TAPERED INSULATION/CIRCKET

VTR THRU ROOF SEE DETAIL 7/AE501

WALK-OFF PAD

GRAPHIC SCALE

1/16"=1'-0"

16' 8' 0 16' 32'

CHECK GRAPHIC SCALE BEFORE USING

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

REGISTERED ARCHITECT ROBERT C. OLOTSON No. 2891 STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: ROOF PLAN

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
		DATE 01/31/17	

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CHECK BY: TGB

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231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. AE120

SHEET NO. 50 OF 53

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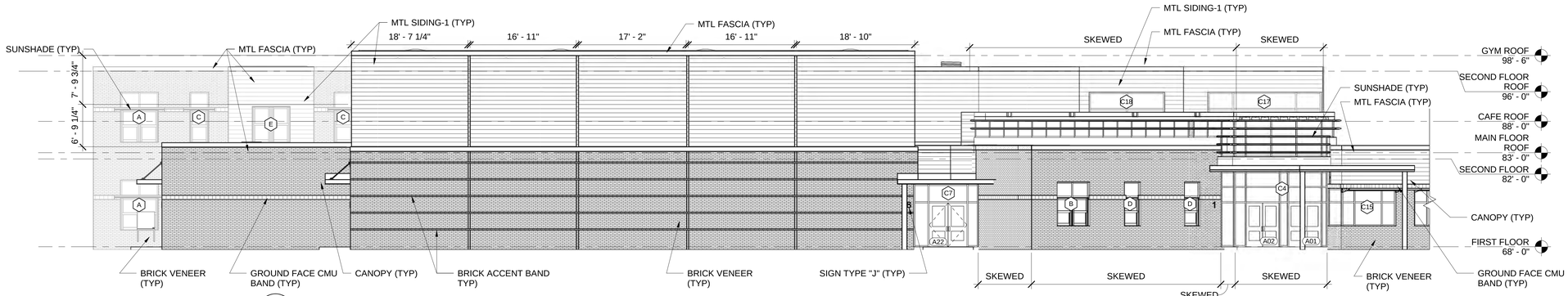

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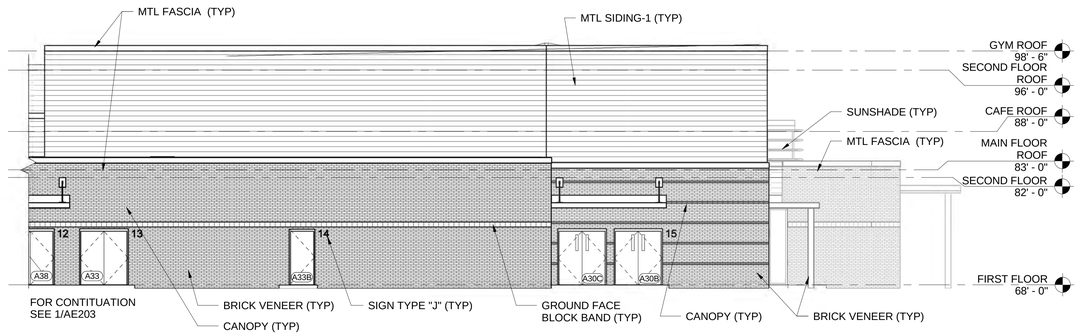

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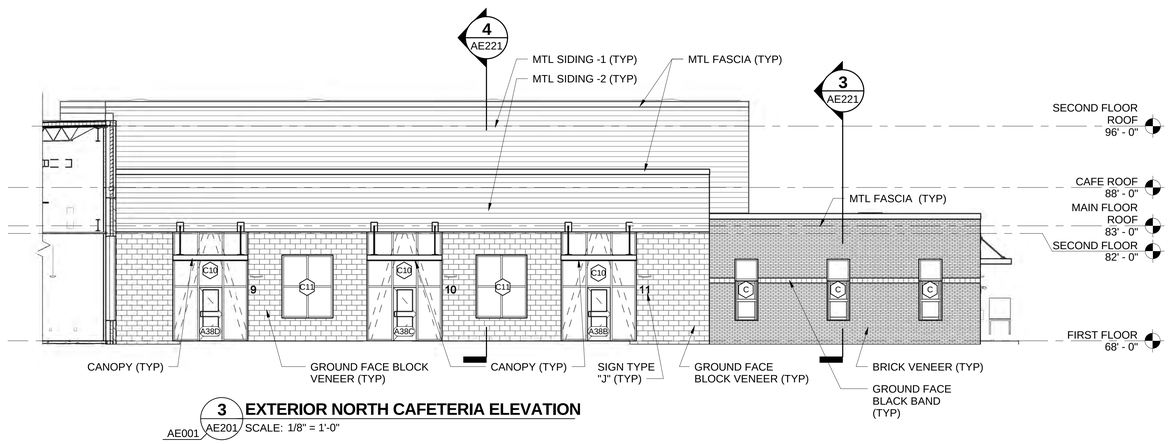

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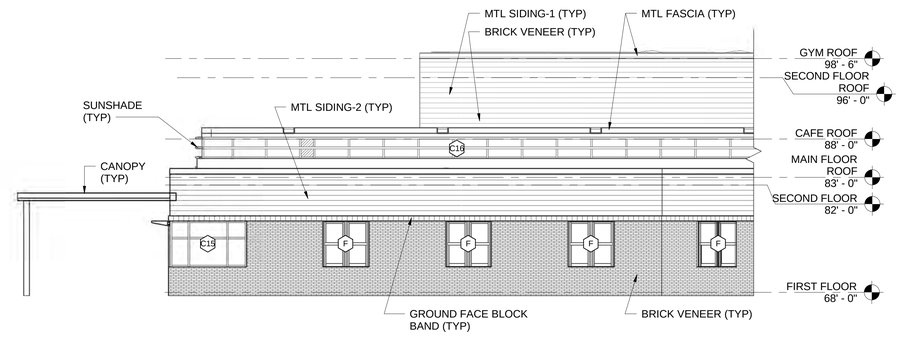

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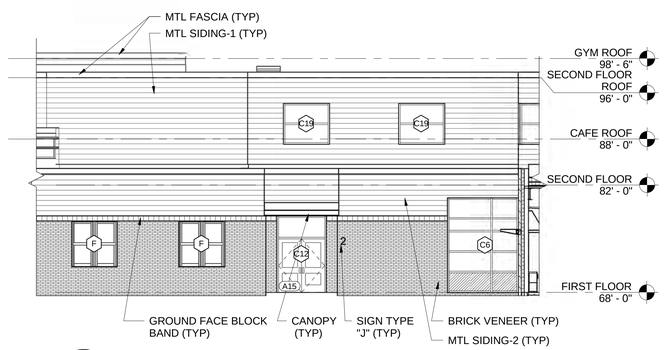

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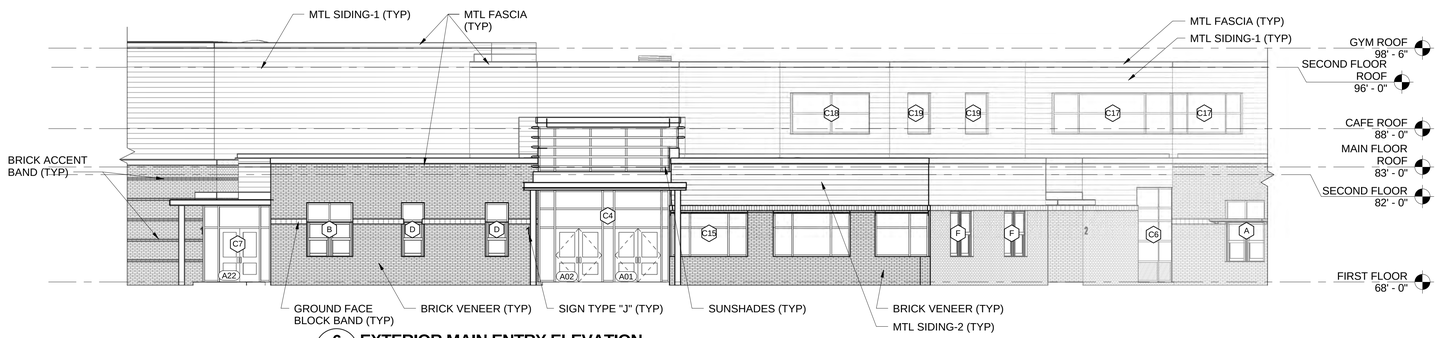

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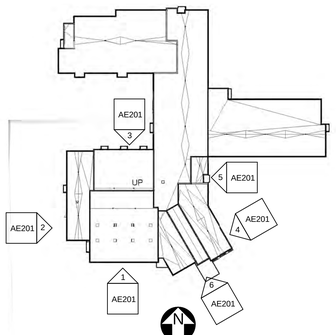

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REGISTERED ARCHITECT ROBERT C. LOLOTSON No. 2891 STATE OF MAINE

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: BUILDING ELEVATIONS

NO.	DATE	DESCRIPTION
		REVISIONS

DRAWN BY: Author
CHECK BY: Designer
BY
NO.
DATE 01/31/17

DRAWING NO. AE201
SHEET NO. 51 OF 53

231 Main Street, Biddeford, Maine 04005 207.283.0193

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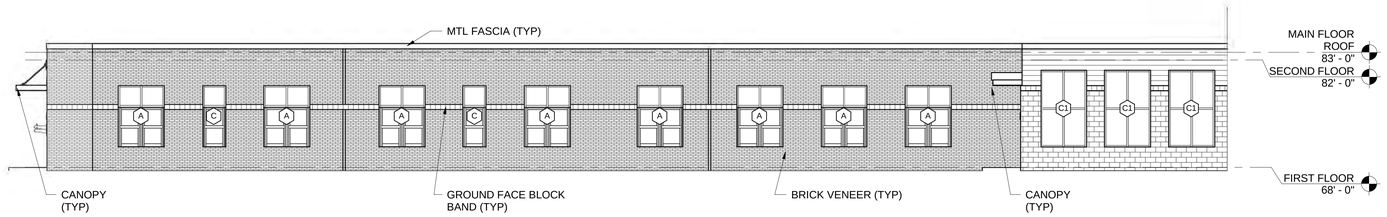

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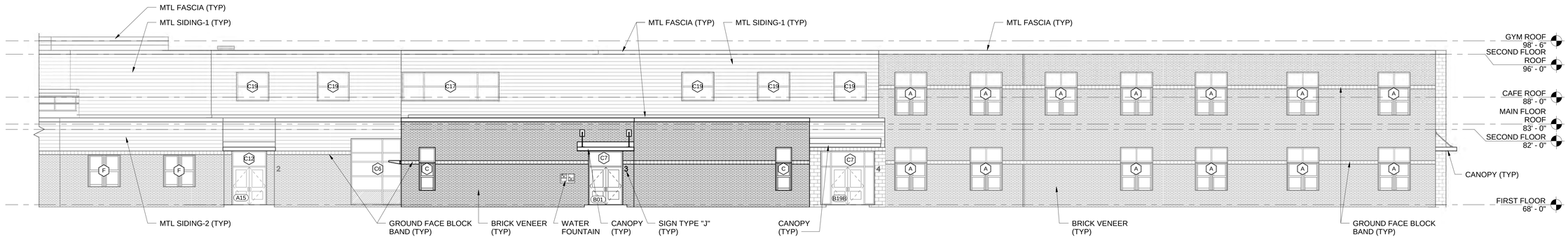

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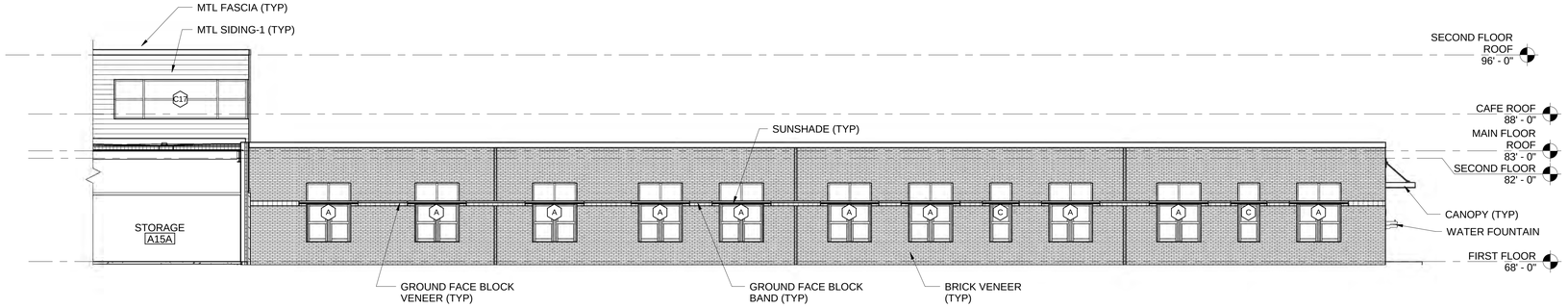

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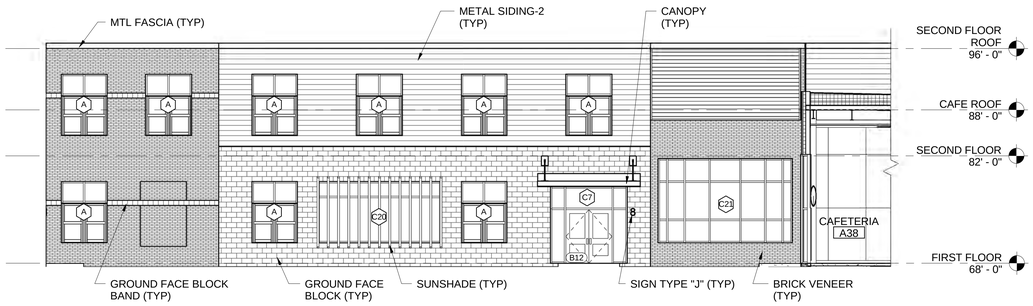

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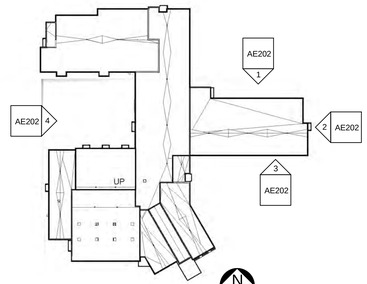

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REGISTERED ARCHITECT ROBERT C. VOLOTSON No. 2891 STATE OF MAINE 1/31/17

STATE OF MAINE PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL

LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: BUILDING ELEVATIONS

DRAWN BY: DEM
CHECK BY: TGB

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
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OAK POINT ASSOCIATES

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SHEET NO. 52 OF 53

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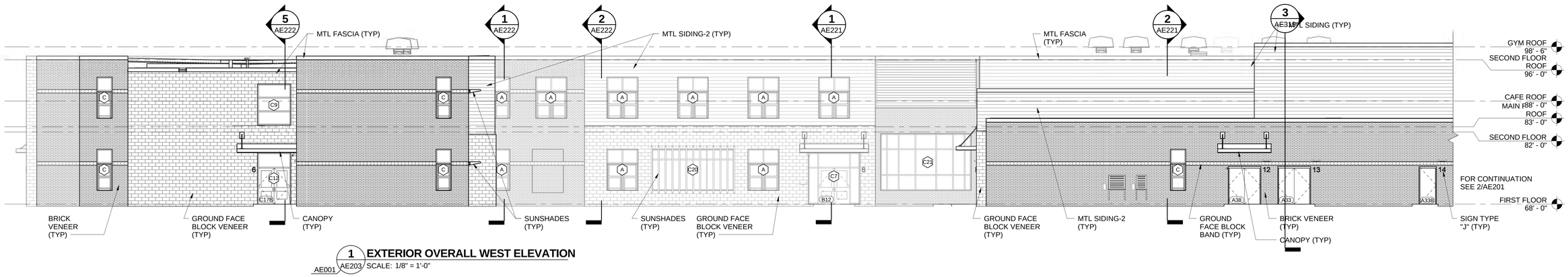

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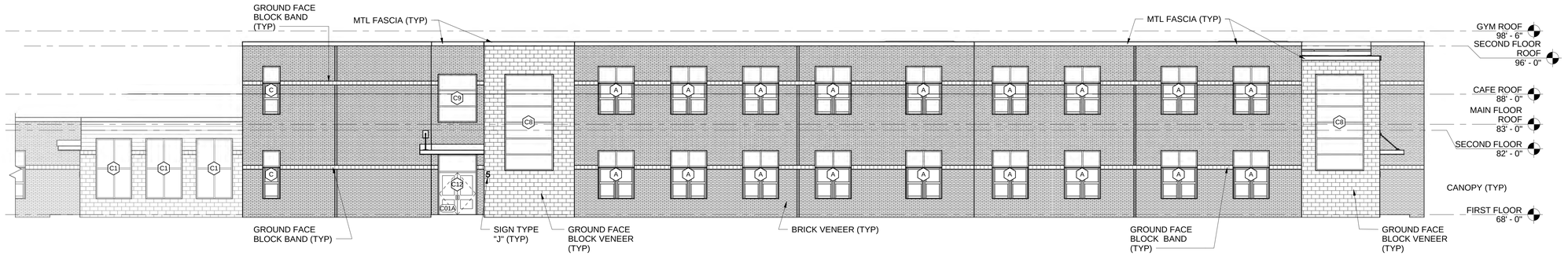

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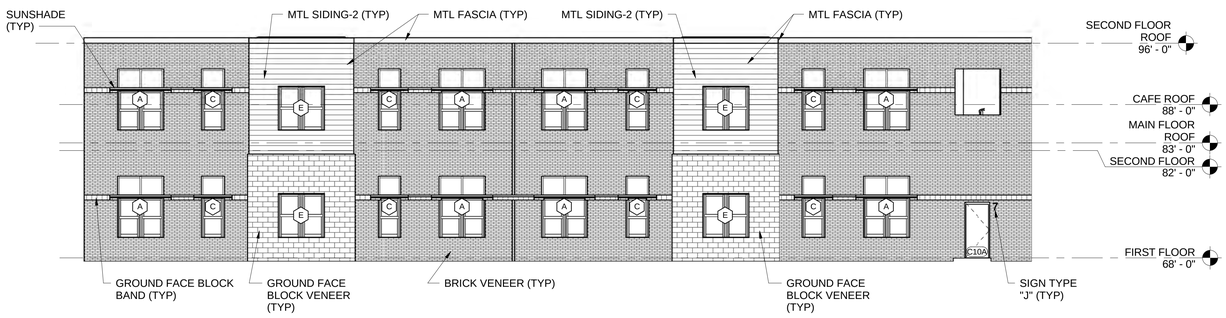

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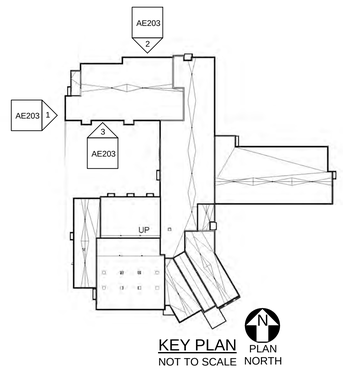

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REGISTERED ARCHITECT ROBERT C. ULLOTSON No. 2851 STATE OF MAINE

NO.	DATE	DESCRIPTION	BY
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DRAWN BY: DEM
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DATE 01/31/17

STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE: PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION: 23 ORONO ROAD, PORTLAND, ME

TITLE THIS DWG: BUILDING ELEVATIONS

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

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SHEET NO. 53 OF 53

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PLANNING BOARD REPORT
PORTLAND, MAINE

Baxter Academy for Technology and Science
185 Lancaster Street
Level III and Traffic Movement Permit
2017-022
Baxter Academies of Maine, Applicant

Submitted to Portland Planning Board Public Hearing Date: March 28, 2017	Prepared by: Shukria Wiar Date: March 24, 2017

I. INTRODUCTION

Baxter Academies of Maine, has requested a public hearing with the Planning Board for a Level III Site Plan for a change of use at 185 Lancaster Street and a traffic movement permit. The proposal is to convert most of the building to the Baxter Academy for Technology and Science, a public charter high school, which is an institutional use. The project involves interior renovations to an existing building and only minor site improvements are proposed. The office building has three floors and the most current uses include the Labor Department, Maine Career Center, and THRIVE Me. The site for the proposed Charter School consists of 75,026 SF that is fully developed and the existing three-story building is located in the Mixed Development District B-7 zone. The school is the first public charter school focusing on science, technology, engineering and mathematics.

Figure 1: Aerial of Proposed Baxter Academy Site

The City has the delegated review for the Traffic Movement Permit and the Board will review the submitted Level III site plan for the change of use that is more than 20,000 square feet.

Applicant Name Baxter Academies of Maine
Consultants Will Conway, Sebago Technics

II. PROJECT DATA

Existing Zoning	Mixed Development District B-7
Existing Use	Office Space- Labor Department, Maine Career Center, and THRIVEMe
Proposed Use	Institutional (Public Charter School)
Proposed Development Program	Change of Use from Office Space to Institutional
Parcel Size	75,026 SF

	Existing	*Proposed*
Building Footprint	70,379 SF	Zero
Building Floor Area	1,054 SF	12,312 SF
Impervious Surface Area	70,379 SF	Zero
Parking Spaces (on site)	149	50
Bicycle Parking Spaces	0	12
Estimated Cost of Project	$3,000,000	

III. EXISTING CONDITIONS

Baxter Academy is looking to relocate from their current locations at 54 York Street and 561 Congress Street to the existing two story brick building located at 185 Lancaster Street in Portland's Bayside neighborhood. The 53,779 SF office building sits at the corner of Lancaster and Elm Streets. The associated surface parking is located across Lancaster Street. The Schlotterbeck and Foss development is across Elm Street. The building is a multi-tenant building; the first-floor area was occupied mainly by the Maine Career Center with the remaining area was an office use. The entire second-floor area had been office use. Once the conversion is complete, the building will house the Baxter Academy for Technology and Science Charter School as the primary tenant.

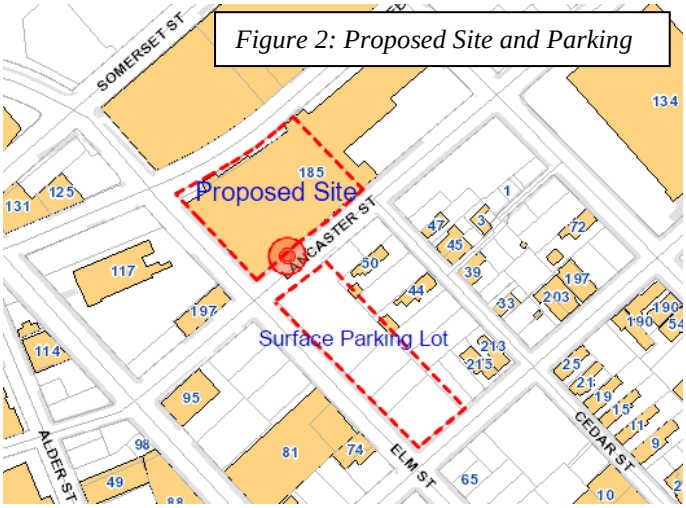

Figure 2: Proposed Site and Parking

IV. PROPOSED DEVELOPMENT

The proposed site is an existing two-story building with a total floor area of approximately 92,561 SF. The Baxter Academy will lease and remodel 31,571 SF of the building for the expanded charter high school. The site has access from both Lancaster and Elm Streets. The academy is proposing a total of fifty (50) parking spaces in an off-site surface parking lot located across Lancaster Street. The spaces will be reserved exclusively for staff only; parking is not proposed for students at the site.

The school's proposal is to convert much the building into a full four-year high school that focuses on the fields of mathematics, technology, and science. The total enrollment is planned for approximately 400 students and 60 staff members. It is projected that half of the total enrollment will come from Portland, South Portland and Westbrook, with the remaining coming from communities outside of the urban core. School operations will be from 8:00 AM to 2:00 PM, resulting in peak traffic generation associated with the school being between 7-8:00 AM and 2-3:00 PM.

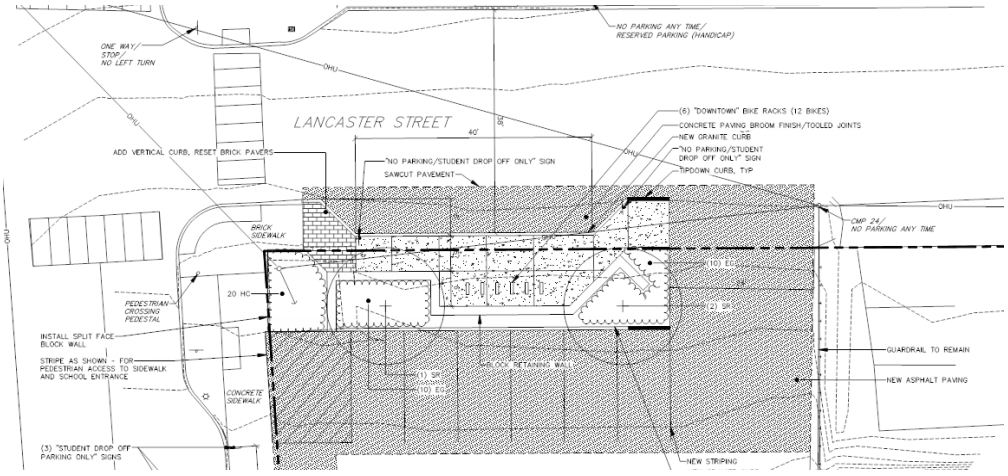

Figure 3: Layout of the new sidewalk and bicycle parking across Lancaster Street.

The school will consist mainly of classroom and lab spaces with supporting office spaces. A cafeteria or food preparation area is not proposed at the facility. The improvements to the building are primarily interior with minor exterior enhancements to upgrade egress, such as

replacement of existing exterior stairs and guardrails, replacing exterior doors (to match existing) and select exterior windows that have failed seals (to match existing).

Across Lancaster Street, there is a surface parking lot that is associated with the existing uses in the surrounding buildings. Currently there are seven parking spaces that back onto Lancaster Street. Those spaces will be eliminated as part of this project and replaced with a sidewalk and bicycle spaces.

V. PUBLIC COMMENT

As of the date of writing this report, three public comment has been submitted see Attachment 5. As part of the Traffic Movement Permit, the direct abutters were notified and notices for the workshop and public hearing were sent to property owners within 500 feet and to the interested citizen's list. Eighty-four (84) notices were sent to area residents and interested citizen's list. The legal ad appeared in the Portland Press Herald on March 20th and 21st editions. A neighborhood meeting was held on March 1, 2017 and minutes are included as Attachments L and M.

VI. RIGHT, TITLE AND INTEREST AND FINANCIAL/TECHNICAL CAPACITY

a. The owner of the property is Bayside II, LLC. The applicant has provided a copy of a quitclaim deed, recorded at the Cumberland County Registry of Deeds (Book 15298 Page 144), which demonstrates their right, title and interest in the property.

b. The estimated cost of the development is $3,000,000. The applicant has submitted a financial letter from Nonprofit Finance Fund, dated 01.03.2017, as demonstration of their financial and technical capacity to complete the proposed development.

VII. ZONING ASSESSMENT

The applicant wants to change the use from offices to a new school (a public charter high school). The property is located in a B-7 zone which allows the proposed use under, "Public or private schools of any type". There is no proposed addition to the building with the exception of replacing an exterior stairs and guardrails, as well as replacing exterior doors. Section 14-332.1(i) states that in the B-7 zone, off-street parking for all projects regardless of size, shall be governed by 14-332.2(c) of this article that states the Planning Board is to establish the parking requirement for the project. The applicant is proposing fifty (50) parking spaces for the academy staff.

Under external effects, Section 14-299 Performance Standards (b), (f), (n) and (o) apply to this project. Below is how the project is meeting the standards:

Sec. 14-299. Performance standards: All uses in the B-7 mixed development district zone shall comply with the following standards. Standards 14-299(a,(f),(j),(m),(n) and (o) below shall be reviewed by the Planning Authority.

(b) *Noise*: (A List of standards is itemized)

1. Staff Comments: The maximum noise requirement of 60 decibels at lot boundaries shall be maintained during the "day time" hours. This performance standard is met subject the design specifications for all mechanical equipment being proposed be submitted for review and approval under the B-7 performance standards, prior to the issuance of the related building permit.

(f) *Off-street parking and loading:* Off-street parking is required as provided in division 20 (off-street parking) of this article. Division 21 (off-street loading) of this article shall not apply. Surface parking shall meet the following standards:

1. None of the spaces shall occupy all or a portion of a sidewalk within a street right-of-way.

Staff Comments: The loading and unloading of buses is proposed at the front entrance on Lancaster Street, which minimizes traffic impacts on the street system. The surface parking lots do not occupy any portions of the sidewalks. The lots are setback from the property lines. This performance standard is met.

2. Driveway entrances shall meet the City of Portland Technical Manual standards.

Staff Comments: The existing entrance to the surface parking lot meets City standards.

3. The parking area shall meet the landscape and buffer standards of the City of Portland Technical and Design Manuals.

Staff Comments: The surface parking area is an existing lot. The seven parking spaces that back out on Lancaster Street will be eliminated as part of this project and replaced with a sidewalk, bicycle spaces, and some landscaping. The rest of the surface parking lot will not be improved. The improvements meet city standards.

(n) *Lighting:* All lighting shall be designed and installed with cut-off fixtures to direct illumination onto the site and to prevent illumination from such fixtures on neighboring properties and as otherwise governed by the site lighting standards of the City of Portland Technical Manual.

Staff Comments: As part of this project, no new lighting is being proposed. If new exterior lighting is proposed it is subject to review under Portland standards in the Technical Manual.

(o) *Building entrances:* All buildings shall have a minimum of one (1) public pedestrian entrance facing the street frontage of the lot. Such building entrances shall also be reviewed under the B-7 bayside design standards.

Staff Comments: The building has two main entrances for the public. One of the entrances is on Lancaster Street and one is to the side of the building off of Elm Street. The entrances are highly visible from the street right-of-way, so this performance standard has been met.

All HVAC equipment shall meet the sound level requirements listed under 14-299 (b). Separate permits are required through Inspection Services for HVAC systems. Such application(s) shall provide HVAC dBA equipment levels. Separate permits are required for any new exterior signs.

The number of required parking spaces is determined by the Planning Board under the B-7 zone. Please refer to the discussion of parking discussion below under the Site Plan Standards.

VIII. SITE PLAN STANDARDS (Section 14-526)
The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. Transportation Standards
The proposed charter school will generate a total of 200 peak vehicle trips during the week and therefore this change of use requires a Traffic Movement Permit (TMP), which the City may issue under delegated review. The applicant had a scoping meeting on February 23, 2017 with Tom Errico, Consultant Traffic Engineer. Since this meeting, Mr. Errico and the applicant have been in constant discussion to finalize the TMP, below are his recommendations:

- *Based upon traffic estimates conducted by the applicant, the project will generate new traffic that triggers the need for a Traffic Movement Permit. A Traffic Scoping meeting was held on February 23, 2016. In response to the scoping meeting a traffic assessment was conducted by Bill Bray. I have reviewed the details of the traffic assessment and I find the contents, methods and conclusions to be acceptable. I would note that the key directive to the applicant was developing a Transportation Operations and Management Plan and a Transportation Demand Management Plan. Details on these plans are provided below.*
- *In response to a coordination meeting with Bill Bray, the applicant has submitted a Response to Traffic Comments letter dated March 19, 2017. I concur with the details of that letter as it relates to elimination of the proposed parking bay on the south side of Lancaster Street; using Lancaster Street for bus loading and unloading activities; and identification of specific locations for parent pick-up and drop-off activities. I would note that the applicant would be responsible for all costs associated with changes to parking signage and removal/relocation of parking meters. The applicant shall submit a detailed plan that summarizes changes for review and approval by the City Planning Authority. The letter notes that student vehicle parking needs will be accommodated in the Marginal Way Rideshare Lot. The applicant has indicated that a specific parking lot location is still pending and details of an identified location will need to be a condition of approval. Based upon the Traffic Assessment, 36 vehicles will be generated by the student body and therefore the condition of approval should note this supply requirement. I would note that according to staffing projections, the provision of 50 parking spaces will be provided on the parking lot on the south side of Lancaster Street and I find this supply to be reasonable.*

- *I find the contents and recommendations contained in the Transportation Operations and Management Plan to be acceptable. I would suggest that the first monitoring period take place 6 months after occupancy. Details of the monitoring scope of work shall be coordinated with the City Planning Authority.*

a. Impact on Surrounding Street Systems/ Access and Circulation
The proposed Baxter Academy site will be accessed from the proposed entrances on both Elm and Lancaster Streets. The applicant was proposing that the route for school buses will be arriving from Chestnut Street, onto Lancaster, and then load/unloading curbside on the east side of the street in a designated School Drop-Off Zone at the main entrance to the building. The route for arriving parents to drop off their students will be on Elm Street, with a couple of spaces on Lancaster Street, behind the bus drop-off area. Employees will park in a designed staff parking lot located at the corner of Lancaster and Elm Street. Mr. Errico has reviewed the plan and finds it acceptable … "*I concur with the details of that letter as it relates to elimination of the proposed parking bay on the south side of Lancaster Street; using Lancaster Street for bus loading and unloading activities; and identification of specific locations for parent pick-up and drop-off activities*".

b. Parking
The academy will lease a total of fifty (50) parking spaces in an off-site surface parking lot located across Lancaster Street. The spaces will be reserved exclusively for staff only; parking will not be provided for students at the proposed site by the school. The Traffic Engineer is recommending that an additional parking spaces be provided for students, so the total number of required spaces for this use would be eighty-six (86). Below is condition of approval that Mr. Errico has recommended:

- *Based upon the Traffic Assessment, 36 vehicles will be generated by the student body and therefore the condition of approval should note this supply requirement. I would note that according to staffing projections, the provision of 50 parking spaces will be provided on the parking lot on the south side of Lancaster Street and I find this supply to be reasonable.*

Bicycle Parking
Currently, there are no bicycle parking facilities on site. The applicant is proposing to install six downtown "lollipop" bicycle racks for a total of twelve (12) parking spaces on Lancaster Street along the new proposed

sidewalk. In their TDM plan, it states "*[i]f demand warrants additional facilities, the school is committed to providing them*".

c. Transportation Demand Management (TDM)
A transportation demand management plan has been submitted. According to the plan (Attachment R), the School is encouraging variety of transportation options for students and staff. These options include charter buses, providing incentives for commuters on the METRO (Metro 8) or South Portland Bus services, and encouraging carpooling, walking, and biking. Baxter Academy has submitted a trip assignment model, prepared for all site trips impacting the street system directly adjacent to the proposed project site, see below:

400 Students and 60 Staff	Trips
40% of students (152) ride 3 chartered buses	3
25% of students (100) commute with an adult:	
• 40 students travel as a single occupant in vehicle with adult	80
• 20 students travel with a second student and adult	20
• 15 students travel with two other students and adult	10
• 25 students travel with adult to work site and walk to school	0
• 18% of students (72) use public transportation	0
• 9% of students (36) drive personal auto and park off-site	0
• 6% of students (24) car pool with fellow student and park off-site	0
• 3% of students (12) walk	0
• 1% of students (4) bike	0
• 85% of students (51) will drive to site and park in Lancaster Street parking lot	51
• 15 of students (9) will use other modes of transportation	0
Total Trips Impacting Street System	164

According to the chart, 109 trips of the total 164 peak trips, are expected to arrive at the site; the remaining 55 trips are parents leaving or dropping-off students. Mr. Errico has reviewed the document and offers the following comments:

- *I find the contents and recommendations contained in the Transportation Demand Management Plan to be acceptable. I would suggest that the first monitoring period take place 6 months after occupancy. Details of the monitoring scope of work shall be coordinated with the City Planning Authority.*

2. Environmental Quality Standards

a. Landscaping
The seven spaces that back out on Lancaster Street will be eliminated as part of this project and replaced with a sidewalk, bicycle spaces, and landscaping. This area may be the only opportunity for landscaping on the proposed site; the rest of the surface parking lot will not be improved. Jeff Tarling has reviewed the proposed landscaping and finds it acceptable.

b. Water Quality, Storm Water Management and Erosion Control
The project consists of converting the existing an existing building into the Baxter Academy for Technology and Science; no building additions are proposed. The existing site is completely impervious; therefore, the project will not create any new impervious areas. Lauren Swett, Consultant Engineer with Woodard and Curran, reviewed the development plans and had come minor comments:

1. *The Applicant has provided a copy of the City of Portland Wastewater Capacity Application within the submission. A copy of the letter confirming capacity to serve should be forwarded upon receipt.*

2. *The Applicant should provide additional detail pertaining to stairway upgrades along the northwestern side of the building on Kennebec Street. Specifically, will any regrading or pavement replacement be required? The area appears to be close to the right-of- way, and potential impacts due to construction should be reflected. A site plan should reflect any of these changes or impacts.*
3. *The project is primarily an internal building upgrade, and will not be required to provide a Stormwater Management Plan. The project is still required to comply with the Basic Standards, and provide erosion and sedimentation control as necessary. The project will have some minor site disturbance. Catch basin protection should be provided in drainage structures in the vicinity of the project. Housekeeping notes should be provided to ensure that sweeping is completed as necessary to prevent tracking from disturbed areas of the site onto adjacent roadways.*

3. Public Infrastructure and Community Safety Standards

a. Sidewalk

There are existing sidewalks on Lancaster and Elm Streets around the building. Across Lancaster Street, there is a surface parking, which serves the existing uses in the surrounding buildings. Currently, there are seven parking spaces that back onto Lancaster Street. Those spaces will be eliminated as part of this project and replaced with a sidewalk and bicycle spaces.

b. Public Safety and Fire Prevention

Captain Keith Gautreau of Fire Department has reviewed the submitted site plans and finds the proposed site plan to be acceptable.

c. Availability and Adequate Capacity of Public Utilities

The current building has public utilities that are available at the site. The applicant has submitted a capacity letters from Portland Water District but will need a capacity letter from Department of Public Works. A copy of the letter confirming capacity to serve should be forwarded upon receipt. The school does not intend on having a kitchen and lunch will be outsourced to a local vender.

4. Site Design Standards

a. Snow and Ice Loading

Snow and Ice Loading area has not been shown on the site plan. According to the applicant, the owner of the building currently has and will continue to remove snow from the parking lot through a snow plow contract with Seabreeze Property Services. The academy is aware that they will be responsible for snow removal on site.

b. Historic Resources

The project site is not located in a historic district; therefore, no review is required.

c. Exterior Lighting

The project is not proposing any new lighting fixtures and they intend to utilize the existing fixtures on site. Any proposed new exterior lighting would require review under Portland's Technical Manual.

d. Signage and Wayfinding

A traffic signage and wayfinding plan has been submitted for review. Mr. Errico reviewed the site plan and finds the plan acceptable with the following comments:

- *I would note that the specific on-street regulatory signage is not acceptable and details of parking restriction wording will be determined in conjunction of the City Parking Division.*

- *I would note that the applicant would be responsible for all costs associated with changes to parking signage and removal/relocation of parking meters. The applicant shall submit a detailed plan that summarizes changes for review and approval by the City Planning Authority.*

e. Zoning Related Design Standards
The proposal is a reuse of an existing building. There are no additions or alterations being proposed to the building.

IX. PLANNING BOARD PROPOSED MOTIONS

TRAFFIC MOVEMENT PERMIT
On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Board Report for application #2017-022 relevant to the Traffic Movement Permit and the testimony presented at the Planning Board hearing, the Planning Board finds the plan **is/ is not** in conformance with the standards for Traffic Movement Permit application for Baxter Academy for Technology and Science and **grants/does not grant** a permit subject to the following conditions:

1. As part of the Transportation Operations and Management Plan, the first monitoring period shall be conducted six months after the certificate of occupancy. The details of the monitoring scope of work shall be coordinated with the Planning Division.

2. As part of the Transportation Demand Management Plan, the first monitoring period shall be conducted six months after the certificate of occupancy. The details of the monitoring scope of work shall be coordinated with the Planning Division.

3. Based upon the Traffic Assessment, the proposed fifty (50) parking spaces are adequate to meet staff parking demands and it has been determined that an additional thirty-six (36) vehicle spaces are warranted for students. Thus a total of eighty-six (86) parking spaces are required for the proposed use. The applicant shall provide the additional thirty-six (36) spaces prior to the issuance of a certificate of occupancy.

4. The applicant shall submit signage and wayfinding plan that address the details of parking restriction and changes for review and approval by the Planning and Parking Divisions. The applicant shall be responsible for all costs associated with changes to parking signage and removal/relocation of parking meters.

A. SITE PLAN REVIEW
On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Board Report for application #2017-022 relevant to the Site Plan and other regulations, and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan **is / is not** in conformance with the site plan standards of the land use code, subject to the following conditions to be met prior to the issuance of a building permit unless otherwise stated:

1. That the applicant shall submit confirmation of ability to serve sewer letter DPS to the Planning Division prior to the issuance of a building permit; and

2. The project shall comply with the Basic Standards of Chapter 500 and provide erosion and sedimentation control on site as necessary; and

3. The Applicant shall provide additional detail pertaining to stairway upgrades along the northwestern side of the building on Kennebec Street, specifically, any regrading or pavement replacement, and potential impacts due to construction shall be reflected on the final site plan; and

5. Based upon the Traffic Assessment, the proposed fifty (50) parking spaces are adequate to meet staff parking demands and it has been determined that an additional thirty-six (36) vehicle spaces are warranted for students. Thus a total of eighty-six (86) parking spaces are required for the proposed use. The applicant shall provide the additional thirty-six (36) spaces prior to the issuance of a certificate of occupancy.

4. The applicant shall submit signage and a wayfinding plan that address the details of parking restriction and changes for review and approval by the Planning and Parking Divisions. The applicant shall be responsible for all costs associated with changes to parking signage and removal/relocation of parking meters.

5. All HVAC equipment shall meet the sound level requirements listed under 14-299 (b). Separate permits are required through Inspection Services for HVAC systems. Such application(s) shall provide HVAC dBA equipment levels. Separate permits are also required for any new exterior signs from the Department of Permitting and Inspections.

ATTACHMENTS:

PLANNING BOARD REPORT ATTACHMENTS

1. Traffic Engineer review (memo from Thomas Errico, 03.23.2017)
2. Department of Public Services review (memo from Lauren Swett, 02.27.2017)
3. Fire Department (memo from Keith Gautreau, 03.23.2017)
4. Public Comments
   - PC1 Jay York 2-14-17
   - PC2 Sarah Michniewicz
   - PC3 Bayside Neighborhood Association

APPLICANT'S SUBMITTAL

A. Baxter Level III Site Plan Application
B. Site Plan Submission Narrative
C. Authorization letter
D. Financial Capacity Letter
E. Landlord Authorization
F. Wastewater Capacity Application
G. CMP Ability to Serve Letter
H. PWD Ability to Serve Determination – 2016
I. Code review - IBC and NFPA
J. HVAC Letter
K. Trash Removal
L. Baxter Neighborhood Meeting
M. Baxter Academy Neighborhood Meeting Minutes-FINAL
N. Baxter - B7 Performance Standards
O. Bayside II Deed
P. Bayside II LLC - Title Policy includes 185 Lancaster Street
Q. Landry French Stair Excavation Sketch
R. Baxter Academy TDM Plan - FINAL 030817
S. TDM Plan Updated on March 19th per Errico's comments approved by Team
T. Baxter Academy - Site Plan Comments Responses
U. Baxter TMP Letter
V. Baxter TMP
W. Traffic Assessment- Updated
X. Traffic Operations Movement Plan
Y. Transportation Operation and Management Plan
Z. Response to Tom Errico Comment

PLANS

Plan 1 DEMO Plan

Plan 2 Existing Conditions Plan
Plan 3 Site Plan
Plan 4 Preliminary Sketch-Baxter
Plan 5 Grading Plan
Plan 6 Bayside II- Survey Plan
Plan 7 S1 SITE PLAN
Plan 8 A1 BUILDING USE PLAN
Plan 9 A1-1 FIRST FLOOR PLAN
Plan10 A1-2 SECOND FLOOR PLAN
Plan11 A2 BUILDING ELEVATIONS
Plan12 Baxter Academy RTU Layout Plan
Plan13 Construction Management Plan

Att. 1

Portland Maine | Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

Baxter Academy - Final Traffic Academy

Tom Errico <thomas.errico@tylin.com> Thu, Mar 23, 2017 at 11:48 AM
To: Shukria Wiar <shukriaw@portlandmaine.gov>

Hi Shukria – I have reviewed the application materials and offer the following final traffic comments.

- Based upon traffic estimates conducted by the applicant, the project will generate new traffic that triggers the need for a Traffic Movement Permit. A Traffic Scoping meeting was held on February 23, 2016. In response to the scoping meeting a traffic assessment was conducted by Bill Bray. I have reviewed the details of the traffic assessment and I find the contents, methods and conclusions to be acceptable. I would note that the key directive to the applicant was developing a Transportation Operations and Management Plan and a Transportation Demand Management Plan. Details on these plans are provided below.

- In response to a coordination meeting with Bill Bray, the applicant has submitted a Response to Traffic Comments letter dated March 19, 2017. I concur with the details of that letter as it relates to elimination of the proposed parking bay on the south side of Lancaster Street; using Lancaster Street for bus loading and unloading activities; and identification of specific locations for parent pick-up and drop-off activities. I would note that the applicant would be responsible for all costs associated with changes to parking signage and removal/relocation of parking meters. The applicant shall submit a detailed plan that summarizes changes for review and approval by the City planning Authority. The letter notes that student vehicle parking needs will be accommodated in the Marginal Way Rideshare Lot. The applicant has indicated that a specific parking lot location is still pending and details of an identified location will need to be a condition of approval. Based upon the Traffic Assessment, 36 vehicles will be generated by the student body and therefore the condition of approval should note this supply requirement. I would note that according to staffing projections, the provision of 50 parking spaces will be provided on the parking lot on the south side of Lancaster Street and I find this supply to be reasonable.

- I find the contents and recommendations contained in the Transportation Operations and Management Plan to be acceptable. I would suggest that the first monitoring period take place 6 months after occupancy. Details of the monitoring scope of work shall be coordinated with the City Planning Authority.

- I find the contents and recommendations contained in the Transportation Demand Management Plan to be acceptable. I would suggest that the first monitoring period take place 6 months after occupancy. Details of the monitoring scope of work shall be coordinated with the City Planning Authority.

- I have reviewed the site plan and I generally find conditions to be acceptable. I would note that the specific on-street regulatory signage is not acceptable and details of parking restriction wording will be determined in conjunction of the City Parking Division.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY LIN INTERNATIONAL

12 Northbrook Drive

Falmouth, ME 04105

207.781.4721 (main)

207.347.4354 (direct)

207.400.0719 (mobile)

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Please consider the environment before printing.

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T 207.774.2112
F 207.774.6635

MEMORANDUM

TO: Shukria Wiar, Planner
FROM: Lauren Swett, PE & Craig Sweet, EIT
DATE: February 27, 2017
RE: 185 Lancaster Street, Level III Site Plan Application

Woodard & Curran has reviewed the Level III Site Plan Application for the proposed project located at 185 Lancaster Street in Portland, Maine. The project involves interior renovations to an existing building for the use of Baxter Academy. Only minor site improvements are proposed.

Documents Reviewed by Woodard & Curran

- Site Plan Application and attachments, dated February 1, 2017, prepared by Ryan Senatore Architecture, on behalf of Baxter Academy.
- Architectural Plans, Sheets A1, A1-1, A1-2, A2, RTU Layout Plan, Construction Management Plan, and S1, dated February 1, 2017, prepared by Ryan Senatore Architecture, on behalf of Baxter Academy.
- Title Survey, dated Jan 26, 2000 prepared by Owen Haskell, Inc, on behalf of Bayside II, LLC.
- Engineering plans, dated February 21, 2017, prepared by Sebago Technics on behalf of Boulos Asset Management.

Comments

1) The Applicant has provided a copy of the City of Portland Wastewater Capacity Application within the submission. A copy of the letter confirming capacity to serve should be forwarded upon receipt.
2) The Applicant should provide additional detail pertaining to stairway upgrades along the northwestern side of the building on Kennebec Street. Specifically, will any regrading or pavement replacement be required? The area appears to be close to the right-of-way, and potential impacts due to construction should be reflected. A site plan should reflect any of these changes or impacts.
3) The project is primarily an internal building upgrade, and will not be required to provide a Stormwater Management Plan. The project is still required to comply with the Basic Standards, and provide erosion and sedimentation control as necessary. The project will have some minor site disturbance. Catch basin protection should be provided in drainage structures in the vicinity of the project. Housekeeping notes should be provided to ensure that sweeping is completed as necessary to prevent tracking from disturbed areas of the site onto adjacent roadways.
4) A survey of the overall area has been provided. The engineering plans provided for the Lancaster Street improvements should be updated to include the property/right-of-way lines such that it is clear what improvements are being done within the City right-of-way. These improvements must follow the City of Portland Technical Standards.

MEMORANDUM

To: FILE

From: Shukria Wiar

Subject: Application ID: 2017-022

Date: 3/23/2017

Comments Submitted by: Keith Gautreau/Fire on 3/22/2017

The Fire Dept. is good with what is proposed.

Level III -- Preliminary and Final Site Plans
Development Review Application
Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
p.m. (207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30

PROJECT NAME: Interior Fit-up for, Baxter Academy for Technology and Science

PROPOSED DEVELOPMENT ADDRESS: 185 Lancaster Street

PROJECT DESCRIPTION:
Interior Fit-up of 31,262 sf for a charter high school in an existing 2 story building

CHART/BLOCK/LOT: 025 F001 001

PRELIMINARY PLAN _____(date)
FINAL PLAN _____(date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer	Applicant Contact Information Attn: Kelli Pryor
Name: Baxter Academies of Maine	Work #: 207 699-5500
Business Name, if applicable:	Home #: n/a
Address: 54 York Street	Cell #: 207-699-5500 Fax#: 207-331-4831
City/State: Portland, ME Zip Code: 04101	e-mail: kelli.pryor@baxter-academy.org
Owner – (if different from Applicant)	**Owner Contact Information**
Name: Bayside II, LLC C/o Boulos Asset Managment	Work #: 207-871-1290
Address: One Canal Plaza,	Home #:
City/State: Portland, Me 04101 Zip Code:	Cell #: Fax#: 207-772-2647
	e-mail:
Agent/ Representative	**Agent/Representative Contact Information**
Name:	Work #:
Address:	Home #:
City/State: Zip Code:	Cell #: Fax#:
	e-mail:
Billing Information	**Billing Information**
Name: Baxter Academy	Work #:
Address: 54 York Street	Home #:
City/State: Portland, ME Zip Code: 04101	Cell #: Fax#:
	e-mail:

Revised: August, 2013

Engineer Will Conway Name: Sebago Technics Address: 75 John Roberts Rd City/State: South Portland Zip Code: 04106 Maine	**Engineer Contact Information** Work #: 207-200-2100 Home #: Cell #: Fax#: 207-856-2206 e-mail:
Surveyor Name: Owen Haskell Address: 390 US Route 1 #10 City/State: Falmouth, ME Zip Code: 04105	**Surveyor Contact Information** Home #: 207-774-0424 Work #: Cell #: Fax#: e-mail:
Architect Name: Ryan Senatore Architecture Address: 565 Congress Street, ste 304 City/State: Portland, ME Zip Code: 04101	**Architect Contact Information** Work #: 207-747-5159 Home #: Cell #: 207-650-6414 Fax#: e-mail: ryan@senatorearchitecture.com
Attorney Name: Daniel Amory Address: 198 Pine Street City/State: Portland, ME Zip Code: 04102	**Attorney Contact Information** Work #: Home #: Cell #: 207-450-0717 Fax#: e-mail: damory1@gmail.com

Designated person/person(s) for uploading to e-Plan:

Name: Ryan Senatore

e-mail: ryan@senatorearchitecture.com

Name:

e-mail:

Name:

e-mail:

APPLICATION FEES:

Level III Development (check applicable reviews)	Other Reviews (check applicable reviews)
X Less than 50,000 sq. ft. ($750.00) ___50,000 - 100,000 sq. ft. ($1,000) ___100,000 – 200,000 sq. ft. ($2,000) ___200,000 – 300,000 sq. ft. ($3,000) ___over 300,00 sq. ft. ($5,000) ___Parking lots over 11 spaces ($1,000) ___After-the-fact Review ($1,000.00 plus applicable application fee) **Plan Amendments (check applicable reviews)** ___Planning Staff Review ($250) ___Planning Board Review ($500) The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($50.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	X Traffic Movement ($1,500) ___Stormwater Quality ($250) ___Subdivisions ($500 + $25/lot) # of Lots___x $25/lot = _____ ___Site Location ($3,500, except for residential projects which shall be $200/lot) # of Lots___x $200/lot = _____ ___Other _____ X Change of Use ___Flood Plain ___Shoreland ___Design Review ___Housing Replacement ___Historic Preservation

INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov (Please be sure to designate a person who will be responsible for uploading documents and drawings.) This step will generate the project ID number for your project.

2. An invoice for the application fee will be e-mail to you. **Payments can be made on-line at Pay Your Invoice , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.**

3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
Tab 3 - Preparing and uploading revised drawings and documents

Applying Online Instructions

5. When ready, upload your files and documents into the following folders:
"Application Submittal – Drawings"
"Application Submittal – Documents"

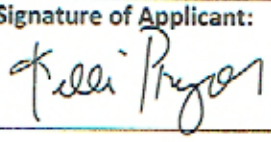
6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

APPLICANT SIGNATURE:

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	**Date:**
	February 1, 2017

PROJECT DATA

The following information is required where applicable, in order to complete the application.

Total Area of Site	75,026 sq. ft.
Proposed Total Disturbed Area of the Site	0 sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland	
Impervious Surface Area	
Impervious Area (Total Existing)	70,379 sq. ft.
Impervious Area (Total Proposed)	70,379 sq. ft.
Building Ground Floor Area and Total Floor Area	
Building Footprint (Total Existing)	53,779 sq. ft.
Building Footprint (Total Proposed)	53,779 sq. ft.
Building Floor Area (Total Existing)	92,561 sq. ft.
Building Floor Area (Total Proposed)	92,561 sq. ft.
Zoning	
Existing	B7
Proposed, if applicable	B7
Land Use	
Existing	Institutional and Office
Proposed	Institutional and Office
Residential, if applicable	
# of Residential Units (Total Existing)	
# of Residential Units (Total Proposed)	
# of Lots (Total Proposed)	
# of Affordable Housing Units (Total Proposed)	
Proposed Bedroom Mix	
# of Efficiency Units (Total Proposed)	
# of One-Bedroom Units (Total Proposed)	
# of Two-Bedroom Units (Total Proposed)	
# of Three-Bedroom Units (Total Proposed)	
Parking Spaces	
# of Parking Spaces (Total Existing)	149
# of Parking Spaces (Total Proposed)	50
# of Handicapped Spaces (Total Proposed)	6
Bicycle Parking Spaces	
# of Bicycle Spaces (Total Existing)	
# of Bicycle Spaces (Total Proposed)	
Estimated Cost of Project	$3,000,000

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
		1	Completed Application form
		1	Application fees
		1	Written description of project
		1	Evidence of right, title and interest
		1	Evidence of state and/or federal approvals, if applicable
		1	Written assessment of proposed project's compliance with applicable zoning requirements
		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
		1	Written requests for waivers from site plan or technical standards, if applicable.
		1	Evidence of financial and technical capacity
		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST**
		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)**
		Proposed grading and contours;	
		Existing structures with distances from property line;	
		Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;	
		Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);	
		Preliminary infrastructure improvements;	
		Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;	
		Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b)(1);	
		Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b)(1);	
		Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;	
		Exterior building elevations.	

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
✓		1	* Completed Application form
✓		1	* Application fees
✓		1	* Written description of project
✓		1	* Evidence of right, title and interest
N/A		1	* Evidence of state and/or federal permits
✓		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
✓		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
✓		1	* Evidence of financial and technical capacity
✓		1	Construction Management Plan
✓		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
N/A		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
N/A		1	Stormwater management plan and stormwater calculations
✓		1	Written summary of project's consistency with related city master plans
✓		1	Evidence of utility capacity to serve
✓		1	Written summary of solid waste generation and proposed management of solid waste
✓		1	A code summary referencing NFPA 1 and all Fire Department technical standards
✓		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
✓		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
✓		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	**Final Site Plans including the following:**
✓			Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);
✓			Existing and proposed structures on parcels abutting site;
✓			All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;
✓			Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;
✓			Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;
N/A			Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;
N/A			Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;
✓			Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;
N/A			Location of all snow storage areas and/or a snow removal plan;
N/A			A traffic control plan as detailed in Section 1 of the Technical Manual;
N/A			Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);
N/A			Location and proposed alteration to any watercourse;
N/A			A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;
N/A			Proposed buffers and preservation measures for wetlands;
N/A			Existing soil conditions and location of test pits and test borings;
N/A			Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;
N/A			A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;
✓			Grading plan;
N/A			Ground water protection measures;
N/A			Existing and proposed sewer mains and connections;

- Continued on next page -

✓		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
N/A		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
N/A		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
✓		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
✓		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
N/A		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
N/A		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
N/A		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
N/A		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
✓		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
✓		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

PORTLAND FIRE DEPARTMENT
SITE REVIEW
FIRE DEPARTMENT CHECKLIST

A separate drawing[s] shall be provided as part of the site plan application for the Portland Fire Department's review.

1. Name, address, telephone number of applicant
2.
3. Name address, telephone number of architect

4. Proposed uses of any structures [NFPA and IBC classification]
5.
6. Square footage of all structures [total and per story]

7. Elevation of all structures

8. Proposed fire protection of all structures
   - ***As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)***

9. Hydrant locations

10. Water main[s] size and location

11. Access to all structures [min. 2 sides]

12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards.

Some structures may require Fire flows using annex H of NFPA 1

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: _____

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 185 Lancaster Street

Chart Block Lot Number: 025 E001 001

Proposed Use: Institutional and Office

Previous Use: Institutional and Office

Existing Sanitary Flows: _____ GPD

Existing Process Flows: _____ GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

_____

_____

Site Category:

Commercial *(see part 4 below)*	X
Industrial *(complete part 5 below)*	
Governmental	
Residential	
Other *(specify)*	

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: _____ Phone: _____

Owner/Developer Name: _____

Owner/Developer Address: _____

Phone: _____ Fax: _____ E-mail: _____

Engineering Consultant Name: _____

Engineering Consultant Address: _____

Phone: _____ Fax: _____ E-mail: _____

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: _____ GPD

Peaking Factor/ Peak Times: _____

Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __ "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* _____

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

Do you currently hold Federal or State discharge permits? Yes____No ____

Is the process wastewater termed categorical under CFR 40? Yes____No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

RYAN SENATORE **ARCHITECTURE**

February 1, 2017

Barbara Barhydt
Planner
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Baxter Academy Interior Fit-up
185 Lancaster Street, Portland, Maine

Barbara,

Please see the attached documents for the Level III Site Plan submission for the Interior Fit-Up project for Baxter Academy at 185 Lancaster Street. This document serves as the written narrative for numerous items within the Final Plan checklist for the Level III Site Plan.

Written Description of Project

Baxter Academy for Technology and Science is a Charter High School with a proposed enrollment of 410 students and 60 Adult Professionals, the Academy is looking to move from their current location to the existing two story brick building located at 185 Lancaster Street in Portland's Bayside neighborhood. The existing building at 185 Lancaster street is a multi-tenant building, the first floor area where Baxter Academy is moving to was occupied primarily by the Maine Career Center which was a training and educational use. The remaining area (2,159 sf) of the first floor was an office use. The second floor area (13,414 sf) Baxter Academy is moving to was an office use. The total area that we are proposing to change from Office use to Institutional is 15,573 sf, thus requiring the Level II Site Plan Process. The school is primarily classroom and lab spaces with supporting office spaces. There is not a cafeteria or food preparation function at the facility. The improvements to the building are primarily interior in nature with minor exterior improvements to upgrade egress, such as replacement of existing exterior stairs and guardrails, replacing exterior doors (to match existing) and select exterior windows that have failed seals (to match existing).

207-650-6414

senatorearchitecture.com

ryan@senatorearchitecture.com

565 Congress Street, Suite 304
Portland, Maine 04101

Evidence of State and Federal Permits

The project is an interior Fit-up, we will be required to file for a State Fire Marshal, Construction and Barrier Free Permit, as well as the City of Portland Building Permit. We are not aware of any other permits required for this project.

Written Assessment of Zoning Requirements

185 Lancaster Street is located in the B7 zone, which allows Institutional (public or private schools). The project is not proposing any space and bulk changes so we would not affect the current buildings relationship to the B7 Zoning.

Written Summary of significant natural Features

The project is an interior Fit-up, as the project site is fully built out currently we are not aware of any significant natural features on the property.

Stormwater Management Plan

The project is an interior Fit-up, as the project site is fully built out currently and no exterior improvements on the ground are proposed the current stormwater conditions will not be altered as part of this project.

Written Assessment of Consistency with related City Master Plan

The project is a permitted us within the B7 zone, it also adds to the diversity of uses in the Bayside Neighborhood as indicated in the City's planning document. 'A New Vision for Bayside'.

Code Summary and Fire Department Technical Standards

As part of the building permit process we will submit a code analysis referencing both NFPA 101 and IBC 2009 codes. In regard to NFPA 1, the existing building where the school will be located is accessible on 3 sides adjacent to City Streets providing Fire Department access. In regard to technical standards, all interior spaces will be designed to be in conformance with NFPA 101, as the project is an interior Fit-up exterior improvements are very minimal and not affect current fire department access to the building and site.

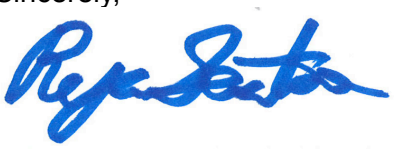
207-650-6414

senatorearchitecture.com

ryan@senatorearchitecture.com

565 Congress Street, Suite 304
Portland, Maine 04101

Sincerely,



Ryan Senatore, AIA LEED-AP

Principal

207-650-6414

senatorearchitecture.com

ryan@senatorearchitecture.com

565 Congress Street, Suite 304
Portland, Maine 04101

Att. C

January 5, 2017

City of Portland
389 Congress Street
Portland, ME 04101

RE: Bayside II, LLC Authorization
Baxter Academy, Level II Site Plan Application and Change of Use
185 Lancaster Street, Portland, Maine

To Whom It May Concern:

This letter serves as authorization for Baxter Academy to submit a Level II site plan application and a change of use request for Leased space at the above reverenced property.

Sincerely,
BAYSIDE II, LLLC

Thomas A. Toye, III
Owner

Att. D

Nonprofit Finance Fund

January 3, 2017

Peter Montano, Treasurer
Baxter Academies of Maine
54 York Street
Portland, ME 04101

Dear Mr. Montano,

Nonprofit Finance Fund ("NFF") has reviewed preliminary information pertaining to Baxter Academies of Maine's request for financing in connection with the proposed leasehold improvements to the building located at 185 Lancaster Street, Portland, ME, 04101 (the "Property") for use as the Baxter Academy for Technology and Science charter school facility. NFF is pleased to provide a letter of interest and preliminary terms for a $3,000,000[1] loan ("Loan") for leasehold improvements to the Property. Final terms of the Loan will be determined as NFF completes its analysis; however, the following provides an initial indication of the financing available from NFF:

Borrower:	Baxter Academies of Maine (the "Borrower")
Amount:	Up to $3,000,000[1]
Interest Rate:	
Final Maturity Date:	
Origination Fee:	
Security:	
Loan-to-Value Ratio:	
Equity Contribution:	
Payment:	

Nonprofit Finance Fund

Expenses:

Good Faith Deposit:

The terms of this letter are subject to additional due diligence and subject to credit approval. This letter is for discussion purposes only and does not constitute a commitment to lend.

We are eager to move forward evaluating your Loan application and looks forward to working with you on this project. If you have any questions, please do not hesitate to call Brenda Loya at 212-457-4717.

Sincerely,

Brenda Loya
Director, Senior Investment Officer

Please indicate acceptance by signature and date:

Baxter Academies of Maine

By: _____ Date: _____

Title: _____

DocuSign Envelope ID: 51354E57-A4C7-40C2-9DFA-32480DA4302D

January 5, 2017

City of Portland
389 Congress Street
Portland, ME 04101

RE: Bayside II, LLC Authorization
Baxter Academy, Level II and Level III Site Plan Application and Change of Use
185 Lancaster Street, Portland, Maine

To Whom It May Concern:

This letter serves as authorization for Baxter Academy to submit a Level II and Level III site plan application and a change of use request for Leased space at the above reverenced property.

Sincerely,
BAYSIDE II, LLLC

DocuSigned by:
7AA616D86A0647B...

Thomas A. Toye, III
Owner

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Date: _____

Bradley Roland, P.E.
Water Resources Division

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 185 Lancaster Street

Chart Block Lot Number: 025 F001 001

Proposed Use: Institutional and Office

Previous Use: Institutional and Office

Existing Sanitary Flows: _____ GPD

Existing Process Flows: _____ GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

_____

_____

Site Category

Commercial *(see part 4 below)*	X
Industrial *(complete part 5 below)*	
Governmental	
Residential	
Other *(specify)*	

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: _____ Phone: _____

Owner/Developer Name: _____

Owner/Developer Address: _____

Phone: _____ Fax: _____ E-mail: _____

Engineering Consultant Name: BENNETT ENGINEERING

Engineering Consultant Address: 7 BENNETT RD, FREEPORT

Phone: 865-9475 Fax: _____ E-mail: will@bennettengineering.net

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 4820 GPD

Peaking Factor/ Peak Times: 75 GPM - 8AM-5PM / MONDAY-FRIDAY.

Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __"Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES (10 144 CMR 241), ASHRAE MODIFIED HUNTER CURVE

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations. NA

Total Drainage Fixture Unit (DFU) Values: _____

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations NA

Estimated Industrial Process Wastewater Flows Generated: _____ GPD

Do you currently hold Federal or State discharge permits? Yes ___ No ___

Is the process wastewater termed categorical under CFR 40? Yes ___ No ___

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

From: Cough, Jamie [mailto:Jamie.Cough@cmpco.com]
Sent: Wednesday, January 04, 2017 6:18 AM
To: Will
Subject: 185 Lancaster Street CMP Ability To Serve Letter

1/4/17

William Bennett
Bennett Engineering
7 Bennett Road
Freeport, ME 04032
Sent via email to: will@bennettengineering.net

RE: CMP Ability to Serve Letter for Baxter Academy at 185 Lancaster Street in Portland, ME.

Dear Mr. Bennett:

CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, please feel free to contact me.

Att. H

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

January 11, 2017

Jonathan Miller
Bennett Engineering, Inc.
7 Bennett Road
Freeport, ME 04032

Re: Baxter Academy, 185 Lancaster Street-PO
Ability to Serve with PWD Water

Dear Mr. Miller:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on January 4, 2017. Based on the information provided per PWD approved final utility plans to be submitted, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter does not constitute approval of this project from the District. Review and approval of final plans is required.**

Conditions of Service

The following conditions of service apply:

- Since the water demand at this site is not anticipated to change, the existing service line at this site may be used to provide domestic water to the building as long as the project team determines that they will provide adequate flow and pressure for the proposed use. If any of the existing services will no longer be used as a result of the development then they must be retired per PWD standards. This includes shutting the corporation valve and cutting the pipe from the water main (for ≤2-inch services) or removing the gate valve and capping the tapping sleeve (for ≥4-inch service).

- Water District approval of water infrastructure plans will be required for the project prior to construction. As your project progresses, we advise that you submit any preliminary design plans to MEANS for review of the water main and water service line configuration. We will work with you to ensure that the design meets our current standards.

- Once the project is ready for construction, the owner or contractor will need to make an appointment to come in and complete a service application form and pay the necessary fees.

225 DOUGLASS STREET P.O. BOX 3553 PORTLAND, MAINE 04104-3553
PHONE: 207.774.5961 FAX: 207.761.8307 WEB: WWW.PWD.ORG

Existing Site Service

According to District records, the project site does currently have existing water service. A 4-inch diameter cast iron domestic and 8-inch fire service line provides water service to this site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of these services.

Water System Characteristics

According to District records, there is an 8-inch diameter cast iron water main in Lancaster Street and a public fire hydrant located 50 feet from the site. Recent flow data is not available in this area. The most recent static pressure reading was 103 psi on September 20, 2016.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

Gordon S. Johnson, P.E.
Engineering Services Manager

Code Review

Dec 23, 2016

Baxter Academy at 185 Lancaster Street

	IBC 2009		NFPA 101 2009	
2 floors above grade	502.1			
Sprinklers		NFPA 13		NFPA 13
Fire Alarm		Monitored Fire Alarm Required		Monitored Fire Alarm Required
Smoke and CO Detectors		Smoke and CO detectors required		Smoke and CO detectors required
		Emergency Lighting		Emergency Lighting
Areas		First floor Tenant area = 19,211 sf		
		Second floor Tenant area = 12,360 sf		
	1004.1.1	Classrooms 20 net sf per occ.	7.3.1.2	Classrooms 20 net sf per occ.
		Shops and Vocational 50 net sf per occ.		Labs, Shops 50 net sf per occ.
Occupant Load	T 1004.1.1	First Floor = 350 Occupants	7.3.1.2	First Floor = 359 Occupants
		Second Floor = 310 Occupants		Second Floor = 318 Occupants
		Total Building Occupant Load = 660		**Total Building Occupant Load = 677**
Use Group(s)	305.1	First and Second Floor - Educational	14.1.10	Educational
	304.1	Basement First and Second Floor - Business	38.1.10	Business
Construction Type	T 503	3B - mixed-combustible		III (000) Mixed-combustible
Building Height	T 503	E = 2 stories, 55 feet		
		B = 3 stories, 55 feet		
Building Area	T 503	E = 14,500 sf		
		B = 19,000 sf		

	First Floor Footprint. = 53,779 sf			
	506.2	Building area Frontage Increase		
		If = (1309'/1309'-0.25) 30'/30		
		If = 0.75		
		Aa = 10,875+(14,500x3)		
		Aa = 54,375 sf allowed		
Building Elements	T 601	0 hr Structural Frame	14.1.6	Educational (No Minimum Construction requirements)
	T 602	2 hr Bearing Walls Exterior	38.1.6	Business (no minimum requirements)
	T 601	0 hr Bearing Walls Interior		
	T 601	0 hr Non-Bearing Walls Interior	14.1.1.2	Classrooms over 50 occ are Assembly
	T 602	1 hr Non-Bearing Walls Exterior (sep. dist 10'<= 30')		
	T602	1hr Non-Bearing Walls Exterior (sep. dist 0'<10')		
	T 602	0 hr Non-Bearing Walls Exterior (sep. dist >30')		
	T 601	0 hr Floor Construction and secondary members		
	T 601	0 hr Roof Construction		
	1007.3 (3)	Areas of Refuge are not required at exit stairs with sprinkler systems		
Separations				
	506.1	NON-Separated Use	6.1.14.2.1	Multiple Occupancy
				Educational and Business
	708.4	1 hr Elevator Shaft < 4 stories	8.6.5	1 hr < 4 stories
	708	2 hr Mechanical Shaft >= 4 stories		
	708	1 hr Mechanical Shaft < 4 stories		
	1022.1	1 hr Stair Shaft < 4 stories		
	1018.1	(smoke partitions) 0 hr Corridor with sprinkler for B and E	14.3.6.1.2	Corridor walls to be smoke partitions with sprinkler
	508.2.5	1 hr Boiler Room	14.3.2.1.1	1 hr Boiler Room
	508.2.5	1 hr Trash Room	14.3.2.1.1	1 hr Trash Room
	508.2.5	1 hr Storage Room	14.3.2.1.1	1 hr Storage Room
	508.2.5	1 hr Laundry Room	14.3.2.1.1	1 hr Laundry Room

	715.4	60 minute Stairwell Doors (1hr shaft)		
Distances and Exits	1018.1	Corridors 44” wide	14.2.3.2	Corridors to be 6’ wide clear minimum
	1018.1	Corridors 72” wide in E occupancy with 100 occupants		
	1021.1	2 Exits required (less than 500 occ. per story)	14.2.4	2 Means of Egress required
		3 Exits required (more than 500 occ. per story)		
	1016.1	250’ Travel Distance to exits with Sprinklers E occupancy	14.2.6.3	200’ Travel distance with sprinkler
	1014	75’ common path of travel	14.2.5.3.1	100’ Common Path of Travel
	1018.4	50‘ Dead End with sprinkler	14.2.5.2	50‘ Dead End with sprinkler
			14.2.5.4	Rooms larger than 1000 sf or 50 occupants need
				2 exit doors that lead to separate exits
			14.2.5.6	Doors cannot swing into exit corridor (provide recess)
			14.2.11.1.2	Window for Rescue - not required with sprinkler
			14.3.3.2	Interior finishes Wall Ceiling Class A or B
			14.3.3.3	Floors to be Class I or II (exits to have Class II)
Unprotected Openings	T 705.8	15% when exterior wall sep. dist. is 3’>5’		
	T 705.8	45% when exterior wall sep. dist. is 10’>15’		
	T 705.8	75% when exterior wall sep. dist. is 15’>20’		
	T 705.8	Unlimited when exterior wall sep. dist. is 25’>30’ (allows ‘0’ hr exterior walls per footnote ‘h’ in 2012 and 104.11 in 2009)		
	T 705.8	Unlimited when exterior wall sep. dist. is 25’>30’ (allows ‘0’ hr exterior walls per footnote ‘h’ in 2012 and 104.11 in 2009)		
	T 705.8	Unlimited when exterior wall sep. dist. is >30’ (allows ‘0’ hr exterior walls per footnote ‘h’ in 2012 and 104.11 in 2009)		
Elevator Lobby	708.14.1.4	Not required with sprinkler		
Elevator as MoE	1007.2.1.1	Not required as it is less than 4 stories		
Egress width	1005.1	Stairs from second floor (0.3 times 310 occupants) = 93”		
		2 stairs each needs to be 46.5” wide		
		Corridors on second floor (0.2 times occupants 310) = 62”		
		Corridors on first floor (0.2 times occupants 350) = 70”		

Egress Stairs	1009.1	Occ. Load >50 = 44” min width	24.2.5.4	36” min. stair width
	1009.1	Occ. Load <=50 = 36” min width	7.2.2.2.1.2(B)	44” min. over 50 occ.
	1003.3	Handrails can protrude into stair 4.5” max	7.2.2.2.1.2	Handrails can protrude into stair 4.5” max
	1005.2	Door Swings may not reduce egress width by > 1/2		
	1009.2	80” min headroom	7.2.2.2.1.1(a)	6’-8” min. headroom
	1009.3	7” max. riser	7.2.2.2.1.1(a)	7” max. riser
	1009.3	11” min Tread depth	7.2.2.2.1.1(a)	11” min. tread
	1009.6	12’ max. total rise between floors or landings	7.2.2.2.1.1(a)	12’ max. height between landings
Ramps	1010.2	1:12 (8%) Max slope	7.2.5.2(a)	1:12 max. slope
	1010.6	60” long landings at top and bottom		
	1010.6	2% max slope of landings	7.2.5.2(a)	1:48 max. cross slope
	1010.8	>6” rise must have handrails on both sides of ramp		
Egress Corridors	1018.2	44” min. when Occ. > 50		
	1018.2	36” min. when Occ. <= 50		
	1018.2	24” min. at service corridors to mechanical equipment		
	1018.1	Corridors 44” wide		
	1018.1	Corridors 72” wide in E occupancy with 100 occupants		
Accessibility	Ch 11 of IBC 2009 does not apply as State of ME did not adopt it as part of MUBEC			
	Must meet ADAAG 2010			
	Maine Human Rights Act Applies			
Plumbing	205 male students			
UPC 2015	Secondary	Toilets 1 per 50 = 5 toilets		
		Urinals 1 per 100 = 3 urinals		
		Lavatory 1 per 40 = 6 Lavatories		
		Water Fountains 1 per 150 = 2		
	205 female students			
	Secondary	Toilets 1 per 30 = 7 toilets		
		Lavatory 1 per 40 = 6 Lavatories		

			30 male staff			
				1 per 50 occ = 1 toilet		
				1 per 100 = 1 urinal		
				1 per 40 = 1 lavatory		
			30 male staff			
				1 per 30 occ = 1 toilet		
				1 per 40 = 1 lavatory		

Att. J

LANDRY/FRENCH
CONSTRUCTION COMPANY

January 3, 2017

To: City of Portland Planning Staff

Re: Mechanical Equipment Manufacturer's Verification for Baxter Academy Renovation – 185 Lancaster Street, Portland

To Whom It May Concern, due to the condensed and simultaneous design/permitting process associated with the aforementioned project, we have not yet selected design/build mechanical and plumbing contractors; which would provide the required documents requested to verify the HVAC manufacturer's ability to meet applicable state and federal emissions requirements.

Please take this letter as written confirmation that all HVAC equipment will be specified to meet/exceed all state and federal emissions requirements and note that verification will be submitted to the City of Portland once available.

Please let me know if you have any questions/concerns.

Thank you.

Mason Rowell
Director of Preconstruction Services

Cc: Ryan Senatore, Will Bennett, Rick Cormier, File

Att. K

CBRE | Boulos Asset Management

Part of the CBRE affiliate network

One Canal Plaza, Suite 500
Portland, ME 04101
T 207.871.1290
F 207.772.2647

December 16, 2016

Ryan Senator
Ryan Senator Architecture
565 Congress Street
Portland, ME 04101

RE: Trash Disposal

Dear Mr. Senator,
All tenants of Bayside II, LLC, you have access to the dumpster located in the Lancaster Street parking lot. This includes tenants in 185 Lancaster Street Portland, ME where Baxter Academy is proposing a new location. Currently solid waste is removed on a daily basis by Pine State Disposal.

Please feel free to contact me at (207) 871-1290 with any questions regarding this matter. Thank you.

Sincerely,

Brian Brooks
Property Manager, Bayside II, LLC
CBRE| Boulos Asset Management

Att. L

Neighborhood Meeting 03/01/17

Sign in Sheet

Baxter Academy Project
185 Lancaster Street

Print Name	Signature
Brian Brooks	[illegible]
Bill Bray	[illegible]
Ryan Senatore	[illegible]
DANIEL AMORY	D Amory
Kelli Pryor	Kelli Pryor
Michele LaForge	Michele LaForge
George Rheault	George Rheault
SUSAN McCLOSKEY	
Susan McCloskey	S McCloskey
[illegible]	SARAH MICHNIEWICZ
Steve Hirshon	[illegible]
Morris Fisher	M Fisher

Baxter Academy Neighborhood Meeting
Meeting Minutes
March 1, 2017

The Neighborhood Meeting was held at 185 Lancaster Street, Portland, ME 04101 on the first floor of the proposed Baxter Academy space. The meeting was open to the public and started promptly at 6:00pm. Meeting concluded at 6:30pm.

PRESENTERS:

Ryan Senatore- Ryan Senatore Architecture
Kelli Pryor- Executive Director, Baxter Academy
Michele LaForge- Head of School, Baxter Academy

ALSO PRESENT:

Bill Bray, P.E. – Traffic Consultant, Traffic Solutions

PRESENTER COMMENTS:

- Ryan Senatore opened the meeting with a short presentation on the proposed facility and site plan.
    - Mr. Senatore explained there will be some minor exterior changes to the 185 Lancaster Street building to include new Baxter Academy signage and new windows where needed.
    - Baxter Academy will be located on the southwest third of the 165-175-185 Lancaster Street building which will include approximately 32,000 square feet.
    - A drop-off zone will be created across the street from the school entrance on 185 Lancaster Street.
    - Mr. Senatore indicated he had been working with the City of Portland on new traffic signage including "School Zone" indicator lights and "Drop-off Zone" signs.
    - Mr. Senatore outlined the interior floor plans for the first and second floors of the proposed Baxter Academy space.
        - First floor consists of an entryway, classrooms, fabrication labs and restrooms.
        - Second floor consists of small classrooms, offices and restrooms. There will also be a new rear stairway created for the non-Baxter Academy second floor tenants.
- Kelli Pryor and Michele LaForge started with giving a brief synopsis of the history of Baxter Academy and then spoke about school operations.

- Baxter Academy opened their doors in 2013 and services a geographic area four times the size of Rhode Island.
- Public transportation is used by many of the students to get to school each day.
- Baxter Academy is STEM (Science, Technology, Engineering and Math) focused.
- Baxter Academy has close ties with the community.
- When Baxter Academy opened in 2013 they had an enrollment of 125 students consisting of freshmen and sophomores. Each of the next two years Baxter increased their enrollment by 100 students by bringing in a new freshmen class. By 2015 they had freshmen through senior enrollment. Their peak enrollment will be 400 students.
- Upper classman often take college courses. The proposed 185 Lancaster Street location is conveniently located between MECA and USM.
- When they finished their brief presentation, the floor was open for public comment and question.

<u>PUBLIC COMMMENT:</u>

- Member of Public asked if meals for the students would be prepared in the building.
    - Michele LaForge answered the question.
        - Food will not be prepared onsite, Baxter Academy works closely with local restaurants to create $5 meal packages for the students. Michele invoked suggestions.
- Member of public inquired about traffic implications and in particular number of trips during peak hours.
    - Bill Bray of Traffic Solutions addressed the question.
        - During peak hours there are 200 trips. This included parents dropping off students which are actually considered two trips. The first trip is coming to the school to drop off the student and the second trip is when they leave the school after dropping the student off. 25% of the students are dropped off at the school by a parent. There are expected to be as many as 60 staff members, 50 of which will be driving to school. There are 3 charter buses that will be dropping students off in the morning and picking them up in the afternoon.
        - There will be a 15 MPH School Zone sign with light indicators that will flash during specific hours.

        - A Traffic Movement Permit will need to be obtained because this project will generate more than 100 trips during peak hours.
        - Baxter Academy is looking at things it can do to reduce the vehicular traffic.
- Member of public asked Kelli and Michele what measures will be taken to deal with conditions in the neighborhood.
    - Michele LaForge addressed the questions
        - Adults will accompany students during lunch break and other designated times. Adults will wear bright colored tee shirts with Baxter Academy logo and information.
        - Baxter Academy is currently using a text alert system and they plan to continue.
        - All students will be traveling in groups when outside the building.
- Member of public asked about parking pressure.
    - Kelli Pryor addressed the concern.
        - Baxter Academy will have 50 parking spaces in the parking lot across Lancaster Street for staff members. Students with vehicles will be encouraged to park in the Marginal Way commuter lot and walk to school.

There were no further questions or comments. Meeting ended at 6:30pm 3/1/17.

RYAN SENATORE **ARCHITECTURE**

March 20, 2017

Shukria Wiar
Planner
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Baxter Academy Interior Fit-up
185 Lancaster Street, Portland, Maine

Shukria,

Below we will address how the Baxter Academy project meets the B7 Design Principles and Standards.

Standard A-1 Sense of Place

- The existing building holds the current street grid and the proposed Baxter Academy building entries are located at the current building entries. The first floor fenestration is to remain as currently exists which is highly transparent and active to the streetscape

Standard A-2 Edges and Transitions

- The building is existing and is in scale with the adjacent surrounding structures

Standard A-3 Gateways

- The existing building scale has a presence on the street corner it is locate don the proposed building signage will enhance the presence on Elm street.

Standard A-4 Views and Landmarks

- The existing building holds the existing street grid, no proposed exterior modification will affect views and landmarks in the neighborhood.

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ryan@senatorearchitecture.com

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Standard A-5 Pedestrian Environment

- The existing building has large amounts of fenestration at the sidewalk level and at a consistent rhythm. The facades have entry awnings at entrances and brick piers breaking up the facades, we are proposing additional signage at the entry to enhance the pedestrian experience.

Standard A-6 Mix of Uses

- The existing building is primarily office uses, the proposed project adds an educational use to the building enhancing the mixed use of the site and building.

Standard A-7 Building Orientation

- The existing building holds the existing street grid, and is located very close to the property lines on all facades. The existing entries are oriented to the streets.

Standard B-1 Streets and Alleys

- The existing sidewalks are scaled to the pedestrian environment and the major intersection at the cornet of the building has crosswalks and there is proposed 'School' signage on the street to serve traffic calming measures. There is proposed landscaping at the added sidewalk along Lancaster street to enhance the pedestrian experience and scale. The sidewalk and landscaping will be designed to the city's streetscape standards.

Standard B-2 Street Connectivity

- The existing street grid is connected and no changes are proposed.

Standard B-3 Mid Block Permeability

- The existing building is continuous for the streets and block it is located on, no changes are proposed.

Standard B-4 Sidewalks and Crosswalks

- The existing sidewalk and crosswalks at the street corner are new and per city standards, the proposed new section of sidewalk is designed to the maximum width feasible.

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Standard B-5 Green Streets

- The small area of proposed site work includes new landscaping to provide additional green elements at the street.

Standard B-6 Multi-modality

- The existing site has multi-modality, there is a bus stop adjacent to the building, the site has sidewalks and areas for pedestrians and bicyclists to circulate to and around the building.

Standard B-7 Continuity of Street Level uses

- The existing building creates a pleasant pedestrian environment, there are no loading docks on the primary streets (Elm and Lancaster)

Standard B-8 Traffic Calming

- The existing street corner of Elm and Lancaster has newly created sidewalks and crosswalks to help clam traffic, there is proposed ‘School‘ signage to help calm traffic on Elm Street as well.

Standard B-9 Streetscape Design

- The proposed site work utilizes the City streetscape standards for Bayside for the proposed sidewalk addition, landscaping and signage.

Standard B-10 Encroachments

- There are no new encroachments proposed on the city sidewalks

Standard B-11 Lighting

- There are no proposed changes to the existing site or building exterior lighting

Standard C-1 Parking Structures

- There are no proposed parking structures

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Standard C-2 Parking Entrances

- There are no proposed parking structure entrances

Standard C-3 Active Uses

- There are no proposed parking structures

Standard C-4 Back of Parking Structures

- There are no proposed parking structures

Standard C-5 Decks and Ramps

- There are no proposed parking structures

Standard C-6 Surface Lots

- There is proposed additional landscaping at the area of sidewalk adjacent to the existing parking lot.

Standard C-7 Bike Racks

- New Bike racks are proposed at the area of new site work near the entry of Baxter Academy, they are designed per the City Standards

Standard C-8 Service, Utility and Mechanical Infrastructure

- Existing Infrastructure will be utilized, any new rooftop mechanical units will be located on existing rooftop mechanical unit curbs, which are set back from the facades and not visible to pedestrians on sidewalks adjacent to the building.

Standard D-1 Open Space Design

- Public parks are accessible from the sidewalks surrounding the building. No new proposed seating or trash receptacles are proposed.

Standard D-2 Bayside Trail

- The existing site is located within walking distance to the Bayside Trail.

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Standard D-3 Landscaping and Street Furniture

- The proposed landscaping is designed to the Design Standards and will enhance the character of the street along Lancaster and Elm.

Standard D-4 Pedestrian Amenities

- The proposed signage will help pedestrians and vehicles navigate the adjacent site around the building.

Standard D-5 Public Art

- No new public art is proposed for the site due to the limited exterior improvements proposed for the project.

Standard E-1, 2, 3, 4 Architectural Design

- Due to the building being existing the Height, Massing, Articulation will not be changed

Standard E-5 Flexibility of Interior Layout

- The proposed interior layout is designed to provide a visually porous facade and the interior activities will help activate the streetscape.

Standard E-6 Entrances

- The existing Primary Entrances are oriented to toward the streets along Elm and Lancaster.

Standard E-7 Windows

- The existing building has a high amount of windows on the street facades.

Standard E-8 Storefronts

- The existing fenestration is not proposed to be modified in a drastic way, all new storefront glazing will be located within existing masonry openings.

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Standard E-9 Back Sides of Buildings

- There are no residential properties on the back sides of the existing building

Standard E-10 Rooftop Appurtenances

- Rooftop Appurtenances will not block view corridors, the limited rooftop work is the replacement of existing HVAC units.

Standard E-11 Fences and Walls

- There are no proposed fences or new exterior walls as part of the project.

Standard E-12 Materials

- The existing Brick facades of the building are in character with the prominent neighborhood material.

Standard E-13 Transparency

- Any new window replacements will have glazing with a VT or 0.7 or greater.

Standard E-14 Illumination

- No facade illumination is proposed

Standard E-15 Weather Protection

- Existing awnings are located at building entries are are to remain.

Standard E-16 Signage

- The proposed signage located at the building entry are designed to meet the B-7 Signage standards. A blade sign is proposed at the main School Entrance and a Blade sign is proposed on the corner of the building at the street corner of Elm and Lancaster.

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Standard E-17 Historic Buildings

- The building is not a designated Historic Structure

Standard E-18 Sustainable Design

- This building is not controlled by the City

Standard E-19 Shadows

- The proposed changes to the building will not affect existing shadow patterns.

Standard E-20 Wind

- The proposed changes to the building will not affect existing wind patterns.

Sincerely,

Ryan Senatore, AIA LEED-AP

Principal

207-650-6414

senatorearchitecture.com

ryan@senatorearchitecture.com

565 Congress Street, Suite 304
Portland, Maine 04101

0005593 BK15298PG144

QUITCLAIM DEED
(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS, that **October Corporation**, a corporation organized and existing under the laws of the State of Maine and having a place of business in Portland, County of Cumberland, and State of Maine, for consideration paid, RELEASES to **Bayside II, LLC**, a Maine limited liability company organized and existing under the laws of the State of Maine, the mailing address of which is P.O. Box 266, Cape Elizabeth, Maine, 04107, certain real estate located in Portland, County of Cumberland, and State of Maine, and more particularly described in Exhibit A, attached hereto and made a part hereof (the "Premises").

The above-described Premises are a portion of the property conveyed to Grantor by deed of October Holdings, LLC, dated January 3, 2000, and recorded in the Cumberland County Registry of Deeds in Book 15259, Page 296.

IN WITNESS WHEREOF, the said October Corporation has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Owen W. Wells, its President, thereunto duly authorized, this 26th day of January, 2000.

MAINE REAL ESTATE TAX PAID

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

Witness
Printed Name: Paul D. Petrucci

OCTOBER CORPORATION

By: _____
Owen W. Wells
Its President

STATE OF MAINE
County of Cumberland, SS.

January 26, 2000

Then personally appeared the above-named Owen W. Wells, President of October Corporation, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said October Corporation.

Before me,

~~Notary Public~~/Maine Attorney-at-Law
Printed Name: Paul D. Petrucci
Commission Expires:

Exhibit A

Deed Description for Bayside II, LLC
Parcels 1, 2 and 3

PARCEL 1:

A certain lot or parcel of land, with the improvements thereon, situated in the block bounded by Elm, Kennebec, Chestnut and Lancaster Streets, in the City of Portland, County of Cumberland and State of Maine and shown as Parcel 1 on ALTA/ACSM Land Title Survey on Kennebec Street, Lancaster Street East, Elm Street, Cedar Street and Oxford Street, Portland, Maine made for Bayside II, LLC by Owen Haskell, Inc., dated January 24, 2000 and recorded in the Cumberland County Registry of Deeds in Plan Book 200, Page 41 (the "Plan"), being bounded and described as follows:

Beginning at the intersection marking the northwesterly side of Lancaster Street and the northeasterly side of Elm Street;

Thence by the northeasterly side of Elm Street N 43° 46' 33" W, a distance of 158.86', to an angle in said Street;

Thence N 40° 53' 33" W a distance of 31.49' to the southeasterly side of Kennebec Street, marking a non-tangent point on a curve, in said Street;

Thence northeasterly by the southeasterly side of said Kennebec Street and by a curve to the left whose radius is 695.00', an arc distance of 210.01', to a point of tangency;

Thence continuing by said Kennebec Street N 48° 56' 54" E, a distance of 251.30', to the southwesterly side of said Chestnut Street;

Thence by the southwesterly side of said Chestnut Street S 44° 38' 26" E, a distance of 164.71' to the northwesterly side of said Lancaster Street;

Thence by the northwesterly side of said Lancaster Street S 49° 39' 27" W, a distance of 461.02', to the point of beginning.

Said parcel contains 76,368 square feet. Meaning and intending to describe the same parcels as described in the deed to the October Corporation as parcels 4, 20, 21, 22 and

24, in the deed recorded in the Cumberland County Registry of Deeds in Book 13803 Page 4.

Parcel 1 is subject to a railroad right of way over a two and one-half foot strip adjoining Kennebec Street as set forth in a deed from Portland Terminal Company to Arrow Rentals (n/k/a Arrow Realty) dated June 10, 1974 and recorded in said Registry of Deeds in Book 3744, Page 343.

PARCEL 2:

A certain lot or parcel of land, with the improvements thereon situated on the northwesterly sideline of Oxford Street, the northeasterly sideline of Elm Street, the southwesterly sideline of Cedar Street and the southeasterly sideline of Lancaster Street East in the City of Portland, County of Cumberland and State of Maine and shown as Parcel 2 on the Plan, bounded and described as follows:

Beginning at the point of intersection of the northwesterly sideline of Oxford Street and the northeasterly sideline of Elm Street;

Thence N 43° 45' 13" W along said sideline of Elm Street 327.06 feet to the southeasterly sideline of Lancaster Street East;

Thence N 49° 39' 27" E along said sideline of Lancaster Street East 210.57 feet to the southwesterly sideline of Cedar Street;

Thence S 43° 29' 51" E along said sideline of Cedar Street 40.00 feet to the northeasterly corner of land now or formerly of Archie and Margaret Tevanian;

Thence by the following courses and distances along said Tevanian land:

S 49° 39' 26" W 117.00 feet to a point;
S 42° 13' 00" E 39.96 feet to a point;
N 49° 39' 26" E 117.89 feet to a point on said sideline of Cedar Street;

Thence S 43° 29' 51" E along said sideline of Cedar Street 39.34 feet to the northeasterly corner of land now or formerly of Leon and Mary Tevanian;

Thence by the following courses and distances along said Tevanian land:

S 48° 42' 12" W 118.73 feet to a point;
S 42° 13' 00" E 40.00 feet to a point;
N 48° 41' 30" E 119.62 feet to a point on said sideline of Cedar Street;

Thence S 43° 29' 51" E along said sideline of Cedar Street 80.62 feet to the northeasterly corner of land now or formerly of Francis F. Buck;

Thence S 48° 41' 30" W along said Buck land 63.30 feet to a point;

Thence S 42° 36' 35" E along said Buck land 83.34 feet to a point on the northwesterly sideline of said Oxford Street;

Thence S 48° 38' 53" W along said sideline of Oxford Street 144.34 feet to the point of beginning.

Said parcel contains 53,341 square feet. Meaning and intending to describe Parcels 5, 7, 8, 9, 10, 11, 18, 19, 23 and 26 as described in the deed from Arrow Realty to October Corporation, dated April 29, 1998 and recorded in said Registry of Deeds in Book 13803, Page 4.

Parcel 2 is subject to the rights and easements granted to New England Telephone and Telegraph and Central Maine Power Company in instrument dated May 7, 1981, and recorded in said Registry of Deeds in Book 4811, Page 70.

PARCEL 3:

A certain parcel of land, with the improvements thereon, situated on the southeasterly side of Lancaster Street, in the City of Portland, County of Cumberland, State of Maine and shown as Parcel 3 on the Plan, bounded and described as follows:

Beginning at the intersection of the southeasterly sideline of Lancaster Street and the southwesterly sideline of Chestnut Street;

Thence S 44° 38' 26" E along the sideline of Chestnut Street 88.08 feet;

Thence S 49° 39' 27" W 107.40;

Thence N 45° 57' 49" W 3.67 feet;

Thence S 31° 29' 21" W 4.67 feet;

Thence N 43° 29' 51" W 23.77 feet;

Thence S 49° 39' 27" W 35.69 feet;

Thence N 43° 29' 51" W 28.00 feet;

Thence S 49° 39' 27" W 72.00 feet to the northeasterly sideline of Cedar Street;

Thence N 43° 29' 51" W along said sideline 34.00 feet to the southeasterly sideline of Lancaster Street;

Thence N 49° 39' 27" E along said sideline 219.00 feet to the point of beginning.

Said parcel contains 14,407 square feet, more or less. Meaning and intending to describe the same parcels described as parcels 13, 14, 15, 16, 33, 34, and 37 in the deed to October Corporation recorded in said Registry of Deeds in Book 13803, Page 4.

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RECEIVED
RECORDED REGISTRY OF DEEDS
2000 JAN 31 AM 10:54
CUMBERLAND COUNTY
John B O'Brien

FIRST AMERICAN TITLE INSURANCE COMPANY

LOAN POLICY
SCHEDULE A

AGENT FILE NO.: TOYT45 **LOAN POLICY NO.: MELe.270042359**
Owner Policy No.: 100037123
DATE & TIME OF POLICY: July 10, 2009 at 11:05 a.m.
AMOUNT OF INSURANCE: $3,675,000.00 **PREMIUM: $50.00**
Owner's Amount of Insurance: $3,408,000.00

Please complete the requested information if the insured premises is covered by any prior FATIC Policy(ies): Policy No(s). 100174348 Amount of Insurance $2,425,000

ADDRESS REFERENCE: Lancaster, Kennebec, Elm, Cedar and Oxford Street, Portland, Maine

1. Name of Insured:

GORHAM SAVINGS BANK, its successors and/or assigns as their interests may appear.

2. The estate or interest in the Land that is encumbered by the Insured Mortgage is: FEE SIMPLE

3. Title is vested in: **BAYSIDE II, LLC** by virtue of a Quitclaim Deed from October Corporation, dated January 26, 2000 and recorded on January 31, 2000 in the Cumberland County Registry of Deeds in Book 15298, Page 144.

4. The Insured Mortgage, and its assignments, if any, are described as follows:

Mortgage from BAYSIDE II, LLC to GORHAM SAVINGS BANK in the amount of $3,675,000.00 dated July 10, 2009 and recorded at Book 27077, Page 231 of the Cumberland County Registry of Deeds.

5. The Land referred to in this policy is described as follows: **Lancaster, Kennebec, Elm, Cedar and Oxford Streets**, in the City of **Portland**, County of **Cumberland**, and State of **Maine**; and is described as set forth in Exhibit "A" attached hereto and made a part hereof.

6. This policy incorporates by reference those ALTA and/or First American endorsements selected below:

__ FATIC (Secondary Mortgage Market)
__ 4-06 (Condominium)
__ 4.1-06
__ 5-06 (Planned Unit Development)
__ 5.1-06
__ 6-06 (Variable Rate)
__ 6.2-06 (Variable Rate – Negative Amortization
__ 8.1-06 (Environmental Protection Lien – Residential) Paragraph b refers to the following state statute(s): MA, NH, CT, VT, RI – "None"; ME – Title 38 MRSA, Section 1370
__ 9-06 (Restrictions, Encroachments, Minerals)
__ 13.1-06 (Leasehold)
__ 14-06 (Future Advance – Priority)
__ 14.1-06 (Future Advance – Knowledge)
__ 14.3-06 (Future Advance – Reverse Mortgage)
__ 22-06 (Location) the type of improvement is a _____ and the street address is as shown above.

MURRAY, PLUMB & MURRAY
By_____
Drew A. Anderson

FIRST AMERICAN TITLE INSURANCE COMPANY

LOAN POLICY

SCHEDULE B - PART I

Owner Policy No. 100037123
Loan Policy No. MELe.270042359
Agent File No. TOYT45

EXCEPTIONS FROM COVERAGE

Except as provided in Schedule B-Part II, this policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

1. Any facts, rights, interests, or claims which are not shown in the public records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession of the Land.

2. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title, including discrepancies, conflicts in boundary lines, shortages in area, or any other facts that would be disclosed by an accurate and complete land survey of the Land, and that are not shown in the public records.

3. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the public records.

4. The mortgage, if any, referred to in Item 4 of Schedule A. (This exception does NOT apply to Loan Policies).

5. Liens for taxes and assessments which become due and payable subsequent to the date of policy.

6. IF THE INSURED PREMISES IS A CONDOMINIUM UNIT: Covenants, conditions, restrictions, reservations, easements, liens for assessments, options, powers of attorney, and limitations on title, created by the laws of the State of the insured premises or set forth in the Master Deed or Declaration of Condominium, in the related By-Laws, in the Declaration of Trust, or Site Plans and Floor Plans as duly recorded in the appropriate land records office and as the same may have been lawfully amended, and in any instrument creating the estate or interest insured by this policy.

The following affects only Parcel 2 as described on attached Exhibit A.

7. Rights and easements granted to New England Telephone and Telegraph and Central Maine Power Company in instrument dated May 7, 1981, and recorded in Book 4811, Page 70.

The following affects only 100 Kennebec Street, which is a portion of Parcel 1 as described on attached Exhibit A.

8. Subject to a railroad right of way over a two and one-half foot strip adjoining Kennebec Street as set forth in a deed from Portland Terminal Company to Arrow Rentals (n/k/a Arrow Realty) dated June 10, 1974, recorded in Book 3744, Page 343.

NOTE: This policy affirmatively insures the Insured that the above Exception 8 does not adversely affect the premises as currently improved.

9. Lease by and between Arrow Realty, Lessor, and State of Maine Department of Administrative & Financial Services, Bureau of General Services on behalf of the Department of Mental Health and Mental Retardation, Lessee, dated March 6, 1995, recorded in Book 11890, Page 277.

FIRST AMERICAN TITLE INSURANCE COMPANY

LOAN POLICY

SCHEDULE B - PART I

Owner Policy No. 100037123
Loan Policy No. MELe.270042359
Agent File No. TOYT45

EXCEPTIONS FROM COVERAGE

Except as provided in Schedule B-Part II, this policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

1. Any facts, rights, interests, or claims which are not shown in the public records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession of the Land.

2. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title, including discrepancies, conflicts in boundary lines, shortages in area, or any other facts that would be disclosed by an accurate and complete land survey of the Land, and that are not shown in the public records.

3. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the public records.

4. The mortgage, if any, referred to in Item 4 of Schedule A. (This exception does NOT apply to Loan Policies).

5. Liens for taxes and assessments which become due and payable subsequent to the date of policy.

6. IF THE INSURED PREMISES IS A CONDOMINIUM UNIT: Covenants, conditions, restrictions, reservations, easements, liens for assessments, options, powers of attorney, and limitations on title, created by the laws of the State of the insured premises or set forth in the Master Deed or Declaration of Condominium, in the related By-Laws, in the Declaration of Trust, or Site Plans and Floor Plans as duly recorded in the appropriate land records office and as the same may have been lawfully amended, and in any instrument creating the estate or interest insured by this policy.

The following affects only Parcel 2 as described on attached Exhibit A.

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The following affects only 100 Kennebec Street, which is a portion of Parcel 1 as described on attached Exhibit A.

8. Subject to a railroad right of way over a two and one-half foot strip adjoining Kennebec Street as set forth in a deed from Portland Terminal Company to Arrow Rentals (n/k/a Arrow Realty) dated June 10, 1974, recorded in Book 3744, Page 343.

NOTE: This policy affirmatively insures the Insured that the above Exception 8 does not adversely affect the premises as currently improved.

9. Lease by and between Arrow Realty, Lessor, and State of Maine Department of Administrative & Financial Services, Bureau of General Services on behalf of the Department of Mental Health and Mental Retardation, Lessee, dated March 6, 1995, recorded in Book 11890, Page 277.

10. Such state of facts as disclosed on "ALTA/ACSM Land Title Survey on Kennebec Street, Lancaster Street East, Elm Street, Cedar Street and Oxford Street, Portland, Maine" made for Bayside II, LLC by Owen Haskell, Inc., dated January 26, 2000 (also referred to as being dated January 24, 2000) and recorded in Plan Book 200, Page 41, including those matters affecting the premises described as follows:

(a) Encroachment of building into street;
(b) Encroachment of buildings appurtenances into street;
(c) Encroachment of gate post over 1.4'±;
(d) Encroachment of guard rail over 2.1'±;
(e) Encroachment of timber planter 0.4' into street;
(f) Encroachment of fence or wall on or near property line – ownership unknown; and
(g) Encroachment of guy wire 0.5'±.

11. Such state of facts as would be disclosed by an accurate survey of the premises subsequent to January 26, 2000.

12. The mortgage insured by this policy and the mortgage insured by the Loan Policy #MELe.270042417 on the Bayside I, LLC property and the mortgage insured by the Loan Policy #MELe.270042358 on the Merchants Plaza, LLC property are all in the original principal amount of $3,675,000.00. However, as the insured lender has disbursed only a total of $3,675,000.00 pursuant to all three mortgages, the total liability of the Company under all three policies is specifically limited to $3,675,000.00. Accordingly, any payment of loss or claim on one policy will automatically reduce the liability of the Company, by an equal amount, on the other policies as well.

13. Rights of tenants in possession as shown on Exhibit B attached hereto.

Exception numbered 1, 2 and 3 are hereby omitted from the Loan Policy only.

Initial for identification

EXHIBIT A

PARCEL 1:

A certain lot or parcel of land, with the improvements thereon, situated in the block bounded by Elm, Kennebec, Chestnut and Lancaster Streets, in the City of Portland, County of Cumberland and State of Maine and shown as Parcel 1 on ALTA/ACSM Land Title Survey on Kennebec Street, Lancaster Street East, Elm Street, Cedar Street and Oxford Street, Portland, Maine made for Bayside II, LLC by Owen Haskell, Inc., dated January 24, 2000 and recorded in the Cumberland County Registry of Deeds in Plan Book 200, Page 41 (the "Plan"), being bounded and described as follows:

Beginning at the intersection marking the northwesterly side of Lancaster Street and the northeasterly side of Elm Street;

Thence by the northeasterly side of Elm Street N 43° 46' 33" W, a distance of 158.86', to an angle in said Street;

Thence N 40° 53' 33" W a distance of 31.49' to the southeasterly side of Kennebec Street, marking a non-tangent point on a curve, in said Street;

Thence northeasterly by the southeasterly side of said Kennebec Street and by a curve to the left whose radius is 695.00', an arc distance of 210.01', to a point of tangency;

Thence continuing by said Kennebec Street N 48° 56' 54" E, a distance of 251.30', to the southwesterly side of said Chestnut Street;

Thence by the southwesterly side of said Chestnut Street S 44° 38' 26" E, a distance of 164.71' to the northwesterly side of said Lancaster Street;

Thence by the northwesterly side of said Lancaster Street S 49° 39' 27" W, a distance of 461.02', to the point of beginning.

PARCEL 2:

A certain lot or parcel of land, with the improvements thereon situated on the northwesterly sideline of Oxford Street, the northeasterly sideline of Elm Street, the southwesterly sideline of Cedar Street and the southeasterly sideline of Lancaster Street East in the City of Portland, County of Cumberland and State of Maine and shown as Parcel 2 on the Plan, bounded and described as follows:

Beginning at the point of intersection of the northwesterly sideline of Oxford Street and the northeasterly sideline of Elm Street;

Thence N 43° 45' 13" W along said sideline of Elm Street 327.06 feet to the southeasterly sideline of Lancaster Street East;

Thence N 49° 39' 27" E along said sideline of Lancaster Street East 210.57 feet to the southwesterly sideline of Cedar Street;

Thence S 43° 29' 51" E along said sideline of Cedar Street 40.00 feet to the northeasterly corner of land now or formerly of Archie and Margaret Tevanian;

Thence by the following courses and distances along said Tevanian land:

S 49° 39' 26" W 117.00 feet to a point;
S 42° 13' 00" E 39.96 feet to a point;
N 49° 39' 26" E 117.89 feet to a point on said sideline of Cedar Street;

Thence S 43° 29' 51" E along said sideline of Cedar Street 39.34 feet to the northeasterly corner of land now or formerly of Leon and Mary Tevanian;

Thence by the following courses and distances along said Tevanian land:

S 48° 42' 12" W 118.73 feet to a point;
S 42° 13' 00" E 40.00 feet to a point;
N 48° 41' 30" E 119.62 feet to a point on said sideline of Cedar Street;

Thence S 43° 29' 51" E along said sideline of Cedar Street 80.62 feet to the northeasterly corner of land now or formerly of Francis F. Buck;

Thence S 48° 41' 30" W along said Buck land 63.30 feet to a point;

Thence S 42° 36' 35" E along said Buck land 83.34 feet to a point on the northwesterly sideline of said Oxford Street;

Thence S 48° 38' 53" W along said sideline of Oxford Street 144.34 feet to the point of beginning.

PARCEL 3:

A certain parcel of land, with the improvements thereon, situated on the southeasterly side of Lancaster Street, in the City of Portland, County of Cumberland, State of Maine and shown as Parcel 3 on the Plan, bounded and described as follows:

Beginning at the intersection of the southeasterly sideline of Lancaster Street and the southwesterly sideline of Chestnut Street;

Thence S 44° 38' 26" E along the sideline of Chestnut Street 88.08 feet;

Thence S 49° 39' 27" W 107.40;

Thence N 45° 57' 49" W 3.67 feet;

Thence S 31° 29' 21" W 4.67 feet;

Thence N 43° 29' 51" W 23.77 feet;

Thence S 49° 39' 27" W 35.69 feet;

Thence N 43° 29' 51" W 28.00 feet;

Thence S 49° 39' 27" W 72.00 feet to the northeasterly sideline of Cedar Street;

Thence N 43° 29' 51" W along said sideline 34.00 feet to the southeasterly sideline of Lancaster Street;

Thence N 49° 39' 27" E along said sideline 219.00 feet to the point of beginning.

LOAN POLICY OF TITLE INSURANCE

Issued By

First American Title Insurance Company

Any notice of claim and any other notice or statement in writing required to be given to the Company under this policy must be given to the Company at the address shown in Section 17 of the Conditions.

COVERED RISKS

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B, AND THE CONDITIONS, FIRST AMERICAN TITLE INSURANCE COMPANY, a California corporation (the "Company") Insures as of Date of Policy and, to the extent stated in Covered Risks 11, 13, and 14, after Date of Policy, against loss or damage, not exceeding the Amount of Insurance, sustained or incurred by the Insured by reason of:

1. Title being vested other than as stated in Schedule A.
2. Any defect in or lien or encumbrance on the Title. This Covered Risk includes but is not limited to insurance against loss from
   (a) A defect in the Title caused by
   (i) forgery, fraud, undue influence, duress, incompetency, incapacity, or impersonation;
   (ii) failure of any person or Entity to have authorized a transfer or conveyance;
   (iii) a document affecting Title not properly created, executed, witnessed, sealed, acknowledged, notarized, or delivered;
   (iv) failure to perform those acts necessary to create a document by electronic means authorized by law;
   (v) a document executed under a falsified, expired, or otherwise invalid power of attorney;
   (vi) a document not properly filed, recorded, or indexed in the Public Records including failure to perform those acts by electronic means authorized by law; or
   (vii) a defective judicial or administrative proceeding.
   (b) The lien of real estate taxes or assessments imposed on the Title by a governmental authority due or payable, but unpaid.
   (c) Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
3. Unmarketable Title.
4. No right of access to and from the Land.
5. The violation or enforcement of any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (a) the occupancy, use, or enjoyment of the Land;
   (b) the character, dimensions, or location of any improvement erected on the Land;
   (c) the subdivision of land; or
   (d) environmental protection
   if a notice, describing any part of the Land, is recorded in the Public Records setting forth the violation or intention to enforce, but only to the extent of the violation or enforcement referred to in that notice.
6. An enforcement action based on the exercise of a governmental police power not covered by Covered Risk 5 if a notice of the enforcement action, describing any part of the Land, is recorded in the Public Records, but only to the extent of the enforcement referred to in that notice.
7. The exercise of the rights of eminent domain if a notice of the exercise, describing any part of the Land, is recorded in the Public Records.
8. Any taking by a governmental body that has occurred and is binding on the rights of a purchaser for value without Knowledge.
9. The invalidity or unenforceability of the lien of the Insured Mortgage upon the Title. This Covered Risk includes but is not limited to insurance against loss from any of the following impairing the lien of the Insured Mortgage
   (a) forgery, fraud, undue influence, duress, incompetency, incapacity, or impersonation;
   (b) failure of any person or Entity to have authorized a transfer or conveyance;
   (c) the Insured Mortgage not being properly created, executed, witnessed, sealed, acknowledged, notarized, or delivered;
   (d) failure to perform those acts necessary to create a document by electronic means authorized by law;
   (e) a document executed under a falsified, expired, or otherwise invalid power of attorney;
   (f) a document not properly filed, recorded, or indexed in the Public Records including failure to perform those acts by electronic means authorized by law; or
   (g) a defective judicial or administrative proceeding.
10. The lack of priority of the lien of the Insured Mortgage upon the Title over any other lien or encumbrance.
11. The lack of priority of the lien of the Insured Mortgage upon the Title
    (a) as security for each and every advance of proceeds of the loan secured by the Insured Mortgage over any statutory lien for services, labor, or material arising from construction of an improvement or work related to the Land when the improvement or work is either
    (i) contracted for or commenced on or before Date of Policy; or
    (ii) contracted for, commenced, or continued after Date of Policy if the construction is financed, in whole or in part, by proceeds of the loan secured by the Insured Mortgage that the Insured has advanced or is obligated on Date of Policy to advance; and
    (b) over the lien of any assessments for street improvements under construction or completed at Date of Policy.
12. The invalidity or unenforceability of any assignment of the Insured Mortgage, provided the assignment is shown in Schedule A, or the failure of the assignment shown in Schedule A to vest title to the Insured Mortgage in the named Insured assignee free and clear of all liens.
13. The invalidity, unenforceability, lack of priority, or avoidance of the lien of the Insured Mortgage upon the Title
    (a) resulting from the avoidance in whole or in part, or from a court order providing an alternative remedy, of any transfer of all or any part of the title to or any interest in the Land occurring prior to the transaction creating the lien of the Insured Mortgage because that prior transfer constituted a fraudulent or preferential transfer under federal bankruptcy, state insolvency, or similar creditors' rights laws; or
    (b) because the Insured Mortgage constitutes a preferential transfer under federal bankruptcy, state insolvency, or similar creditors' rights laws by reason of the failure of its recording in the Public Records
    (i) to be timely, or
    (ii) to impart notice of its existence to a purchaser for value or to a judgment or lien creditor.
14. Any defect in or lien or encumbrance on the Title or other matter included in Covered Risks 1 through 13 that has been created or attached or has been filed or recorded in the Public Records subsequent to Date of Policy and prior to the recording of the Insured Mortgage in the Public Records.

The Company will also pay the costs, attorneys' fees, and expenses incurred in defense of any matter insured against by this policy, but only to the extent provided in the Conditions.

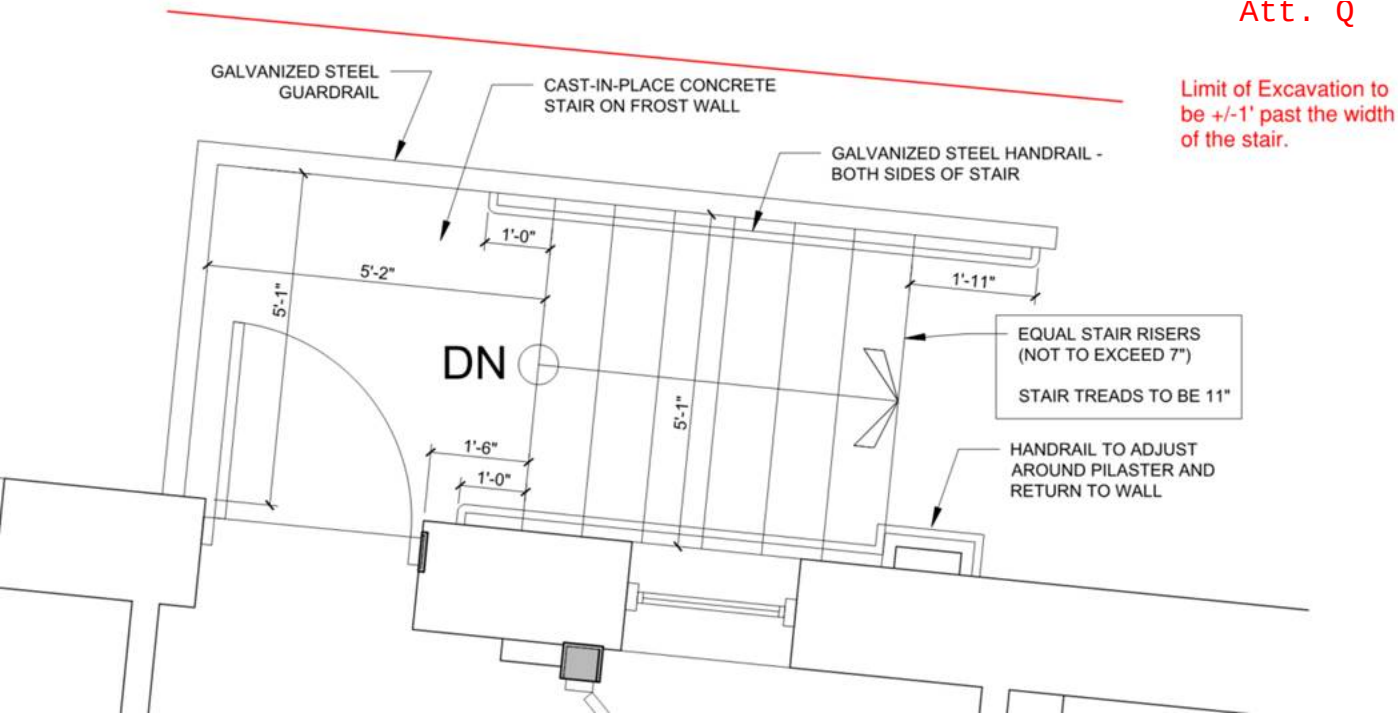
First American Title Insurance Company

BY: _____ PRESIDENT

ATTEST: _____ SECRETARY

This Jacket was created electronically and constitutes an original document

Att. Q



Limit of Excavation to be +/-1' past the width of the stair.

Cushman Transportation Consulting, LLC
94 Beckett Street, 2nd Floor, Portland, ME 04101 · (207) 200-1910 · www.sarahcushman.com

Transportation Demand Management (TDM) Plan
Baxter Academy for Technology and Science
March 8, 2017

Baxter Academies of Maine provides this Transportation Demand Management (TDM) Plan for the relocated and consolidated Baxter Academy of Science and Technology at 185 Lancaster Street. This public charter high school has a strong cultural commitment to continuing and furthering its robust TDM work to encourage and enable the use of public transportation, carpooling, bicycling and walking at this new location. It does this in support of both its own and the City of Portland's transportation, liveability, and sustainability goals.

A. Site Transportation Overview & Context

Baxter Academy has operated under a Transportation Demand Management (TDM) Plan at its present York and Congress Street sites since the school's inception in September 2013 and has successfully implemented key TDM strategies to mitigate costs and meet the school's various transportation challenges. Baxter is free to Maine students and current pupils come from 57 municipalities based in the Southern, Central, and Midcoast regions - drawing from as far away as Owls Head, Norway, Windsor, and Berwick. In addition, the student body geographical make-up shifts each year with students entering and leaving the school. Families have been strongly motivated to utilize the school's busing and carpooling opportunities to make it possible for their children to attend the school and to free themselves from costs and travel time associated with transporting their students themselves.

Seventy-nine percent of students use public or charter transportation, walk or bike, or carpool with at least one other student. As stated in the City of Portland's draft 2017 Comprehensive Plan, "The 1993 *A Time of Change: Portland Transportation Plan* called for reducing the share of single occupancy vehicle trips City-wide to 50%, just under the share briefly achieved following the oil crisis of the late 1970s, while at the same time increasing the share of trips by other modes." Thus, Baxter Academy's student multi-modal rate far surpasses this standard.

The staff is also diverse, with individuals commuting from 19 municipalities, including as remote as the Waterville area. Only 30% of Baxter employees drive alone for every trip to the campus; all of these drivers indicate that they are conscious of seeking alternatives, but this is the only current viable option. For example, one staff member mentioned that she is hoping to use the proposed Metro public transportation route from Gorham. Other faculty often

travel with students and/or with a spouse/partner. Local staff consistently commute on foot and by bicycle. Public transit use is reimbursable by the school and when applicable, staff have availed themselves of this benefit.

Baxter Academy is leasing and remodeling 31,571 square feet of the existing two-story 92,561 square foot building at 185 Lancaster Street. Total enrollment at the new site is expected to be 400 students, with 60 employed staff. The adaptive reuse of the structure at this location, in the heart of the Bayside neighborhood, supports the multi-modal objectives of the B-7 zone in which it stands – where dense urban form, mixed-uses, and the utilization of transportation beyond the automobile are strongly encouraged. The school and its multi-modal initiatives are part of Bayside's continued renaissance and align with the goals of *A New Vision for Bayside* and the *Bayside Master Transportation Plan*.

The new school site is pedestrian and bicycle-friendly, located within the strong sidewalk network and lower-speed street grid of the Portland Peninsula - and just a block and a half from the Bayside Trail. The location is served by the Metro Route #8, and perhaps most importantly, it is just three short blocks from the hub of Greater Portland's transit services at the Elm Street Pulse and Monument Square. Current students use all of the area's transit providers - Metro local buses and the Breez, Casco Bay Lines ferry service, the South Portland Bus Service, the Lakes Region Explorer, and Shuttlebus-Zoom. The school pays 100% of the students' fares.

The site will also include a 150-foot drop-off zone on Elm Street to support the use of the school's three charter buses. These collect additional students in Lewiston, Windham, and Topsham who come from there and nearby municipalities. The school's lease at 185 Lancaster Street includes access to 50 parking spaces in an off-street lot across from the school, which will be used for staff and visitors.

B. TDM Coordinator

The two most vital characteristics of highly successful TDM programs are: (1) they are dynamic - piloting strategies, assessing impacts, and modifying tactics as needed, and (2) they are managed by committed and enthusiastic staff who are responsible for overseeing, promoting and sustaining the program.

Tia Wilson, Operations & Admissions Manager, serves as Baxter Academy's TDM Coordinator and will continue in this role at the school's new location. Ms. Wilson is a problem-solver who works to educate and connect students, families, and staff with public transportation and carpool options. She conducts an electronic survey of the student body annually before the school year begins to remind families of the school's multi-modal goals, inform them regarding transportation options, and gain a better understanding of which transportation mode(s) will benefit them the most**.**

At 185 Lancaster Street, the TDM Coordinator will implement a more comprehensive survey of students and staff to meet the City's TDM Plan surveying requirements (see Section C). Ms. Wilson will continue to explore and help implement additional TDM strategies to reduce single-occupancy and low-occupancy vehicle trips to the school. She also will assist the school to continue its pedestrian safety training with students and encourage bicycle commuting and safety education for local students and staff. The Coordinator's contact information is: Tia Wilson, Baxter Academy, 54 York Street, Portland, ME 04101; (207) 699-5500.

C. Employee and Student Survey

Per the City of Portland's Technical Standards regarding TDM Plans, Baxter Academy will employ a comprehensive survey of staff and student families at the 185 Lancaster Street site. The survey will be conducted annually in electronic form to educate faculty and families regarding their transportation options, record mode share, and assist employees and students to find carpool matches.

In addition, the survey will identify barriers to the use of public transit, the school charter bus system, carpooling, and bicycling and walking for more local students and staff. Staff and students may also be asked to offer additional ideas and strategies for reducing single occupancy and low-occupancy private vehicle trips. The survey will produce comparable data from year to year and be available for compilation with other sites' commute data by a third party, such as the City.

D. Trip Generation and Parking Demand Targets

On behalf of Baxter Academy, Traffic Solutions has produced ITE trip generation and parking demand projections to establish the impact of the new school location. Total forecasted trips during the "morning" peak hour are 200 and the parking demand using the 85th percentile is projected to be 52 spaces for staff, students, and visitors.

Baxter Academy is committed to continuing its work to reduce single-occupancy and low-occupancy trips to the campus - to improve multi-modal safety at and near the site, ease traffic congestion, and be a sustainable and liveable presence in downtown Portland and the Bayside neighborhood. The school's trip and parking reduction goals are based on the fact that the school has already done a tremendous amount of work to provide collective transportation options for its students (via public transportation, charter buses, and carpooling) and encourage walking and bicycling for more local students and staff. These existing TDM efforts limit the amount of additional peak hour trip and parking reductions still possible. However, potential reductions might be made in two areas: the single-occupancy vehicle trips and parking impacts of staff (51) and students (36) and the low-occupancy trips of a single student being dropped off by an adult (80).

Trip Reduction Target

Balancing the school's new setting and multi-modal accessibility, its current TDM practices and high multi-modal rates, and student and staff originating locations, an achievable trip reduction target is 2% over the first two years after opening for both faculty and pupils. This means a target trip generation of 50 staff trips and 78 one student/one adult trips during the AM peak hour by 2019.

Parking Reduction Target

As stated in the initial narrative above, Baxter Academy's policy will be to continue to provide only a limited number of off-site parking spaces for its staff and none for its students. The school will use parking permits to manage shared employee use of the lot. Baxter will also reserve a small portion of the parking area for rotating visitors who come to do school business (nurses, psychologists, consultants, board members, legal team, etc.).

Students electing to travel to or from Baxter Academy by private automobile will be directed to use public off-street parking areas located on Marginal Way, versus on-street spaces located near the campus. The Bayside Trail will facilitate their walk to the school. This will be made clear in the school's registration materials and its annual communications with families before the school year begins. Students will continue to be issued registration forms that collect a copy of their license, car make and model, plate number and where they park in Portland.

E. Trip/Parking Reduction Strategies & Incentives

Baxter Academy will take up its current comprehensive trip reduction strategies again at the new location, including:

- Providing charter buses for outlying communities
- Encouraging the use of public transit within the urban core with 100% funding of student and staff trips; the school's closer proximity to the Elm St. Pulse may help reduce some current parent drop-off vehicle trips
- Encouraging and facilitating carpooling/ridesharing among families and staff
- Encouraging bicycling through the provision of on-site bike racks
- Encouraging walking both as a primary mode for local students and staff and also from transit hubs and remote parking sites; additionally, providing students with hands-on pedestrian safety training

The following are other avenues for the school to explore to meet trip reduction targets.

Commuter Assistance

Baxter Academy is encouraged to engage Go Maine, the statewide commuter assistance program, in order to sign up participating staff who walk, bike, carpool, and use public transit for:

- the Emergency Ride Home benefit
- NuRide trip rewards
- expanding ride-matching possibilities to include additional downtown Portland employees.

Carpooling for school staff is a challenge because of their geographic spread and diverse schedules both at the school and in their home lives. However, some staff do carpool when possible. One or more vanpools, utilizing vRide, may also become an option if a number of staff from a particular municipality enter the school's employ.

Baxter can also partner with Go Maine and other local multi-modal groups, such as the Bicycle Coalition of Maine, to provide staff with educational materials regarding active transportation and to offer "commute coaching" at the beginning of each school year.

The school can further encourage adults driving an individual pupil to school to match up with additional students to carpool. The school will continue to explore various carpooling apps such as groupcarpool.com and share these resources with parents. As the student body grows, the school may wish to develop a customized SchoolPool website interface for students and families looking to find a carpool directly. Confidentiality concerns can be ameliorated with an "opt out" form for parents, while still ensuring a higher participation rate than an "opt-in" program.

Facilitating Walking Trips to and from the School Site

The school will continue its staff-led hands-on pedestrian safety training for students walking in and around downtown. Many students need to walk to and from the school site for daytime activities and to reach public transportation stops and remote parking areas like the Marginal Way Park & Ride. In addition, families dropping off student(s) will be encouraged, when feasible, to drive the student passenger(s) to their respective place of work with the students walking to/from the 185 Lancaster Street Campus.

To address any concerns about personal safety, the school and student leadership can also foster the informal formation of WalkPools, peer walking groups originating at the school or at transit stops and remote parking locations to enable students to walk together.

Flextime

When possible, staff who do not need to be at the school during the morning peak hour should be encouraged to arrive at a later time and offered a flextime work schedule.

UHaulCarShare & Informal Bikeshare

Baxter Academy has an account with UHaulCarShare that the school's employees can access. Some Baxter Academy staff bring their vehicles to school because they need a car available for trips during the work day. Concerted education of staff and encouragement to use this benefit could alleviate this need.

UHaulCarShare is available in Portland and South Portland, currently providing access to a total of nine vehicles on an hourly or daily basis. One of these is located at 26 Elm Street, just three blocks from the school. At one time there were two UhaulCarShare vehicles on Elm Street and, if the demand is strong enough, the school can negotiate with the company for additional available vehicles.

Similarly, for shorter staff trips, the school could maintain one or more shared bicycles and associated gear such as helmets and locks available for use at the site.

Other Incentives

Campus Campaigns: Baxter could organize an incentive campaign where users of public and charter buses, carpools with at least two students, and registered walkers and bicyclists are entered into a monthly raffle for gift cards, movie passes, and other benefits. Alternately, the school could consider an internal competition between classes or students and staff - with the winners earning a special celebration, such as a field trip to a favorite destination or a class party.

F. Education & Promotion

Baxter Academy administrators will carry on with their strong multi-modal education and promotion efforts at the 185 Lancaster Street site. This includes:

- Conducting the annual transportation survey of all in-coming students and members of the staff and encouraging other modal travel options versus personal auto travel.
- Communicating regularly, via email and open houses, the school's goal to shift as many students as possible to public transportation via the 100% subsidy, as well as other modes of transportation.
- Facilitating student and staff carpool matching

Per the City of Portland's Technical Standards regarding TDM Plans, Baxter Academy will also:

- produce a multi-modal page for the school's website (currently under development) and will actively maintain both it and a highly visible TDM bulletin board at the school. Both will provide:
  - Transit provider maps and schedules
  - Go Maine (and Emergency Ride Home Guarantee) and vRide vanpool service information
  - Internal information sharing about things such as: desired carpools, transit or bicycle commuting mentoring, and the results of student and staff transportation surveys
  - Information about specific incentives offered by the school (e.g. the 100% transit subsidy)
  - Information on walking and bicycling routes, school parking policies and locations, etc.
- Periodically recognize individual students and staff whose multi-modal activities reduce the traffic impact of the school - through newsletter, email, bulletin board, or other announcements.

Additional promotional suggestions for the school to explore, in order to reach trip reduction targets, are:

- Develop a Multimodal Access Map that is posted on the school's website and TDM bulletin board kiosk, identifying the walk zone, common walk routes and times, bike lanes and trails, and transit stops and routes. With the new site, students and staff may not realize how short walk and bike times are to particular downtown locations and this may encourage fewer auto trips.
- Form a student committee/subcommittee to advise the school's TDM work and develop peer-led campaigns that encourage active transportation and reduce the appeal of driving to school.

G. Monitoring

Baxter Academy's TDM Plan will be monitored by its TDM Coordinator. This effort will include:

- Annual family surveys regarding school transportation preferences
- Ridership figures on the school-sponsored charter buses
- Public transit usage through subsidy information
- The number of families participating in the school's ride-share/matching program
- The number of students biking to school
- The number of students registering their private vehicles with the school and where they park in town

- The number of staff utilizing school-leased parking
- The number of staff utilizing public transportation or other travel options
- Evaluating the daily parking demand of both campus visitors and vendor service providers and evaluate if other parking arrangements are deemed warranted
- Site traffic observations to cross-reference with the annual survey

This data will be compiled and compared against the parking and vehicle trip generation goals contained in Section D above. A summary report will be produced annually and submitted to the City's TDM planning office for review and comment.

H. Project Specific Standards

Infrastructure

School Zone Safety Features: Baxter Academy will install a flashing school zone speed limit sign assembly on Elm Street in advance of the 185 Lancaster Street Campus. An "*End School Zone*" sign will be appropriately located on Elm Street just west of the designated school bus loading zone advising motorists that they are leaving the school zone area. Secondary school speed zone signage will also be installed on both approaches of Lancaster Street that informs approaching motorists they are entering a designated school zone.

Baxter Academy will augment the City's annual crosswalk re-striping program, re-painting each of the existing crosswalk markings early spring of each year at the Lancaster Street/Elm Street intersection.

School staff will serve as a pedestrian crossing guard at the Lancaster/Elm Streets intersection aiding students crossing the Elm Street approach. A portable "*school crossing*" sign will be appropriately located in the center of the intersection reinforcing the school zone area.

Sidewalk Improvements: The City recently made sidewalk improvements on Elm Street and the Baxter Academy relocation will fund additional sidewalk expansion on Lancaster Street, along the frontage of the staff parking area.

Bicycle Parking: A total of 6 downtown "lollipop" bike racks are being installed for parking 12 bicycles as part of the school's Site Plan. If demand warrants additional facilities, the school is committed to providing them.

TDM Bulletin Board: In addition to the school's website transportation page, the school will erect a transportation bulletin board in a prominent location with information on various transportation options. This will include commuter assistance, public transportation, and ride matching.

Cushman Transportation Consulting, LLC
94 Beckett Street, 2nd Floor, Portland, ME 04101· (207) 200-1910· www.sarahcushman.com

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Baxter Academy for Technology and Science
March 20, 2017

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Baxter also utilizes three charter buses to collect additional students in Lewiston, Windham, and Topsham who come from there and nearby municipalities. The school's new lease includes access to 50 parking spaces in an off-street lot across from the school, which will be used for staff and visitors.

B. TDM Coordinator

The two most vital characteristics of highly successful TDM programs are: (1) they are dynamic - piloting strategies, assessing impacts, and modifying tactics as needed, and (2) they are managed by committed and enthusiastic staff who are responsible for overseeing, promoting and sustaining the program.

Tia Wilson, Operations & Admissions Manager, serves as Baxter Academy's TDM Coordinator and will continue in this role at the school's new location. Ms. Wilson is a problem-solver who works to educate and connect students, families, and staff with public transportation and carpool options. She conducts an electronic survey of the student body annually before the school year begins to remind families of the school's multi-modal goals, inform them regarding transportation options, and to gain a better understanding of which transportation mode(s) will benefit them the most**.**

At 185 Lancaster Street, the TDM Coordinator will implement a more comprehensive survey of students and staff to meet the City's TDM Plan surveying requirements (see Section C). Ms. Wilson will continue to explore and help implement additional TDM strategies to reduce single-occupancy and low-occupancy vehicle trips to the school. She also will assist the school to continue its pedestrian safety training with students and encourage bicycle commuting and safety education for local students and staff. The Coordinator's contact information is: Tia Wilson, Baxter Academy, 54 York Street, Portland, ME 04101; (207) 699-5500.

C. Employee and Student Survey

Per the City of Portland's Technical Standards regarding TDM Plans, Baxter Academy will employ a comprehensive survey of staff and student families at the 185 Lancaster Street site. The survey will be conducted annually in electronic form to educate faculty and families regarding their transportation options, record mode share, and assist employees and students to find carpool matches.

In addition, the survey will identify barriers to the use of public transit, the school charter bus system, carpooling, and bicycling and walking for more local students and staff. Staff and students may also be asked to offer additional ideas and strategies for reducing single occupancy and low-occupancy private vehicle trips. The survey will produce comparable data from year to year and be available for compilation with other sites' commute data by a third party, such as the City.

D. Trip Generation and Parking Demand Targets

On behalf of Baxter Academy, Traffic Solutions has produced ITE trip generation and parking demand projections to establish the impact of the new school location. Total forecasted trips during the "morning" peak hour are 200 and the parking demand using the 85th percentile is projected to be 52 spaces for staff, students, and visitors.

Baxter Academy is committed to continuing its work to reduce single-occupancy and low-occupancy trips to the campus - to improve multi-modal safety at and near the site, ease traffic congestion, and be a sustainable and liveable presence in downtown Portland and the Bayside neighborhood. The school's trip and parking reduction goals are based on the fact that the school has already done a tremendous amount of work to provide collective transportation options for its students (via public transportation, charter buses, and carpooling) and encourage walking and bicycling for more local students and staff. These existing TDM efforts limit the amount of additional peak hour trip and parking reductions still possible. However, potential reductions might be made in two areas: the single-occupancy vehicle trips and parking impacts of staff (51) and students (36) and the low-occupancy trips of a single student being dropped off by an adult (80).

Trip Reduction Target

Balancing the school's new setting and multi-modal accessibility, its current TDM practices and high multi-modal rates, and student and staff originating locations, an achievable trip reduction target is 2% over the first two years after opening for both faculty and pupils. This means a target trip generation of 50 staff trips and 78 one student/one adult trips during the AM peak hour by 2019. The trip target will be re-visited after the first two years of implementation.

Parking Reduction Target

As stated in the initial narrative above, Baxter Academy's policy will be to continue to provide only a limited number of off-site parking spaces for its staff and none for its students. The school will use parking permits to manage shared employee use of the lot. Baxter will also reserve a small portion of the parking area for rotating visitors who come to do school business (nurses, psychologists, consultants, board members, legal team, etc.).

Students electing to travel to or from Baxter Academy by private automobile will be directed to use public off-street parking areas located on Marginal Way, versus on-street spaces located near the campus. The Bayside Trail will facilitate their walk to the school. This will be made clear in the school's registration materials and its annual communications with families before the school year begins. Students will continue to be issued registration forms that collect a copy of their license, car make and model, plate number and where they park in Portland.

E. Trip/Parking Reduction Strategies & Incentives

Baxter Academy will take up its current comprehensive trip reduction strategies again at the new location, including:

- Providing charter buses for outlying communities
- Encouraging the use of public transit within the urban core with 100% funding of student and staff trips; the school's closer proximity to the Elm St. Pulse may help reduce some current parent drop-off vehicle trips
- Encouraging and facilitating carpooling/ridesharing among families and staff
- Encouraging bicycling through the provision of on-site bike racks
- Encouraging walking both as a primary mode for local students and staff and also from transit hubs and remote parking sites; additionally, providing students with hands-on pedestrian safety training

The following are other avenues for the school to explore to meet trip reduction targets.

Commuter Assistance

Baxter Academy is encouraged to engage Go Maine, the statewide commuter assistance program, in order to sign up participating staff who walk, bike, carpool, and use public transit for:

- the Emergency Ride Home benefit
- NuRide trip rewards
- expanding ride-matching possibilities to include additional downtown Portland employees.

Carpooling for school staff is a challenge because of their geographic spread and diverse schedules both at the school and in their home lives. However, some staff do carpool when possible. One or more vanpools, utilizing vRide, may also become an option if a number of staff from a particular municipality enter the school's employ.

Baxter can also partner with Go Maine and other local multi-modal groups, such as the Bicycle Coalition of Maine, to provide staff with educational materials regarding active transportation and to offer "commute coaching" at the beginning of each school year.

The school can further encourage adults driving an individual pupil to school to match up with additional students to carpool. The school will continue to explore various carpooling apps such as groupcarpool.com and share these resources with parents. As the student body grows, the school may wish to develop a customized SchoolPool website interface for students and families looking to find a carpool directly. Confidentiality concerns can be ameliorated with an "opt out" form for parents, while still ensuring a higher participation rate than an "opt-in" program.

Facilitating Walking Trips to and from the School Site

The school will continue its staff-led hands-on pedestrian safety training for students walking in and around downtown. Many students need to walk to and from the school site for daytime activities and to reach public transportation stops and remote parking areas like the Marginal Way Park & Ride. In addition, families dropping off student(s) will be encouraged, when feasible, to drive the student passenger(s) to their respective place of work with the students walking to/from the 185 Lancaster Street Campus.

To address any concerns about personal safety, the school and student leadership can also foster the informal formation of WalkPools, peer walking groups originating at the school or at transit stops and remote parking locations to enable students to walk together.

Flextime

When possible, staff who do not need to be at the school during the morning peak hour should be encouraged to arrive at a later time and offered a flextime work schedule.

UHaulCarShare & Informal Bikeshare

Baxter Academy has an account with UHaulCarShare that the school's employees can access. Some Baxter Academy staff bring their vehicles to school because they need a car available for trips during the work day. Concerted education of staff and encouragement to use this benefit could alleviate this need.

UHaulCarShare is available in Portland and South Portland, currently providing access to a total of nine vehicles on an hourly or daily basis. One of these is located at 26 Elm Street, just three blocks from the school. At one time there were two UhaulCarShare vehicles on Elm Street and, if the demand is strong enough, the school can negotiate with the company for additional available vehicles.

Similarly, for shorter staff trips, the school could maintain one or more shared bicycles and associated gear such as helmets and locks available for use at the site.

Other Incentives

Campus Campaigns: Baxter could organize an incentive campaign where users of public and charter buses, carpools with at least two students, and registered walkers and bicyclists are entered into a monthly raffle for gift cards, movie passes, and other benefits. Alternately, the school could consider an internal competition between classes or students and staff - with the winners earning a special celebration, such as a field trip to a favorite destination or a class party.

F. Education & Promotion

Baxter Academy administrators will carry on with their strong multi-modal education and promotion efforts at the 185 Lancaster Street site. This includes:

- Conducting the annual transportation survey of all in-coming students and members of the staff and encouraging other modal travel options versus personal auto travel.
- Communicating regularly, via email and open houses, the school's goal to shift as many students as possible to public transportation via the 100% subsidy, as well as other modes of transportation.
- Facilitating student and staff carpool matching

Per the City of Portland's Technical Standards regarding TDM Plans, Baxter Academy will also:

- Produce a multi-modal page for the school's website (currently under development) and will actively maintain both it and a highly visible TDM bulletin board at the school. Both will provide:
  - Transit provider maps and schedules
  - Go Maine (and Emergency Ride Home Guarantee) and vRide vanpool service information
  - Internal information sharing about things such as: desired carpools, transit or bicycle commuting mentoring, and the results of student and staff transportation surveys
  - Information about specific incentives offered by the school (e.g. the 100% transit subsidy)
  - Information on walking and bicycling routes, school parking policies and locations, etc.
- Periodically recognize individual students and staff whose multi-modal activities reduce the traffic impact of the school - through newsletter, email, bulletin board, or other announcements.

Additional promotional suggestions for the school to explore, in order to reach trip reduction targets, are:

- Develop a Multimodal Access Map that is posted on the school's website and TDM bulletin board kiosk, identifying the walk zone, common walk routes and times, bike lanes and trails, and transit stops and routes. With the new site, students and staff may not realize how short walk and bike times are to particular downtown locations and this may encourage fewer auto trips.
- Form a student committee/subcommittee to advise the school's TDM work and develop peer-led campaigns that encourage active transportation and reduce the appeal of driving to school.

G. Monitoring

Baxter Academy's TDM Plan will be monitored by its TDM Coordinator. This effort will include:

- Annual family surveys regarding school transportation preferences
- Ridership figures on the school-sponsored charter buses
- Public transit usage through subsidy information
- The number of families participating in the school's ride-share/matching program
- The number of students biking to school
- The number of students registering their private vehicles with the school and where they park in town

- The number of staff utilizing school-leased parking
- The number of staff utilizing public transportation or other travel options
- Evaluating the daily parking demand of both campus visitors and vendor service providers and evaluate if other parking arrangements are deemed warranted
- Site traffic observations to cross-reference with the annual survey

This data will be compiled and compared against the parking and vehicle trip generation goals contained in Section D above. A summary report will be produced annually and submitted to the City's TDM planning office for review and comment.

H. Project Specific Standards

Infrastructure

School Zone Safety Features: Baxter Academy will install a flashing school zone speed limit sign assembly on Elm Street in advance of the 185 Lancaster Street Campus. An "*End School Zone*" sign will be appropriately located on Elm Street just west of the designated school bus loading zone advising motorists that they are leaving the school zone area. Secondary school speed zone signage will also be installed on both approaches of Lancaster Street that informs approaching motorists they are entering a designated school zone.

Baxter Academy will augment the City's annual crosswalk re-striping program, re-painting each of the existing crosswalk markings early spring of each year at the Lancaster Street/Elm Street intersection.

School staff will serve as a pedestrian crossing guard at the Lancaster/Elm Streets intersection aiding students crossing the Elm Street approach. A portable "*school crossing*" sign will be appropriately located in the center of the intersection reinforcing the school zone area.

Sidewalk Improvements: The City recently made sidewalk improvements on Elm Street and the Baxter Academy relocation will fund additional sidewalk expansion on Lancaster Street, along the frontage of the staff parking area.

Bicycle Parking: A total of 6 downtown "lollipop" bike racks are being installed for parking 12 bicycles as part of the school's Site Plan. If demand warrants additional facilities, Baxter is committed to providing them. The school's site work to improve Lancaster Street will provide the space required to install supplementary racks, if needed.

TDM Bulletin Board: In addition to the school's website transportation page, the school will erect a transportation bulletin board in a prominent location with information on various transportation options. This will include commuter assistance, public transportation, and ride matching.

RYAN SENATORE **ARCHITECTURE**

March 8, 2017

Shukria Wiar
Planner
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Baxter Academy Interior Fit-up - Response to Review Comments
185 Lancaster Street, Portland, Maine

Shukria,

Please see the attached documents and responses below to the review comments.

A.1) The square footage has been revised and the application has been uploaded to e-plan

A.2) It is understood that the project will need to meet the B-7 Zone performance standards applicable to the project as described in section 14-299 of the zoning ordinance.

A.3) Public Transit is provided to the Site and Building as the Metro Bus route stops at the curb adjacent to the building on Elm Street.

A.4) A TDM has been submitted by Bill Bray of traffic solutions, he is working with Tom Errico on this process.

A.5) This project is consistent with the City Master Plans as it is providing a High School Use within the B7 zone in the neighborhood, thus adding to the diversity of uses in the existing neighborhood which is encouraged by the Master Plan.

A.6) No New exterior lighting is being proposed as part of this project

A.7) All new HVAC equipment will be placed on existing HVAC unit curbs on the building roof, these units are located on the roof far enough away from the roof edge that they are not visible from the streets adjacent to the building. The are no ground mounted HVAC units proposed.

A.8) The proposed exterior signage is shown on the exterior elevations submitted to the City, they are not lit signs. The signs are placed on the facades to help the users of the building navigate to the main entry on

207-650-6414

senatorearchitecture.com

ryan@senatorearchitecture.com

565 Congress Street, Suite 304
Portland, Maine 04101

Lancaster Street. Traffic signage is shown on the Site plans directing the users of the building to the appropriate parking and travel operations.

A.9) The signage and landscaping is designed to meet the B-7 design standards, there is no new proposed exterior lighting for the project. A separate signage permit application will be submitted to the City at a future date

A.10) The right of way is shown on the submitted site plans

B.1) The City of Portland Waste Water capacity application has been uploaded to e-plan

B.2) The Survey plan shows the right of way 3.1' from the outer building edge to the property line, the proposed stairs are flush with the building bump out edges. Please see the attached excavation plan from Landry French with requires 12" of over excavation so the excavation will be within the property boundaries.

B.3) See the revised Site Plans with the additional stormwater information uploaded to e-Plan

B.4) See the revised Site Plans uploaded to e-Plan with the right-of way information.

Please feel free to contact me with any questions.

Sincerely,

Ryan Senatore, AIA LEED-AP

Principal

207-650-6414

senatorearchitecture.com

ryan@senatorearchitecture.com

565 Congress Street, Suite 304
Portland, Maine 04101

Att. U

Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
(207) 774-3603
(207) 400-6890 mobile
trafficsolutions@maine.rr.com

March 1, 2017

Thomas A. Errico, P.E.
Senior Associate
Traffic Engineering Director
T.Y. Lin International
12 Northbrook Drive
Falmouth, ME 04105

RE: Baxter Academy for Technology and Science – Traffic Movement Permit (TMP)

Dear Tom:

Please find attached copies of the two documents you requested at the TMP Scoping Meeting on Thursday, February 23, 2017 and the results of a vehicle sight distance evaluation completed for the existing parking lot driveway entrance onto Lancaster Street. The two documents attached are:

1. January 15, 2014 report from Baxter Academy to the City of Portland that provides an overview of bus and parent loading/unloading conditions at the 54 York Street site. This report was a requirement of the Planning Board in their approval of the current Baxter Academy site.
2. Conformation of the Notice of Intent to File advertisement in the local newspaper.

You will recall the City has directed that the curb line directly fronting the existing surface parking lot on Lancaster Street be reconstructed as part of the proposed Baxter Academy project. I am attaching a copy of the latest improvement plan for your information and file. You will note the proposed plan provides a protected parking lane (six-foot in depth) framed on both ends with extensions of the curb line. The proposed curb extension closest to the existing exit driveway entrance restricts vehicle parking within 13-feet of the existing parking lot entrance. The proposed curb improvement meets and exceeds the City's driveway "No-Parking" zone requirement [Chapter 28-53(b)] of 5-feet. Sightlines "*left*" from the existing driveway entrance meet the City's driveway entrance standard; the sightline "*right*" from the driveway entrance meets the standard for a posted speed of 25mph based upon current on-street parking regulations.

Additional traffic and parking documents will be forwarded for your review separately.

Please call me at 400-6890 with questions or additional informational needs.

Very truly yours,

William J. Bray, P.E.

Baxter Academy
for Technology and Science

January 15, 2014

City of Portland

To Whom It May Concern:

As required by the planning board report, 05-2013, I am submitting a report for Baxter Academy, located at 54 York Street in Portland.

The report states in section VII iib:

The bus and parent loading/unloading conditions shall be monitored within three months following the opening of the school and a report shall be provided to the City summarizing existing conditions. Adjustments to the Plan may be required following this monitoring exercise. Additional annual monitoring shall be required in conjunction with the TDM plan.

As the chief operating officer, I have overseen the loading and unloading conditions at 54 York Street during the first three months of operation and in an ongoing basis. I am submitting background information, observations, anecdotes, and my thoughts for your review.

Background

Baxter Academy has contracted with Luce Transportation to provide bus service along three routes extending from Baxter Academy to Topsham, Lewiston, and Kennebunk.

Parents were notified on September 2, 2013 of protocol for dropping off and picking up students at 54 York Street. Specifically, these points were communicated:

When dropping off or picking up your student from Baxter Academy, 54 York Street, you must use Maple Street, which is next to our building. For safety reasons, please DO NOT park on York Street (directly in front of our Main Entrance) for drop-off or pick-up.
Please be aware that buses will be arriving at approximately 8:25 am and departing at 3:30 pm. It would be preferable if you did not compete with the buses. Also, please urge your student to use marked crosswalks near the building if crossing the street.
Baxter staff will be on York and Maple street each morning and afternoon during bus and parent drop off and pickup.

The first day of school for Baxter Academy was September 4, 2013. However, we were not at 54 York Street for this day. Instead, all drop off and pick up activity occurred at Fort Williams State Park in Cape Elizabeth.

Originally, bus drop off was scheduled for 8:25 am and pick-up at 3:30 pm. As of October 21, 2013, our afternoon pick-up for buses changed to 3:10 pm.

Baxter Academy staff members are present on the sidewalk each morning and afternoon to ensure safe drop off and pick up. Specifically, they reinforce that crosswalks are to be used at all times and keep students on the sidewalk and out of the streets while waiting for buses.

Baxter Academy
for Technology and Science

Observations

Parent Drop Off and Pick Up
Parents begin dropping their children off as early as 7:30 am, which is in accordance with agreements we have with them. The majority of parent drop off is complete by 8:20 am.

In the first weeks of school, we reinforced that parents needed to drop off students by pulling onto Maple Street, rather than unloading on York Street. However, due to construction on the hotel at the corner of Maple and Commercial, and construction vehicles constantly being parked in the 15-minute parking spots on Maple Street lining our building, a bottleneck quickly surfaced. Without a constant and reliable place for unloading in such a way that would enable students to exit the vehicle onto a sidewalk, we could not continue to ask parents to pull onto Maple Street. Doing so would require them to let their children out in the middle of the street.

As a result, drop off points for parents have become diversified depending on the parents' line of travel. Currently some parents are using Maple Street and the 30-minute parking spots on either side of York Street (running north and south) to briefly stop and let their students out. This seems to work particularly well because students generally exit their vehicles onto the sidewalk and then either use the crosswalk (for cars parked on the southbound side) or walk directly onto the sidewalk from the northbound side.

Occasionally, parents will pull in front of the school's main entrance to drop off their student. This is regularly discouraged by staff, however is happening with greater frequency now that snow has arrived. Occasionally, parents will also park directly in front of the main entrance to wait for their student to come out for pick up; this generally occurs only after the buses have departed.

In the afternoons, there are fewer parent pickups than drop offs. If students are picked up, it is generally before the school day ends. Parents park in an appropriate on-street spot (Maple Street or York Street), use a crosswalk if necessary, and enter the school building. They sign their student out while they wait for the student to come to the front office. They then return to their parked car and leave. This process typically takes about 5 minutes.

My Thoughts
Due to the construction on Maple Street, the plan for parent drop off to occur solely on Maple Street is untenable during this period. Both construction activity (e.g. construction vehicles blocking Maple Street), and vehicles belonging to workers at the construction site being parked in the 15-Minute Parking on Maple Street, have thwarted this plan.

Parents have found reasonable alternatives that are generally safer than drop off or pick up on Maple Street. Using on-street parking on either side of York Street has caused no negative reports of which I am aware. Traffic is stopped only while a student uses a crosswalk, which is to be expected in any scenario.

Buses
Buses arrive to the school one by one beginning at approximately 8:20 am and ending at 8:25 am most days. The buses use their yellow and red flashers as required and appropriate. Traffic back up behind a bus is generally between one (1) and six (6) vehicles and lasts no more than two minutes. To date I have not heard of one complaint - nothing ranging from a honk to a letter. Students leave the buses and enter directly into the school. We have not had a single incident of concern during this time.

For afternoon pick up, buses arrive together in a line and stop in front of the school main entrance on York Street (northbound). They use their yellow and red flashers as is required. Students are both inside and outside the

building at this time. The students line up and board the buses in an orderly fashion, usually taking about 1.5 minutes. At this time, normally no more than one (1) to six (6) vehicles are stopped behind the buses.

My Thoughts
Bus drop off and pick up has gone as smoothly as I could imagine. I have received no complaints about the impact of having the buses stop in front of the school. In fact, I most commonly hear that people are very happy and pleasantly surprised that our drop off and pick up has had no impact on their driving in the area. These reports come primarily from people who work on York Street in buildings owned by J. B. Brown.

Bicycles
We have numerous bicycle stands installed along Maple Street. Students and faculty use these daily. I have heard no reports of trouble from people in the area, nor from the students and faculty. Currently, there is still room for more bicycles to be locked up on the existing stands. As the temperature decreases, I expect our bicycle rider numbers to dwindle. We will observe whether the numbers increase in the Spring of 2014, and if we adequately have stands at that time. I expect that we will for this school year.

Summary

To date, drop off and pick up at 54 York Street has been going smoothly. There have been no complaints brought to our attention.

Hotel construction adjacent to our building has complicated original plans for parent drop off and pick up to occur exclusively on Maple Street. Parents have adapted by using existing on-street parking spots on York Street, which has not caused a problem to date either from a pedestrian perspective or from a parking perspective. In regards to the latter, parents are parking for less than 5 minutes on average.

Once hotel construction is complete, we can determine if parents need to be redirected to drop off and pick up solely on Maple Street, or if some blended approach, as is currently the situation, can continue to work.

Concern

The one concern I do have (and it is shared by others in the Baxter Academy community) is that this area is not marked as a school zone with a reduced speed limit. Vehicle speeds on York Street often seem faster than the speed limit. We would like to have appropriate signage installed on York Street, at the appropriate distances, in order to inform drivers that this is now a school zone and they should slow their speeds accordingly. Preferably flashing signs like those installed on Cumberland Ave. near Portland High School.

Please let me know if you have any questions. I look forward to continue working together to ensure that this area of Portland serves all members of the community well.

Sincerely,

Adam Burk

Portland Press Herald
Maine Sunday Telegram
pressherald.com

Payment Receipt

Traffic Solutions
Amy Bray

235 Bancroft St
Portland, ME 04102

Thank you for placing your advertisement in Portland Press Herald.

PAYMENT INFORMATION:

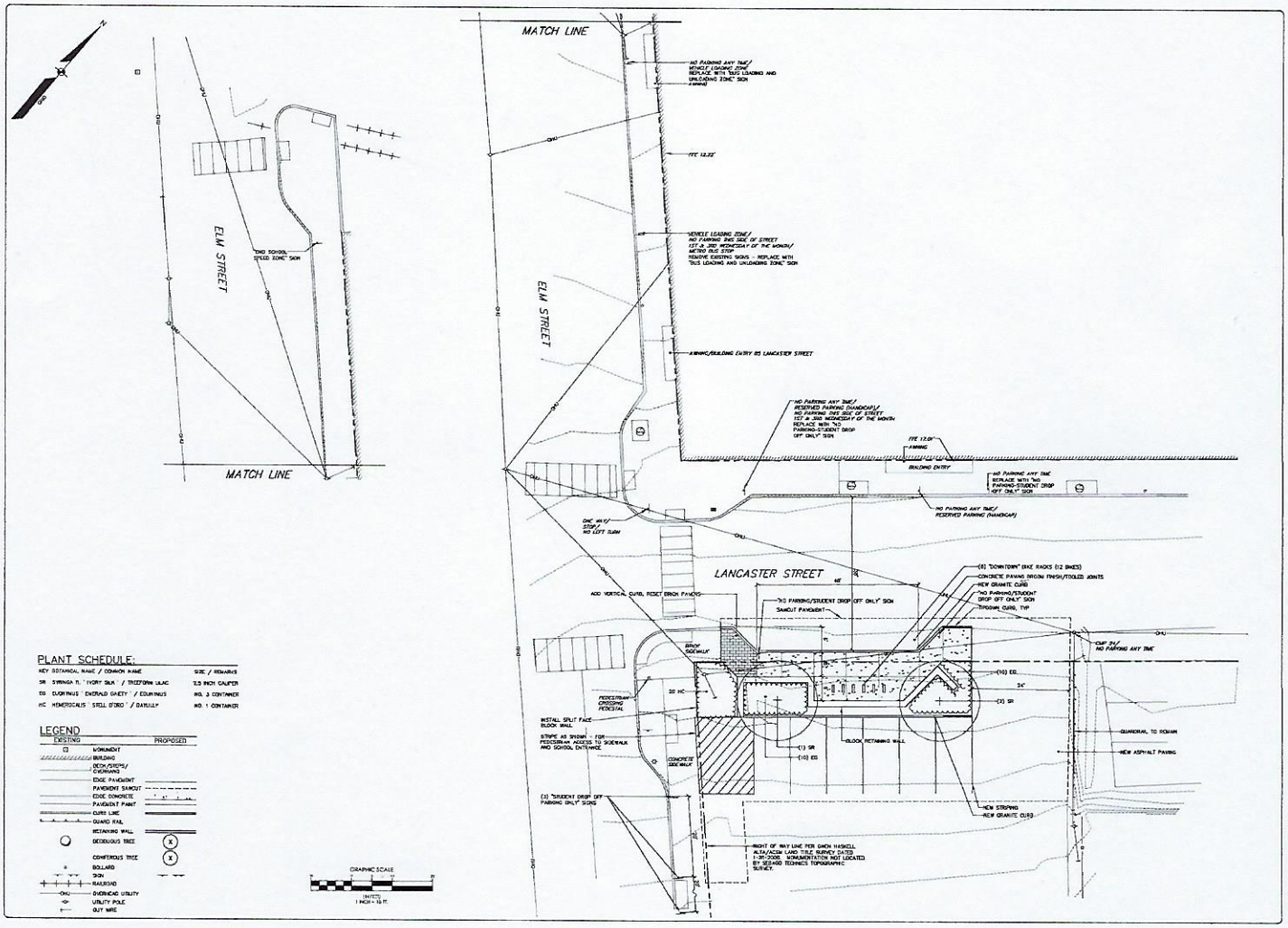
Total Order Price: $351.28

Payment Amount: 351.28
Payment Method: Credit Card

Thank you,
Classified Sales

207-791-6100 Monday - Friday, 8:00 a.m. - 5:00 p.m.
classified@pressherald.com

ORDER INFORMATION:		**Order Number:**	**172166**
Title:	Portland Press Herald	**Classification:**	1000 Legal Notices
Start date:	2/16/2017	**Number of Days:**	1
PO Number:	Baxter / Amy Bray		



PLANT SCHEDULE:

KEY	BOTANICAL NAME / COMMON NAME	SIZE / REMARKS
SR	SYRINGA R. 'IVORY SILK' / TREEFORM LILAC	2.5 INCH CALIPER
EG	EUONYMUS 'ENERALD GAIETY' / EUONYMUS	NO. 3 CONTAINER
HC	HEMEROCALIS 'STELL D'ORO' / DAYLILLY	NO. 1 CONTAINER

LEGEND

EXISTING		PROPOSED
	MONUMENT	
	BUILDING	
	DECK/STEPS/ OVERHANG	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	CURB LINE	
	GUARD RAIL	
	RETAINING WALL	
	DECIDUOUS TREE	X
	CONIFEROUS TREE	X
	BOLLARD	
	SIGN	
	RAILROAD	
	OVERHEAD UTILITY	
	UTILITY POLE	
	GUY WIRE	

DESIGNED	CHECKED
WTC	WTC

REV.	BY	DATE	STATUS
C	WTC	3-02-17	CITY SUBMITTAL NO. 3
B	WTC	2-27-17	CITY SUBMITTAL NO. 2
A	WTC	2-21-17	CITY SUBMITTAL NO. 1

THIS PLAN SHALL NOT BE ISSUED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, ACTIVATIONS OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

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250 Gibbons Rd. Suite B Lewiston, ME 04240 Tel. 207-783-5654

SITE PLAN
OF
185 LANDSCASTER STREET
185 LANDCASTER STREET
PORTLAND, MAINE
FOR:
BOULOS ASSET MANAGEMENT
DIVE CANAL PLAZA
PORTLAND, MAINE 04101

PROJECT NO.	SCALE
17040	1" = 10'

SHEET 3 OF 5

17040.dwg, Tab 5

Att. V

Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
(207) 774-3603
(207) 400-6890 mobile
trafficsolutions@maine.rr.com

March 1, 2017

Thomas A. Errico, P.E.
Senior Associate
Traffic Engineering Director
T.Y. Lin International
12 Northbrook Drive
Falmouth, ME 04105

RE: Baxter Academy for Technology and Science – Traffic Movement Permit (TMP)

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Please call me at 400-6890 with questions or additional informational needs.

Very truly yours,

William J. Bray, P.E.

Baxter Academy
for Technology and Science

January 15, 2014

City of Portland

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Baxter Academy has contracted with Luce Transportation to provide bus service along three routes extending from Baxter Academy to Topsham, Lewiston, and Kennebunk.

Parents were notified on September 2, 2013 of protocol for dropping off and picking up students at 54 York Street. Specifically, these points were communicated:

When dropping off or picking up your student from Baxter Academy, 54 York Street, you must use Maple Street, which is next to our building. For safety reasons, please DO NOT park on York Street (directly in front of our Main Entrance) for drop-off or pick-up.
Please be aware that buses will be arriving at approximately 8:25 am and departing at 3:30 pm. It would be preferable if you did not compete with the buses. Also, please urge your student to use marked crosswalks near the building if crossing the street.
Baxter staff will be on York and Maple street each morning and afternoon during bus and parent drop off and pickup.

The first day of school for Baxter Academy was September 4, 2013. However, we were not at 54 York Street for this day. Instead, all drop off and pick up activity occurred at Fort Williams State Park in Cape Elizabeth.

Originally, bus drop off was scheduled for 8:25 am and pick-up at 3:30 pm. As of October 21, 2013, our afternoon pick-up for buses changed to 3:10 pm.

Baxter Academy staff members are present on the sidewalk each morning and afternoon to ensure safe drop off and pick up. Specifically, they reinforce that crosswalks are to be used at all times and keep students on the sidewalk and out of the streets while waiting for buses.

Baxter Academy
for Technology and Science

Observations

Parent Drop Off and Pick Up
Parents begin dropping their children off as early as 7:30 am, which is in accordance with agreements we have with them. The majority of parent drop off is complete by 8:20 am.

In the first weeks of school, we reinforced that parents needed to drop off students by pulling onto Maple Street, rather than unloading on York Street. However, due to construction on the hotel at the corner of Maple and Commercial, and construction vehicles constantly being parked in the 15-minute parking spots on Maple Street lining our building, a bottleneck quickly surfaced. Without a constant and reliable place for unloading in such a way that would enable students to exit the vehicle onto a sidewalk, we could not continue to ask parents to pull onto Maple Street. Doing so would require them to let their children out in the middle of the street.

As a result, drop off points for parents have become diversified depending on the parents' line of travel. Currently some parents are using Maple Street and the 30-minute parking spots on either side of York Street (running north and south) to briefly stop and let their students out. This seems to work particularly well because students generally exit their vehicles onto the sidewalk and then either use the crosswalk (for cars parked on the southbound side) or walk directly onto the sidewalk from the northbound side.

Occasionally, parents will pull in front of the school's main entrance to drop off their student. This is regularly discouraged by staff, however is happening with greater frequency now that snow has arrived. Occasionally, parents will also park directly in front of the main entrance to wait for their student to come out for pick up; this generally occurs only after the buses have departed.

In the afternoons, there are fewer parent pickups than drop offs. If students are picked up, it is generally before the school day ends. Parents park in an appropriate on-street spot (Maple Street or York Street), use a crosswalk if necessary, and enter the school building. They sign their student out while they wait for the student to come to the front office. They then return to their parked car and leave. This process typically takes about 5 minutes.

My Thoughts
Due to the construction on Maple Street, the plan for parent drop off to occur solely on Maple Street is untenable during this period. Both construction activity (e.g. construction vehicles blocking Maple Street), and vehicles belonging to workers at the construction site being parked in the 15-Minute Parking on Maple Street, have thwarted this plan.

Parents have found reasonable alternatives that are generally safer than drop off or pick up on Maple Street. Using on-street parking on either side of York Street has caused no negative reports of which I am aware. Traffic is stopped only while a student uses a crosswalk, which is to be expected in any scenario.

Buses
Buses arrive to the school one by one beginning at approximately 8:20 am and ending at 8:25 am most days. The buses use their yellow and red flashers as required and appropriate. Traffic back up behind a bus is generally between one (1) and six (6) vehicles and lasts no more than two minutes. To date I have not heard of one complaint - nothing ranging from a honk to a letter. Students leave the buses and enter directly into the school. We have not had a single incident of concern during this time.

For afternoon pick up, buses arrive together in a line and stop in front of the school main entrance on York Street (northbound). They use their yellow and red flashers as is required. Students are both inside and outside the

building at this time. The students line up and board the buses in an orderly fashion, usually taking about 1.5 minutes. At this time, normally no more than one (1) to six (6) vehicles are stopped behind the buses.

My Thoughts
Bus drop off and pick up has gone as smoothly as I could imagine. I have received no complaints about the impact of having the buses stop in front of the school. In fact, I most commonly hear that people are very happy and pleasantly surprised that our drop off and pick up has had no impact on their driving in the area. These reports come primarily from people who work on York Street in buildings owned by J. B. Brown.

Bicycles
We have numerous bicycle stands installed along Maple Street. Students and faculty use these daily. I have heard no reports of trouble from people in the area, nor from the students and faculty. Currently, there is still room for more bicycles to be locked up on the existing stands. As the temperature decreases, I expect our bicycle rider numbers to dwindle. We will observe whether the numbers increase in the Spring of 2014, and if we adequately have stands at that time. I expect that we will for this school year.

Summary

To date, drop off and pick up at 54 York Street has been going smoothly. There have been no complaints brought to our attention.

Hotel construction adjacent to our building has complicated original plans for parent drop off and pick up to occur exclusively on Maple Street. Parents have adapted by using existing on-street parking spots on York Street, which has not caused a problem to date either from a pedestrian perspective or from a parking perspective. In regards to the latter, parents are parking for less than 5 minutes on average.

Once hotel construction is complete, we can determine if parents need to be redirected to drop off and pick up solely on Maple Street, or if some blended approach, as is currently the situation, can continue to work.

Concern

The one concern I do have (and it is shared by others in the Baxter Academy community) is that this area is not marked as a school zone with a reduced speed limit. Vehicle speeds on York Street often seem faster than the speed limit. We would like to have appropriate signage installed on York Street, at the appropriate distances, in order to inform drivers that this is now a school zone and they should slow their speeds accordingly. Preferably flashing signs like those installed on Cumberland Ave. near Portland High School.

Please let me know if you have any questions. I look forward to continue working together to ensure that this area of Portland serves all members of the community well.

Sincerely,

Adam Burk

Portland Press Herald
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Thank you for placing your advertisement in Portland Press Herald.

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Start date:	2/16/2017	**Number of Days:**	1
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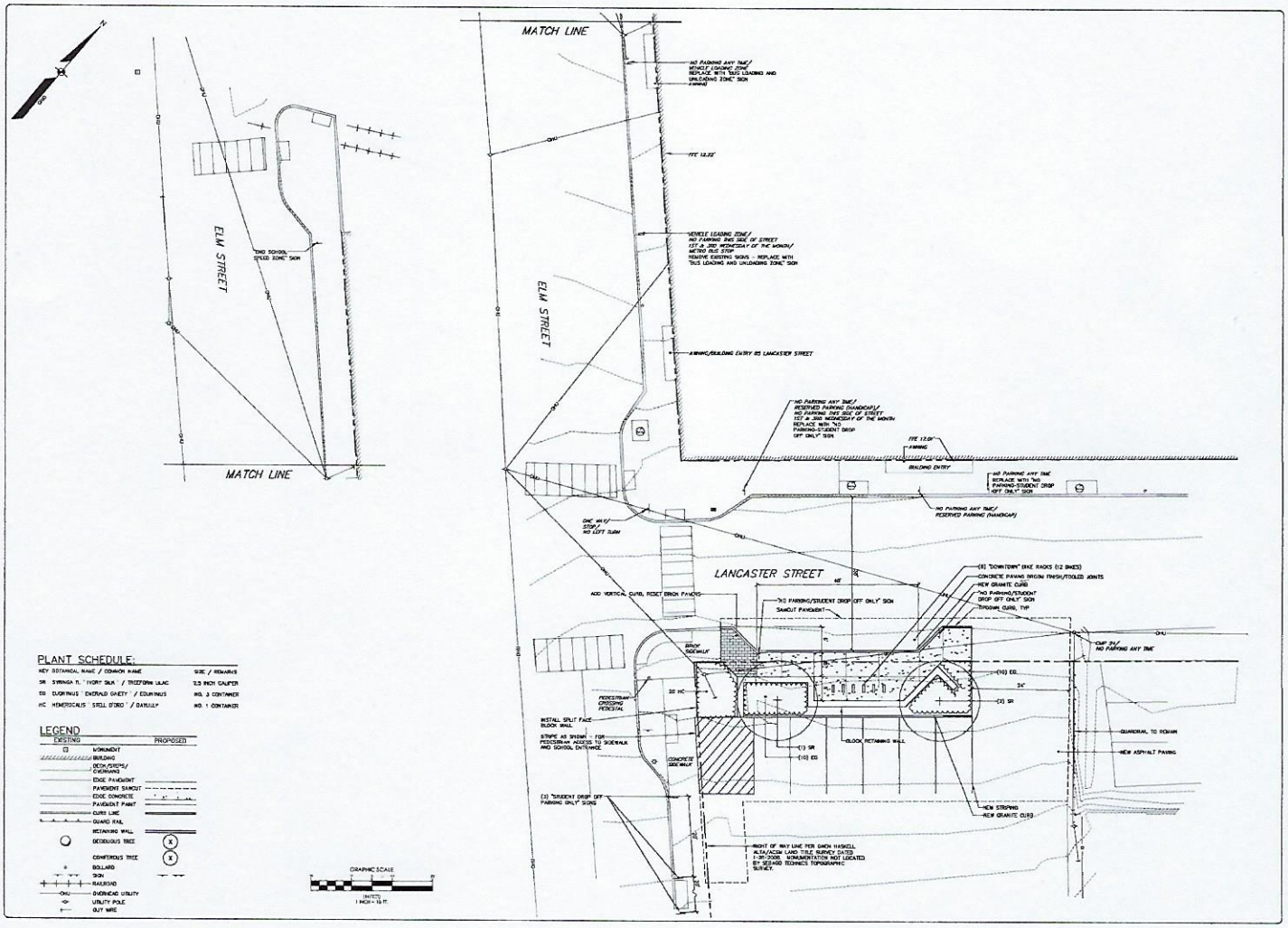

PLANT SCHEDULE:

KEY	BOTANICAL NAME / COMMON NAME	SIZE / REMARKS
SR	SYRINGA R. 'IVORY SILK' / TREEFORM LILAC	2.5 INCH CALIPER
EG	EUONYMUS 'EMERALD GAIETY' / EUONYMUS	NO. 3 CONTAINER
HC	HEMEROCALIS 'STELL D'ORO' / DAYLILLY	NO. 1 CONTAINER

LEGEND

EXISTING		PROPOSED
	MONUMENT	
	BUILDING	
	DECK/STEPS/ OVERHANG	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	CURB LINE	
	GUARD RAIL	
	RETAINING WALL	
	DECIDUOUS TREE	X
	CONIFEROUS TREE	X
	BOLLARD	
	SIGN	
	RAILROAD	
	OVERHEAD UTILITY	
	UTILITY POLE	
	GUY WIRE	

DESIGNED	CHECKED
WTC	WTC

REV.	BY	DATE	STATUS
C	WTC	3-02-17	CITY SUBMITTAL NO. 3
B	WTC	2-27-17	CITY SUBMITTAL NO. 2
A	WTC	2-21-17	CITY SUBMITTAL NO. 1

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SITE PLAN
OF
185 LANDSCASTER STREET
185 LANDCASTER STREET
PORTLAND, MAINE
FOR:
BOULOS ASSET MANAGEMENT
DIVE CANAL PLAZA
PORTLAND, MAINE 04101

PROJECT NO.	SCALE
17040	1" = 10'

SHEET 3 OF 5

17040.dwg, Tab 5

March 4, 2017

Baxter Academy for Technology and Science

TRANSPORTATION OPERATIONS and MANAGEMENT PLAN

Introduction

Baxter Academy for Technology and Science is fully committed to providing the necessary resources and services to maintain the highest level of student safety at its 185 Lancaster Street Campus. The Traffic Operations and Management plan provides both the administration and staff of Baxter Academy a "*blue-print*" of recommended operational principles and guidelines that, with implementation, ensures a safe environment for students, staff and the general public.

Proposed Transportation Operations and Management Plan

School Zone Safety Features: Baxter Academy will install a flashing school zone speed limit sign assembly on Elm Street in advance of the 185 Lancaster Street Campus. The flashing school light system will operate with a timer controlling time periods of operation. An "*End School Zone*" sign will be appropriately located on Elm Street just west of the designated school bus loading zone advising motorists that they are leaving the school zone area. Secondary school speed zone signage will also be installed on both approaches of Lancaster Street that informs approaching motorists they are entering a designated school zone.

Baxter Academy will augment the City's annual crosswalk re-striping program, re-painting each of the existing crosswalk markings early spring of each year at the Lancaster Street/Elm Street intersection.

Baxter Academy staff will serve as a pedestrian crossing guard at the Lancaster/Elm Streets intersection aiding students crossing the Elm Street approach. A portable "*school crossing*" sign will be appropriately located in the center of the intersection reinforcing the school zone area.

Recommended Actions

- Baxter Academy will consult with the City's Traffic Division in advance of the school calendar year to review hourly and daily timing inputs for the automated school flashing speed limit assembly.
- Baxter Academy will field review, annually during mid-summer, the operational status of all traffic signage and roadway striping amenities. Noted deficiencies will be appropriately reported to the City's Traffic Division.
- Baxter Academy will re-stripe the crosswalk markings at the Lancaster Street/Elm Street intersection as soon as practical in the spring of each year. Coordination with Public Works in completing this task is essential. Baxter Academy assumes that the City will re-stripe the intersection markings prior to the beginning of the school year consistent with their current practices at all other City school locations.

- Baxter Academy staff, serving as an intersection crossing guard, will be required to wear a reflectorized orange vest meeting the latest OSHA standards. They will direct traffic appropriately using a STOP paddle. Staff members performing this service should meet with City Officials annually, in advance of the start of the school year, to review the appropriate procedures serving as an adult crossing guard.

Charter School Bus Service: Baxter Academy provides charter school bus service from three service areas in Southern Maine; Lewiston, Windham and Topsham. Students will be picked up daily at a designated bus area in each of the three communities and scheduled to arrive on-campus at approximately ___ AM (Schedule to be established later). Each of the three buses will discharge the students and return to a daytime queuing location off-site. They will return to the Baxter Academy Campus in the afternoon at ___ PM (Schedule to be established later) picking students up for the return trip to each of the three service communities.

A "*bus loading and unloading*" zone will be established along the Elm Street frontage of the 185 Lancaster Street Campus of sufficient length to accommodate three full-size school buses. Baxter Academy will rigidly regulate and control the arrival and departure schedule of the charter school buses. Bus arrival times, both morning and afternoon, will purposely be delayed allowing private vehicle utilization of the Elm Street curb space for student drop-off and pick-up functions. Students traveling on the charter school buses in the afternoon will wait in the "great-room" and be released for boarding with arrival of the school buses.

Baxter Academy staff will have a strong presence in this area ensuring that all personal autos have cleared the bus loading area prior to the bus arrival time. Special traffic signage will be erected that establishes the designated dual-purpose parking area.

Baxter Academy has developed the basic tenants of a Student Policy (Refer to Appendix A) that clearly define the responsibilities and expectations of students and parents alike in the use of the designated passenger loading and unloading areas.

The charter school buses are fully equipped with all mandatory school bus safety features including school flashing lights systems, etc.

Recommended Actions

- Baxter Academy will meet with the City's Transportation Office, Police Department, and representatives of the Charter School Bus Company to prepare a bus routing plan for each of the three bus routes. The bus routing plan will be reviewed annually with the City offices and adjusted as deemed necessary. Baxter Academy will review the designated "*bus loading and unloading*" area annually at the start of the school year verifying that all bus zone signing exists, etc. Baxter Academy will meet with appropriate City staff to establish the required sign verbiage establishing the dual-purpose passenger loading zone.
- Baxter Academy staff will be assigned, as necessary, to monitor the Elm Street bus loading zone ensuring that all private autos have cleared the bus zone prior to the arrival of the charter buses.

- Baxter Academy will develop a final operations plan and review the content of that plan with appropriate City officials prior to the beginning of the school year.
- Each of the three charter school buses will operate their mandatory flashing school lights during all loading and unloading activities.
- Baxter Academy staff will supervise the loading and unloading of students from each bus ensuring orderly and safe passage of students and minimal disruption to through vehicle travel on Elm Street. Students will be ushered in an orderly fashion to/from the entrance door of the school.
- Baxter Academy staff will be required to wear a reflectorized orange vest meeting the latest OSHA standards.

Parent Drop-Offs: Three designated parent drop-off zones are proposed near the main school entrance on Lancaster Street. A total of eight vehicle spaces are provided. Three spaces are provided on Elm Street at Lancaster Street; two spaces in a proposed recessed parking area on the east side of Lancaster Street and, three spaces in front of the Campus. Eight additional parking spaces are provided, for short time periods, in the designated Elm Street bus loading zone for student drop-off and pick-up in private vehicles. Students will also be allowed to exit the school in the afternoon through doors directly onto Kennebec Street for pick-up.

Each of the three designated drop-off areas adjacent to the main Campus entrance will be signed for *"5-Minute Loading and Unloading Only"*. Baxter Academy staff will be assigned to monitor and control the student activities in the general area of the Campus to minimize the disruption to other motor vehicle operators and ensure the safety of the Baxter Students.

Recommended Actions

- Baxter Academy will send annually, prior to the beginning of the school year, an introductory letter to all parents reminding them to only drop-off and pick-up students in the designated pick-up/drop-off areas. Parents will also be encouraged, when feasible, to drive the student passenger(s) to their respective place of work with the student walking to/from the 185 Lancaster Street Campus.
- Baxter Academy staff will strategically locate reflectorized traffic cones in curb areas where the discharging or pick-up of students is both unsafe and undesirable.
- Baxter Academy staff will be required to wear a reflectorized orange vest meeting the latest OSHA standards.
- Baxter Academy staff will review annually, in advance of the school year, that all mandatory signage denoting each designated drop-off zone are in place. If upgrades or replacements are necessary, the City's Traffic Division should be notified.

Automobile Travel: Baxter Academy administration will encourage both staff and the student body to travel to/from the 185 Lancaster Street Campus using other modes of travel other than private vehicle. Baxter Academy will provide off-street parking accommodations to staff members in a 50-space, off-street parking lot adjacent to the Campus. Staff members will be issued a parking permit by the Administration for use of the parking lot. Two designated handicap parking zones (with two-plus spaces in each) located along Lancaster Street are available for use by both staff and students alike. Further, an off-site parking lot in the rear of the Campus is also available for handicap parking, as necessary.

Students electing to travel to/from Baxter Academy in a private auto will be directed to use public off-street parking areas located on Marginal Way versus on-street spaces located near the Campus.

Recommended Actions

- Baxter Academy administrators, annually before the commencement of the school year, will send a letter to all in-coming students and members of the staff encouraging other modal travel options versus personal auto travel.
- Students who choose to commute in their personal vehicle will be directed to use public parking lots found on Marginal Way in lieu of parking on-street nearby the 185 Street Campus.
- Baxter Academy will evaluate throughout the school year both the demand and viability of providing a shuttle service connecting the public parking lots with the Campus.

Other Transportation Modal Travel: Both students and staff members will be encouraged to avail themselves of other non-auto transportation services commuting to/from the 185 Lancaster Street campus. Current other modal services include: METRO bus service, both intra-city and the inter-municipal express *Breeze* bus route; Southern Maine *Zoom* and Shuttle bus service; The Lakes Region Explorer; Casco Bay Island Transit Service with connections to Casco Bay Islands; bicycle travel; walking; carpooling, etc.

All public bus transit routes connect directly and/or indirectly through the METRO's "*HUB*" located on Elm Street near Monument Square. A short walk down Elm Street to the Campus is provided along a well-maintained sidewalk system. Pedestrian "*Walk*" signals are provided at both Monument Square and Cumberland Avenue to aid the student/staff walker crossing both major streets.

Staff or students traveling to Baxter Academy riding a bicycle will be able to safely store their bikes in bike racks located immediately adjacent to the 185 Lancaster Street Campus.

Recommend Actions

- Baxter Academy administrators, annually before the commencement of the school year, will send a letter to all in-coming students and members of the staff encouraging other modal travel options versus personal auto travel.
- Schedules and contact information for each service provider will be in a highly visible place on Campus.
- Baxter Academy staff will travel on foot between Monument Square and the Campus prior to the school year evaluating if sidewalk and traffic signal deficiencies require attention. All noted defects will be reported to the City of Portland's Public Works Department.
- Baxter Academy staff will review annually the functional condition of the on-site bicycle racks ensuring their security and operation.

Other Baxter Academy Transportation Services: Visitors to the Baxter Academy Campus will be directed to use existing on-street parking spaces when visiting the Campus. Baxter Academy

Service vendors, whether scheduled or random, will also be directed to use on-street parking spaces located in the general vicinity of the 185 Lancaster Street Campus.

Baxter Academy will evaluate the daily parking demand of both Campus visitors and vendor service providers and evaluate if other parking arrangements are deemed warranted.

Recommended Actions

- Baxter Academy administrators will monitor daily the Campus parking needs of both Visitors and Service Vendors and adjust, as necessary, the accommodation of their parking needs.
- Service Vendors will be requested, when possible, to approach the Campus during time periods other than the "*peak*" arrival and departure times of the school.

Baxter Academy
for Technology and Science

DRAFT

Student Drop-Off and Pick-Up by Private Vehicle Policy

To ensure student safety and to promote smooth transportation flow around Baxter Academy, as required by the City of Portland, we require all parents and students to understand the rules for student drop-off and pick-up by private vehicle at 185 Lancaster Street. The following rules pertain to drop-off and pick-up schedules and procedures. **Please sign this form to attest that you have read, do understand, and will abide by our policy.** *A map of pick-up locations is appended to this document. Please keep it for reference during the school year.*

- Pick-up and drop-off locations for Baxter Academy will be located in the designated spaces on Elm Street and Lancaster Street.
- On Elm Street, parents have 150 feet of parking to quickly drop their students off in the morning before the buses arrive at _____.
- On Lancaster Street, parents have 8 designated spots to use for dropping students off in the morning.
- On Kennebec Street, parents can drop off and pick up students with monitored exits on that side of the building.

MORNING DROP OFF

- Students being dropped off at Baxter Academy are required to **exit the vehicle *on the curb side*** and enter the building as quickly as possible.
- If a bus approaches the bus loading zone on Elm Street, parents must make way for the bus to pull over and offload students.

AFTERNOON PICK UP

- Students who are walking, bicycling, using public transportation or being picked up by private vehicle will be dismissed first. ***Cars queuing on Elm Street to pick up these students will be required to depart quickly to make room for the school buses arriving at 3:__***.
- Pick up times for students will be between the times of _____ and _____, and will be strictly monitored by staff to ensure space is open for the buses.
- Students who take Baxter's school buses will wait in the great room until 3:15, and will not be allowed to leave the building until the buses arrive.
- Buses will arrive for student pick up at 3:15 p.m. sharp. Students will be dismissed to load the buses quickly.

Baxter Academy staff will enforce these rules on a daily basis. Please sign and return this form to signify that you will abide by these important rules.

Every student must have this document on file, even if drop off or pick up at the school will be a rare occurrence.

Student Name(s): _____ Grade(s):_____

Parent/Guardian Name: _____ Parent/Guardian Phone #: _____

Parent/Guardian Vehicle Make: _____ Model: _____ Plate #: _____

Additional Possible Drop-Off/Pick-Up Vehicle Make, Model, and Plate #:_____

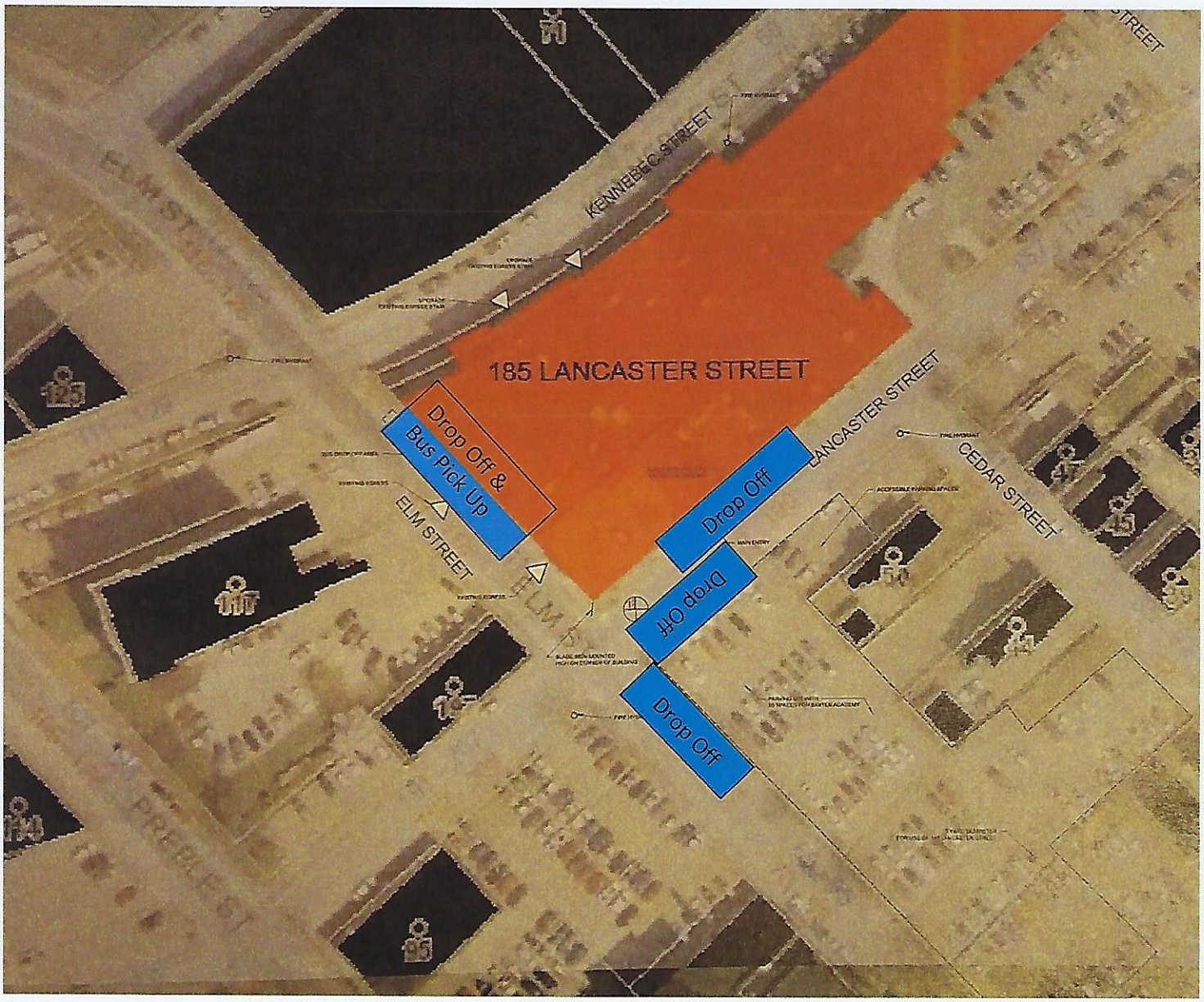
I have read the following guidelines and will adhere to them.

_____ _____

Student Signature Parent/Guardian signature

DRAFT

Drop off and Pick up Locations



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March 4, 2017

Traffic Assessment

For Proposed
Baxter Academy for Technology and Science
Public Charter High School
Portland, Maine

INTRODUCTION

Baxter Academies of Maine are proposing to relocate and consolidate its public charter high school, known as Baxter Academy for Technology and Science, from its current facilities at 54 York Street and 561 Congress Street in Portland to an expanded facility at 185 Lancaster Street. The proposed site is an existing two-story building with a total floor area of approximately 92,561 square feet; Baxter Academies will lease and remodel 31,571 square feet of the building for the expanded charter high school project. Baxter Academies of Maine anticipates starting construction early spring with completion of the second floor expected in early fall prior to the commencement of the 2017-18 academic year and completion of the first floor expected around Thanksgiving.

This report provides an estimate of site trip generation for the proposed Baxter Academy public charter high school project generated during the critical AM peak hour; an assignment of the site trips to the adjacent street system; a review of existing roadway safety trends; a forecast of both 2017 pre- and post-development traffic conditions and, a technical evaluation of multi-way "Stop" control at the Lancaster Street/Chestnut Street intersection.

EXISTING CONDITIONS

Existing Design Hour Traffic: Manual turning movement counts were conducted at both the Chestnut Street/Lancaster Street and Elm Street/Lancaster Street intersections during the morning "*peak*" commuter hours of 7:00 to 9:00AM. Traffic data was collected at the former location on Tuesday, September 13, 2016 and traffic data at the Elm Street/Lancaster Street intersection was collected on Wednesday, February 15, 2017. All traffic entering and exiting both intersections was recorded in 15-minute intervals between the identified study times (A copy of the traffic data is attached as an appendix to the report). From a summary of the data, a peak hour of traffic (7:30 to 8:30AM) was determined for both intersections.

Traffic data collected during time periods other than the summer months of July and August require adjustment to reflect "*peak*" travel conditions. MaineDOT provides factors for adjusting traffic data collected during other periods of time. MaineDOT utilizes highway classifications of I, II, or III for all State and Local roadways. Group I roadways are defined as urban roadways or those roads that typically see commuter traffic and experience little fluctuation from week to week throughout the year. Group II roadways or arterial roads are those that see a

combination of commuter and recreational traffic and, therefore, experience moderate fluctuations during the year. Group III roads or recreational roadways are typically used for recreational purposes and experience significant seasonal fluctuations. MaineDOT has designated the intersecting roadways at both intersections Group I roadways, which require an adjustment of 1.03 for the September 2016 data and a factor of 1.15 for adjusting the February 2017 data. The Chestnut Street/Lancaster Street "*base*" intersection volumes were increased by an additional 1% to approximate 2017 travel conditions at the intersection. Figure 1 illustratively presents the estimated 2017 Design Hour Traffic forecasts for both study intersections.

Roadway Safety Trends: The Maine Department of Transportation's (MaineDOT) Accident Records Section provided three-year (2013 through 2015) safety records for the sections of the streets highlighted on the attached map, a combined distance of 0.86 miles. MaineDOT's report is presented as follows:

2013 - 2015 Accident Summary
Portions of Kennebec Street, Lancaster Street, Oxford Street,
Preble Street, Elm Street and Chestnut Street

Location	Number of Accidents	Critical Rate Factor
1. Elm Street @ Kennebec Street	7	2.55
2. Elm Street @ Lancaster Street	9	3.79
3. Preble Street @ Kennebec Street	12	4.22
4. Lancaster Street @ Preble Street	3	1.28
5. Oxford Street @ Preble Street	4	1.65
6. Elm Street @ Somerset Street	2	0.52
7. Chestnut Street @ Oxford Street	1	1.44
8. Chestnut Street @ Lancaster Street	3	4.69
9. Chestnut Street @ Kennebec Street	1	1.03
10. Somerset Street @ Chestnut Street	4	1.25
11. Kennebec Street btw. Elm Street and Chestnut Street	1	0.98
12. Lancaster Street btw. Chestnut Street and Cedar Street	1	5.38
13. Lancaster Street btw. Cedar Street and Elm Street	3	6.87
14. Lancaster Street btw. Elm Street and Preble Street	2	33.90
15. Oxford Street btw. Preble Street and Elm Street	3	10.01
16. Oxford Street btw. Cedar Street and Chestnut Street	2	4.26
17. Preble Street btw. Kennebec Street and Lancaster Street	1	0.53
18. Preble Street btw. Lancaster Street and Oxford Street	3	1.56
19. Elm Street btw. Somerset Street and Kennebec Street	1	0.76
20. Chestnut Street btw. Lancaster Street and Oxford Street	1	1.41
21. Chestnut Street btw. Kennebec Street and Lancaster Street	1	2.34
22. Chestnut Street btw. Somerset Street and Kennebec Street	1	2.71

The MaineDOT considers any roadway segment or intersection a high crash location if both of the following criteria are met:

- ***8 or more accidents***
- ***A Critical Rate Factor greater than 1.00***

As the data presented in the table shows (locations highlighted in red), two locations meet MaineDOT's criteria for a high crash location. A total of 9 crashes and a Critical Rate Factor (CRF) of 3.79 were reported for the Elm Street/Lancaster Street intersection. A total of 12 vehicle crashes with a Critical Rate Factor of 4.22 were reported for the second location at Preble Street and Kennebec Street. A more in-depth review (preparation of detailed vehicle collision diagrams) was prepared for both locations to determine if a clear pattern of accident is occurring (Copies of the Collision Diagrams are attached as an appendix to the report). The following two paragraphs summarize the detailed safety analysis conducted for both locations:

Location #2 – Elm Street at Lancaster Street: Six of the total crashes reported were "*angle*" collisions involving traffic (auto and/or bicycle) on either approach of Lancaster Street being struck by a thru vehicle traveling northerly on Elm Street. The remaining three crashes occurred more randomly in the intersection.

The City recently completed a very significant roadway/sidewalk reconstruction project along Elm Street, a one-way collector street that connects Portland's Downtown to Interstate 295 and western sections of the City. The improvement project narrowed pavement widths on Elm Street and widened sidewalks in an effort to reduce travel speeds in the corridor and improve overall pedestrian safety. The safety improvement project should help reduce the frequency of traffic accidents at the noted intersection.

Location #3 – Preble Street at Kennebec Street: The MaineDOT data for this location incorrectly included a vehicle crash occurring at an adjacent intersection; therefore, the total number of reported crashes is reduced to 11 crashes at the intersection. Eight of the 11 vehicle crashes involved motorists entering the intersection from both Kennebec Street approaches colliding with thru vehicles traveling southerly on Preble Street. Existing buildings in both northerly quadrants of the intersection limit vehicle sightlines of approaching vehicles. The City is currently developing preliminary design plans for extending Somerset Street to Hanover Street; the proposed project design also includes discontinuance of the west leg of Kennebec Street between Hanover and Preble Streets. This design feature should greatly reduce the frequency of vehicle crashes occurring within the Kennebec Street/Preble Street intersection.

SITE TRAFFIC

Site Trip Generation: The Institute of Transportation Engineers (ITE) 7th edition of the **TRIP GENERATION** manual provides an equation under Land-Use Code #530 - High School for estimating the volume of peak hour trips generated by a public high school during the morning commuter hour. The analysis was completed based upon a projected school enrollment of 400 students.

$$Ln(T) = 0.77Ln(X) + 0.69 \; [X = 400 \text{ students}]$$

Accordingly, the 400-student Baxter Academy public charter high school can be expected to generate a total of **200** vehicle trips during the weekday AM peak hour.

Site Trip Assignment: Baxter Academy for Technology and Science recently conducted a survey of their existing student population to determine transportation modal choice of students traveling to/from the 54 York Street site. The results of the survey (copy of survey results attached) are presented as follows:

- 38% Charted School Bus Service
- 25% Commute with an Adult (1)
- 18% Public Transportation (METRO, Zoom Bus, Casco Bay Transit, Other)
- 9% Drive personal vehicle
- 6% Carpool with another student
- 3% Walk
- 1% Bike

Total = 100%

(1) NOTE: Multiple students are being driven by one adult and/or travel to the work site of the adult and walk to the school.

A trip assignment model, prepared for all site trips impacting the street system immediately adjacent to the proposed project site, was developed based upon the following assumptions and considerations:

400 students and 60 staff		
40% of students (152) ride 3 chartered buses	=	*3 trips*
25% of students (100) commute with an adult:		
○ *40 students travel as a single occupant in vehicle with adult*	=	*80 trips*
○ *20 students travel with a second student and adult*	=	*20 trips*
○ *15 students travel with two other students and adult*	=	*10 trips*
○ *25 students travel with adult to work site and walk to school*	=	*0 trips*
18% of students (72) use public transportation	=	*0 trips*
9% of students (36) drive personal auto and park off-site	=	*0 trips* (1)
6% of students (24) car pool with fellow student and park off-site	=	*0 trips* (1)
3% of students (12) walk	=	*0 trips*
1% of students (4) bike	=	*0 trips*
85% of staff (51) will drive to site and park in Lancaster Street parking lot	=	*51 trips* (1)
15% of staff (9) will use other modes of transportation	=	*0 trips*
Total Trips Impacting Street System	=	*164 trips*

(1) NOTE: A total of 50 on-site parking spaces are provided in an adjacent off-street parking lot for employees only. No student parking is provided.

Approximately, 109 of the 164 peak hour trips are expected to arrive at the 185 Lancaster Street site and the remaining 55 trips are parents leaving after dropping-off student(s).

Figure 2 illustratively presents the assignment of the site trips to the street system immediately adjacent to the proposed 185 Lancaster Street site.

2017 POST-DEVELOPMENT TRAFFIC FORECAST

Other Development Traffic: Traffic generated by projects that have been approved by the local Planning Board and/or the Maine Department of Transportation, yet are not open, must be included in the estimate of post-development traffic. Peak hour trips generated by the following projects were appropriately assigned to the study intersections:

- *191 Marginal Way Re-Development Project*
- *Mid-Town Development*
- *Bayside Bowl*
- *89 Anderson Street*
- *Schlotterback & Foss Building*
- *#443 Congress Street*
- *Westerlea View Lofts*

Figure 3 is a "*line-diagram*" plan that depicts the Other Development trip assignment to both study intersections.

2017 Post-Development Traffic – AM Peak Hour: 2017 Post-Development traffic forecasts were prepared for both study intersections combining peak hour trips generated by the Baxter Academy project (Refer to Figure 2) with Other Development trips highlighted on Figure 3 with 2017 Design Hour Traffic as illustrated on Figure 1. Figure 4 graphically presents the 2017 Post-Development Traffic Conditions for both study intersections during the AM peak hour.

LANCASTER STREET/CHESTNUT STREET – MULTI-WAY "STOP" CONTROL EVALUATION

The Chestnut Street/Lancaster Street intersection presently operates as a two-way STOP controlled intersection with both Lancaster Street approaches under STOP control. A detailed evaluation was completed in 2016 to determine if projected traffic conditions at that time warranted a modification of the traffic control at the

intersection. The earlier study, which was based upon existing 2016 travel conditions measured at the intersection, concluded that traffic conditions at the intersection failed to satisfy the minimum warrants for "*multi-way*" STOP control.

The proposed Baxter Academy for Technology and Science project is forecast to moderately increase peak hour traffic volumes traveling through the subject intersection, especially during the "*morning*" peak hour. The traffic projections estimate an increased volume of 73 trips will travel through the subject intersection in the AM peak hour. It is anticipated that lower residual volumes of traffic generated by the school project will travel through the intersection throughout a typical weekday. A decision to modify traffic control at the intersection should be based upon actual travel conditions measured at the intersection versus estimated travel patterns of multiple development projects impacting the intersection. It is the recommendation of this report that further study of the intersection should be deferred until the Baxter Academy site is fully functional.

STUDENT "DROP-OFF" PARKING SPACE DEMAND

Approximately twenty-five percent (25%) of the existing student enrollment commute with an adult to and from the existing Baxter Academy site at 54 York Street. Short-term on-street parking spaces located on the south side of Maple Street is the primary "drop-off/pick-up" area for students traveling via this mode. Other curbside parking areas used include the west side of York Street opposite the school entrance and the 1-hour parking spaces located on the north side of Maple Street (York Street to Commercial Street). Existing student "drop-off/pick-up" practices were observed on Monday, February 27, 2017 during both the morning arrival and afternoon departure time periods. Vehicle trips were recorded in 5-minute increments between 7:40 and 8:25AM and, again, between 2:30 and 3:00PM. The following tables summarize that effort:

Parent "Drop-Off" Trips

Survey Start Time	Total Vehicle Trips
7:40 to 7:45 AM	5
7:45 to 7:50 AM	5
7:50 to 7:55 AM	4
7:55 to 8:00 AM	6
8:00 to 8:05 AM	8
8:05 to 8:10 AM	7
8:10 to 8:15 AM	9
8:15 to 8:20 AM	6
8:20 to 8:25 AM	9

Parent "Pick-Ups" Parking Space Trends

Survey Start Time	Number of Vehicles *"Waiting"*
2:30 to 2:35 PM	7
2:35 to 2:40 PM	8
2:40 to 2:45 PM	8
2:45 to 2:50 PM	10
2:50 to 2:55 PM	13
2:55 to 3:00 PM	15

A total of fifty-nine (59) "*drop-off*" trips were recorded during the morning arrival period; with a peak value of 9 trips occurring during two separate time periods. A separate tally of vehicle duration was not maintained, although, the length of stay very seldom exceeded 30 to 60 seconds in length. The afternoon survey process focused on the "*length of stay*" for each motorist versus "*total trips*" as was the case used in the morning survey. Motorists in the afternoon were observed arriving early on-site, well in advance of the school dismissal time,

parking in the available on-street parking spaces located near the 54 York Street site. As shown in the chart, the "*peak*" number of vehicles parked curb-side was 15, which occurred just prior to the school dismissal time of 3:00PM. The survey stopped at 3:00 PM concurrent with the end of the school day. It is reasonable to assume that the actual "*peak*" number of vehicles queued waiting for a student may have exceeded 15 vehicles, just after dismissal time but the duration was very short.

The student capacity of the proposed 185 Lancaster Street site is 400 students, representing an increase of 57 students when compared to the existing York Street site. Accordingly, it is reasonable to assume that the drop-off parking needs of the new school site will increase proportionally resulting in a student "*drop-off*" parking demand of 18 vehicle spaces. A parking space demand of 11 spaces is determined for the morning peak hour.

SUMMARY

1. The proposed Baxter Academy for Technology and Science public charter high school can be expected to generate approximately 200 vehicle trips during the "*busiest*" single hourly time period of the day; the AM peak hour. Roughly 80% percent of the trips (164 trips) impact the street system immediately adjacent to the proposed site at 185 Lancaster Street. The remaining site trips (36-trips) are generated by students traveling to school in a private vehicle parking off-site in public parking lots or curb-side on nearby streets.

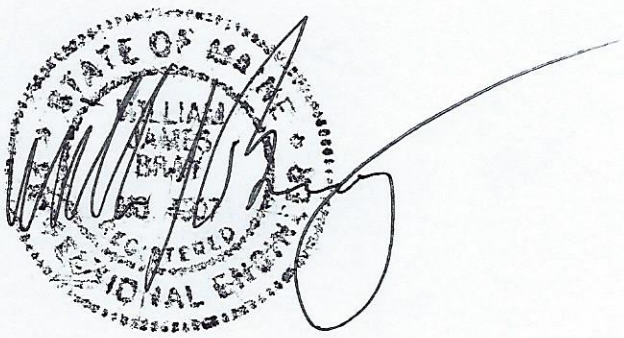
2. MaineDOT's Traffic Safety Bureau's latest three-year safety report (2013 through 2015) for the segments of streets and intersections highlighted on the attached City map identified two locations as High Crash Locations (HCL). Detailed vehicle collision diagrams were prepared for both locations to better determine if a clear pattern of accident is occurring at either location.

   Location #2: Elm Street at Lancaster Street, had a reported total of 9 vehicle crashes and a Critical Rate Factor of 3.79. The predominate crash pattern were "*angle*" crashes, which accounted for six of the 9 reported vehicle crashes. A detailed review of each traffic crash report suggests travel speed and roadway conditions were likely contributing factors causing the crash. The City's most recent street re-construction project on Elm Street, which narrowed travel lanes on Elm Street, should help immensely in reducing vehicle speeds on the Elm Street approach to the intersection.

   Location #3: Preble Street at Kennebec Street, had a reported total of 12 vehicle crashes and a Critical Rate Factor of 4.22. A review of the vehicle crash reports provided by MaineDOT shows that one vehicle accident report was incorrectly coded occurring at an adjacent intersection. Eight of the 11 vehicle accidents were "*angle*" crashes involving motorists on both Kennebec Street approaches striking thru vehicles traveling southerly on Preble Street. The west approach of Kennebec Street is proposed to be closed with the extension of Somerset Street to Hanover Street. Six of the 8 "angle" crashes involved motorists from this approach colliding with thru Preble Street traffic. Completion of the proposed, federally funded project should greatly reduce the frequency of traffic crashes reported at the intersection.

3. The proposed Baxter Academy school project is expected to increase, somewhat moderately, the volume of traffic traveling through the Chestnut Street/Lancaster Street intersection during two time periods of the day; the morning and afternoon peak hours. Measured traffic impacts during the remaining hours will be very minor. A detailed traffic safety evaluation report was completed in 2016 of the intersection to determine if the current traffic control measures were both appropriate and safe. The report specifically evaluated whether prevailing traffic volumes warranted multi-way STOP control at the intersection. The traffic safety report concluded that existing traffic conditions found at the intersection do not meet the minimum requirements for "*multi-way*" STOP control. It would be the recommendation of this report that the City may want to re-assess traffic conditions at the intersection in the near future to determine if prevailing conditions have changed.

4. Baxter Academy has determined that approximately 25% of their students travel to/from school with another adult and are dropped-off and/or picked-up curb side in the immediate area of the school site. The number of parking spaces required, albeit for short periods of time, to accommodate the drop-off/pick-up needs of the new school site is critical. To most accurately assess the parking space needs, existing field measurements were conducted at the existing 54 York Street school site. All student drop-off and pick-up occurrences were recorded in 5-minute increments between 7:40 and 8:25 AM and, again, between 2:30 and 3:00 PM. The peak number of occupied parking spaces in the morning peak hour was 11 and the peak parking space utilization value in the afternoon was 15. The student capacity of the proposed 185 Lancaster Street site is 400 students, representing an increase of 57 students when compared to the existing York Street site. Accordingly, it is reasonable to assume that the drop-off parking needs of the new school site will increase proportionally resulting in a student "*drop-off*" parking demand of 18 vehicle spaces for the afternoon dismissal time and a much lower parking space requirement of 11 spaces in the morning arrival period.



Portland: Lancaster & Chestnut
Tuesday September 13, 2016
Sunny
Count By: Dawn-Marie Fahey

File Name : Portland Lancaster & Chestnut 091316
Site Code : 00091316
Start Date : 9/13/2016
Page No : 5

	Chestnut From North				Lancaster From East				Chestnut From South				Lancaster From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**15**	36	7	58	2	10	2	14	**3**	**9**	1	**13**	5	**8**	1	14	99
07:45 AM	11	**58**	**10**	**79**	2	**12**	**3**	**17**	0	5	**2**	7	**9**	8	3	**20**	**123**
08:00 AM	9	37	5	51	**7**	7	3	17	3	9	1	13	4	7	**5**	16	97
08:15 AM	10	33	4	47	4	5	3	12	1	3	2	6	5	4	1	10	75
Total Volume	45	164	26	235	15	34	11	60	7	26	6	39	23	27	10	60	394
% App. Total	19.1	69.8	11.1		25	56.7	18.3		17.9	66.7	15.4		38.3	45	16.7		
PHF	.750	.707	.650	.744	.536	.708	.917	.882	.583	.722	.750	.750	.639	.844	.500	.750	.801

Portland: Elm & Lancaster
Wednesday February 15, 2017
Clear
Count By: Dawn-Marie Fahey

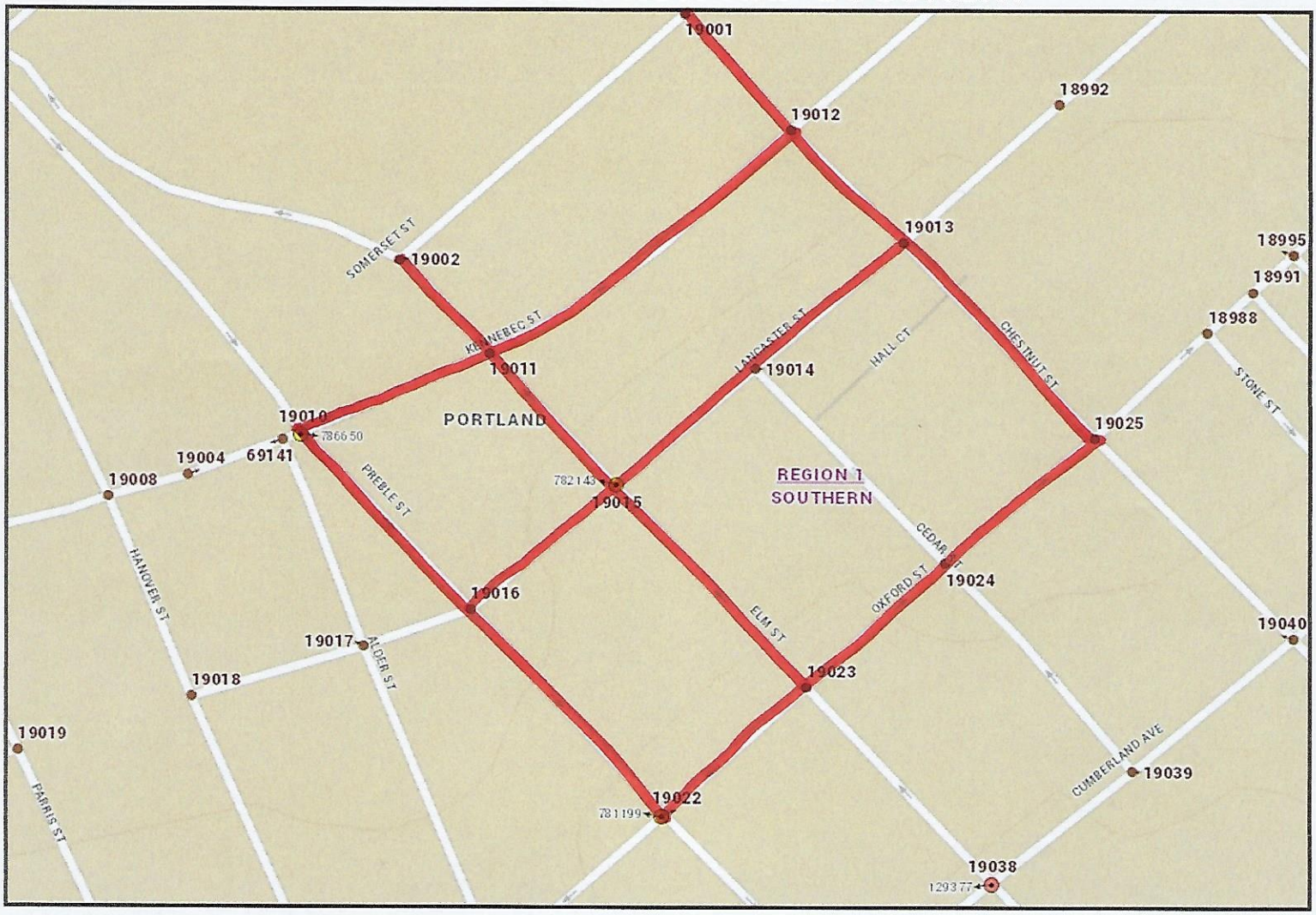
File Name : Portland Elm & Lancaster AM 021517
Site Code : 00021517
Start Date : 2/15/2017
Page No : 5

	Elm St From North				Lancaster From East				Elm St From South				Lancaster From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	14	**18**	0	32	3	**24**	2	29	0	11	3	14	75
07:45 AM	0	0	0	0	**18**	16	0	**34**	6	**54**	2	**62**	0	**22**	5	27	**123**
08:00 AM	0	0	0	0	7	17	0	24	**8**	37	**3**	48	0	21	7	**28**	100
08:15 AM	0	0	0	0	13	12	0	25	6	36	2	44	0	11	**11**	22	91
Total Volume	0	0	0	0	52	63	0	115	23	151	9	183	0	65	26	91	389
% App. Total	0	0	0		45.2	54.8	0		12.6	82.5	4.9		0	71.4	28.6		
PHF	.000	.000	.000	.000	.722	.875	.000	.846	.719	.699	.750	.738	.000	.739	.591	.813	.791

60 72 26 174 10 75 30

Seasonal traffic adjustment 1.01 ÷ 0.88 = 1.15

DEFAULT TITLE FROM MAP DOCUMENT



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0.06 Miles

1 inch = 0.04 miles

Date: 2/8/2017
Time: 9:24:25 AM

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Preble St Chestnut St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: **0560414**	Start Node: **19012**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19010**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560426**	Start Node: **19013**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19016**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560560**	Start Node: **19022**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19025**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560597**	Start Node: **19010**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19022**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560252**	Start Node: **19023**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19015**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560252**	Start Node: **19015**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19011**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560252**	Start Node: **19011**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19002**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560135**	Start Node: **19025**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19001**	End Offset: **0**	☐ **Exclude Last Node**

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
19011	0560414 - 0.21	Int of ELM ST KENNEBEC ST	2	7	0	0	0	0	7	0.0	1.910	1.22	0.48	2.55
												Statewide Crash Rate:	0.15	
19014	0560426 - 0.15	Int of CEDAR ST LANCASTER ST	2	0	0	0	0	0	0	0.0	0.341	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
19015	0560426 - 0.20	Int of ELM ST LANCASTER ST	2	9	0	1	2	1	5	44.4	1.572	1.91	0.50	3.79
												Statewide Crash Rate:	0.15	
19023	0560560 - 0.12	Int of ELM ST OXFORD ST	2	0	0	0	0	0	0	0.0	1.359	0.00	0.52	0.00
												Statewide Crash Rate:	0.15	
19024	0560560 - 0.17	0509444 POR,OXFORD,CEDAR ST.	2	0	0	0	0	0	0	0.0	0.347	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
19010	0560597 - 0.13	Int of KENNEBEC ST PREBLE ST	2	12	0	1	0	3	8	33.3	2.001	2.00	0.47	4.22
												Statewide Crash Rate:	0.15	
19016	0560597 - 0.19	Int of LANCASTER ST PREBLE ST	2	3	0	0	0	0	3	0.0	1.544	0.65	0.51	1.28
												Statewide Crash Rate:	0.15	
19022	0560597 - 0.26	Int of OXFORD ST PREBLE ST	2	4	0	0	0	1	3	25.0	1.618	0.82	0.50	1.65
												Statewide Crash Rate:	0.15	
19002	0560252 - 0.32	Int of ELM ST SOMERSET ST	2	2	0	0	0	1	1	50.0	3.074	0.22	0.42	0.00
												Statewide Crash Rate:	0.15	
19025	0560135 - 0.16	0509445 POR,CHESTNUT,OXFORD ST.	2	1	0	1	0	0	0	100.0	0.383	0.87	0.60	1.44
												Statewide Crash Rate:	0.14	
19013	0560135 - 0.24	Int of CHESTNUT ST LANCASTER ST	2	3	0	0	0	1	2	33.3	0.353	2.84	0.60	4.69
												Statewide Crash Rate:	0.14	
19012	0560135 - 0.28	0509432 POR,CHESTNUT,KENNEBEC ST.	2	1	0	0	0	0	1	0.0	0.549	0.61	0.59	1.03
												Statewide Crash Rate:	0.14	
19001	0560135 - 0.31	0509421 POR,SOMERSET,CHESTNUT ST.	2	4	0	0	0	1	3	25.0	2.500	0.53	0.43	1.25
												Statewide Crash Rate:	0.14	
Study Years: 3.00		**NODE TOTALS:**		46	0	3	2	8	33	28.3	17.551	0.87	0.27	3.18

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
19011	19012	194707	0 - 0.10	0560414 - 0.11	0.10	2	1	0	0	0	0	0	0.0	0.00021	1574.56	1598.97	0.00
Int of ELM ST KENNEBEC ST				RD INV 05 60414											Statewide Crash Rate: 383.78		
19010	19011	194704	0 - 0.05	0560414 - 0.21	0.05	2	0	0	0	0	0	0	0.0	0.00016	0.00	1644.70	0.00
Int of KENNEBEC ST PREBLE ST				RD INV 05 60414											Statewide Crash Rate: 383.78		
19013	19014	194710	0 - 0.04	0560426 - 0.11	0.04	2	1	0	0	0	0	1	0.0	0.00005	6486.09	1204.97	5.38
Int of CHESTNUT ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19014	19015	194712	0 - 0.05	0560426 - 0.15	0.05	2	3	0	0	0	0	3	0.0	0.00009	11025.05	1605.53	6.87
Int of CEDAR ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19015	19016	194714	0 - 0.04	0560426 - 0.20	0.04	2	2	0	0	0	0	2	0.0	0.00004	18946.93	558.86	33.90
Int of ELM ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19022	19023	3122298	0 - 0.05	0560560 - 0.07	0.05	2	3	0	0	1	0	1	50.0	0.00016	6101.84	609.36	10.01
Int of OXFORD ST PREBLE ST				RD INV 05 60560											Statewide Crash Rate: 159.43		
19023	19024	194730	0 - 0.05	0560560 - 0.12	0.05	2	0	0	0	0	0	0	0.0	0.00011	0.00	1642.73	0.00
Int of ELM ST OXFORD ST				RD INV 05 60560											Statewide Crash Rate: 383.78		
19024	19025	194732	0 - 0.05	0560560 - 0.17	0.05	2	2	0	0	0	0	2	0.0	0.00010	6918.50	1622.25	4.26
0509444 POR,OXFORD,CEDAR ST.				RD INV 05 60560											Statewide Crash Rate: 383.78		
19010	19016	3106835	0 - 0.06	0560597 - 0.13	0.06	2	1	0	0	0	0	1	0.0	0.00088	379.95	715.35	0.00
Int of KENNEBEC ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 198.28		
19016	19022	3106836	0 - 0.07	0560597 - 0.19	0.07	2	3	0	0	0	1	2	33.3	0.00090	1107.50	710.64	1.56
Int of LANCASTER ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 198.28		
19015	19023	3123553	0 - 0.07	0560252 - 0.17	0.07	2	0	0	0	0	0	0	0.0	0.00101	0.00	692.86	0.00
Int of ELM ST LANCASTER ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19011	19015	3119283	0 - 0.05	0560252 - 0.24	0.05	2	0	0	0	0	0	0	0.0	0.00087	0.00	715.87	0.00
Int of ELM ST KENNEBEC ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19002	19011	3129301	0 - 0.03	0560252 - 0.29	0.03	2	1	0	0	0	0	1	0.0	0.00056	593.28	785.16	0.00
Int of ELM ST SOMERSET ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19013	19025	194711	0 - 0.08	0560135 - 0.16	0.08	2	1	0	0	0	0	1	0.0	0.00014	2324.95	1654.59	1.41
Int of CHESTNUT ST LANCASTER ST				RD INV 05 60135											Statewide Crash Rate: 383.78		
19012	19013	194709	0 - 0.04	0560135 - 0.24	0.04	2	1	0	0	0	0	1	0.0	0.00009	3742.80	1599.73	2.34
0509432 POR,CHESTNUT,KENNEBEC ST.				RD INV 05 60135											Statewide Crash Rate: 383.78		
19001	19012	194692	0 - 0.03	0560135 - 0.28	0.03	2	1	0	0	0	0	1	0.0	0.00008	4204.61	1553.75	2.71
0509421 POR,SOMERSET,CHESTNUT ST.				RD INV 05 60135											Statewide Crash Rate: 383.78		
Study Years: 3.00				**Section Totals:**	0.86		20	0	0	1	1	16	10.0	0.00545	1222.83	510.47	2.40
				Grand Totals:	0.86		66	0	3	3	9	49	22.7	0.00545	4035.35	669.73	6.03

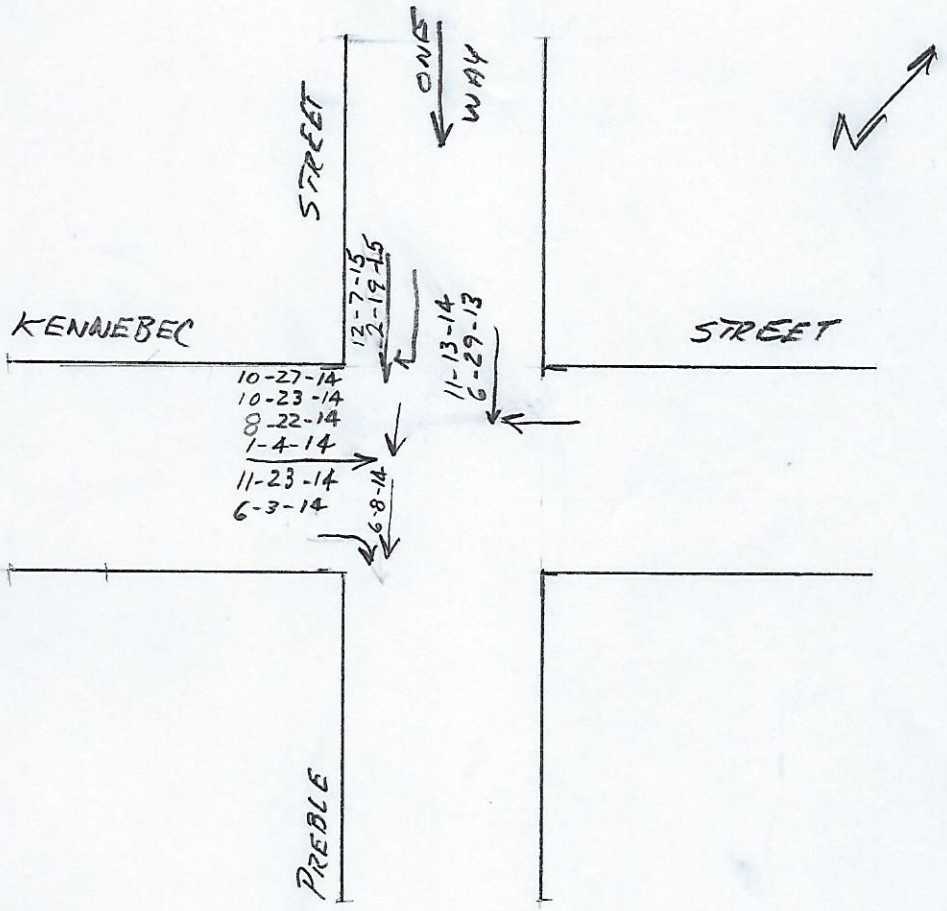
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION PREBLE ST. @ KENNEBEC STS.

TOWN PORTLAND NODE NO(S) 19010

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE [B], ANIMAL [A], SLED [S]

WEATHER

C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

LOCATION PREBLE ST. @ KENNEBEC ST.

TOWN PORTLAND NODE NO(S) 19010

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-1851	6-29-13	11:24					2	1	2	
15-857	2-19-15	7:30					2	SNOW	8	
14-069	1-4-14	10:08					2	SNOW	2	
14-2456	8-22-14	15:00					2	1	2	
14-3134	10-23-14	12:53					2	2	2	
14-3458	11-23-14	14:09					2	1	2, 14	
14-1631	6-3-14	19:32					2	1	2	
14-1764	6-18-14	8:45					2	1	2	
14-3178	10-27-14	10:35				1	2	1	2	
14-3346	11-13-14	12:36		1		3	2	1	2	
15-4085	12-7-15	13:30					2	1	8	

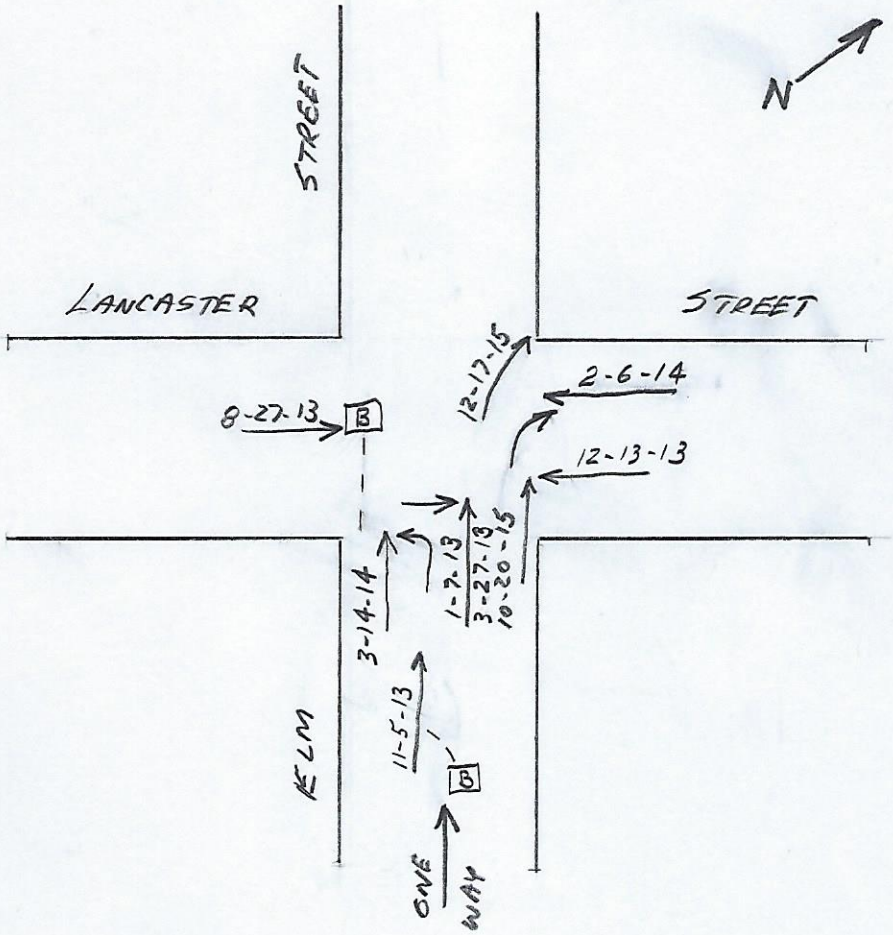
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION ELM ST. @ LANCASTER ST.

TOWN PORTLAND NODE NO(S) 19015

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH–SANDED
4. ICE/PACKED SNOW–SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH–NOT SANDED 9. ICE–PKD. SNOW–NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS – HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER–NO PASSING 7. IMPROPER PASS–OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION–DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED–WINDSHIELD GLASS
19. VISION OBSCURED–SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

– VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, PEDESTRIAN (P), FATAL ACCIDENT
BACKING, REAR END
FIXED OBJECT, SIDE SWIPE, VEHICLE (MOVING)
HEAD ON, TURNING MOVE, BICYCLE (B)
OVERTURN, CHANGE LANE, ANIMAL (A)
PARKED VEHICLE, OUT OF CONTROL, SLED (S)

WEATHER

C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL B = NON–INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

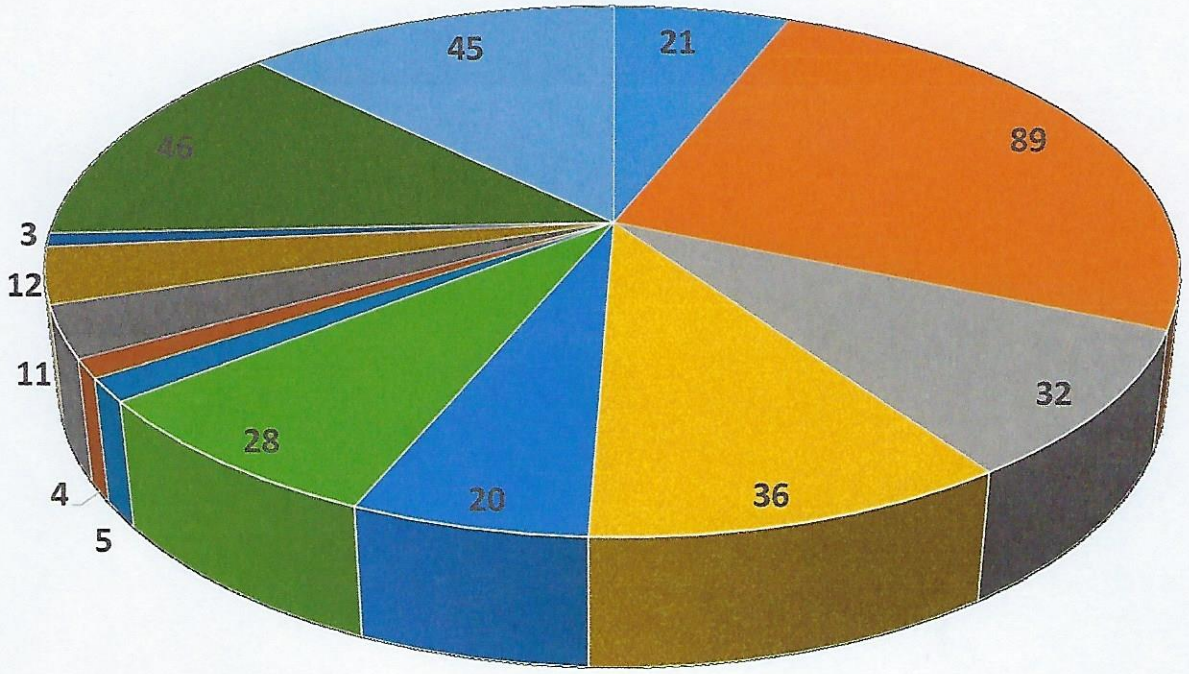
LOCATION ELM ST. @ LANCASTER ST.

TOWN PORTLAND NODE NO(S) 19015

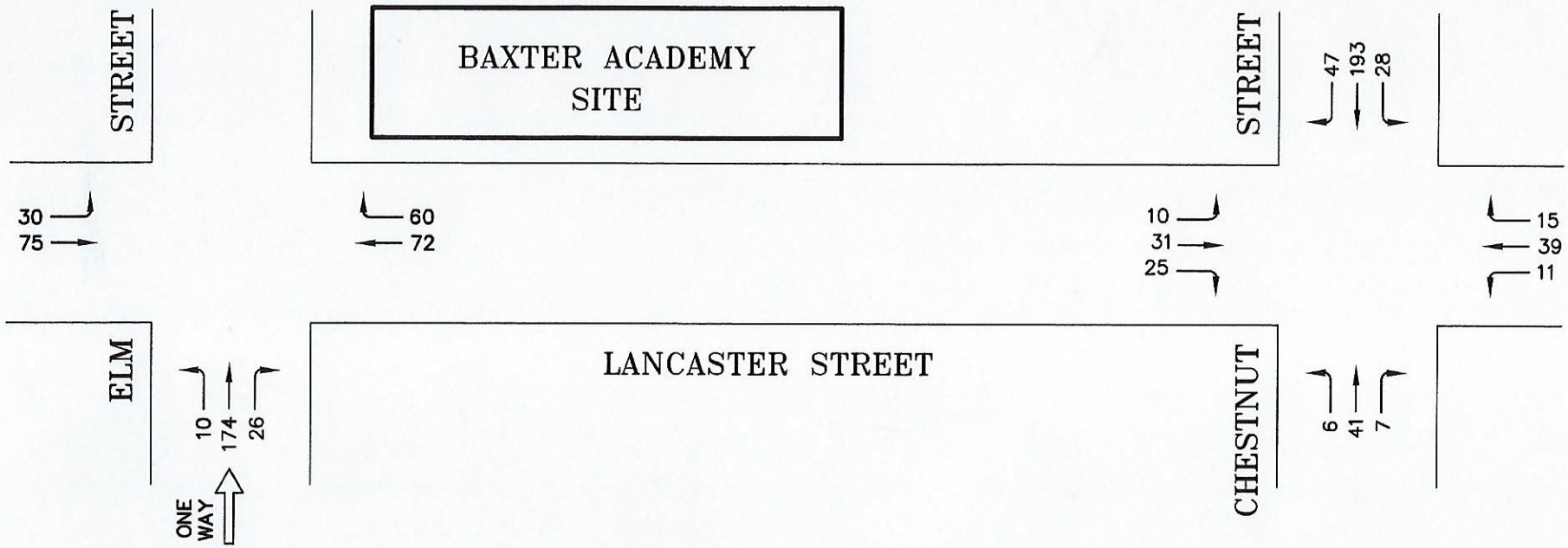
YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
14-0437	2-6-14	9:35					2	SNOW	3	
14-0942	3-14-14	18:10					2	1	8	
15-4228	12-17-15	19:40					5	2	51	
13-0210	1-7-13	9:40					2	2	2	
13-1038	3-27-13	16:00			1		1	2	51	
13-2436	8-27-13	19:28			1		2	1	2	
13-3146	11-5-13	18:11			1		4	1	8	
13-3604	12-13-13	11:15		1			2	1	5	Ran Stop Sign
15-3532	10-20-15	19:28					4	1	5	Ran Stop Sign

How our students get to school 2016-2017



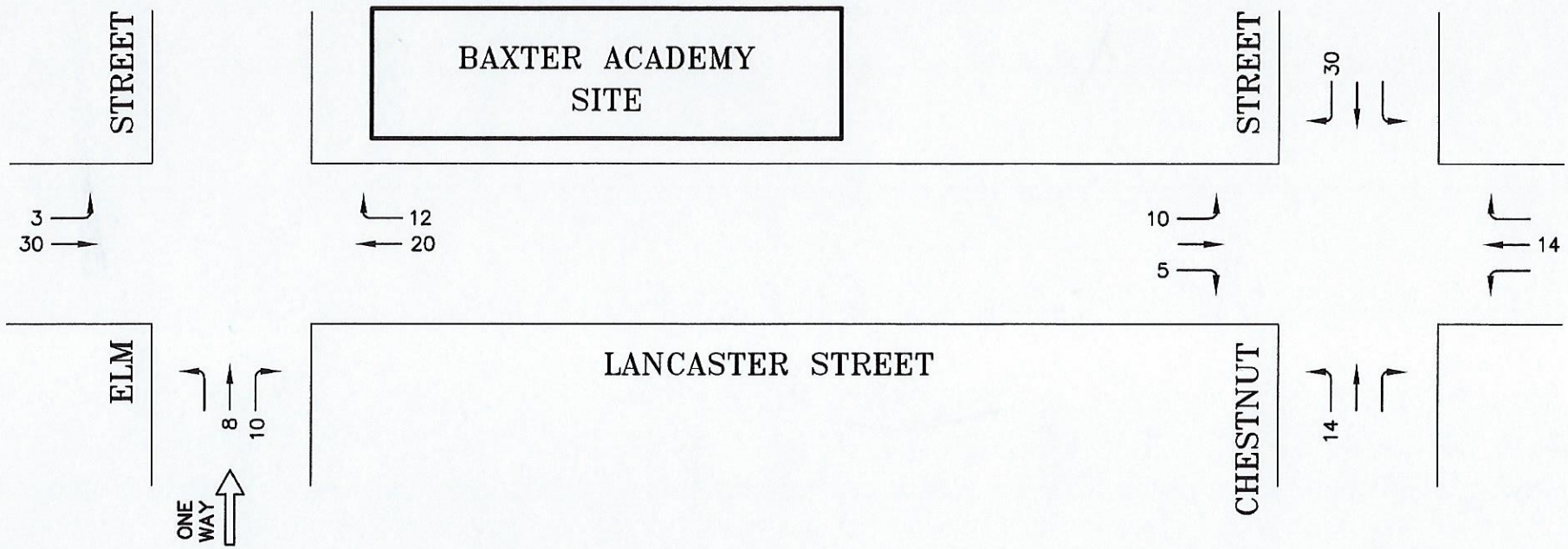
- Carpool -21
- Commute with Adult - 89
- Drive own car- 32
- Luce Transportation - Lewiston -36
- METRO - Breeze - 20
- METRO - Local - 28
- Ride Bike - 5
- Lakes Region Bus - 4
- Walk - 11
- Zoom Bus - 12
- Boat - 3
- Luce Transportation - Topsham - 46
- Luce Transportation - Windham - 45



2017 DESIGN HOUR TRAFFIC
AM PEAK HOUR
FIGURE 1

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

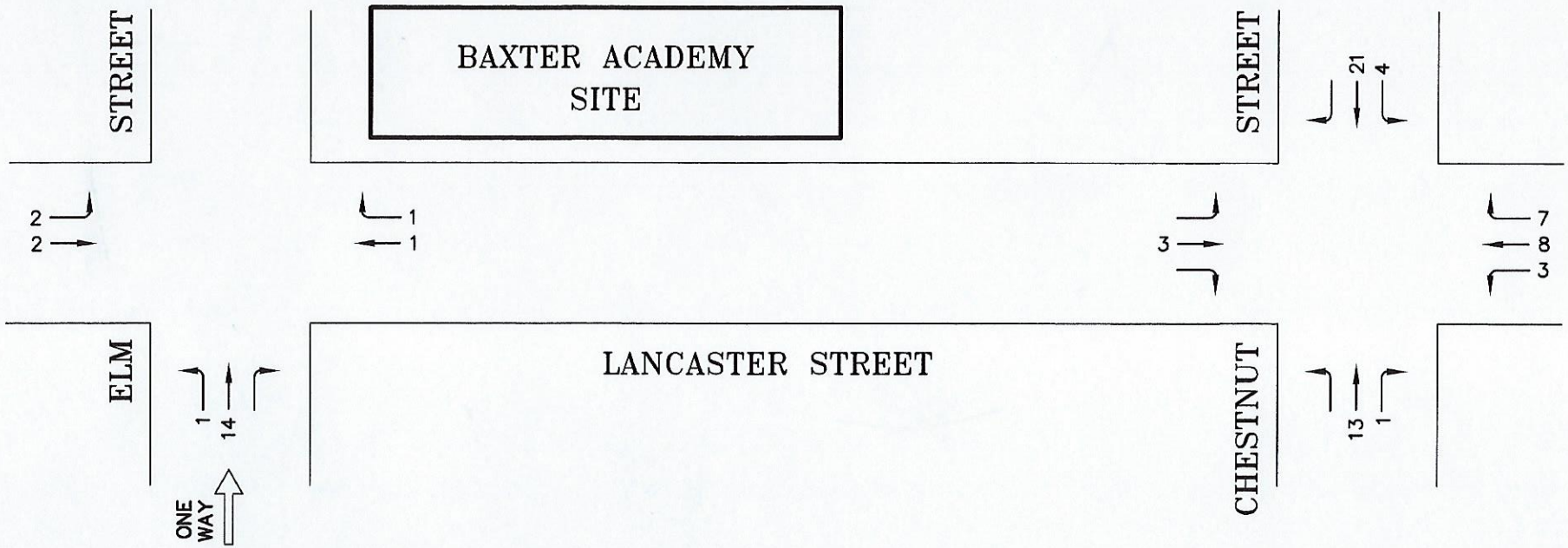
Project Name and Location: BAXTER ACADEMY, 185 LANCASTER STREET, PORTLAND, MAINE	TRAFFIC SOLUTIONS, 235 BANCROFT STREET, PORTLAND, MAINE 04102-1730
DATE: FEBRUARY, 2017	FIGURE: 1



SITE TRAFFIC ASSIGNMENT
AM PEAK HOUR
FIGURE 2

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location: BAXTER ACADEMY, 185 LANCASTER STREET, PORTLAND, MAINE	TRAFFIC SOLUTIONS, 235 BANCROFT STREET, PORTLAND, MAINE 04102-1730
DATE: FEBRUARY, 2017	FIGURE: 2



OTHER DEVELOPMENT TRAFFIC
AM PEAK HOUR
FIGURE 3

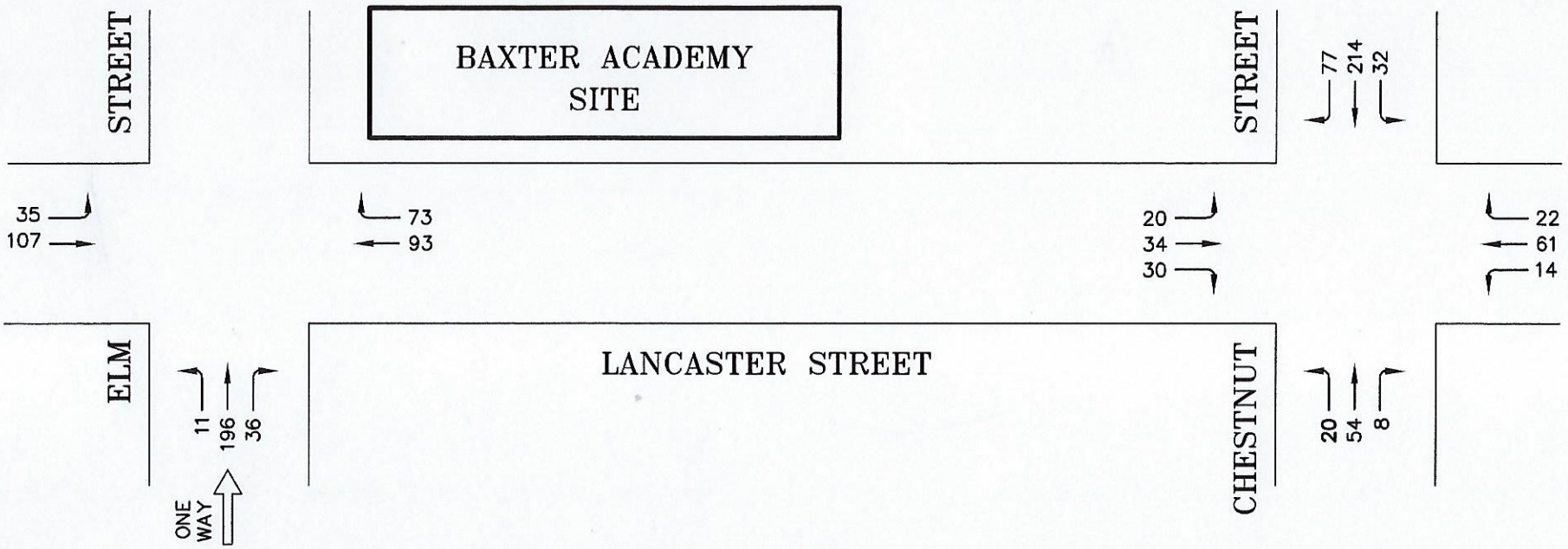
E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location
BAXTER ACADEMY
185 LANCASTER STREET, PORTLAND, MAINE

DATE: FEBRUARY, 2017

FIGURE: 3

TRAFFIC SOLUTIONS
235 BANCROFT STREET, PORTLAND, MAINE 04102-1730



2017 POST-DEVELOPMENT TRAFFIC
AM PEAK HOUR
FIGURE 4

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location:
BAXTER ACADEMY
185 LANCASTER STREET, PORTLAND, MAINE

DATE: FEBRUARY, 2017

FIGURE: 4

TRAFFIC SOLUTIONS
235 BANCROFT STREET, PORTLAND, MAINE 04102-1730

Cushman Transportation Consulting, LLC
94 Beckett Street, 2nd Floor, Portland, ME 04101 · (207) 200-1910 · www.sarahcushman.com

Transportation Demand Management (TDM) Plan
Baxter Academy for Technology and Science
March 8, 2017

Baxter Academies of Maine provides this Transportation Demand Management (TDM) Plan for the relocated and consolidated Baxter Academy of Science and Technology at 185 Lancaster Street. This public charter high school has a strong cultural commitment to continuing and furthering its robust TDM work to encourage and enable the use of public transportation, carpooling, bicycling and walking at this new location. It does this in support of both its own and the City of Portland's transportation, liveability, and sustainability goals.

A. Site Transportation Overview & Context

Baxter Academy has operated under a Transportation Demand Management (TDM) Plan at its present York and Congress Street sites since the school's inception in September 2013 and has successfully implemented key TDM strategies to mitigate costs and meet the school's various transportation challenges. Baxter is free to Maine students and current pupils come from 57 municipalities based in the Southern, Central, and Midcoast regions - drawing from as far away as Owls Head, Norway, Windsor, and Berwick. In addition, the student body geographical make-up shifts each year with students entering and leaving the school. Families have been strongly motivated to utilize the school's busing and carpooling opportunities to make it possible for their children to attend the school and to free themselves from costs and travel time associated with transporting their students themselves.

Seventy-nine percent of students use public or charter transportation, walk or bike, or carpool with at least one other student. As stated in the City of Portland's draft 2017 Comprehensive Plan, "The 1993 *A Time of Change: Portland Transportation Plan* called for reducing the share of single occupancy vehicle trips City-wide to 50%, just under the share briefly achieved following the oil crisis of the late 1970s, while at the same time increasing the share of trips by other modes." Thus, Baxter Academy's student multi-modal rate far surpasses this standard.

The staff is also diverse, with individuals commuting from 19 municipalities, including as remote as the Waterville area. Only 30% of Baxter employees drive alone for every trip to the campus; all of these drivers indicate that they are conscious of seeking alternatives, but this is the only current viable option. For example, one staff member mentioned that she is hoping to use the proposed Metro public transportation route from Gorham. Other faculty often

travel with students and/or with a spouse/partner. Local staff consistently commute on foot and by bicycle. Public transit use is reimbursable by the school and when applicable, staff have availed themselves of this benefit.

Baxter Academy is leasing and remodeling 31,571 square feet of the existing two-story 92,561 square foot building at 185 Lancaster Street. Total enrollment at the new site is expected to be 400 students, with 60 employed staff. The adaptive reuse of the structure at this location, in the heart of the Bayside neighborhood, supports the multi-modal objectives of the B-7 zone in which it stands – where dense urban form, mixed-uses, and the utilization of transportation beyond the automobile are strongly encouraged. The school and its multi-modal initiatives are part of Bayside's continued renaissance and align with the goals of *A New Vision for Bayside* and the *Bayside Master Transportation Plan*.

The new school site is pedestrian and bicycle-friendly, located within the strong sidewalk network and lower-speed street grid of the Portland Peninsula - and just a block and a half from the Bayside Trail. The location is served by the Metro Route #8, and perhaps most importantly, it is just three short blocks from the hub of Greater Portland's transit services at the Elm Street Pulse and Monument Square. Current students use all of the area's transit providers - Metro local buses and the Breez, Casco Bay Lines ferry service, the South Portland Bus Service, the Lakes Region Explorer, and Shuttlebus-Zoom. The school pays 100% of the students' fares.

The site will also include a 150-foot drop-off zone on Elm Street to support the use of the school's three charter buses. These collect additional students in Lewiston, Windham, and Topsham who come from there and nearby municipalities. The school's lease at 185 Lancaster Street includes access to 50 parking spaces in an off-street lot across from the school, which will be used for staff and visitors.

B. TDM Coordinator

The two most vital characteristics of highly successful TDM programs are: (1) they are dynamic - piloting strategies, assessing impacts, and modifying tactics as needed, and (2) they are managed by committed and enthusiastic staff who are responsible for overseeing, promoting and sustaining the program.

Tia Wilson, Operations & Admissions Manager, serves as Baxter Academy's TDM Coordinator and will continue in this role at the school's new location. Ms. Wilson is a problem-solver who works to educate and connect students, families, and staff with public transportation and carpool options. She conducts an electronic survey of the student body annually before the school year begins to remind families of the school's multi-modal goals, inform them regarding transportation options, and gain a better understanding of which transportation mode(s) will benefit them the most**.**

At 185 Lancaster Street, the TDM Coordinator will implement a more comprehensive survey of students and staff to meet the City's TDM Plan surveying requirements (see Section C). Ms. Wilson will continue to explore and help implement additional TDM strategies to reduce single-occupancy and low-occupancy vehicle trips to the school. She also will assist the school to continue its pedestrian safety training with students and encourage bicycle commuting and safety education for local students and staff. The Coordinator's contact information is: Tia Wilson, Baxter Academy, 54 York Street, Portland, ME 04101; (207) 699-5500.

C. Employee and Student Survey

Per the City of Portland's Technical Standards regarding TDM Plans, Baxter Academy will employ a comprehensive survey of staff and student families at the 185 Lancaster Street site. The survey will be conducted annually in electronic form to educate faculty and families regarding their transportation options, record mode share, and assist employees and students to find carpool matches.

In addition, the survey will identify barriers to the use of public transit, the school charter bus system, carpooling, and bicycling and walking for more local students and staff. Staff and students may also be asked to offer additional ideas and strategies for reducing single occupancy and low-occupancy private vehicle trips. The survey will produce comparable data from year to year and be available for compilation with other sites' commute data by a third party, such as the City.

D. Trip Generation and Parking Demand Targets

On behalf of Baxter Academy, Traffic Solutions has produced ITE trip generation and parking demand projections to establish the impact of the new school location. Total forecasted trips during the "morning" peak hour are 200 and the parking demand using the 85th percentile is projected to be 52 spaces for staff, students, and visitors.

Baxter Academy is committed to continuing its work to reduce single-occupancy and low-occupancy trips to the campus - to improve multi-modal safety at and near the site, ease traffic congestion, and be a sustainable and liveable presence in downtown Portland and the Bayside neighborhood. The school's trip and parking reduction goals are based on the fact that the school has already done a tremendous amount of work to provide collective transportation options for its students (via public transportation, charter buses, and carpooling) and encourage walking and bicycling for more local students and staff. These existing TDM efforts limit the amount of additional peak hour trip and parking reductions still possible. However, potential reductions might be made in two areas: the single-occupancy vehicle trips and parking impacts of staff (51) and students (36) and the low-occupancy trips of a single student being dropped off by an adult (80).

Trip Reduction Target

Balancing the school's new setting and multi-modal accessibility, its current TDM practices and high multi-modal rates, and student and staff originating locations, an achievable trip reduction target is 2% over the first two years after opening for both faculty and pupils. This means a target trip generation of 50 staff trips and 78 one student/one adult trips during the AM peak hour by 2019.

Parking Reduction Target

As stated in the initial narrative above, Baxter Academy's policy will be to continue to provide only a limited number of off-site parking spaces for its staff and none for its students. The school will use parking permits to manage shared employee use of the lot. Baxter will also reserve a small portion of the parking area for rotating visitors who come to do school business (nurses, psychologists, consultants, board members, legal team, etc.).

Students electing to travel to or from Baxter Academy by private automobile will be directed to use public off-street parking areas located on Marginal Way, versus on-street spaces located near the campus. The Bayside Trail will facilitate their walk to the school. This will be made clear in the school's registration materials and its annual communications with families before the school year begins. Students will continue to be issued registration forms that collect a copy of their license, car make and model, plate number and where they park in Portland.

E. Trip/Parking Reduction Strategies & Incentives

Baxter Academy will take up its current comprehensive trip reduction strategies again at the new location, including:

- Providing charter buses for outlying communities
- Encouraging the use of public transit within the urban core with 100% funding of student and staff trips; the school's closer proximity to the Elm St. Pulse may help reduce some current parent drop-off vehicle trips
- Encouraging and facilitating carpooling/ridesharing among families and staff
- Encouraging bicycling through the provision of on-site bike racks
- Encouraging walking both as a primary mode for local students and staff and also from transit hubs and remote parking sites; additionally, providing students with hands-on pedestrian safety training

The following are other avenues for the school to explore to meet trip reduction targets.

Commuter Assistance

Baxter Academy is encouraged to engage Go Maine, the statewide commuter assistance program, in order to sign up participating staff who walk, bike, carpool, and use public transit for:

- the Emergency Ride Home benefit
- NuRide trip rewards
- expanding ride-matching possibilities to include additional downtown Portland employees.

Carpooling for school staff is a challenge because of their geographic spread and diverse schedules both at the school and in their home lives. However, some staff do carpool when possible. One or more vanpools, utilizing vRide, may also become an option if a number of staff from a particular municipality enter the school's employ.

Baxter can also partner with Go Maine and other local multi-modal groups, such as the Bicycle Coalition of Maine, to provide staff with educational materials regarding active transportation and to offer "commute coaching" at the beginning of each school year.

The school can further encourage adults driving an individual pupil to school to match up with additional students to carpool. The school will continue to explore various carpooling apps such as groupcarpool.com and share these resources with parents. As the student body grows, the school may wish to develop a customized SchoolPool website interface for students and families looking to find a carpool directly. Confidentiality concerns can be ameliorated with an "opt out" form for parents, while still ensuring a higher participation rate than an "opt-in" program.

Facilitating Walking Trips to and from the School Site

The school will continue its staff-led hands-on pedestrian safety training for students walking in and around downtown. Many students need to walk to and from the school site for daytime activities and to reach public transportation stops and remote parking areas like the Marginal Way Park & Ride. In addition, families dropping off student(s) will be encouraged, when feasible, to drive the student passenger(s) to their respective place of work with the students walking to/from the 185 Lancaster Street Campus.

To address any concerns about personal safety, the school and student leadership can also foster the informal formation of WalkPools, peer walking groups originating at the school or at transit stops and remote parking locations to enable students to walk together.

Flextime

When possible, staff who do not need to be at the school during the morning peak hour should be encouraged to arrive at a later time and offered a flextime work schedule.

UHaulCarShare & Informal Bikeshare

Baxter Academy has an account with UHaulCarShare that the school's employees can access. Some Baxter Academy staff bring their vehicles to school because they need a car available for trips during the work day. Concerted education of staff and encouragement to use this benefit could alleviate this need.

UHaulCarShare is available in Portland and South Portland, currently providing access to a total of nine vehicles on an hourly or daily basis. One of these is located at 26 Elm Street, just three blocks from the school. At one time there were two UhaulCarShare vehicles on Elm Street and, if the demand is strong enough, the school can negotiate with the company for additional available vehicles.

Similarly, for shorter staff trips, the school could maintain one or more shared bicycles and associated gear such as helmets and locks available for use at the site.

Other Incentives

Campus Campaigns: Baxter could organize an incentive campaign where users of public and charter buses, carpools with at least two students, and registered walkers and bicyclists are entered into a monthly raffle for gift cards, movie passes, and other benefits. Alternately, the school could consider an internal competition between classes or students and staff - with the winners earning a special celebration, such as a field trip to a favorite destination or a class party.

F. Education & Promotion

Baxter Academy administrators will carry on with their strong multi-modal education and promotion efforts at the 185 Lancaster Street site. This includes:

- Conducting the annual transportation survey of all in-coming students and members of the staff and encouraging other modal travel options versus personal auto travel.
- Communicating regularly, via email and open houses, the school's goal to shift as many students as possible to public transportation via the 100% subsidy, as well as other modes of transportation.
- Facilitating student and staff carpool matching

Per the City of Portland's Technical Standards regarding TDM Plans, Baxter Academy will also:

- produce a multi-modal page for the school's website (currently under development) and will actively maintain both it and a highly visible TDM bulletin board at the school. Both will provide:
  - Transit provider maps and schedules
  - Go Maine (and Emergency Ride Home Guarantee) and vRide vanpool service information
  - Internal information sharing about things such as: desired carpools, transit or bicycle commuting mentoring, and the results of student and staff transportation surveys
  - Information about specific incentives offered by the school (e.g. the 100% transit subsidy)
  - Information on walking and bicycling routes, school parking policies and locations, etc.
- Periodically recognize individual students and staff whose multi-modal activities reduce the traffic impact of the school - through newsletter, email, bulletin board, or other announcements.

Additional promotional suggestions for the school to explore, in order to reach trip reduction targets, are:

- Develop a Multimodal Access Map that is posted on the school's website and TDM bulletin board kiosk, identifying the walk zone, common walk routes and times, bike lanes and trails, and transit stops and routes. With the new site, students and staff may not realize how short walk and bike times are to particular downtown locations and this may encourage fewer auto trips.
- Form a student committee/subcommittee to advise the school's TDM work and develop peer-led campaigns that encourage active transportation and reduce the appeal of driving to school.

G. Monitoring

Baxter Academy's TDM Plan will be monitored by its TDM Coordinator. This effort will include:

- Annual family surveys regarding school transportation preferences
- Ridership figures on the school-sponsored charter buses
- Public transit usage through subsidy information
- The number of families participating in the school's ride-share/matching program
- The number of students biking to school
- The number of students registering their private vehicles with the school and where they park in town

- The number of staff utilizing school-leased parking
- The number of staff utilizing public transportation or other travel options
- Evaluating the daily parking demand of both campus visitors and vendor service providers and evaluate if other parking arrangements are deemed warranted
- Site traffic observations to cross-reference with the annual survey

This data will be compiled and compared against the parking and vehicle trip generation goals contained in Section D above. A summary report will be produced annually and submitted to the City's TDM planning office for review and comment.

H. Project Specific Standards

Infrastructure

School Zone Safety Features: Baxter Academy will install a flashing school zone speed limit sign assembly on Elm Street in advance of the 185 Lancaster Street Campus. An "*End School Zone*" sign will be appropriately located on Elm Street just west of the designated school bus loading zone advising motorists that they are leaving the school zone area. Secondary school speed zone signage will also be installed on both approaches of Lancaster Street that informs approaching motorists they are entering a designated school zone.

Baxter Academy will augment the City's annual crosswalk re-striping program, re-painting each of the existing crosswalk markings early spring of each year at the Lancaster Street/Elm Street intersection.

School staff will serve as a pedestrian crossing guard at the Lancaster/Elm Streets intersection aiding students crossing the Elm Street approach. A portable "*school crossing*" sign will be appropriately located in the center of the intersection reinforcing the school zone area.

Sidewalk Improvements: The City recently made sidewalk improvements on Elm Street and the Baxter Academy relocation will fund additional sidewalk expansion on Lancaster Street, along the frontage of the staff parking area.

Bicycle Parking: A total of 6 downtown "lollipop" bike racks are being installed for parking 12 bicycles as part of the school's Site Plan. If demand warrants additional facilities, the school is committed to providing them.

TDM Bulletin Board: In addition to the school's website transportation page, the school will erect a transportation bulletin board in a prominent location with information on various transportation options. This will include commuter assistance, public transportation, and ride matching.

Att. W

Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
(207) 774-3603
(207) 400-6890 mobile
trafficsolutions@maine.rr.com

March 4, 2017

Traffic Assessment

For Proposed
Baxter Academy for Technology and Science
Public Charter High School
Portland, Maine

INTRODUCTION

Baxter Academies of Maine are proposing to relocate and consolidate its public charter high school, known as Baxter Academy for Technology and Science, from its current facilities at 54 York Street and 561 Congress Street in Portland to an expanded facility at 185 Lancaster Street. The proposed site is an existing two-story building with a total floor area of approximately 92,561 square feet; Baxter Academies will lease and remodel 31,571 square feet of the building for the expanded charter high school project. Baxter Academies of Maine anticipates starting construction early spring with completion of the second floor expected in early fall prior to the commencement of the 2017-18 academic year and completion of the first floor expected around Thanksgiving.

This report provides an estimate of site trip generation for the proposed Baxter Academy public charter high school project generated during the critical AM peak hour; an assignment of the site trips to the adjacent street system; a review of existing roadway safety trends; a forecast of both 2017 pre- and post-development traffic conditions and, a technical evaluation of multi-way "Stop" control at the Lancaster Street/Chestnut Street intersection.

EXISTING CONDITIONS

Existing Design Hour Traffic: Manual turning movement counts were conducted at both the Chestnut Street/Lancaster Street and Elm Street/Lancaster Street intersections during the morning "*peak*" commuter hours of 7:00 to 9:00AM. Traffic data was collected at the former location on Tuesday, September 13, 2016 and traffic data at the Elm Street/Lancaster Street intersection was collected on Wednesday, February 15, 2017. All traffic entering and exiting both intersections was recorded in 15-minute intervals between the identified study times (A copy of the traffic data is attached as an appendix to the report). From a summary of the data, a peak hour of traffic (7:30 to 8:30AM) was determined for both intersections.

Traffic data collected during time periods other than the summer months of July and August require adjustment to reflect "*peak*" travel conditions. MaineDOT provides factors for adjusting traffic data collected during other periods of time. MaineDOT utilizes highway classifications of I, II, or III for all State and Local roadways. Group I roadways are defined as urban roadways or those roads that typically see commuter traffic and experience little fluctuation from week to week throughout the year. Group II roadways or arterial roads are those that see a

combination of commuter and recreational traffic and, therefore, experience moderate fluctuations during the year. Group III roads or recreational roadways are typically used for recreational purposes and experience significant seasonal fluctuations. MaineDOT has designated the intersecting roadways at both intersections Group I roadways, which require an adjustment of 1.03 for the September 2016 data and a factor of 1.15 for adjusting the February 2017 data. The Chestnut Street/Lancaster Street "*base*" intersection volumes were increased by an additional 1% to approximate 2017 travel conditions at the intersection. Figure 1 illustratively presents the estimated 2017 Design Hour Traffic forecasts for both study intersections.

Roadway Safety Trends: The Maine Department of Transportation's (MaineDOT) Accident Records Section provided three-year (2013 through 2015) safety records for the sections of the streets highlighted on the attached map, a combined distance of 0.86 miles. MaineDOT's report is presented as follows:

2013 - 2015 Accident Summary
Portions of Kennebec Street, Lancaster Street, Oxford Street,
Preble Street, Elm Street and Chestnut Street

Location	Number of Accidents	Critical Rate Factor
1. Elm Street @ Kennebec Street	7	2.55
2. Elm Street @ Lancaster Street	9	3.79
3. Preble Street @ Kennebec Street	12	4.22
4. Lancaster Street @ Preble Street	3	1.28
5. Oxford Street @ Preble Street	4	1.65
6. Elm Street @ Somerset Street	2	0.52
7. Chestnut Street @ Oxford Street	1	1.44
8. Chestnut Street @ Lancaster Street	3	4.69
9. Chestnut Street @ Kennebec Street	1	1.03
10. Somerset Street @ Chestnut Street	4	1.25
11. Kennebec Street btw. Elm Street and Chestnut Street	1	0.98
12. Lancaster Street btw. Chestnut Street and Cedar Street	1	5.38
13. Lancaster Street btw. Cedar Street and Elm Street	3	6.87
14. Lancaster Street btw. Elm Street and Preble Street	2	33.90
15. Oxford Street btw. Preble Street and Elm Street	3	10.01
16. Oxford Street btw. Cedar Street and Chestnut Street	2	4.26
17. Preble Street btw. Kennebec Street and Lancaster Street	1	0.53
18. Preble Street btw. Lancaster Street and Oxford Street	3	1.56
19. Elm Street btw. Somerset Street and Kennebec Street	1	0.76
20. Chestnut Street btw. Lancaster Street and Oxford Street	1	1.41
21. Chestnut Street btw. Kennebec Street and Lancaster Street	1	2.34
22. Chestnut Street btw. Somerset Street and Kennebec Street	1	2.71

The MaineDOT considers any roadway segment or intersection a high crash location if both of the following criteria are met:

- ***8 or more accidents***
- ***A Critical Rate Factor greater than 1.00***

As the data presented in the table shows (locations highlighted in red), two locations meet MaineDOT's criteria for a high crash location. A total of 9 crashes and a Critical Rate Factor (CRF) of 3.79 were reported for the Elm Street/Lancaster Street intersection. A total of 12 vehicle crashes with a Critical Rate Factor of 4.22 were reported for the second location at Preble Street and Kennebec Street. A more in-depth review (preparation of detailed vehicle collision diagrams) was prepared for both locations to determine if a clear pattern of accident is occurring (Copies of the Collision Diagrams are attached as an appendix to the report). The following two paragraphs summarize the detailed safety analysis conducted for both locations:

Location #2 – Elm Street at Lancaster Street: Six of the total crashes reported were "*angle*" collisions involving traffic (auto and/or bicycle) on either approach of Lancaster Street being struck by a thru vehicle traveling northerly on Elm Street. The remaining three crashes occurred more randomly in the intersection.

The City recently completed a very significant roadway/sidewalk reconstruction project along Elm Street, a one-way collector street that connects Portland's Downtown to Interstate 295 and western sections of the City. The improvement project narrowed pavement widths on Elm Street and widened sidewalks in an effort to reduce travel speeds in the corridor and improve overall pedestrian safety. The safety improvement project should help reduce the frequency of traffic accidents at the noted intersection.

Location #3 – Preble Street at Kennebec Street: The MaineDOT data for this location incorrectly included a vehicle crash occurring at an adjacent intersection; therefore, the total number of reported crashes is reduced to 11 crashes at the intersection. Eight of the 11 vehicle crashes involved motorists entering the intersection from both Kennebec Street approaches colliding with thru vehicles traveling southerly on Preble Street. Existing buildings in both northerly quadrants of the intersection limit vehicle sightlines of approaching vehicles. The City is currently developing preliminary design plans for extending Somerset Street to Hanover Street; the proposed project design also includes discontinuance of the west leg of Kennebec Street between Hanover and Preble Streets. This design feature should greatly reduce the frequency of vehicle crashes occurring within the Kennebec Street/Preble Street intersection.

SITE TRAFFIC

Site Trip Generation: The Institute of Transportation Engineers (ITE) 7th edition of the **TRIP GENERATION** manual provides an equation under Land-Use Code #530 - High School for estimating the volume of peak hour trips generated by a public high school during the morning commuter hour. The analysis was completed based upon a projected school enrollment of 400 students.

$$Ln(T) = 0.77Ln(X) + 0.69 \; [X = 400 \text{ students}]$$

Accordingly, the 400-student Baxter Academy public charter high school can be expected to generate a total of **200** vehicle trips during the weekday AM peak hour.

Site Trip Assignment: Baxter Academy for Technology and Science recently conducted a survey of their existing student population to determine transportation modal choice of students traveling to/from the 54 York Street site. The results of the survey (copy of survey results attached) are presented as follows:

- 38% Charted School Bus Service
- 25% Commute with an Adult (1)
- 18% Public Transportation (METRO, Zoom Bus, Casco Bay Transit, Other)
- 9% Drive personal vehicle
- 6% Carpool with another student
- 3% Walk
- 1% Bike

Total = 100%

(1) NOTE: Multiple students are being driven by one adult and/or travel to the work site of the adult and walk to the school.

A trip assignment model, prepared for all site trips impacting the street system immediately adjacent to the proposed project site, was developed based upon the following assumptions and considerations:

400 students and 60 staff		
40% of students (152) ride 3 chartered buses	=	*3 trips*
25% of students (100) commute with an adult:		
○ *40 students travel as a single occupant in vehicle with adult*	=	*80 trips*
○ *20 students travel with a second student and adult*	=	*20 trips*
○ *15 students travel with two other students and adult*	=	*10 trips*
○ *25 students travel with adult to work site and walk to school*	=	*0 trips*
18% of students (72) use public transportation	=	*0 trips*
9% of students (36) drive personal auto and park off-site	=	*0 trips* (1)
6% of students (24) car pool with fellow student and park off-site	=	*0 trips* (1)
3% of students (12) walk	=	*0 trips*
1% of students (4) bike	=	*0 trips*
85% of staff (51) will drive to site and park in Lancaster Street parking lot	=	*51 trips* (1)
15% of staff (9) will use other modes of transportation	=	*0 trips*
Total Trips Impacting Street System	=	*164 trips*

(1) NOTE: A total of 50 on-site parking spaces are provided in an adjacent off-street parking lot for employees only. No student parking is provided.

Approximately, 109 of the 164 peak hour trips are expected to arrive at the 185 Lancaster Street site and the remaining 55 trips are parents leaving after dropping-off student(s).

Figure 2 illustratively presents the assignment of the site trips to the street system immediately adjacent to the proposed 185 Lancaster Street site.

2017 POST-DEVELOPMENT TRAFFIC FORECAST

Other Development Traffic: Traffic generated by projects that have been approved by the local Planning Board and/or the Maine Department of Transportation, yet are not open, must be included in the estimate of post-development traffic. Peak hour trips generated by the following projects were appropriately assigned to the study intersections:

- *191 Marginal Way Re-Development Project*
- *Mid-Town Development*
- *Bayside Bowl*
- *89 Anderson Street*
- *Schlotterback & Foss Building*
- *#443 Congress Street*
- *Westerlea View Lofts*

Figure 3 is a "*line-diagram*" plan that depicts the Other Development trip assignment to both study intersections.

2017 Post-Development Traffic – AM Peak Hour: 2017 Post-Development traffic forecasts were prepared for both study intersections combining peak hour trips generated by the Baxter Academy project (Refer to Figure 2) with Other Development trips highlighted on Figure 3 with 2017 Design Hour Traffic as illustrated on Figure 1. Figure 4 graphically presents the 2017 Post-Development Traffic Conditions for both study intersections during the AM peak hour.

LANCASTER STREET/CHESTNUT STREET – MULTI-WAY "STOP" CONTROL EVALUATION

The Chestnut Street/Lancaster Street intersection presently operates as a two-way STOP controlled intersection with both Lancaster Street approaches under STOP control. A detailed evaluation was completed in 2016 to determine if projected traffic conditions at that time warranted a modification of the traffic control at the

intersection. The earlier study, which was based upon existing 2016 travel conditions measured at the intersection, concluded that traffic conditions at the intersection failed to satisfy the minimum warrants for "*multi-way*" STOP control.

The proposed Baxter Academy for Technology and Science project is forecast to moderately increase peak hour traffic volumes traveling through the subject intersection, especially during the "*morning*" peak hour. The traffic projections estimate an increased volume of 73 trips will travel through the subject intersection in the AM peak hour. It is anticipated that lower residual volumes of traffic generated by the school project will travel through the intersection throughout a typical weekday. A decision to modify traffic control at the intersection should be based upon actual travel conditions measured at the intersection versus estimated travel patterns of multiple development projects impacting the intersection. It is the recommendation of this report that further study of the intersection should be deferred until the Baxter Academy site is fully functional.

STUDENT "DROP-OFF" PARKING SPACE DEMAND

Approximately twenty-five percent (25%) of the existing student enrollment commute with an adult to and from the existing Baxter Academy site at 54 York Street. Short-term on-street parking spaces located on the south side of Maple Street is the primary "drop-off/pick-up" area for students traveling via this mode. Other curbside parking areas used include the west side of York Street opposite the school entrance and the 1-hour parking spaces located on the north side of Maple Street (York Street to Commercial Street). Existing student "drop-off/pick-up" practices were observed on Monday, February 27, 2017 during both the morning arrival and afternoon departure time periods. Vehicle trips were recorded in 5-minute increments between 7:40 and 8:25AM and, again, between 2:30 and 3:00PM. The following tables summarize that effort:

Parent "Drop-Off" Trips

Survey Start Time	Total Vehicle Trips
7:40 to 7:45 AM	5
7:45 to 7:50 AM	5
7:50 to 7:55 AM	4
7:55 to 8:00 AM	6
8:00 to 8:05 AM	8
8:05 to 8:10 AM	7
8:10 to 8:15 AM	9
8:15 to 8:20 AM	6
8:20 to 8:25 AM	9

Parent "Pick-Ups" Parking Space Trends

Survey Start Time	Number of Vehicles *"Waiting"*
2:30 to 2:35 PM	7
2:35 to 2:40 PM	8
2:40 to 2:45 PM	8
2:45 to 2:50 PM	10
2:50 to 2:55 PM	13
2:55 to 3:00 PM	15

A total of fifty-nine (59) "*drop-off*" trips were recorded during the morning arrival period; with a peak value of 9 trips occurring during two separate time periods. A separate tally of vehicle duration was not maintained, although, the length of stay very seldom exceeded 30 to 60 seconds in length. The afternoon survey process focused on the "*length of stay*" for each motorist versus "*total trips*" as was the case used in the morning survey. Motorists in the afternoon were observed arriving early on-site, well in advance of the school dismissal time,

parking in the available on-street parking spaces located near the 54 York Street site. As shown in the chart, the "*peak*" number of vehicles parked curb-side was 15, which occurred just prior to the school dismissal time of 3:00PM. The survey stopped at 3:00 PM concurrent with the end of the school day. It is reasonable to assume that the actual "*peak*" number of vehicles queued waiting for a student may have exceeded 15 vehicles, just after dismissal time but the duration was very short.

The student capacity of the proposed 185 Lancaster Street site is 400 students, representing an increase of 57 students when compared to the existing York Street site. Accordingly, it is reasonable to assume that the drop-off parking needs of the new school site will increase proportionally resulting in a student "*drop-off*" parking demand of 18 vehicle spaces. A parking space demand of 11 spaces is determined for the morning peak hour.

SUMMARY

1. The proposed Baxter Academy for Technology and Science public charter high school can be expected to generate approximately 200 vehicle trips during the "*busiest*" single hourly time period of the day; the AM peak hour. Roughly 80% percent of the trips (164 trips) impact the street system immediately adjacent to the proposed site at 185 Lancaster Street. The remaining site trips (36-trips) are generated by students traveling to school in a private vehicle parking off-site in public parking lots or curb-side on nearby streets.

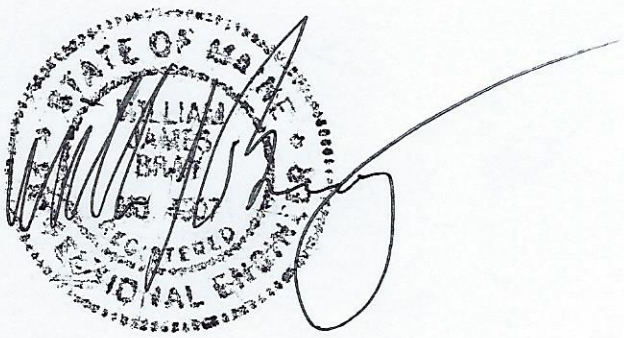
2. MaineDOT's Traffic Safety Bureau's latest three-year safety report (2013 through 2015) for the segments of streets and intersections highlighted on the attached City map identified two locations as High Crash Locations (HCL). Detailed vehicle collision diagrams were prepared for both locations to better determine if a clear pattern of accident is occurring at either location.

   Location #2: Elm Street at Lancaster Street, had a reported total of 9 vehicle crashes and a Critical Rate Factor of 3.79. The predominate crash pattern were "*angle*" crashes, which accounted for six of the 9 reported vehicle crashes. A detailed review of each traffic crash report suggests travel speed and roadway conditions were likely contributing factors causing the crash. The City's most recent street re-construction project on Elm Street, which narrowed travel lanes on Elm Street, should help immensely in reducing vehicle speeds on the Elm Street approach to the intersection.

   Location #3: Preble Street at Kennebec Street, had a reported total of 12 vehicle crashes and a Critical Rate Factor of 4.22. A review of the vehicle crash reports provided by MaineDOT shows that one vehicle accident report was incorrectly coded occurring at an adjacent intersection. Eight of the 11 vehicle accidents were "*angle*" crashes involving motorists on both Kennebec Street approaches striking thru vehicles traveling southerly on Preble Street. The west approach of Kennebec Street is proposed to be closed with the extension of Somerset Street to Hanover Street. Six of the 8 "angle" crashes involved motorists from this approach colliding with thru Preble Street traffic. Completion of the proposed, federally funded project should greatly reduce the frequency of traffic crashes reported at the intersection.

3. The proposed Baxter Academy school project is expected to increase, somewhat moderately, the volume of traffic traveling through the Chestnut Street/Lancaster Street intersection during two time periods of the day; the morning and afternoon peak hours. Measured traffic impacts during the remaining hours will be very minor. A detailed traffic safety evaluation report was completed in 2016 of the intersection to determine if the current traffic control measures were both appropriate and safe. The report specifically evaluated whether prevailing traffic volumes warranted multi-way STOP control at the intersection. The traffic safety report concluded that existing traffic conditions found at the intersection do not meet the minimum requirements for "*multi-way*" STOP control. It would be the recommendation of this report that the City may want to re-assess traffic conditions at the intersection in the near future to determine if prevailing conditions have changed.

4. Baxter Academy has determined that approximately 25% of their students travel to/from school with another adult and are dropped-off and/or picked-up curb side in the immediate area of the school site. The number of parking spaces required, albeit for short periods of time, to accommodate the drop-off/pick-up needs of the new school site is critical. To most accurately assess the parking space needs, existing field measurements were conducted at the existing 54 York Street school site. All student drop-off and pick-up occurrences were recorded in 5-minute increments between 7:40 and 8:25 AM and, again, between 2:30 and 3:00 PM. The peak number of occupied parking spaces in the morning peak hour was 11 and the peak parking space utilization value in the afternoon was 15. The student capacity of the proposed 185 Lancaster Street site is 400 students, representing an increase of 57 students when compared to the existing York Street site. Accordingly, it is reasonable to assume that the drop-off parking needs of the new school site will increase proportionally resulting in a student "*drop-off*" parking demand of 18 vehicle spaces for the afternoon dismissal time and a much lower parking space requirement of 11 spaces in the morning arrival period.



Portland: Lancaster & Chestnut
Tuesday September 13, 2016
Sunny
Count By: Dawn-Marie Fahey

File Name : Portland Lancaster & Chestnut 091316
Site Code : 00091316
Start Date : 9/13/2016
Page No : 5

	Chestnut From North				Lancaster From East				Chestnut From South				Lancaster From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**15**	36	7	58	2	10	2	14	**3**	**9**	1	**13**	5	**8**	1	14	99
07:45 AM	11	**58**	**10**	**79**	2	**12**	**3**	**17**	0	5	**2**	7	**9**	8	3	**20**	**123**
08:00 AM	9	37	5	51	**7**	7	3	17	3	9	1	13	4	7	**5**	16	97
08:15 AM	10	33	4	47	4	5	3	12	1	3	2	6	5	4	1	10	75
Total Volume	45	164	26	235	15	34	11	60	7	26	6	39	23	27	10	60	394
% App. Total	19.1	69.8	11.1		25	56.7	18.3		17.9	66.7	15.4		38.3	45	16.7		
PHF	.750	.707	.650	.744	.536	.708	.917	.882	.583	.722	.750	.750	.639	.844	.500	.750	.801

Portland: Elm & Lancaster
Wednesday February 15, 2017
Clear
Count By: Dawn-Marie Fahey

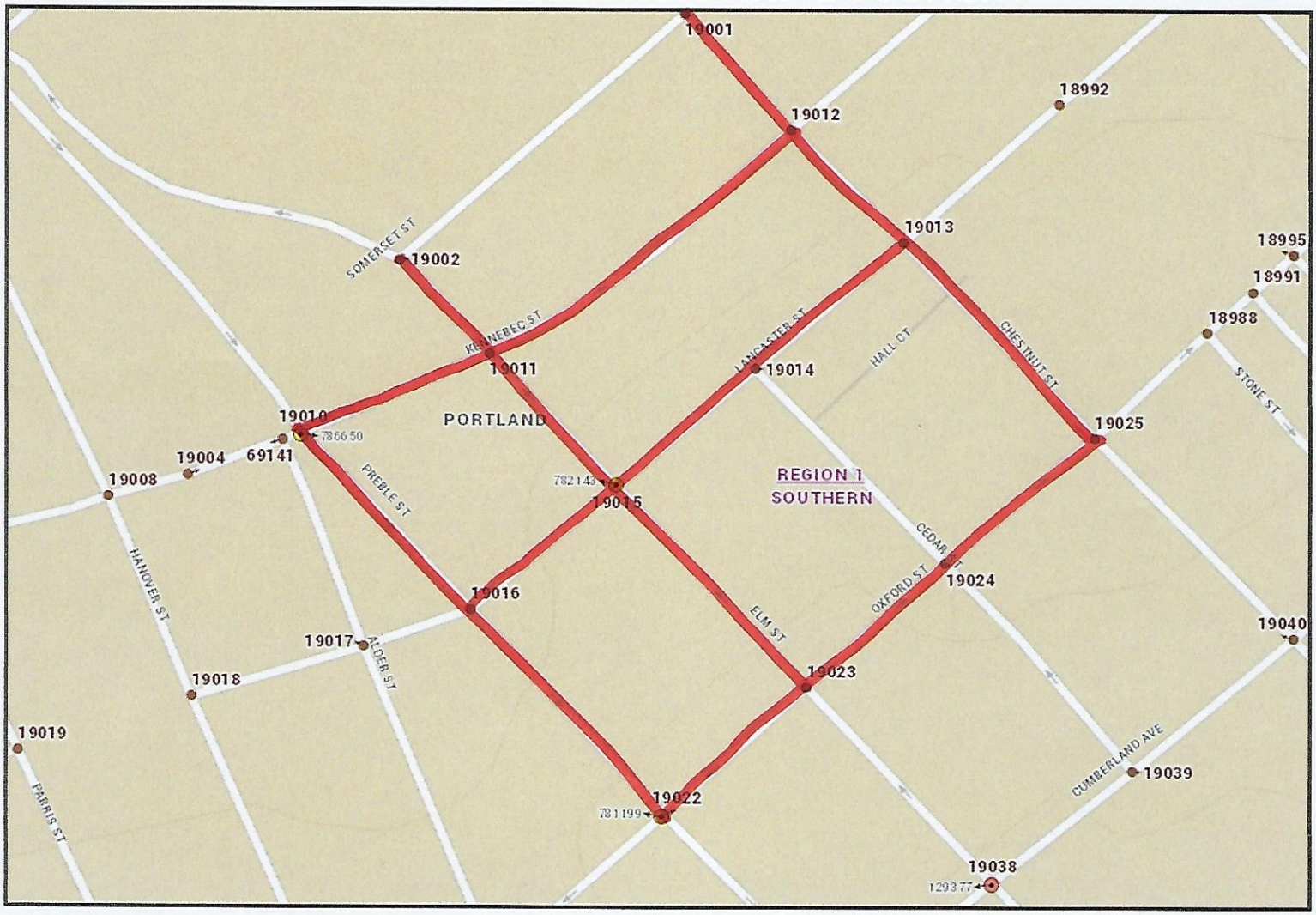
File Name : Portland Elm & Lancaster AM 021517
Site Code : 00021517
Start Date : 2/15/2017
Page No : 5

	Elm St From North				Lancaster From East				Elm St From South				Lancaster From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	14	**18**	0	32	3	**24**	2	29	0	11	3	14	75
07:45 AM	0	0	0	0	**18**	16	0	**34**	6	**54**	2	**62**	0	**22**	5	27	**123**
08:00 AM	0	0	0	0	7	17	0	24	**8**	37	**3**	48	0	21	7	**28**	100
08:15 AM	0	0	0	0	13	12	0	25	6	36	2	44	0	11	**11**	22	91
Total Volume	0	0	0	0	52	63	0	115	23	151	9	183	0	65	26	91	389
% App. Total	0	0	0		45.2	54.8	0		12.6	82.5	4.9		0	71.4	28.6		
PHF	.000	.000	.000	.000	.722	.875	.000	.846	.719	.699	.750	.738	.000	.739	.591	.813	.791

60 72 26 174 10 75 30

Seasonal traffic adjustment 1.01 ÷ 0.88 = 1.15

DEFAULT TITLE FROM MAP DOCUMENT



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0.06 Miles

1 inch = 0.04 miles

Date: 2/8/2017
Time: 9:24:25 AM

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☑ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Preble St Chestnut St area in Portland

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: **0560414**	Start Node: **19012**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19010**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560426**	Start Node: **19013**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19016**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560560**	Start Node: **19022**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19025**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560597**	Start Node: **19010**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19022**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560252**	Start Node: **19023**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19015**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560252**	Start Node: **19015**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19011**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560252**	Start Node: **19011**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19002**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560135**	Start Node: **19025**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19001**	End Offset: **0**	☐ **Exclude Last Node**

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
19011	0560414 - 0.21	Int of ELM ST KENNEBEC ST	2	7	0	0	0	0	7	0.0	1.910	1.22	0.48	2.55
												Statewide Crash Rate:	0.15	
19014	0560426 - 0.15	Int of CEDAR ST LANCASTER ST	2	0	0	0	0	0	0	0.0	0.341	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
19015	0560426 - 0.20	Int of ELM ST LANCASTER ST	2	9	0	1	2	1	5	44.4	1.572	1.91	0.50	3.79
												Statewide Crash Rate:	0.15	
19023	0560560 - 0.12	Int of ELM ST OXFORD ST	2	0	0	0	0	0	0	0.0	1.359	0.00	0.52	0.00
												Statewide Crash Rate:	0.15	
19024	0560560 - 0.17	0509444 POR,OXFORD,CEDAR ST.	2	0	0	0	0	0	0	0.0	0.347	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
19010	0560597 - 0.13	Int of KENNEBEC ST PREBLE ST	2	12	0	1	0	3	8	33.3	2.001	2.00	0.47	4.22
												Statewide Crash Rate:	0.15	
19016	0560597 - 0.19	Int of LANCASTER ST PREBLE ST	2	3	0	0	0	0	3	0.0	1.544	0.65	0.51	1.28
												Statewide Crash Rate:	0.15	
19022	0560597 - 0.26	Int of OXFORD ST PREBLE ST	2	4	0	0	0	1	3	25.0	1.618	0.82	0.50	1.65
												Statewide Crash Rate:	0.15	
19002	0560252 - 0.32	Int of ELM ST SOMERSET ST	2	2	0	0	0	1	1	50.0	3.074	0.22	0.42	0.00
												Statewide Crash Rate:	0.15	
19025	0560135 - 0.16	0509445 POR,CHESTNUT,OXFORD ST.	2	1	0	1	0	0	0	100.0	0.383	0.87	0.60	1.44
												Statewide Crash Rate:	0.14	
19013	0560135 - 0.24	Int of CHESTNUT ST LANCASTER ST	2	3	0	0	0	1	2	33.3	0.353	2.84	0.60	4.69
												Statewide Crash Rate:	0.14	
19012	0560135 - 0.28	0509432 POR,CHESTNUT,KENNEBEC ST.	2	1	0	0	0	0	1	0.0	0.549	0.61	0.59	1.03
												Statewide Crash Rate:	0.14	
19001	0560135 - 0.31	0509421 POR,SOMERSET,CHESTNUT ST.	2	4	0	0	0	1	3	25.0	2.500	0.53	0.43	1.25
												Statewide Crash Rate:	0.14	
Study Years: 3.00		**NODE TOTALS:**		46	0	3	2	8	33	28.3	17.551	0.87	0.27	3.18

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
19011	19012	194707	0 - 0.10	0560414 - 0.11	0.10	2	1	0	0	0	0	0	0.0	0.00021	1574.56	1598.97	0.00
Int of ELM ST KENNEBEC ST				RD INV 05 60414											Statewide Crash Rate: 383.78		
19010	19011	194704	0 - 0.05	0560414 - 0.21	0.05	2	0	0	0	0	0	0	0.0	0.00016	0.00	1644.70	0.00
Int of KENNEBEC ST PREBLE ST				RD INV 05 60414											Statewide Crash Rate: 383.78		
19013	19014	194710	0 - 0.04	0560426 - 0.11	0.04	2	1	0	0	0	0	1	0.0	0.00005	6486.09	1204.97	5.38
Int of CHESTNUT ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19014	19015	194712	0 - 0.05	0560426 - 0.15	0.05	2	3	0	0	0	0	3	0.0	0.00009	11025.05	1605.53	6.87
Int of CEDAR ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19015	19016	194714	0 - 0.04	0560426 - 0.20	0.04	2	2	0	0	0	0	2	0.0	0.00004	18946.93	558.86	33.90
Int of ELM ST LANCASTER ST				RD INV 05 60426											Statewide Crash Rate: 383.78		
19022	19023	3122298	0 - 0.05	0560560 - 0.07	0.05	2	3	0	0	1	0	1	50.0	0.00016	6101.84	609.36	10.01
Int of OXFORD ST PREBLE ST				RD INV 05 60560											Statewide Crash Rate: 159.43		
19023	19024	194730	0 - 0.05	0560560 - 0.12	0.05	2	0	0	0	0	0	0	0.0	0.00011	0.00	1642.73	0.00
Int of ELM ST OXFORD ST				RD INV 05 60560											Statewide Crash Rate: 383.78		
19024	19025	194732	0 - 0.05	0560560 - 0.17	0.05	2	2	0	0	0	0	2	0.0	0.00010	6918.50	1622.25	4.26
0509444 POR,OXFORD,CEDAR ST.				RD INV 05 60560											Statewide Crash Rate: 383.78		
19010	19016	3106835	0 - 0.06	0560597 - 0.13	0.06	2	1	0	0	0	0	1	0.0	0.00088	379.95	715.35	0.00
Int of KENNEBEC ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 198.28		
19016	19022	3106836	0 - 0.07	0560597 - 0.19	0.07	2	3	0	0	0	1	2	33.3	0.00090	1107.50	710.64	1.56
Int of LANCASTER ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 198.28		
19015	19023	3123553	0 - 0.07	0560252 - 0.17	0.07	2	0	0	0	0	0	0	0.0	0.00101	0.00	692.86	0.00
Int of ELM ST LANCASTER ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19011	19015	3119283	0 - 0.05	0560252 - 0.24	0.05	2	0	0	0	0	0	0	0.0	0.00087	0.00	715.87	0.00
Int of ELM ST KENNEBEC ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19002	19011	3129301	0 - 0.03	0560252 - 0.29	0.03	2	1	0	0	0	0	1	0.0	0.00056	593.28	785.16	0.00
Int of ELM ST SOMERSET ST				RD INV 05 60252											Statewide Crash Rate: 198.28		
19013	19025	194711	0 - 0.08	0560135 - 0.16	0.08	2	1	0	0	0	0	1	0.0	0.00014	2324.95	1654.59	1.41
Int of CHESTNUT ST LANCASTER ST				RD INV 05 60135											Statewide Crash Rate: 383.78		
19012	19013	194709	0 - 0.04	0560135 - 0.24	0.04	2	1	0	0	0	0	1	0.0	0.00009	3742.80	1599.73	2.34
0509432 POR,CHESTNUT,KENNEBEC ST.				RD INV 05 60135											Statewide Crash Rate: 383.78		
19001	19012	194692	0 - 0.03	0560135 - 0.28	0.03	2	1	0	0	0	0	1	0.0	0.00008	4204.61	1553.75	2.71
0509421 POR,SOMERSET,CHESTNUT ST.				RD INV 05 60135											Statewide Crash Rate: 383.78		
Study Years: 3.00				**Section Totals:**	0.86		20	0	0	1	1	16	10.0	0.00545	1222.83	510.47	2.40
				Grand Totals:	0.86		66	0	3	3	9	49	22.7	0.00545	4035.35	669.73	6.03

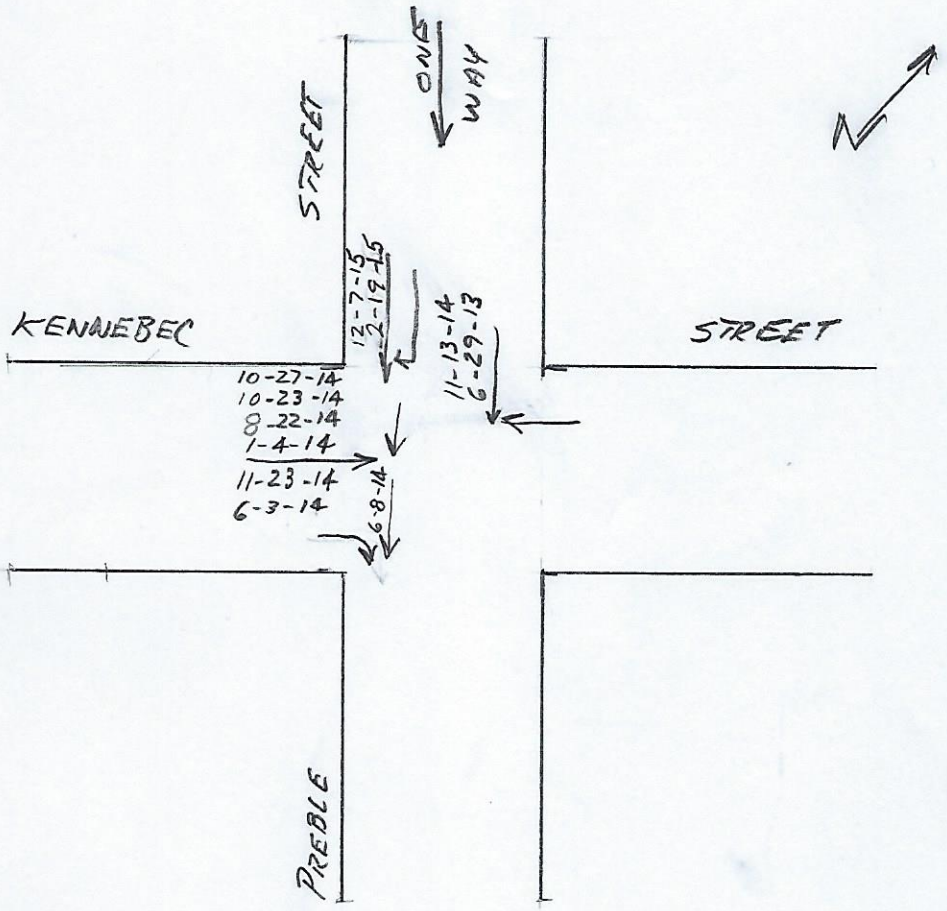
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION PREBLE ST. @ KENNEBEC STS.

TOWN PORTLAND NODE NO(S) 19010

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH-SANDED
4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS - HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS
19. VISION OBSCURED-SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

- VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE, PEDESTRIAN, REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE [B], ANIMAL [A], SLED [S]

WEATHER

C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL B = NON-INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

LOCATION PREBLE ST. @ KENNEBEC ST.

TOWN PORTLAND NODE NO(S) 19010

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-1851	6-29-13	11:24					2	1	2	
15-857	2-19-15	7:30					2	SNOW	8	
14-069	1-4-14	10:08					2	SNOW	2	
14-2456	8-22-14	15:00					2	1	2	
14-3134	10-23-14	12:53					2	2	2	
14-3458	11-23-14	14:09					2	1	2, 14	
14-1631	6-3-14	19:32					2	1	2	
14-1764	6-18-14	8:45					2	1	2	
14-3178	10-27-14	10:35				1	2	1	2	
14-3346	11-13-14	12:36		1		3	2	1	2	
15-4085	12-7-15	13:30					2	1	8	

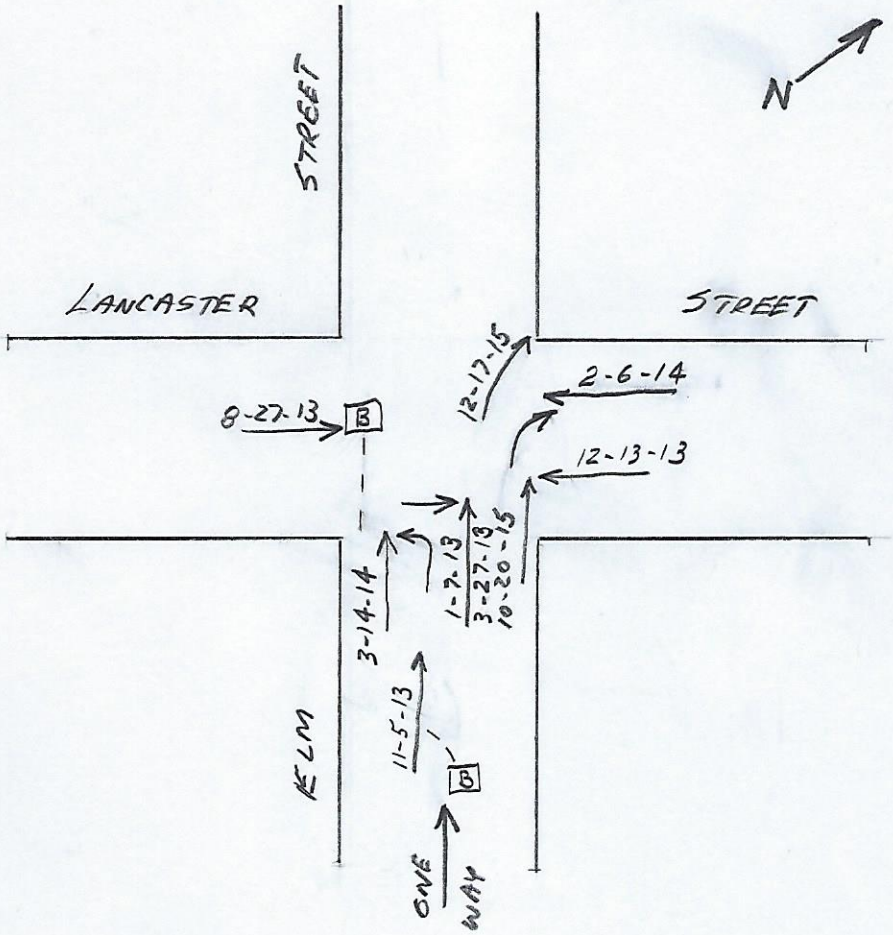
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION ELM ST. @ LANCASTER ST.

TOWN PORTLAND NODE NO(S) 19015

YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ ACC/MEV _____

LIGHT

1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)
4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)
7. OTHER

ROAD SURFACE

1. DRY 2. WET 3. SNOW/SLUSH–SANDED
4. ICE/PACKED SNOW–SANDED 5. MUDDY 6. DEBRIS
7. OILY 8. SNOW/SLUSH–NOT SANDED 9. ICE–PKD. SNOW–NOT SANDED
10. OTHER

APPARENT CONTRIBUTING FACTORS – HUMAN

1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED
4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
6. DRIVING LEFT OF CENTER–NO PASSING 7. IMPROPER PASS–OVERTAKING
8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN
11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC
14. DRIVER INATTENTION–DISTRACTION 15. DRIVER INEXPERIENCE
16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED–WINDSHIELD GLASS
19. VISION OBSCURED–SUN/HEADLIGHTS
20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR
31. HIT AND RUN 51. UNKNOWN

– VEHICULAR

41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
51. UNKNOWN

SYMBOLS

ANGLE, PEDESTRIAN (P), FATAL ACCIDENT
BACKING, REAR END
FIXED OBJECT, SIDE SWIPE, VEHICLE (MOVING)
HEAD ON, TURNING MOVE, BICYCLE (B)
OVERTURN, CHANGE LANE, ANIMAL (A)
PARKED VEHICLE, OUT OF CONTROL, SLED (S)

WEATHER

C = CLEAR F = FOG R = RAIN
SL = SLEET S = SNOW CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL B = NON–INCAPACITATING
A = INCAPACITATING C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

SHEET 2 OF 2

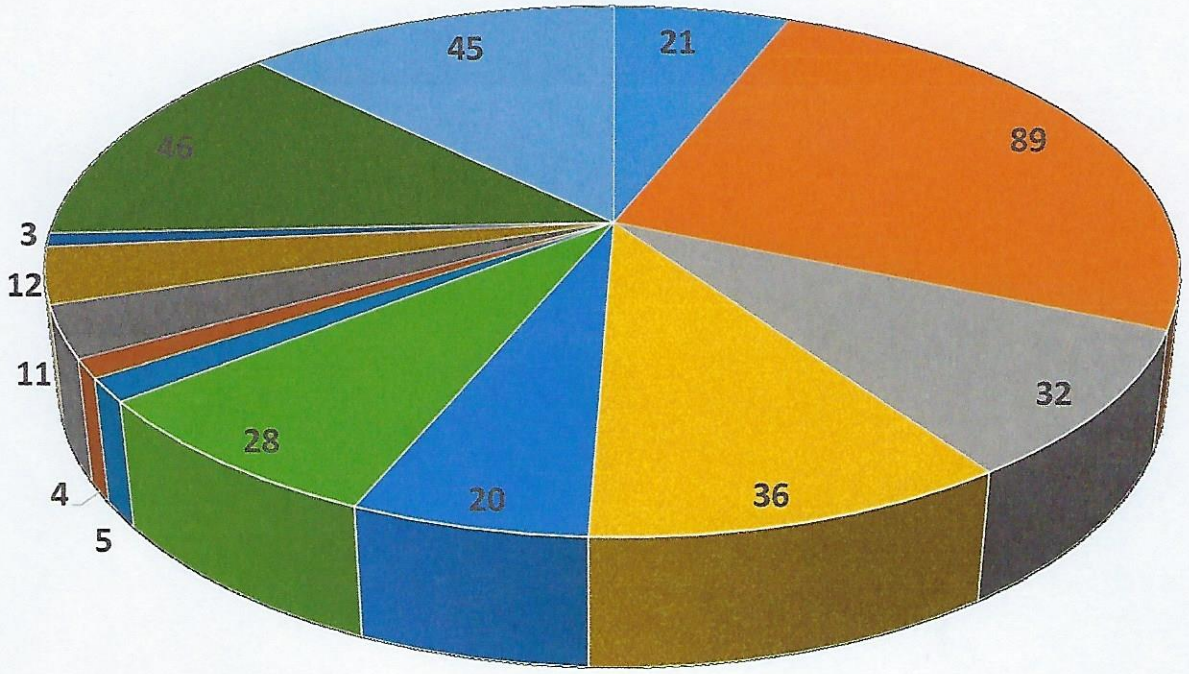
LOCATION ELM ST. @ LANCASTER ST.

TOWN PORTLAND NODE NO(S) 19015

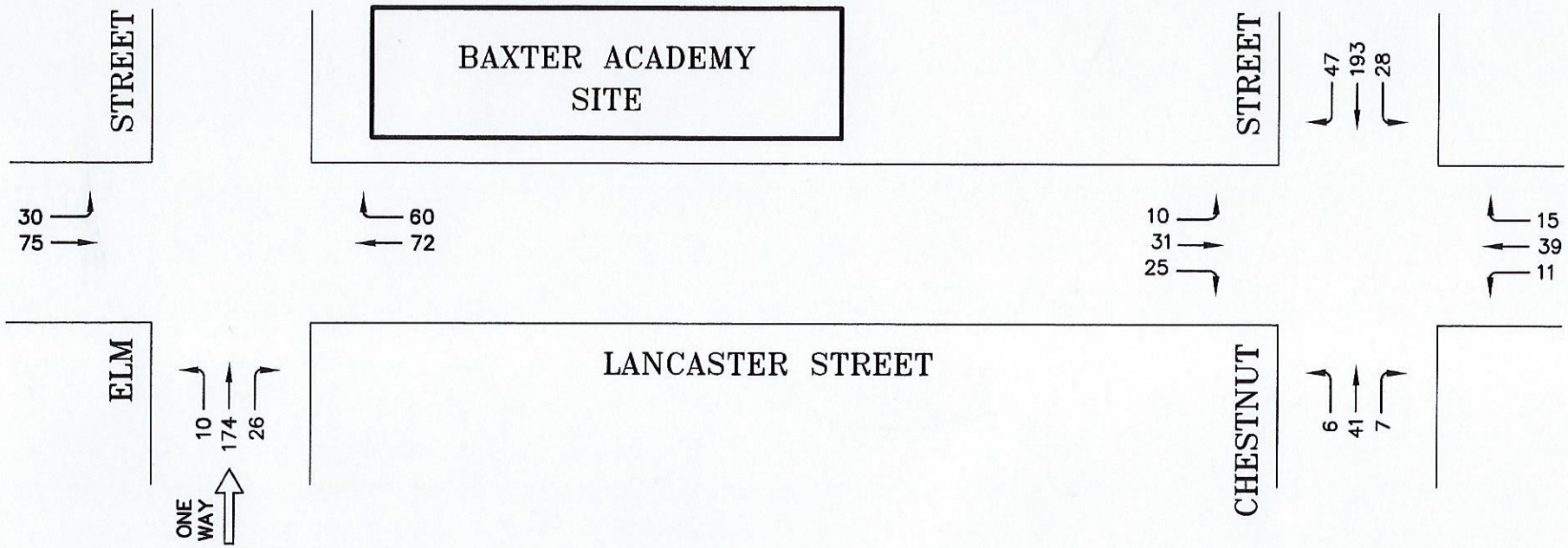
YEARS REVIEWED 2013 - 2015 DATE PREPARED 2-17-2017

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
14-0437	2-6-14	9:35					2	SNOW	3	
14-0942	3-14-14	18:10					2	1	8	
15-4228	12-17-15	19:40					5	2	51	
13-0210	1-7-13	9:40					2	2	2	
13-1038	3-27-13	16:00			1		1	2	51	
13-2436	8-27-13	19:28			1		2	1	2	
13-3146	11-5-13	18:11			1		4	1	8	
13-3604	12-13-13	11:15		1			2	1	5	Ran Stop Sign
15-3532	10-20-15	19:28					4	1	5	Ran Stop Sign

How our students get to school 2016-2017



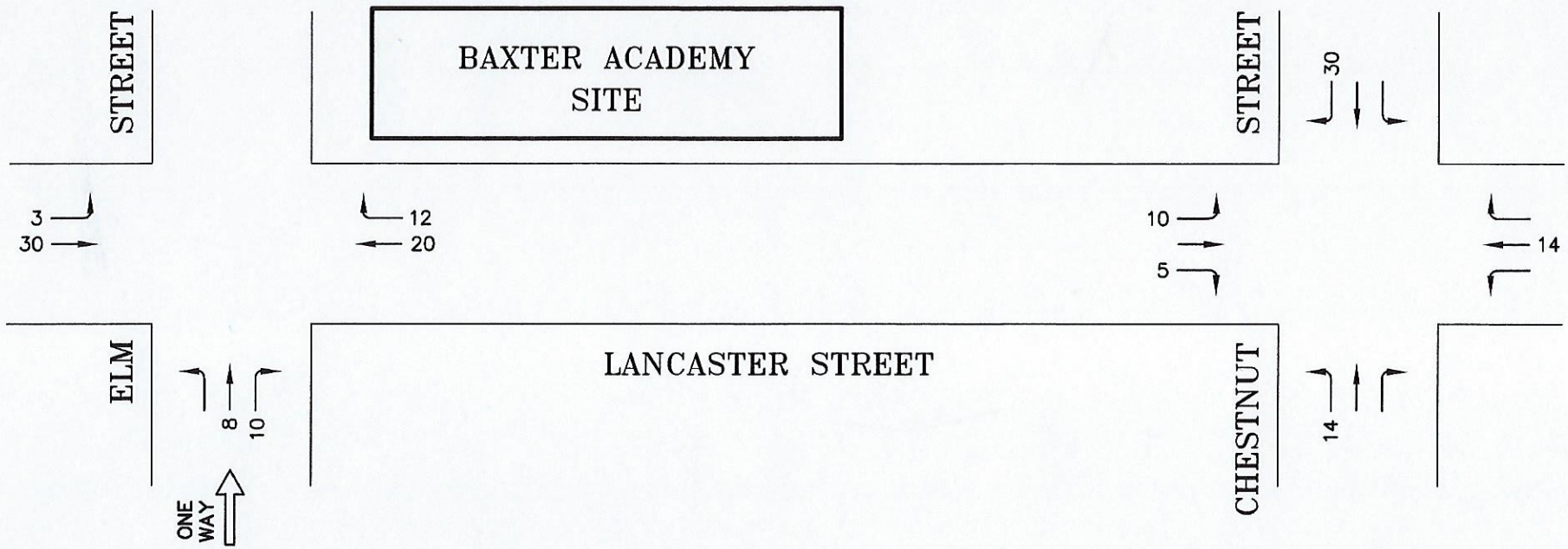
- Carpool -21
- Commute with Adult - 89
- Drive own car- 32
- Luce Transportation - Lewiston -36
- METRO - Breeze - 20
- METRO - Local - 28
- Ride Bike - 5
- Lakes Region Bus - 4
- Walk - 11
- Zoom Bus - 12
- Boat - 3
- Luce Transportation - Topsham - 46
- Luce Transportation - Windham - 45



2017 DESIGN HOUR TRAFFIC
AM PEAK HOUR
FIGURE 1

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

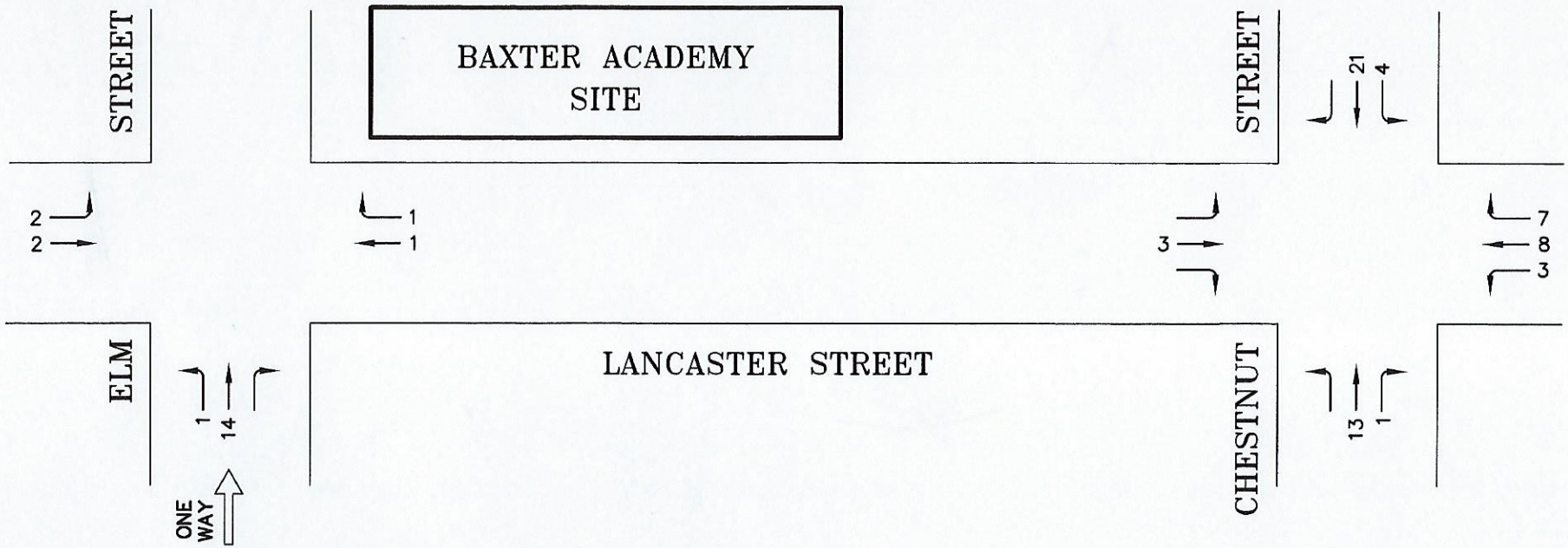
Project Name and Location: BAXTER ACADEMY, 185 LANCASTER STREET, PORTLAND, MAINE	TRAFFIC SOLUTIONS, 235 BANCROFT STREET, PORTLAND, MAINE 04102-1730
DATE: FEBRUARY, 2017	FIGURE: 1



SITE TRAFFIC ASSIGNMENT
AM PEAK HOUR
FIGURE 2

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location: BAXTER ACADEMY, 185 LANCASTER STREET, PORTLAND, MAINE	TRAFFIC SOLUTIONS, 235 BANCROFT STREET, PORTLAND, MAINE 04102-1730
DATE: FEBRUARY, 2017	FIGURE: 2



OTHER DEVELOPMENT TRAFFIC
AM PEAK HOUR
FIGURE 3

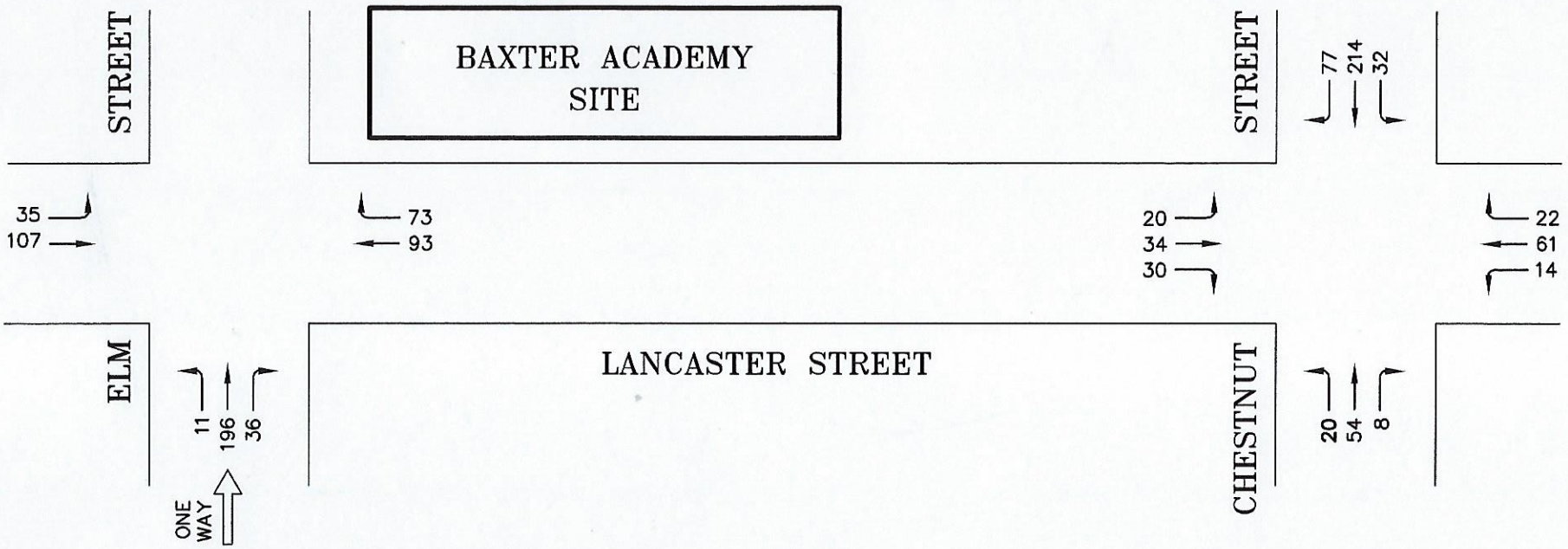
E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location
BAXTER ACADEMY
185 LANCASTER STREET, PORTLAND, MAINE

DATE: FEBRUARY, 2017

FIGURE: 3

TRAFFIC SOLUTIONS
235 BANCROFT STREET, PORTLAND, MAINE 04102-1730



2017 POST-DEVELOPMENT TRAFFIC
AM PEAK HOUR
FIGURE 4

E:\LAND PROJECTS\34000\344399 TRAFFIC SOLUTIONS\BAXTER ACADEMY\PLANSET\BAXTER ACADEMY 3-2-17.DWG

Project Name and Location:
BAXTER ACADEMY
185 LANCASTER STREET, PORTLAND, MAINE

DATE: FEBRUARY, 2017

FIGURE: 4

TRAFFIC SOLUTIONS
235 BANCROFT STREET, PORTLAND, MAINE 04102-1730

Att. X

March 4, 2017

Baxter Academy for Technology and Science

TRANSPORTATION OPERATIONS and MANAGEMENT PLAN

Introduction

Baxter Academy for Technology and Science is fully committed to providing the necessary resources and services to maintain the highest level of student safety at its 185 Lancaster Street Campus. The Traffic Operations and Management plan provides both the administration and staff of Baxter Academy a "*blue-print*" of recommended operational principles and guidelines that, with implementation, ensures a safe environment for students, staff and the general public.

Proposed Transportation Operations and Management Plan

School Zone Safety Features: Baxter Academy will install a flashing school zone speed limit sign assembly on Elm Street in advance of the 185 Lancaster Street Campus. The flashing school light system will operate with a timer controlling time periods of operation. An "*End School Zone*" sign will be appropriately located on Elm Street just west of the designated school bus loading zone advising motorists that they are leaving the school zone area. Secondary school speed zone signage will also be installed on both approaches of Lancaster Street that informs approaching motorists they are entering a designated school zone.

Baxter Academy will augment the City's annual crosswalk re-striping program, re-painting each of the existing crosswalk markings early spring of each year at the Lancaster Street/Elm Street intersection.

Baxter Academy staff will serve as a pedestrian crossing guard at the Lancaster/Elm Streets intersection aiding students crossing the Elm Street approach. A portable "*school crossing*" sign will be appropriately located in the center of the intersection reinforcing the school zone area.

Recommended Actions

- Baxter Academy will consult with the City's Traffic Division in advance of the school calendar year to review hourly and daily timing inputs for the automated school flashing speed limit assembly.
- Baxter Academy will field review, annually during mid-summer, the operational status of all traffic signage and roadway striping amenities. Noted deficiencies will be appropriately reported to the City's Traffic Division.
- Baxter Academy will re-stripe the crosswalk markings at the Lancaster Street/Elm Street intersection as soon as practical in the spring of each year. Coordination with Public Works in completing this task is essential. Baxter Academy assumes that the City will re-stripe the intersection markings prior to the beginning of the school year consistent with their current practices at all other City school locations.

- Baxter Academy staff, serving as an intersection crossing guard, will be required to wear a reflectorized orange vest meeting the latest OSHA standards. They will direct traffic appropriately using a STOP paddle. Staff members performing this service should meet with City Officials annually, in advance of the start of the school year, to review the appropriate procedures serving as an adult crossing guard.

Charter School Bus Service: Baxter Academy provides charter school bus service from three service areas in Southern Maine; Lewiston, Windham and Topsham. Students will be picked up daily at a designated bus area in each of the three communities and scheduled to arrive on-campus at approximately ___ AM (Schedule to be established later). Each of the three buses will discharge the students and return to a daytime queuing location off-site. They will return to the Baxter Academy Campus in the afternoon at ___ PM (Schedule to be established later) picking students up for the return trip to each of the three service communities.

A "*bus loading and unloading*" zone will be established along the Elm Street frontage of the 185 Lancaster Street Campus of sufficient length to accommodate three full-size school buses. Baxter Academy will rigidly regulate and control the arrival and departure schedule of the charter school buses. Bus arrival times, both morning and afternoon, will purposely be delayed allowing private vehicle utilization of the Elm Street curb space for student drop-off and pick-up functions. Students traveling on the charter school buses in the afternoon will wait in the "great-room" and be released for boarding with arrival of the school buses.

Baxter Academy staff will have a strong presence in this area ensuring that all personal autos have cleared the bus loading area prior to the bus arrival time. Special traffic signage will be erected that establishes the designated dual-purpose parking area.

Baxter Academy has developed the basic tenants of a Student Policy (Refer to Appendix A) that clearly define the responsibilities and expectations of students and parents alike in the use of the designated passenger loading and unloading areas.

The charter school buses are fully equipped with all mandatory school bus safety features including school flashing lights systems, etc.

Recommended Actions

- Baxter Academy will meet with the City's Transportation Office, Police Department, and representatives of the Charter School Bus Company to prepare a bus routing plan for each of the three bus routes. The bus routing plan will be reviewed annually with the City offices and adjusted as deemed necessary. Baxter Academy will review the designated "*bus loading and unloading*" area annually at the start of the school year verifying that all bus zone signing exists, etc. Baxter Academy will meet with appropriate City staff to establish the required sign verbiage establishing the dual-purpose passenger loading zone.
- Baxter Academy staff will be assigned, as necessary, to monitor the Elm Street bus loading zone ensuring that all private autos have cleared the bus zone prior to the arrival of the charter buses.

- Baxter Academy will develop a final operations plan and review the content of that plan with appropriate City officials prior to the beginning of the school year.
- Each of the three charter school buses will operate their mandatory flashing school lights during all loading and unloading activities.
- Baxter Academy staff will supervise the loading and unloading of students from each bus ensuring orderly and safe passage of students and minimal disruption to through vehicle travel on Elm Street. Students will be ushered in an orderly fashion to/from the entrance door of the school.
- Baxter Academy staff will be required to wear a reflectorized orange vest meeting the latest OSHA standards.

Parent Drop-Offs: Three designated parent drop-off zones are proposed near the main school entrance on Lancaster Street. A total of eight vehicle spaces are provided. Three spaces are provided on Elm Street at Lancaster Street; two spaces in a proposed recessed parking area on the east side of Lancaster Street and, three spaces in front of the Campus. Eight additional parking spaces are provided, for short time periods, in the designated Elm Street bus loading zone for student drop-off and pick-up in private vehicles. Students will also be allowed to exit the school in the afternoon through doors directly onto Kennebec Street for pick-up.

Each of the three designated drop-off areas adjacent to the main Campus entrance will be signed for *"5-Minute Loading and Unloading Only"*. Baxter Academy staff will be assigned to monitor and control the student activities in the general area of the Campus to minimize the disruption to other motor vehicle operators and ensure the safety of the Baxter Students.

Recommended Actions

- Baxter Academy will send annually, prior to the beginning of the school year, an introductory letter to all parents reminding them to only drop-off and pick-up students in the designated pick-up/drop-off areas. Parents will also be encouraged, when feasible, to drive the student passenger(s) to their respective place of work with the student walking to/from the 185 Lancaster Street Campus.
- Baxter Academy staff will strategically locate reflectorized traffic cones in curb areas where the discharging or pick-up of students is both unsafe and undesirable.
- Baxter Academy staff will be required to wear a reflectorized orange vest meeting the latest OSHA standards.
- Baxter Academy staff will review annually, in advance of the school year, that all mandatory signage denoting each designated drop-off zone are in place. If upgrades or replacements are necessary, the City's Traffic Division should be notified.

Automobile Travel: Baxter Academy administration will encourage both staff and the student body to travel to/from the 185 Lancaster Street Campus using other modes of travel other than private vehicle. Baxter Academy will provide off-street parking accommodations to staff members in a 50-space, off-street parking lot adjacent to the Campus. Staff members will be issued a parking permit by the Administration for use of the parking lot. Two designated handicap parking zones (with two-plus spaces in each) located along Lancaster Street are available for use by both staff and students alike. Further, an off-site parking lot in the rear of the Campus is also available for handicap parking, as necessary.

Students electing to travel to/from Baxter Academy in a private auto will be directed to use public off-street parking areas located on Marginal Way versus on-street spaces located near the Campus.

Recommended Actions

- Baxter Academy administrators, annually before the commencement of the school year, will send a letter to all in-coming students and members of the staff encouraging other modal travel options versus personal auto travel.
- Students who choose to commute in their personal vehicle will be directed to use public parking lots found on Marginal Way in lieu of parking on-street nearby the 185 Street Campus.
- Baxter Academy will evaluate throughout the school year both the demand and viability of providing a shuttle service connecting the public parking lots with the Campus.

Other Transportation Modal Travel: Both students and staff members will be encouraged to avail themselves of other non-auto transportation services commuting to/from the 185 Lancaster Street campus. Current other modal services include: METRO bus service, both intra-city and the inter-municipal express *Breeze* bus route; Southern Maine *Zoom* and Shuttle bus service; The Lakes Region Explorer; Casco Bay Island Transit Service with connections to Casco Bay Islands; bicycle travel; walking; carpooling, etc.

All public bus transit routes connect directly and/or indirectly through the METRO's "*HUB*" located on Elm Street near Monument Square. A short walk down Elm Street to the Campus is provided along a well-maintained sidewalk system. Pedestrian "*Walk*" signals are provided at both Monument Square and Cumberland Avenue to aid the student/staff walker crossing both major streets.

Staff or students traveling to Baxter Academy riding a bicycle will be able to safely store their bikes in bike racks located immediately adjacent to the 185 Lancaster Street Campus.

Recommend Actions

- Baxter Academy administrators, annually before the commencement of the school year, will send a letter to all in-coming students and members of the staff encouraging other modal travel options versus personal auto travel.
- Schedules and contact information for each service provider will be in a highly visible place on Campus.
- Baxter Academy staff will travel on foot between Monument Square and the Campus prior to the school year evaluating if sidewalk and traffic signal deficiencies require attention. All noted defects will be reported to the City of Portland's Public Works Department.
- Baxter Academy staff will review annually the functional condition of the on-site bicycle racks ensuring their security and operation.

Other Baxter Academy Transportation Services: Visitors to the Baxter Academy Campus will be directed to use existing on-street parking spaces when visiting the Campus. Baxter Academy

Service vendors, whether scheduled or random, will also be directed to use on-street parking spaces located in the general vicinity of the 185 Lancaster Street Campus.

Baxter Academy will evaluate the daily parking demand of both Campus visitors and vendor service providers and evaluate if other parking arrangements are deemed warranted.

Recommended Actions

- Baxter Academy administrators will monitor daily the Campus parking needs of both Visitors and Service Vendors and adjust, as necessary, the accommodation of their parking needs.
- Service Vendors will be requested, when possible, to approach the Campus during time periods other than the "*peak*" arrival and departure times of the school.

Baxter Academy
for Technology and Science

DRAFT

Student Drop-Off and Pick-Up by Private Vehicle Policy

To ensure student safety and to promote smooth transportation flow around Baxter Academy, as required by the City of Portland, we require all parents and students to understand the rules for student drop-off and pick-up by private vehicle at 185 Lancaster Street. The following rules pertain to drop-off and pick-up schedules and procedures. **Please sign this form to attest that you have read, do understand, and will abide by our policy.** *A map of pick-up locations is appended to this document. Please keep it for reference during the school year.*

- Pick-up and drop-off locations for Baxter Academy will be located in the designated spaces on Elm Street and Lancaster Street.
- On Elm Street, parents have 150 feet of parking to quickly drop their students off in the morning before the buses arrive at _____.
- On Lancaster Street, parents have 8 designated spots to use for dropping students off in the morning.
- On Kennebec Street, parents can drop off and pick up students with monitored exits on that side of the building.

MORNING DROP OFF

- Students being dropped off at Baxter Academy are required to **exit the vehicle *on the curb side*** and enter the building as quickly as possible.
- If a bus approaches the bus loading zone on Elm Street, parents must make way for the bus to pull over and offload students.

AFTERNOON PICK UP

- Students who are walking, bicycling, using public transportation or being picked up by private vehicle will be dismissed first. ***Cars queuing on Elm Street to pick up these students will be required to depart quickly to make room for the school buses arriving at 3:__***.
- Pick up times for students will be between the times of _____ and _____, and will be strictly monitored by staff to ensure space is open for the buses.
- Students who take Baxter's school buses will wait in the great room until 3:15, and will not be allowed to leave the building until the buses arrive.
- Buses will arrive for student pick up at 3:15 p.m. sharp. Students will be dismissed to load the buses quickly.

Baxter Academy staff will enforce these rules on a daily basis. Please sign and return this form to signify that you will abide by these important rules.

Every student must have this document on file, even if drop off or pick up at the school will be a rare occurrence.

Student Name(s): _____ Grade(s):_____

Parent/Guardian Name: _____ Parent/Guardian Phone #: _____

Parent/Guardian Vehicle Make: _____ Model: _____ Plate #: _____

Additional Possible Drop-Off/Pick-Up Vehicle Make, Model, and Plate #:_____

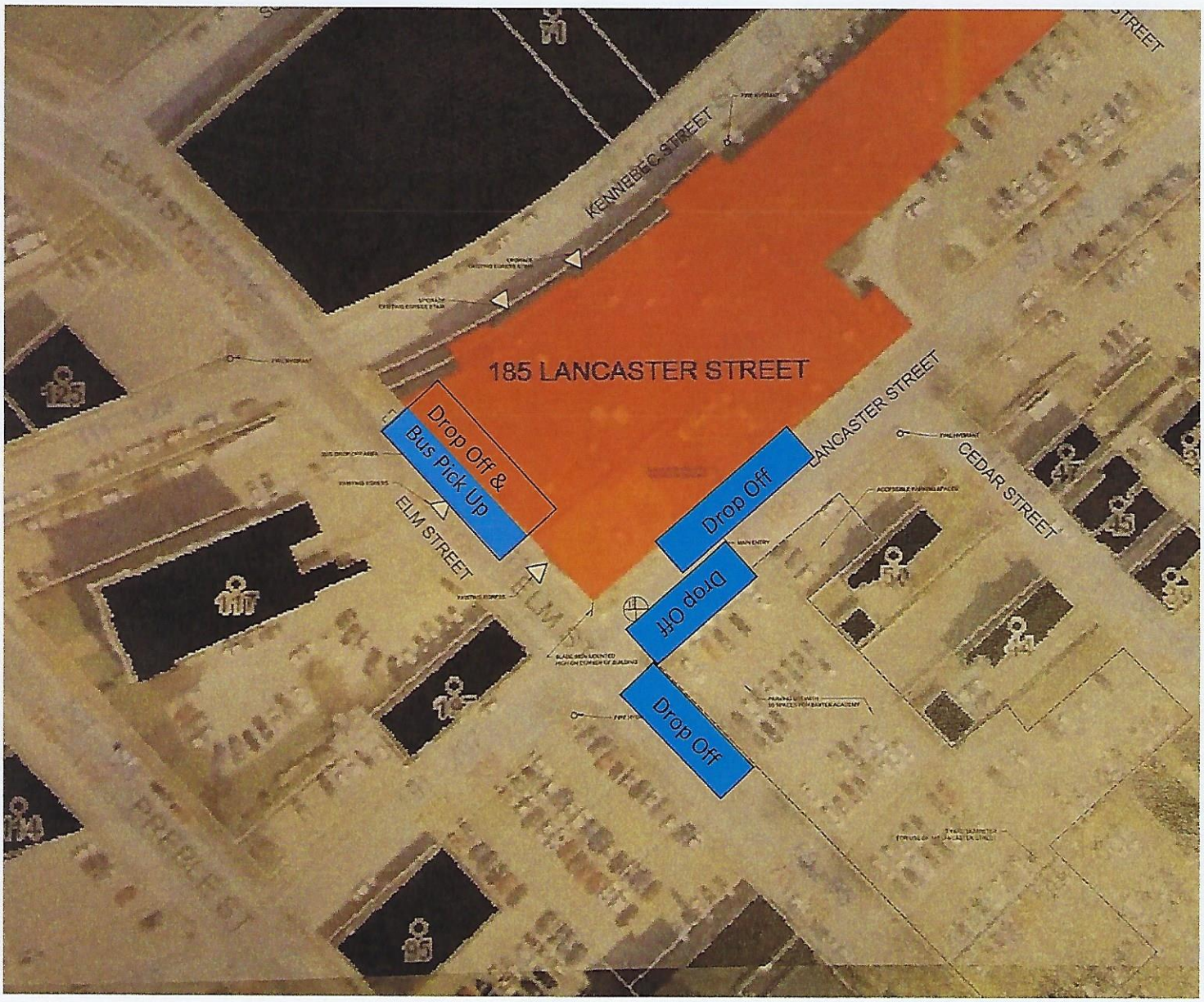
I have read the following guidelines and will adhere to them.

_____ _____

Student Signature Parent/Guardian signature

DRAFT

Drop off and Pick up Locations



Att. Y

March 19 , 2017

Baxter Academy for Technology and Science

TRANSPORTATION OPERATIONS and MANAGEMENT PLAN

Introduction

Baxter Academy for Technology and Science is fully committed to providing the necessary resources and services to maintain the highest level of student safety at its 185 Lancaster Street Campus. The Traffic Operations and Management plan provides both the administration and staff of Baxter Academy a "*blue-print*" of recommended operational principles and guidelines that, with implementation, ensures a safe environment for students, staff and the general public.

Proposed Transportation Operations and Management Plan

School Zone Safety Features: Baxter Academy will install a flashing school zone speed limit sign assembly on Elm Street in advance of the 185 Lancaster Street Campus. The flashing school light system will operate with a timer controlling time periods of operation. An "*End School Zone*" sign will be appropriately located on Elm Street advising motorists that they are leaving the school zone area. Secondary school speed zone signage will also be installed on both approaches of Lancaster Street that informs approaching motorists they are entering a designated school zone.

Baxter Academy will augment the City's annual crosswalk re-striping program, re-painting each of the existing crosswalk markings early spring of each year at the Lancaster Street/Elm Street intersection.

Baxter Academy staff will serve as a pedestrian crossing guard at the Lancaster/Elm Streets intersection aiding students crossing the Elm Street approach. A portable "*school crossing*" sign will be appropriately located in the center of the intersection reinforcing the school zone area.

Recommended Actions

- Baxter Academy will consult with the City's Traffic Division in advance of the school calendar year to review hourly and daily timing inputs for the automated school flashing speed limit assembly.
- Baxter Academy will field review, annually during mid-summer, the operational status of all traffic signage and roadway striping amenities. Noted deficiencies will be appropriately reported to the City's Traffic Division.
- Baxter Academy will re-stripe the crosswalk markings at the Lancaster Street/Elm Street intersection as soon as practical in the spring of each year. Coordination with Public Works in completing this task is essential. Baxter Academy assumes that the City will re-stripe the intersection markings prior to the beginning of the school year consistent with their current practices at all other City school locations.
- Baxter Academy staff, serving as an intersection crossing guard, will be required to wear a reflectorized orange vest meeting the latest OSHA standards. They will direct

traffic appropriately using a STOP paddle. Staff members performing this service should meet with City Officials annually, in advance of the start of the school year, to review the appropriate procedures serving as an adult crossing guard.

Charter School Bus Service: Baxter Academy provides charter school bus service from three service areas in Southern Maine; Lewiston, Windham and Topsham. Students will be picked up daily at a designated bus area in each of the three communities and scheduled to arrive on-campus at approximately ___ AM (Schedule to be established later). Each of the three buses will discharge the students and return to a daytime queuing location off-site. They will return to the Baxter Academy Campus in the afternoon at ___ PM (Schedule to be established later) picking students up for the return trip to each of the three service communities.

The charter school buses are fully equipped with all mandatory school bus safety features including school flashing lights and STOP paddle systems, etc.

Charter buses will line-up in succession on Lancaster Street adjacent to the main Campus entrance to drop-off and pick-up students. Buses will stop "*in-line*" on Lancaster Street with activation of both flashing lights and STOP paddle equipment.

Recommended Actions

- Baxter Academy will meet with the City's Transportation Office, Police Department, and representatives of the Charter School Bus Company to prepare a bus routing plan for each of the three bus routes.
    - The bus routing plan must ensure that all buses enter Lancaster Street through the Chestnut Street intersection.
    - The first bus must stop near Elm Street without blockage of the pedestrian crosswalk.
    - The bus routing plan will be reviewed annually with the City offices and adjusted as necessary.
- Each of the three charter school buses will operate their mandatory flashing school lights and STOP paddle during all loading and unloading activities.
- Baxter Academy staff will supervise the loading and unloading of students from each bus ensuring orderly and safe passage of students and minimal disruption to traffic. Students will be ushered in an orderly fashion to/from the entrance door of the school.
- Baxter Academy staff will be required to wear a reflectorized orange vest meeting the latest OSHA standards.

Parent Drop-Offs: Four designated parent drop-off zones are proposed near the main school entrance on Lancaster Street. A total of eighteen vehicle spaces are provided. Three spaces are provided on Elm Street along the frontage of the staff parking lot; three spaces on Lancaster Street at the main entrance; five spaces on Kennebec Street adjacent to the Campus building and 8 spaces are provided on Elm Street between Lancaster and Kennebec Streets.

Each of the four designated drop-off areas will be signed *"5-Minute Loading and Unloading Only"* or other approved designation as directed by the City.

Recommended Actions

- Baxter Academy will send annually, prior to the beginning of the school year, an introductory letter to all parents reminding them to only drop-off and pick-up students in the designated pick-up/drop-off areas. Parents will also be encouraged, when feasible, to drive the student passenger(s) to their respective place of work with the student walking to/from the 185 Lancaster Street Campus.
- Baxter Academy staff will strategically locate reflectorized traffic cones in curb areas where the discharging or pick-up of students is both unsafe and undesirable.
- Baxter Academy staff will be required to wear a reflectorized orange vest meeting the latest OSHA standards.
- Baxter Academy staff will review annually, in advance of the school year, that all mandatory signage denoting each designated drop-off zone are in place. If upgrades or replacements are necessary, the City's Traffic Division should be notified.

Automobile Travel: Baxter Academy administration will encourage both staff and the student body to travel to/from the 185 Lancaster Street Campus using other modes of travel other than private vehicle. Baxter Academy will provide off-street parking accommodations to staff members in a 50-space, off-street parking lot adjacent to the Campus. Staff members will be issued a parking permit by the Administration for use of the parking lot. Two designated handicap parking zones (with two-plus spaces in each) located along Lancaster Street are available for use by both staff and students alike. Further, an off-site parking lot in the rear of the Campus is also available for handicap parking, as necessary.

Students electing to travel to/from Baxter Academy in a private auto will be directed to use public off-street parking areas located on Marginal Way or other approved off-street parking areas versus on-street spaces located near the Campus.

Recommended Actions

- Baxter Academy administrators, annually before the commencement of the school year, will send a letter to all in-coming students and members of the staff encouraging other modal travel options versus personal auto travel.
- Students who choose to commute in their personal vehicle will be directed to use public parking lots found on Marginal Way or other approved off-street parking areas in lieu of parking on-street nearby the 185 Street Campus.
- Baxter Academy will evaluate throughout the school year both the demand and viability of providing a shuttle service connecting the public parking lots with the Campus.

Other Transportation Modal Travel: Both students and staff members will be encouraged to avail themselves of other non-auto transportation services commuting to/from the 185 Lancaster Street campus. Current other modal services include: METRO bus service, both intra-city and the inter-municipal express *Breeze* bus route; Southern Maine *Zoom* and Shuttle bus service; The Lakes Region Explorer; Casco Bay Island Transit Service with connections to Casco Bay Islands; bicycle travel; walking; carpooling, etc.

All public bus transit routes connect directly and/or indirectly through the METRO's "*HUB*" located on Elm Street near Monument Square. A short walk down Elm Street to the Campus is provided along a well-maintained sidewalk system. Pedestrian "*Walk*" signals are provided at both Monument Square and Cumberland Avenue to aid the student/staff walker crossing both major streets.

Staff or students traveling to Baxter Academy riding a bicycle will be able to safely store their bikes in bike racks located immediately adjacent to the 185 Lancaster Street Campus.

Recommend Actions

- Baxter Academy administrators, annually before the commencement of the school year, will send a letter to all in-coming students and members of the staff encouraging other modal travel options versus personal auto travel.
- Schedules and contact information for each service provider will be in a highly visible place on Campus.
- Baxter Academy staff will travel on foot between Monument Square and the Campus prior to the school year evaluating if sidewalk and traffic signal deficiencies require attention. All noted defects will be reported to the City of Portland's Public Works Department.
- Baxter Academy staff will review annually the functional condition of the on-site bicycle racks ensuring their security and operation.

Other Baxter Academy Transportation Services: Visitors to the Baxter Academy Campus will be directed to use existing on-street parking spaces when visiting the Campus. Baxter Academy Service vendors, whether scheduled or random, will also be directed to use on-street parking spaces located in the general vicinity of the 185 Lancaster Street Campus.

Baxter Academy will evaluate the daily parking demand of both Campus visitors and vendor service providers and evaluate if other parking arrangements are deemed warranted.

Recommended Actions

- Baxter Academy administrators will monitor daily the Campus parking needs of both Visitors and Service Vendors and adjust, as necessary, the accommodation of their parking needs.
- Service Vendors will be requested, when possible, to approach the Campus during time periods other than the "*peak*" arrival and departure times of the school.

Att. Z

Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
(207) 774-3603
(207) 400-6890 mobile
trafficsolutions@maine.rr.com

March 19, 2017

Thomas A. Errico, P.E.
Senior Associate
Traffic Engineering Director
T.Y. Lin International
12 Northbrook Drive
Falmouth, ME 04105

RE: Baxter Academy for Technology and Science – Response to Traffic Comments

Dear Tom:

We very much appreciated the opportunity to meet with you last Wednesday to review your comments. Based upon our discussions we have appropriately updated both the street improvement plan for Lancaster Street and associated traffic reports and are submitting them herewith for your final review and approval. Highlights of the changes include:

- The Lancaster Street improvement plan has been revised eliminating the prior parking bay design concept and replacing with an alignment following the existing edge of pavement.

- The Charter school buses will now load and unload on Lancaster Street "*in-line*" with the first bus stopped near Elm Street. Buses will operate their flashing lights and STOP paddle mechanisms during all loading and unloading activities.

- The designated parent drop-off/pick-up areas have been revised providing three spaces on Lancaster Street adjacent to the main entrance; three spaces on Elm Street adjacent to the staff parking lot; eight spaces on Elm Street between Lancaster and Kennebec Streets and, five spaces on Kennebec Street adjacent to the Campus building. Your request to designate at least two spaces in the staff parking lot for parent drop-offs was considered but the lot will likely be operated with a card access system installed by the landlord, which would preclude uncontrolled entry to the lot. Attached is an aerial plan that identifies each of the noted proposed drop-off parking areas.

Please find enclosed for your review and information an updated copy of the Transportation Operations and Management Plan for Baxter Academy, which has been revised incorporating the noted operational modifications.

We are also enclosing a revised copy of the Transportation Demand Management Plan for your review. The Trip Reduction Target section of the TDM plan has been changed adding the following sentence, as you requested: "***The trip target will be re-visited after the first two years of implementation.***"

Baxter Academy has carefully reviewed your request for developing a written student parking policy that requires students driving personal autos to park in the Marginal Way rideshare parking lot versus on-street. The

Administration would appreciate your consideration to not limit or restrict the parking options to a single location. They are fully committed to exploring other off-site parking options in consultation with the City that consider access, availability and, most importantly, student safety.

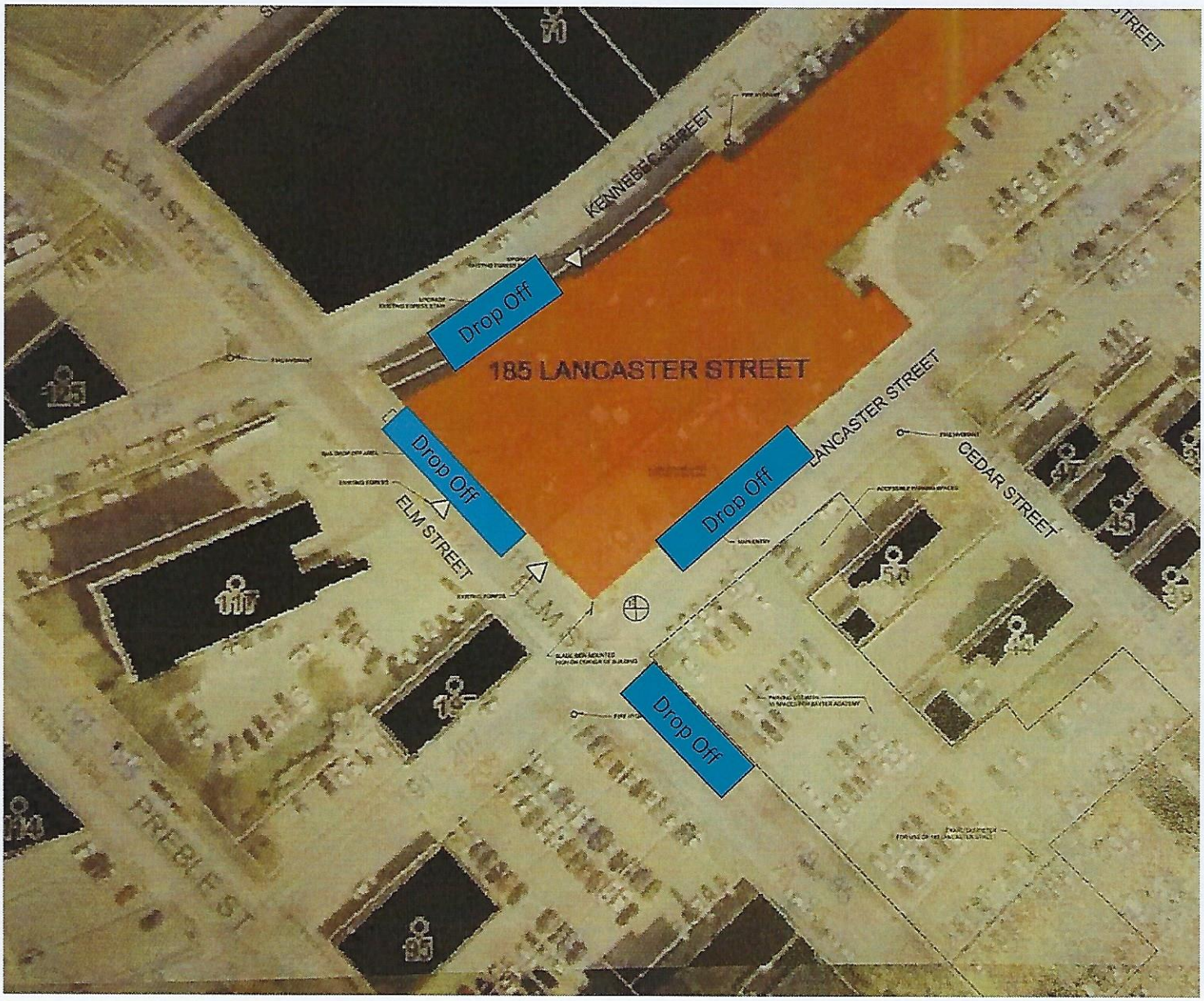
We trust that each of your concerns have been appropriately addressed.

Please contact me directly at 400-6890 with any questions or follow-up concerns.

Very truly yours,

William J. Bray, P.E.

Drop off and Pick up Locations



PC1

Google Groups

Re: Baxter Academy

Jay York <jyork2@maine.rr.com> Feb 14, 2017 10:30 AM
Posted in group: **Planning Board**

Excellent! The positive activity can't help but improve this area in the neighborhood. But hope they have enough parking. Remember about 15-17 years ago the Bayside parking changes that designated specific spots for PHS students. Plus how do the parents of Baxter Academy students feel about this neighborhood having the highest (or close to) police calls of any neighborhood in Portland? Of course PHS's students' parents don't seem to be overly concerned.

Jay York
58 Wilmot Street (in Bayside)

>

Portland Maine | Yes. Google's good here.

James Dealaman <jdealaman@portlandmaine.gov>

185 Lancaster

1 message

Sarah M <sarahmichniewicz@me.com> Mon, Feb 27, 2017 at 3:20 PM
To: planningboard@portlandmaine.gov

To Whom It May Concern,

I am writing to submit comments on traffic movement in relation to the proposed development of 185 Lancaster Street. I own and reside in a home located at 47 Cedar Street and am excited by the idea of Baxter Academy moving to 185 Lancaster Street. I feel they would be a positive addition to a neighborhood that has been long neglected.

I do, however, have concerns with how the estimated 400 students of Baxter Academy and the associated increase in vehicular and pedestrian traffic will impact the area in general and Cedar Street, Oxford Street and Hall Court in particular.

Cedar Street is two blocks long, one way, narrow, and dimly lit. The half closest to Lancaster Street in particular is in very poor condition. The sidewalks on upper Cedar were upgraded to brick several years ago while the lower half of Cedar was ignored. Pedestrians on Cedar Street (and on Oxford Street between Elm and Chestnut) generally walk in the street rather than on the degraded sidewalk surfaces.

Pedestrians traffic here is often comprised of large groups of people utilizing the services of Oxford Street Shelter and/or Preble Street Resource Center. Many of these individuals are engaged in drug or alcohol use and are not fully aware of their surroundings. They frequently obstruct traffic along Oxford Street and especially outside of the shelter at the intersection of Oxford and Cedar Streets. They often respond slowly or with resistance to drivers attempting to use the street. I am concerned that the potential for accidents and hostile interactions will increase with the addition of Baxter Academy student traffic.

Portland High School students already account for some of the traffic on Cedar Street and the surrounding area and utilize a number of the available parking spaces on the street. The presence of Whole Foods, Trader Joe's and Community Counseling have also contributed to an increase in traffic in this area over the past decade.

The section of Cedar from 47 Cedar to Lancaster Street becomes treacherous in snow and icy conditions as plowing and sidewalk snow removal are often neglected. Cars regularly slide through the stop sign and into the traffic lanes of Lancaster Street. This would be of particular concern with additional traffic consisting of novice drivers.

Large snowbanks in winter lead to severe narrowing of Cedar street. This leads to difficulty in leaving driveways and in exiting Hall Court onto Cedar. Hall Court is a narrow, one lane dirt track open to two way traffic and it is consistently neglected. People using the community garden often park on the side and partially obstruct the roadway. Hall Court connects Cedar and

Chestnut Streets and the exit onto Cedar is blind and dangerous owing to a house that fronts on the sidewalk and parked vehicles that obstruct the sightline.

I ask that addressing these concerns about roads, sidewalks and lighting be a priority for the safety of residents and students, drivers and pedestrians alike.

Sincerely yours,

Sarah Michniewicz
47 Cedar Street
Portland, ME 04101

PC3

BAYSIDE NEIGHBORHOOD ASSOCIATION

P.O. Box 11563 Portland, Maine 04104 BNAPortland@gmail.com Facebook:Bayside Neighborhood Association

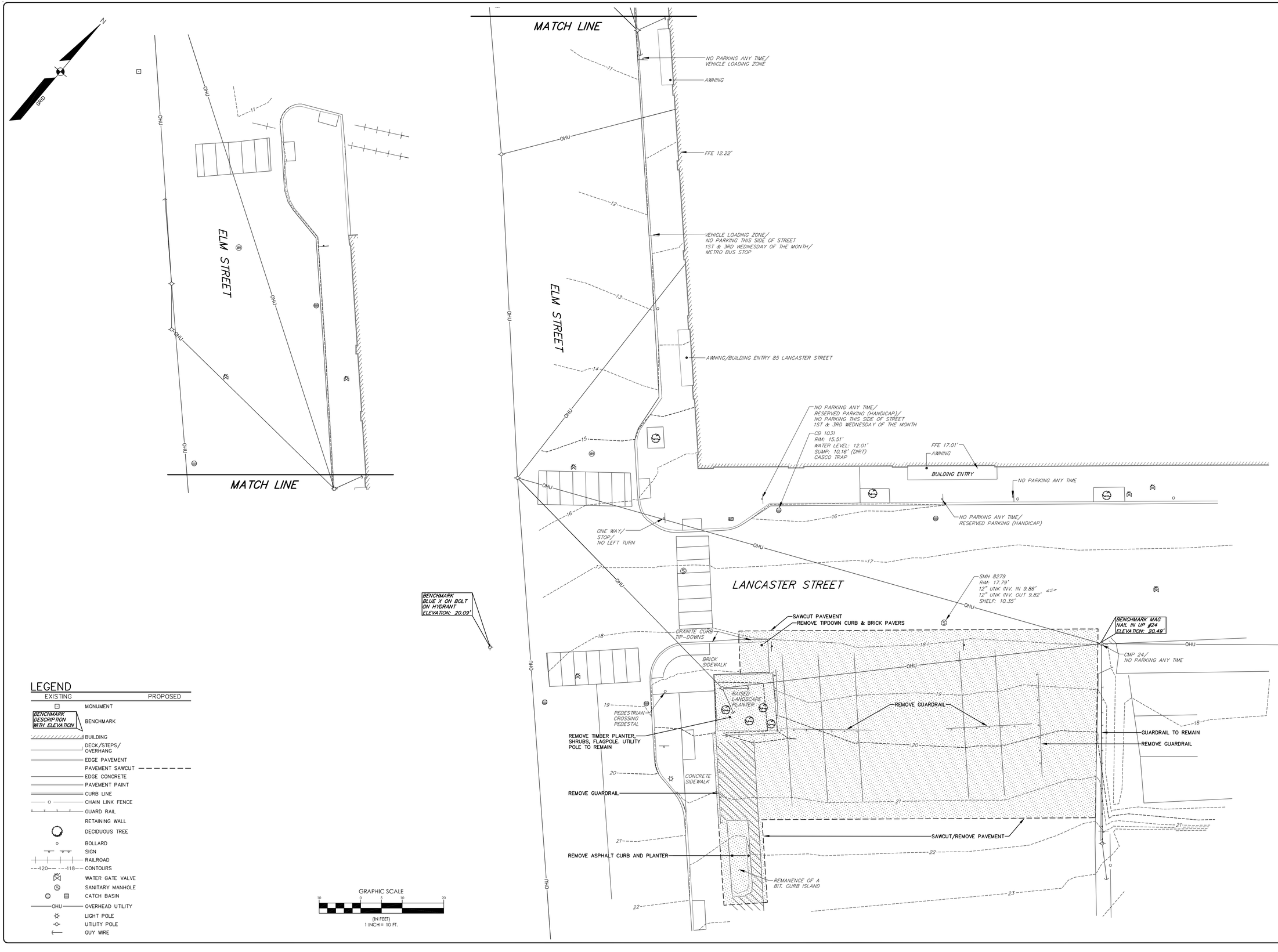
March 22, 2017

Elizabeth Boepple, Chair
Portland Planning Board
389 Congress Street
Portland, Maine 04101

Dear Ms. Boepple and members of the Planning Board:
The Bayside Neighborhood Association welcomes the move of Baxter Academy to 185 Lancaster st. Bringing over four hundred people to the neighborhood on a daily basis will bring new vitality to our neighborhood. Repurposing an historically important industrial building to become a dynamic learning center can only bring positive change to Bayside.

Baxter Academy representatives have been very responsive to issues raised by residents and we look forward to a long and productive relationship with them.

Sincerely,
Steve Hirshon, President
Bayside Neighborhood Association



LEGEND

EXISTING		PROPOSED
	MONUMENT	
BENCHMARK DESCRIPTION WITH ELEVATION	BENCHMARK	
	BUILDING	
	DECK/STEPS/ OVERHANG	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	CURB LINE	
	CHAIN LINK FENCE	
	GUARD RAIL	
	RETAINING WALL	
	DECIDUOUS TREE	
	BOLLARD	
	SIGN	
	RAILROAD	
120 118	CONTOURS	
	WATER GATE VALVE	
	SANITARY MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 INCH = 10 FT.

REGISTERED LANDSCAPE ARCHITECT
WILLIAM T. CONWAY
No. 308
STATE OF MAINE

DESIGNED	CHECKED
WTC	WTC

REV:	BY:	DATE:	STATUS:
A	WTC	2-21-17	CITY SUBMITTAL, NO.1

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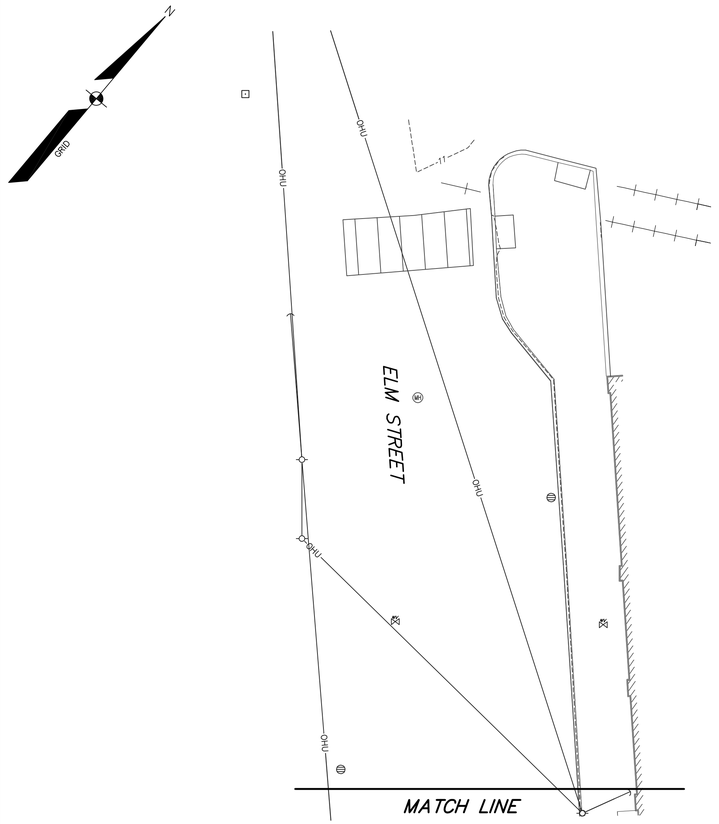
250 Goddard Rd. Suite B Lewiston, ME 04240 Tel. 207-783-5656

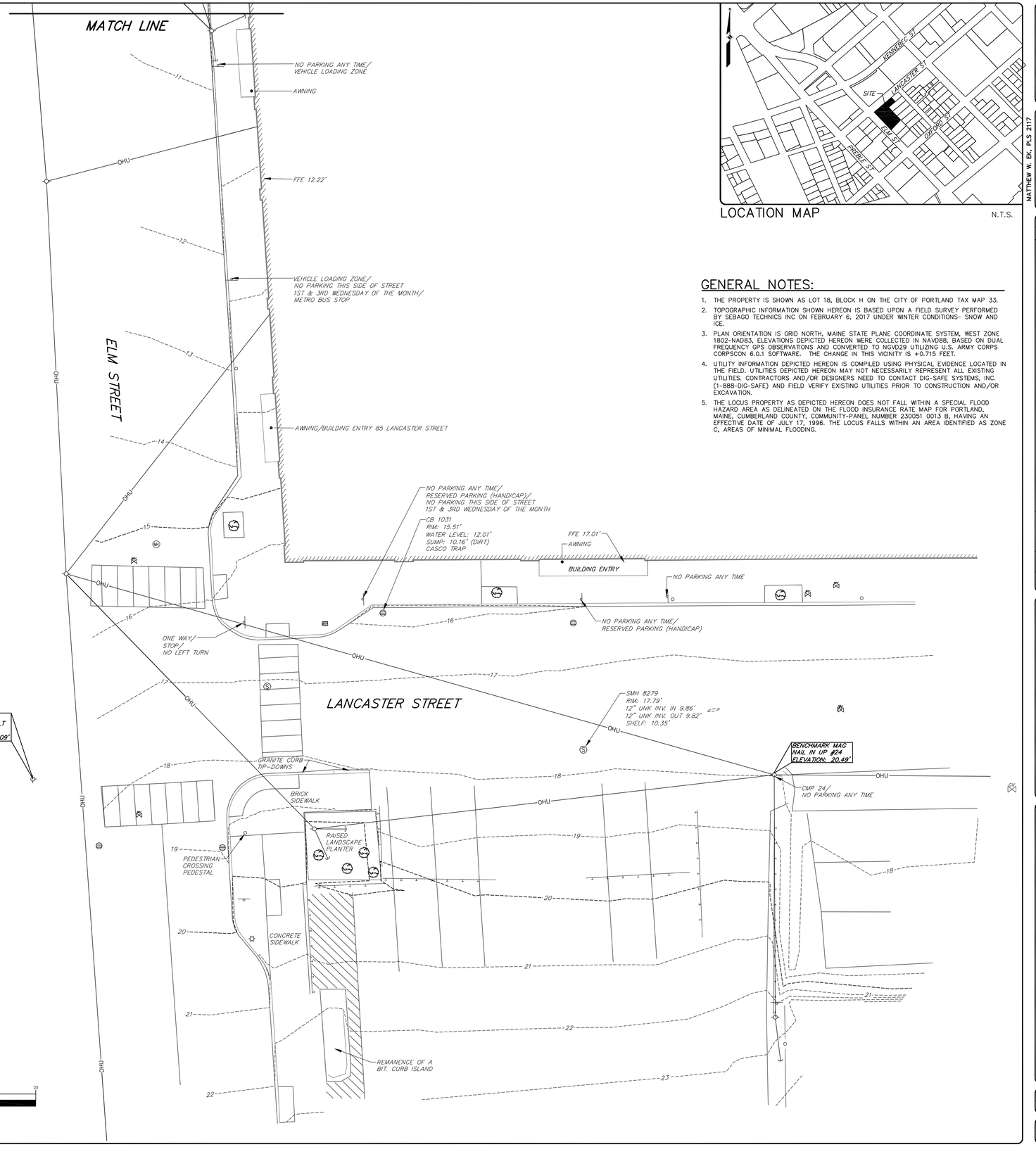
DEMOLITION PLAN
OF:
185 LANDSCASTER STREET
185 LANDCASTER STREET
PORTLAND, MAINE
FOR:
BOULOS ASSET MANAGEMENT
ONE CANAL PLAZA
PORTLAND, MAINE 04101

PROJECT NO.	SCALE
17040	1" = 10'

SHEET 2 OF 4

17040DEMO.dwg, TAB:DEMO





LOCATION MAP N.T.S.

GENERAL NOTES:

1. THE PROPERTY IS SHOWN AS LOT 18, BLOCK H ON THE CITY OF PORTLAND TAX MAP 33.
2. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED BY SEBAGO TECHNICS INC ON FEBRUARY 6, 2017 UNDER WINTER CONDITIONS- SNOW AND ICE.
3. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON WERE COLLECTED IN NAVD88, BASED ON DUAL FREQUENCY GPS OBSERVATIONS AND CONVERTED TO NGVD29 UTILIZING U.S. ARMY CORPS CORPSCON 6.0.1 SOFTWARE. THE CHANGE IN THIS VICINITY IS +0.715 FEET.
4. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
5. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR PORTLAND, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBER 230051 0013 B, HAVING AN EFFECTIVE DATE OF JULY 17, 1996. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C, AREAS OF MINIMAL FLOODING.

LEGEND

EXISTING

- MONUMENT
- BENCHMARK (BENCHMARK DESCRIPTION WITH ELEVATION)
- BUILDING
- DECK/STEPS/OVERHANG
- EDGE PAVEMENT
- EDGE CONCRETE
- PAVEMENT PAINT
- CURB LINE
- 120 118 CONTOURS
- GUARD RAIL
- DECIDUOUS TREE
- PARKING METER
- SIGN
- RAILROAD TRACKS
- WATER GATE VALVE
- HYDRANT
- SANITARY MANHOLE
- CATCH BASIN
- OHU OVERHEAD UTILITY
- LIGHT POLE
- UTILITY POLE
- GUY WIRE

GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 INCH = 10 FT.

MATTHEW W. EK, PLS 2117

STATE OF MAINE
MATTHEW W. EK
No. 2117
REGISTERED LAND SURVEYOR

DESIGNED	CHECKED
CLQ	MWE

REV:	BY:	DATE:	STATUS
C	WTC	2-21-17	CITY SUBMITTAL NO.1
B	CLQ	2-9-17	ISSUED TO CLIENT FOR REVIEW
A	CDM	2-8-17	ISSUED TO CLIENT FOR REVIEW

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250 Goddard Rd. Suite B Lewiston, ME 04240 Tel: 207-753-9825

EXISTING CONDITIONS PLAN
OF:
185 LANDSCASTER STREET
185 LANDCASTER STREET
PORTLAND, MAINE
FOR:
BOULOS ASSET MANAGEMENT
ONE CANAL PLAZA
PORTLAND, MAINE 04101

PROJECT NO.	SCALE
17040	1" = 10'

SHEET 1 OF 4

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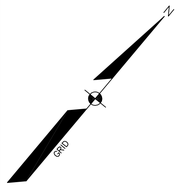

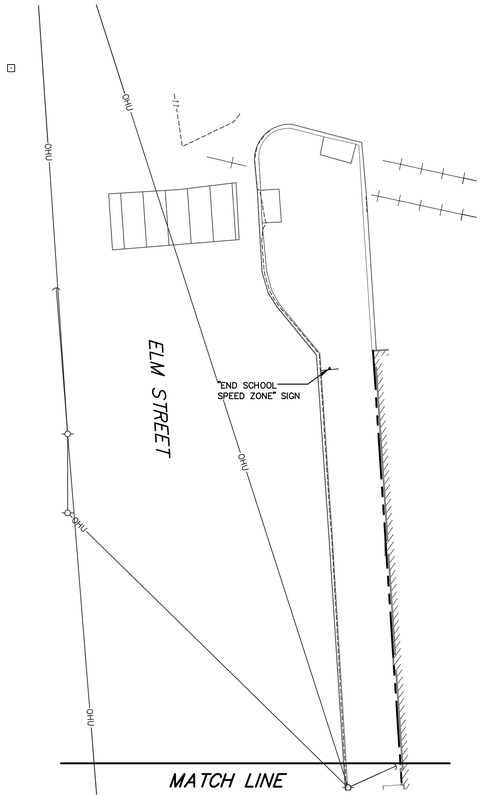

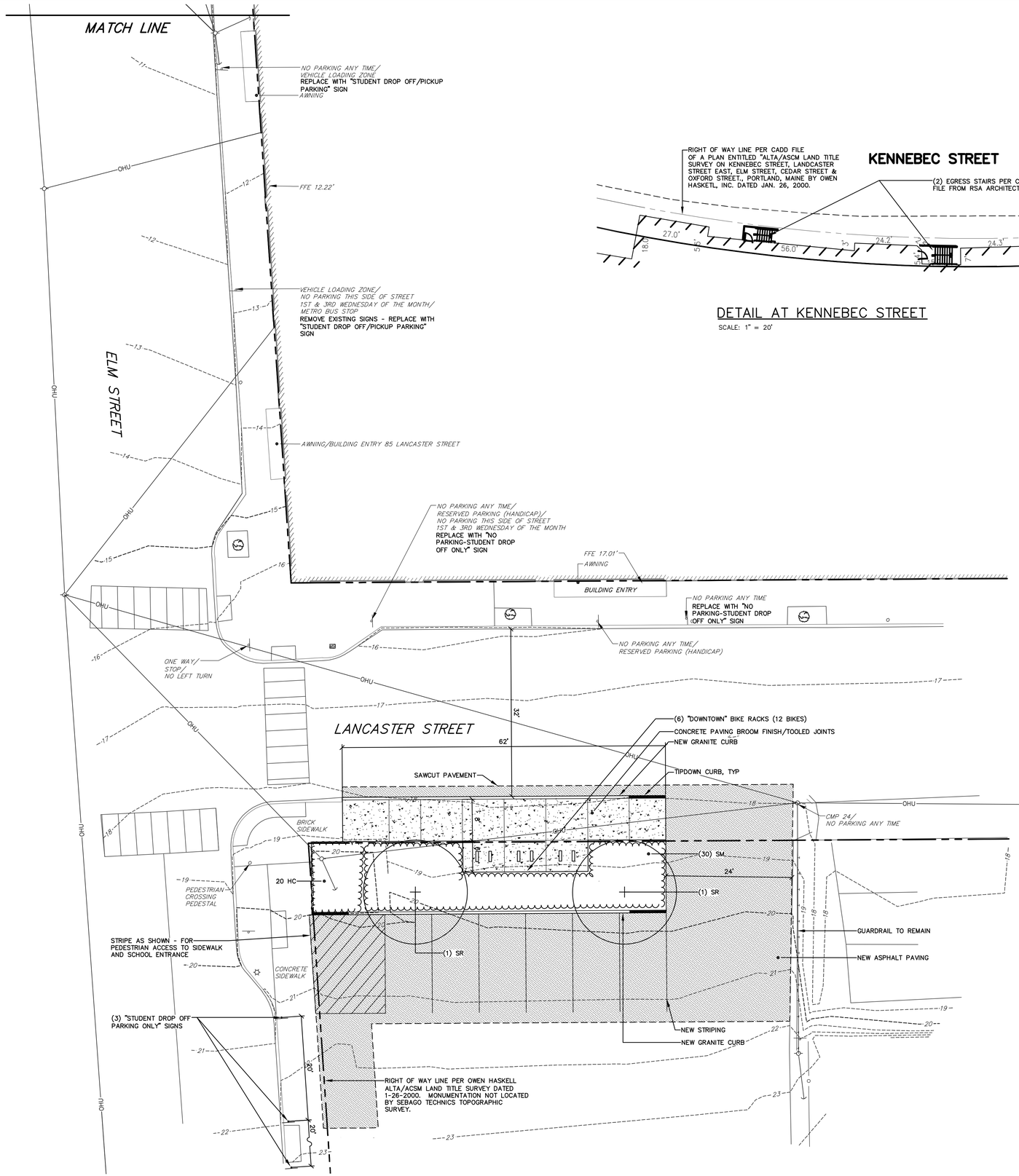

DETAIL AT KENNEBEC STREET

SCALE: 1" = 20'

PLANT SCHEDULE:

KEY	BOTANICAL NAME / COMMON NAME	SIZE / REMARKS
SR	SYRINGA R. 'IVORY SILK' / TREEFORM LILAC	2.5 INCH CALIPER
SM	SPIRAEA X. 'MAGIC CARPET' / SPIREA	NO. 3 CONTAINER
HC	HEMEROCALIS 'STELL D'ORO' / DAYLILLY	NO. 1 CONTAINER

LEGEND

EXISTING	PROPOSED
MONUMENT	
BUILDING	
DECK/STEPS/ OVERHANG	
EDGE PAVEMENT	
PAVEMENT SAWCUT	
EDGE CONCRETE	
PAVEMENT PAINT	
CURB LINE	
GUARD RAIL	
RETAINING WALL	
DECIDUOUS TREE	X
CONIFEROUS TREE	X
BOLLARD	
SIGN	
RAILROAD	
OHU OVERHEAD UTILITY	
UTILITY POLE	
GUY WIRE	

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 INCH = 10 FT.

WILLIAM T. CONWAY, RLA NO. 108

REGISTERED LANDSCAPE ARCHITECT
WILLIAM T. CONWAY
NO. 108
STATE OF MAINE
05/21/17

DESIGNED	CHECKED
WTC	WTC

REV:	BY:	DATE:	STATUS:
D.	WTC	3-21-17	CITY SUBMITTAL, NO. 4
C.	WTC	3-02-17	CITY SUBMITTAL, NO. 3
B.	WTC	2-27-17	CITY SUBMITTAL, NO. 2
A.	WTC	2-21-17	CITY SUBMITTAL, NO. 1

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75 John Roberts Rd. Suite 1A South Portland, ME. 04106 Tel. 207-200-2100
250 Goddard Rd. Suite B Lewiston, ME. 04240 Tel. 207-783-3565

SITE PLAN
OF:
185 LANDSCASTER STREET
185 LANDCASTER STREET
PORTLAND, MAINE
FOR:
BOULOS ASSET MANAGEMENT
ONE CANAL PLAZA
PORTLAND, MAINE 04101

PROJECT NO.	SCALE
17040	1" = 10'

SHEET 3 OF 5

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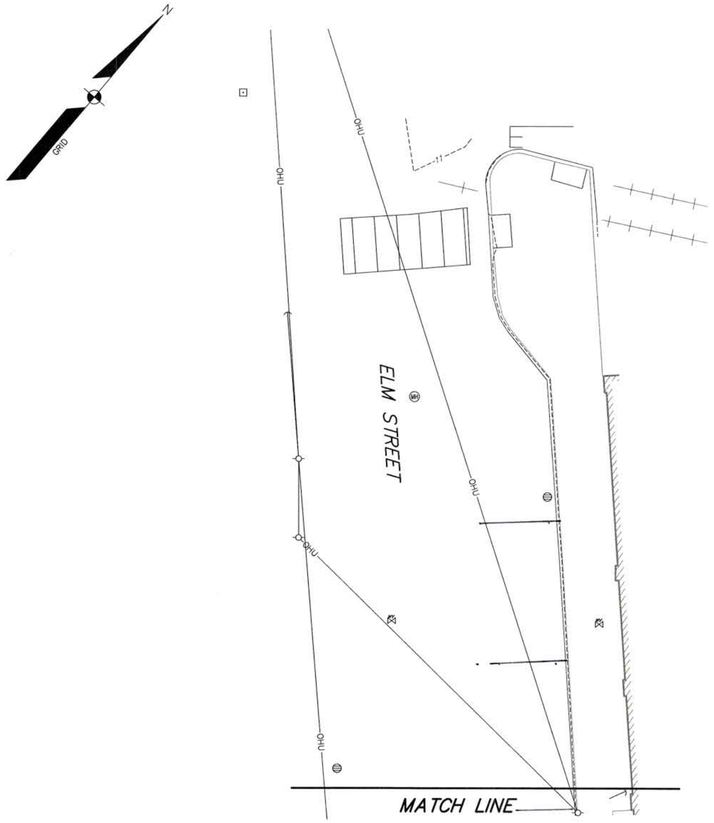
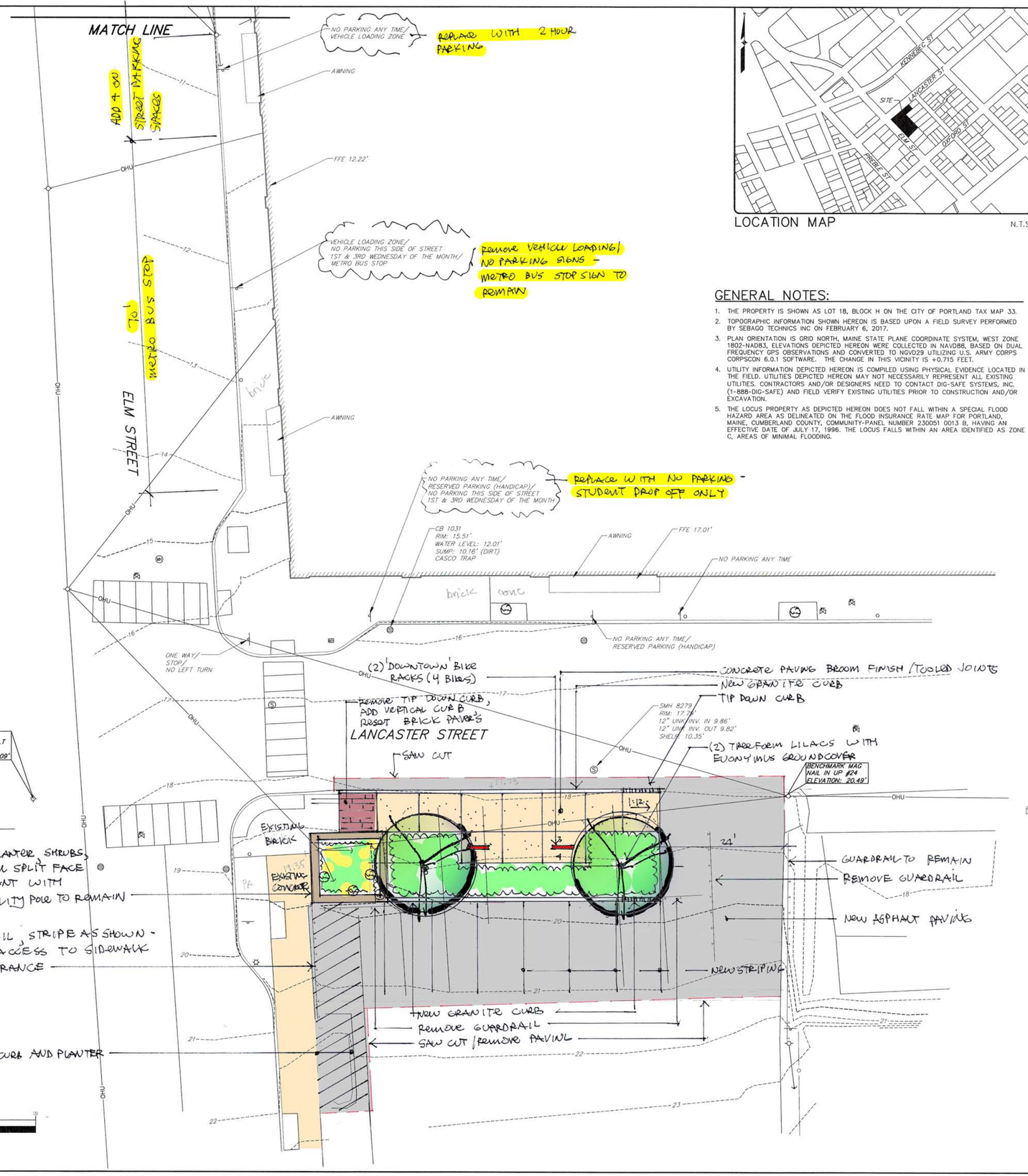




LOCATION MAP N.T.S.

CHARLES D. MARCHESE, PLS 2009

GENERAL NOTES:

1. THE PROPERTY IS SHOWN AS LOT 18, BLOCK H ON THE CITY OF PORTLAND TAX MAP 33.
2. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED BY SEBAGO TECHNICS INC ON FEBRUARY 6, 2017.
3. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON WERE COLLECTED IN NAVD88, BASED ON DUAL FREQUENCY GPS OBSERVATIONS AND CONVERTED TO NGVD29 UTILIZING U.S. ARMY CORPS CORPSCON 6.0.1 SOFTWARE. THE CHANGE IN THIS VICINITY IS +0.715 FEET.
4. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
5. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR PORTLAND, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBER 230051 0013 B, HAVING AN EFFECTIVE DATE OF JULY 17, 1996. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C, AREAS OF MINIMAL FLOODING.

LEGEND

EXISTING

- MONUMENT
- BENCHMARK (BENCHMARK DESCRIPTION WITH ELEVATION)
- BUILDING
- DECK/STEPS/ OVERHANG
- EDGE PAVEMENT
- EDGE CONCRETE
- PAVEMENT PAINT
- CURB LINE
- 120 118 CONTOURS
- GUARD RAIL
- DECIDUOUS TREE
- PARKING METER
- SIGN
- RAILROAD TRACKS
- WATER GATE VALVE
- HYDRANT
- SANITARY MANHOLE
- CATCH BASIN
- OHU OVERHEAD UTILITY
- LIGHT POLE
- UTILITY POLE
- GUY WIRE

DESIGNED	CHECKED
CLQ	CDM

REV.:	BY:	DATE:	STATUS:
A	CLQ	2-8-17	ISSUED TO CLIENT FOR REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

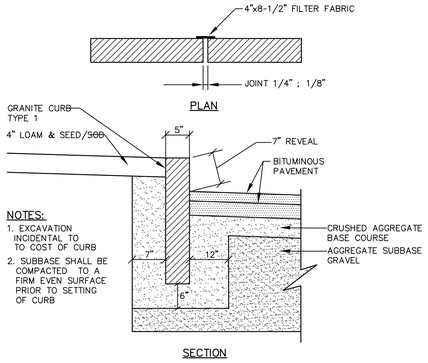
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. Suite A South Portland, ME 04106 Tel. 207-200-2100
250 Goddard Rd. Lewiston, ME 04240 Tel. 207-783-5656

EXISTING CONDITIONS PLAN
OF:
185 LANCASTER STREET
185 LANCASTER STREET
PORTLAND, MAINE
FOR:
BOULOS ASSET MANAGEMENT
ONE CANAL PLAZA
PORTLAND, MAINE 04101

PROJECT NO.	SCALE
17040	1" = 10'

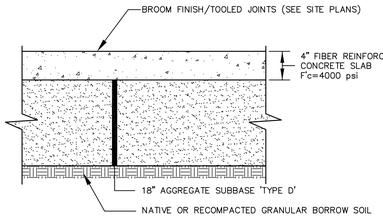
SHEET 1 OF -

17040EC.dwg, TAB:17040EC



VERTICAL GRANITE CURB

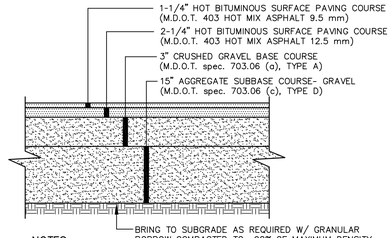
NOT TO SCALE



NOTE:
1. PROVIDE CONTRACTION CONTROL JOINTS EVERY 6' IN EACH DIRECTION

4" CONCRETE PAVING

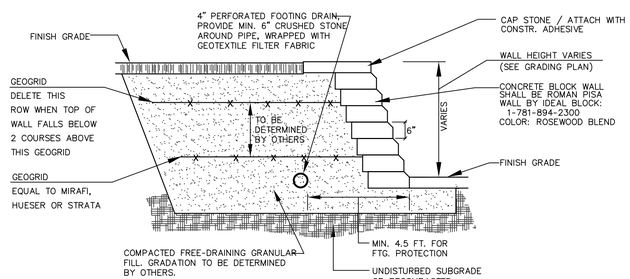
NOT TO SCALE



NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

TYP. PAVED PARKING LOT/DRIVEWAY SECTION

NOT TO SCALE

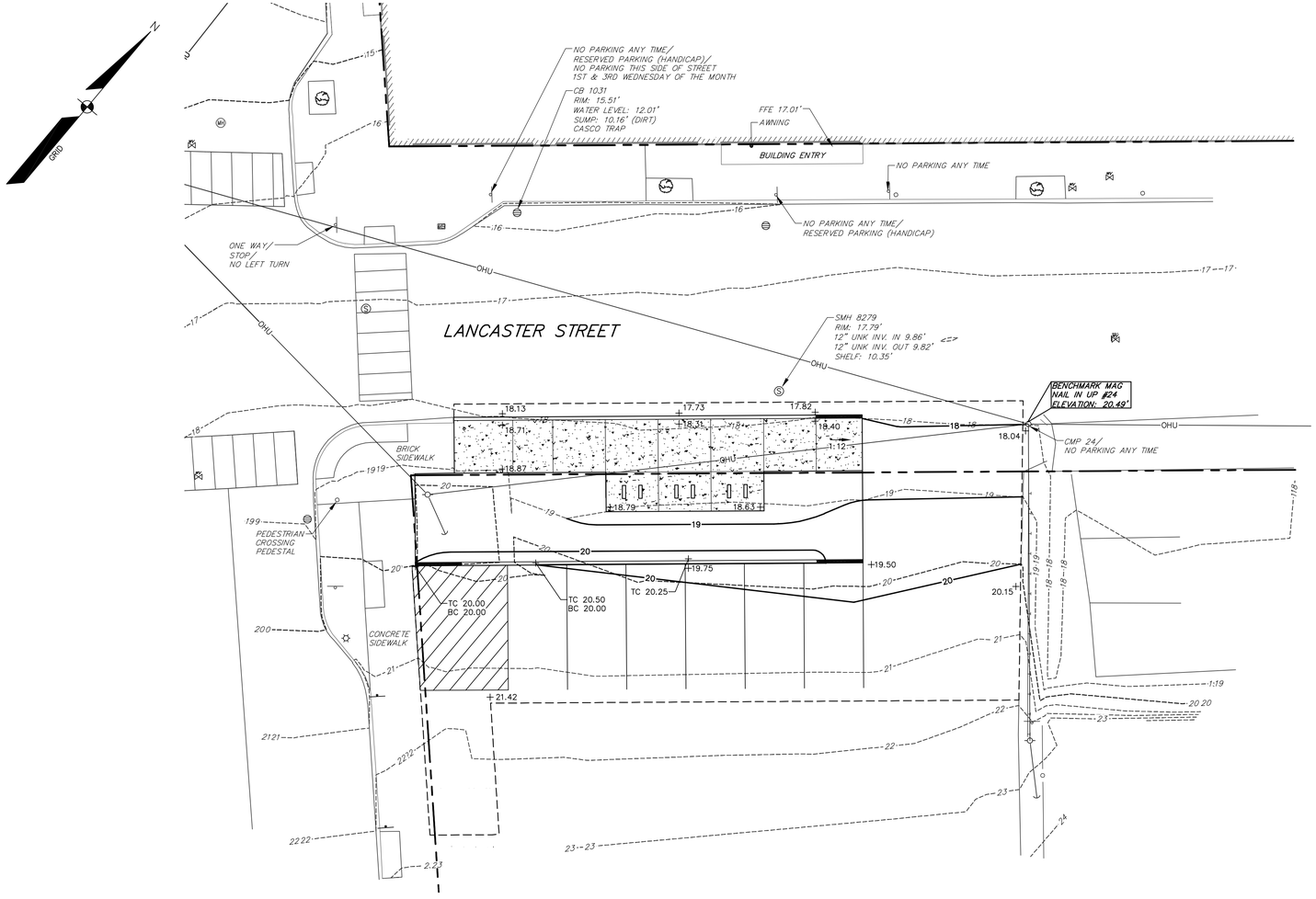


NOTE:

CONTRACTOR SHALL PROVIDE STAMPED ENGINEERING DESIGN PLANS AND CALCULATIONS FOR REVIEW BY ARCHITECT PRIOR TO CONSTRUCTION. ALL WALL DESIGNS TO BE REVIEWED BY OWNERS GEOTECHNICAL ENGINEER FOR GLOBAL STABILITY PRIOR TO SUBMITTING PLANS AND CALCULATIONS TO ARCHITECT.

CONCRETE BLOCK RETAINING WALL

NOT TO SCALE



GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 INCH = 10 FT.

LEGEND

EXISTING		PROPOSED
⊡	MONUMENT	
BENCHMARK DESCRIPTION WITH ELEVATION	BENCHMARK	
	BUILDING	
	DECK/STEPS/ OVERHANG	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	CURB LINE	
	GUARD RAIL	
	RETAINING WALL	
	DECIDUOUS TREE	
○	BOLLARD	
	SIGN	
	RAILROAD	
120 118	CONTOURS	120
	SPOT GRADE	+120.00
	WATER GATE VALVE	
Ⓢ	SANITARY MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	

WILLIAM T. CONWAY, RLA NO. 108

REGISTERED LANDSCAPE ARCHITECT WILLIAM T. CONWAY NO. 108 STATE OF MAINE 05/21/17

DESIGNED	CHECKED
WTC	WTC

REV.	BY:	DATE:	STATUS
C	WTC	3-21-17	CITY SUBMITTAL, NO. 3
B	WTC	2-27-17	CITY SUBMITTAL, NO. 2
A	WTC	2-21-17	CITY SUBMITTAL, NO. 1

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. Suite 1A South Portland, ME 04106 Tel: 207-200-2100
250 Goddard Rd. Suite B Lewiston, ME 04240 Tel: 207-783-9826

GRADING PLAN & DETAILS
OF:
185 LANDSCASTER STREET
185 LANDCASTER STREET
PORTLAND, MAINE
FOR:
BOULOS ASSET MANAGEMENT
ONE CANAL PLAZA
PORTLAND, MAINE 04101

PROJECT NO.	SCALE
17040	AS NOTED

SHEET 4 OF 5

17040GU.dwg, TAB: GU

CERTIFICATION

ALTA SURVEY, JOB NO. 99336P DATED JANUARY 24, 2000
PROPERTY LEGAL DESCRIPTION ATTACHED AS EXHIBIT A.

THIS ALTA SURVEY WAS MADE FOR THE BENEFIT OF BAYSIDE II, LLC A MAINE LIMITED LIABILITY COMPANY, THE UNION CENTRAL LIFE INSURANCE COMPANY, AND FIRST AMERICAN TITLE INSURANCE COMPANY.

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE INFORMATION AND BELIEF THAT SAID ALTA SURVEY:

1. WAS PREPARED BY ME OR UNDER MY SUPERVISION;
2. WAS MADE ON THE GROUND AND IS CORRECT;
3. DELINEATES ALL LOT LINES AND SHOWS THE LOCATION AND DIMENSION OF ALL IMPROVEMENTS (EXCLUDING PADS, ROADWAYS AND PARKING AREAS) ON THE SUBJECT PROPERTY AND THE DISTANCE THEREFROM TO THE NEAREST FACING EXTERIOR PROPERTY LINES OF THE SUBJECT PROPERTY;
4. SHOWS THE LOCATION OF ALL VISIBLE OR RECORDED EASEMENTS, RIGHTS-OF-WAY AND OTHER MATTERS OF RECORD AFFECTING OR BENEFITING THE SUBJECT PROPERTY AS DISCLOSED BY MORTGAGEE TITLE INSURANCE COMMITMENT NO. TOYT13-GROUP B ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY.
5. SHOWS THE MEANS OF ACCESS AND LOCATION AND RIGHTS-OF-WAY BOUNDARIES OF ALL ADJOINING STREETS TOGETHER WITH THE WIDTH AND THE NAME THEREOF;
6. SHOWS ANY AND ALL BUILDING SETBACK LINES ESTABLISHED BY APPLICABLE ZONING AND/OR OTHER GOVERNMENTAL ORDINANCES OR REGULATIONS.

I DO FURTHER CERTIFY THAT:

7. THERE ARE NO ENCROACHMENTS UPON THE BOUNDARY LINES OF THE SUBJECT PROPERTY OR UPON ANY EASEMENT AREAS EXCEPT AS SHOWN ON THE SURVEY.
8. INGRESS AND EGRESS TO THE SUBJECT PROPERTY IS PROVIDED BY ELM STREET, KENNEBEC STREET, CHESTNUT STREET, CEDAR STREET AND LANCASTER STREET EAST, UPON WHICH PROPERTY FRONTS, THE SAME BEING A PAVED AND DEDICATED PUBLIC RIGHT-OF-WAY ACCEPTED AND MAINTAINED BY CITY OF PORTLAND.
9. THE TITLE LINES AND LINES OF ACTUAL POSSESSION ARE THE SAME, EXCEPT AS SHOWN.
10. THE SUBJECT PROPERTY DOES NOT SERVE AND IS NOT SERVICED BY ANY ADJOINING PROPERTY FOR DRAINAGE, INGRESS AND EGRESS OR ANY OTHER PURPOSE;
11. THE STREET ADDRESS OF THE SUBJECT PROPERTY IS SHOWN HEREON.
12. THE TOTAL SQUARE FOOT AREA OF THE SUBJECT PROPERTY IS SHOWN HEREON:
13. THE TOTAL SQUARE FOOT AREA OF THE BUILDING(S) LOCATED ON THE SUBJECT PROPERTY IS SHOWN HEREON.
14. THE TOTAL NUMBER OF PARKING SPACES LOCATED ON THE SUBJECT PROPERTY IS SHOWN HEREON.
15. THE SUBJECT PROPERTY HEREON DOES NOT LIE IN A 100 YEAR FLOOD PLAIN, A FLOOD WAY OR AN AREA THAT HAS BEEN IDENTIFIED BY THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT OR ANY OTHER GOVERNMENTAL AUTHORITY AS A FLOOD HAZARD AREA UNDER THE NATIONAL FLOOD INSURANCE ACT OF 1968 (24 CFR 1901.1), AS AMENDED (SUCH DETERMINATION HAVING BEEN MADE FROM A PERSONAL REVIEW OF FLOOD MAP NUMBER 230051-0013 B. EFFECTIVE DATE JULY 17, 1986. WHICH IS THE LATEST AVAILABLE FLOOD MAP FOR SUBJECT PROPERTY).
16. THE DESCRIPTION FOR PARCELS 1, 2 AND 3 ARE THE SAME AS PARCELS 4,5,7,8,9,10,11,13,14,15,16,18,19,20,21,22,23,24, 26,33,34 AND 37 IN SOURCE DEED 13,803, PAGE 4.

I DO FURTHER CERTIFY THAT THE SURVEY REPRESENTED HEREON MEETS THE REQUIREMENTS OF THE STATE OF MAINE, AND SUCH OTHER RULES AND REGULATIONS AS MAY BE APPLICABLE TO SURVEYS PERFORMED IN SAID STATE, WITH THE EXCEPTION OF NO REPORT AND NO MARKERS SET.

THE UNDERSIGNED EXPRESSLY UNDERSTANDS AND AGREES THAT (a) THIS CERTIFICATE IS MADE TO INDUCE LENDER TO EXTEND CREDIT SECURED BY A MORTGAGE COVERING THE SUBJECT PROPERTY AND TO INDUCE THE TITLE COMPANY TO ISSUE A POLICY OF TITLE INSURANCE INSURING THE VALIDITY AND PRIORITY OF SUCH MORTGAGE; (b) BOTH LENDER AND TITLE COMPANY ARE ENTITLED TO RELY ON THIS PLAT OF SURVEY AS BEING TRUE AND ACCURATE IN ALL RESPECTS AND UPON THIS CERTIFICATE AS BEING TRUE AND ACCURATE; AND (c) THE CONSIDERATION PAID TO THE UNDERSIGNED FOR THE PREPARATION AND CERTIFICATION OF SUCH SURVEY HAS BEEN PAID, IN PART, FOR THE BENEFIT OF LENDER AND TITLE COMPANY AND IN ANTICIPATION OF THEIR RELIANCE.

OWEN HASKELL, INC.

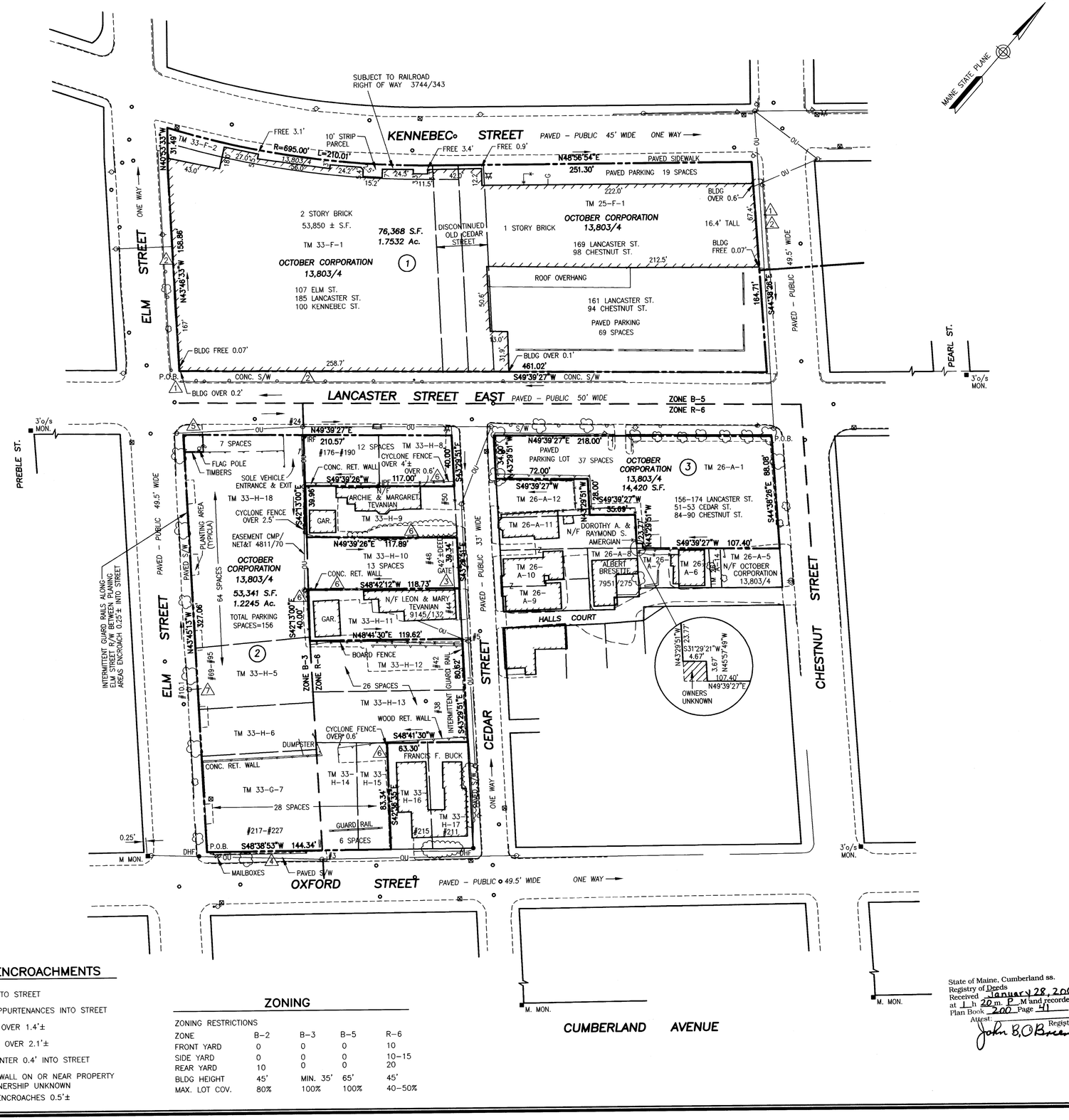
DATED: 1-27-00

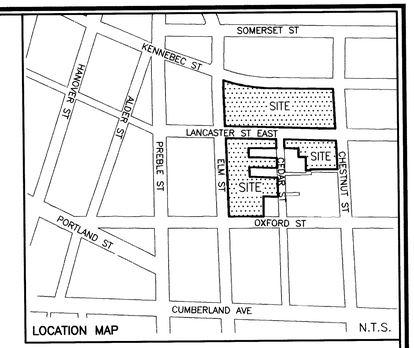
P.R. Cn

PROFESSIONAL LICENSE NO. 509

STATE OF MAINE — PAUL R. CRAN — 509 — REGISTERED PROFESSIONAL LAND SURVEYOR

SEAL





LEGEND

- HYDRANT
- UTILITY POLE
- MANHOLE
- CATCH BASIN
- SIGN
- TREE
- GUARD RAIL
- RETAINING WALL
- FENCE
- CURB
- EDGE OF PAVEMENT
- OU — OVERHEAD UTILITIES
- G — GAS LINE
- ZONE LINE
- BUILDING
- P.O.B. — POINT OF BEGINNING OF NEW SURVEY DESCRIPTION
- S/W — SIDEWALK
- (1) — PARCEL NO. IN NEW SURVEY DESCRIPTION

PLAN REFERENCES

1. SURVEY MADE FOR WILBUR F. TRASK JULY 31, 1906 BY E.C. JORDAN (FB 54/4).
2. SURVEY FOR ABRAHAM MOORGOFSKY DECEMBER 21-22, 1920 BY E.C. JORDAN (FB 83/86).
3. PLAN RECORDED IN DEED BOOK 107, PAGE 213 FOR DORCAS MOODY AND WILLIAM WEBB.

GENERAL NOTES

1. BEARINGS ARE BASED ON MAINE STATE GRID WEST ZONE PER COORDINATES ON CONTROL POINTS PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
2. STREET NUMBERS ARE TAKEN FROM TAX MAP.
3. SOME PARKING SPACES ENCROACH INTO STREETS.
4. SURVEY PERFORMED UNDER CONDITIONS OF SNOW COVER. NOT ALL FEATURES COULD BE OBSERVED OR LOCATED.
5. STREET LINES SHOWN ARE BASED ON MONUMENTATION FOUND AND TIES TO BUILDINGS PER SURVEYS BY E.C. JORDAN CO.
6. OWNERSHIP OF FENCES AND RETAINING WALLS ALONG PROPERTY LINES HAS NOT BEEN DETERMINED.

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

LIST OF ENCROACHMENTS

1. BUILDING INTO STREET
2. BUILDING APPURTENANCES INTO STREET
3. GATE POST OVER 1.4'±
4. GUARD RAIL OVER 2.1'±
5. TIMBER PLANTER 0.4' INTO STREET
6. FENCE OR WALL ON OR NEAR PROPERTY LINE – OWNERSHIP UNKNOWN
7. GUY WIRE ENCROACHES 0.5'±

ZONING

ZONING RESTRICTIONS

ZONE	B-2	B-3	B-5	R-6
FRONT YARD	0	0	0	10
SIDE YARD	0	0	0	10-15
REAR YARD	10	0	0	20
BLDG HEIGHT	45'	MIN. 35'	65'	45'
MAX. LOT COV.	80%	100%	100%	40-50%

GRAPHIC SCALE
0 20' 40' 80' 160'

State of Maine, Cumberland ss.
Registry of Deeds
Received January 28, 2000
at 1 h 20 m. P M and recorded in
Plan Book 200 Page 41
Attest: John B. O'Brien Register

ALTA/ACSM LAND TITLE SURVEY

ON

KENNEBEC STREET, LANCASTER STREET EAST, ELM STREET, CEDAR STREET & OXFORD STREET
PORTLAND, MAINE

MADE FOR

BAYSIDE II, LLC
P.O. BOX 266, CAPE ELIZABETH, MAINE

OWEN HASKELL, INC.
16 CASCO ST., PORTLAND, ME 04101 (207)774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	OHI	Date	Job No.
Trace By	JLW	JAN. 26, 2000	99336P
Check By	JPRC/SSS	Scale	Drwg. No.
Book No.	898	1" = 40'	1-B

□ A□ TER□ACADEM□ □□I□ TERI□ R□□ IT□U□

185 LANCASTER STREET PORTLAND, MAINE

FEBRUARY 22, 2017

FOR ADDITIONAL SITE INFORMAITON SEE CIVIL ENGINEERING DRAWINGS

1 SITE PLAN
1"=30'

PROGRESS PRINT ONLY
Not for Construction

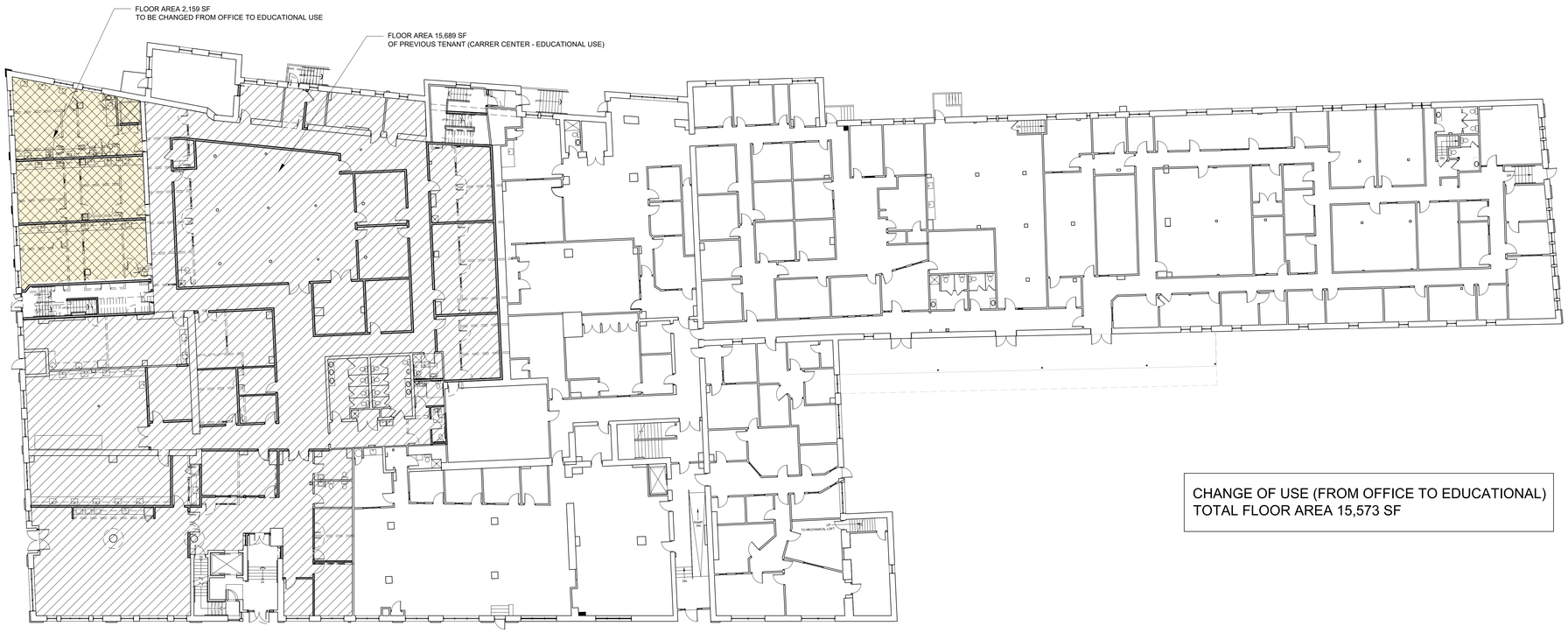
RYAN SENATORE ARCHITECTURE

□ A□ TER□ACADEM□ □□□I□ TERI□ R□□ IT□U□

185 LANCASTER STREET PORTLAND, MAINE

DECEMBER 23, 2016

2 SECOND FLOOR PLAN
1/16" = 1'-0"



1 FIRST FLOOR PLAN
1/16" = 1'-0"

CHANGE OF USE (FROM OFFICE TO EDUCATIONAL)
TOTAL FLOOR AREA 15,573 SF

PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

PLAN NOTES

1.) PREPARE ALL WALL AND FLOOR SURFACES TO RECEIVE NEW FINISHES PER FINISH MANUFACTURERS INSTALLATION INSTRUCTIONS. REMOVE AND REPLACE ALL DAMAGED FLOOR SHEATHING FOUND UPON REMOVAL OF EXISTING FLOORING

2.) FIRE STOPPING SHALL CONSIST OF UL LISTED ASSEMBLIES AND BE INSTALLED PER CODE

3.) ALL FLOORS TO BE LEVELED WITH A FULL COATING OF FLOOR LEVELER PRIOR TO INSTALLATION OF VCT OR LVT FINISHED FLOORING

4.) ALL CABINETS TO BE MID-GRADE LAB QUALITY CABINETS OF PLYWOOD CONSTRUCTION

5.) WHERE CABINETS AND COUNTERTOPS ARE SHOWN INCLUDE 12" DEEP WALL CABINETS ABOVE FOR FULL LENGTH OF CABINETS

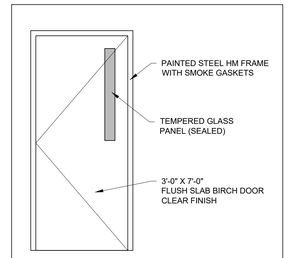
6.) ALL COUNTERTOPS TO BE EPOXY LAB GRADE WITH 4" BACKSPLASHES

7.) ALL SINKS IN EPOXY COUNTERTOPS TO BE EPOXY SINKS UNDERMOUNTED

8.) PROVIDE BLOCKING IN WALLS AT ALL CABINETS, GRAB BARS, TOILET ACCESSORIES, WHITEBOARDS, PROJECTORS, ETC.

9.) PROVIDE 'VENETIAN' BLINDS AT ALL EXTERIOR WINDOWS

10.)AT SPRAY ROOM, SEAL AND CAULK ALL JOINTS IN DRYWALL, SEAL TO FLOOR AND FLOOR DECK ABOVE



TYPICAL (NON FIRE RATED) DOOR DETAIL

1 FIRST FLOOR PLAN
1/8" = 1'-0"

© 2016 RYAN SENATORE ARCHITECTURE

BAXTER ACADEMY

INTERIOR FIT-UP

185 LANCASTER STREET, PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
565 CONGRESS STREET
PORTLAND, MAINE 04101
207-650-6414
senatorearchitecture.com

CONSULTANTS:

PROGRESS PRINT ONLY
Not for Construction
DECEMBER 23, 2016

REVISIONS:

DATE:	
PROJECT No.	1648
DRAWN BY:	RRT, RJS
CHECKED BY:	RJS
SCALE:	AS NOTED

SHEET TITLE:
FIRST FLOOR PLAN

A1-1

1 SECOND FLOOR PLAN
1/8" = 1'-0"

PLAN NOTES

1.) PREPARE ALL WALL AND FLOOR SURFACES TO RECEIVE NEW FINISHES PER FINISH MANUFACTURERS INSTALLATION INSTRUCTIONS. REMOVE AND REPLACE ALL DAMAGED FLOOR SHEATHING FOUND UPON REMOVAL OF EXISTING FLOORING

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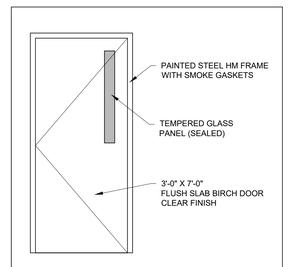


TYPICAL (NON FIRE RATED) DOOR DETAIL

© 2016 RYAN SENATORE ARCHITECTURE

BAXTER ACADEMY
INTERIOR FIT-UP
185 LANCASTER STREET, PORTLAND, MAINE

RSA
RYAN SENATORE ARCHITECTURE
565 CONGRESS STREET
PORTLAND, MAINE 04101
207-650-6414
senatorearchitecture.com

CONSULTANTS:

PROGRESS PRINT ONLY
Not for Construction
DECEMBER 23, 2016

REVISIONS:

DATE:	
PROJECT No.	1648
DRAWN BY:	RRT, RJS
CHECKED BY:	RJS
SCALE:	AS NOTED

SHEET TITLE:
SECOND FLOOR PLAN

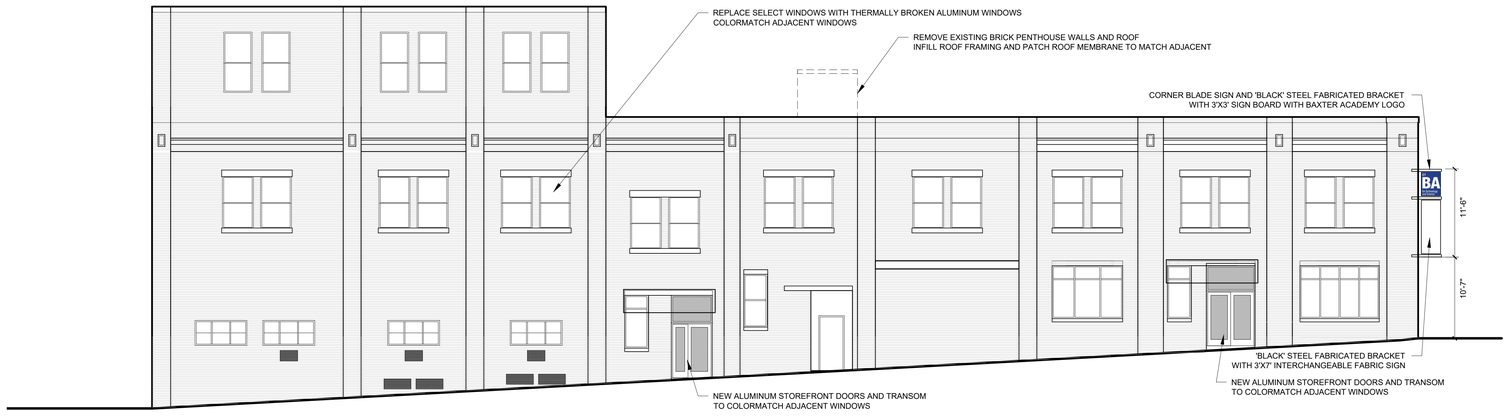
A1-2

□ A□ TER□ACADEM□ □II□ TERI□ R□□ IT□U□

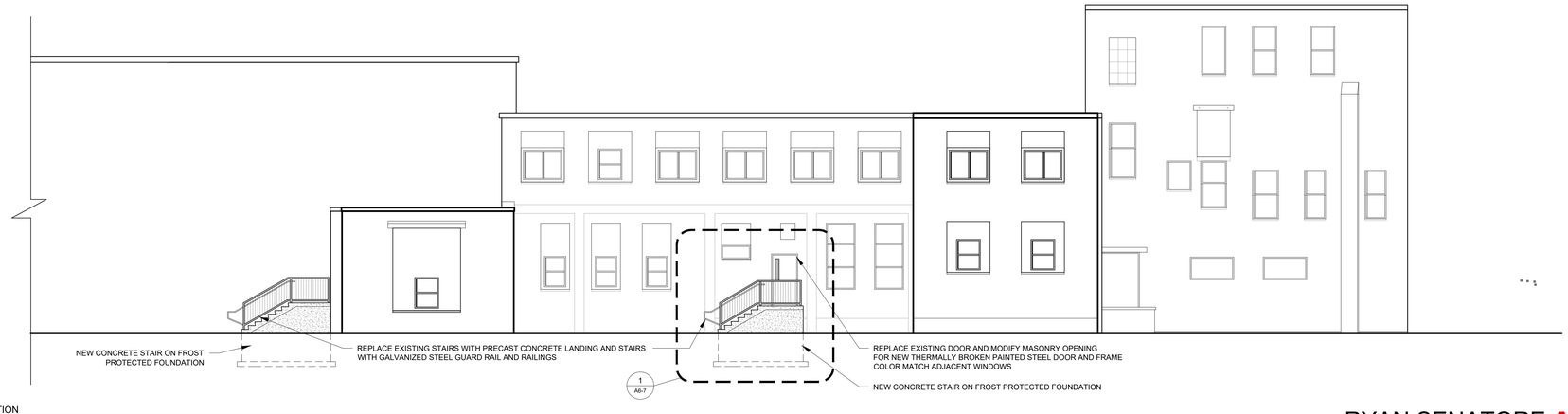
185 LANCASTER STREET PORTLAND, MAINE

DECEMBER 23, 2016

3 LANCASTER STREET ELEVATION
1/8" = 1'-0"



2 ELM STREET ELEVATION
1/8" = 1'-0"



1 KENNEBEC STREET ELEVATION
1/8" = 1'-0"

PROGRESS PRINT ONLY
Not for Construction

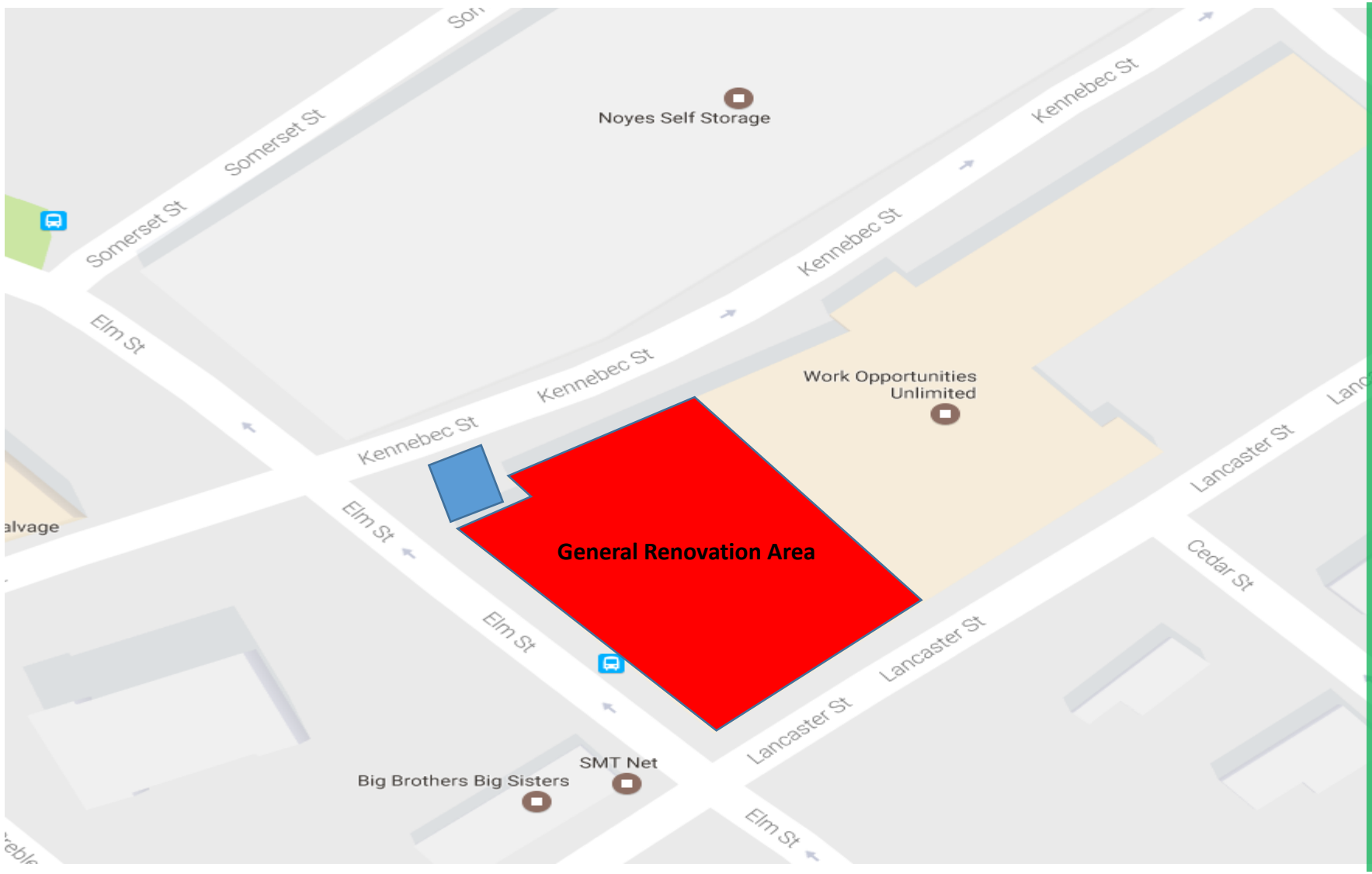
RYAN SENATORE **ARCHITECTURE**

Baxter Academy Interior Renovation – Initial Roof Top Equipment Plan
185 Lancaster Street, Portland ME

The ‘Red’ boxes outline the proposed locations of 6 new roof top units (RTUs) at 185 Lancaster Street. Please note that the intent is to install the new RTUs within the same footprint as those that are existing on the roof.

Baxter Academy Renovation CM Plan

185 Lancaster Street – Portland, ME



Description of Work

- The project is an interior renovation to an existing building, which will require minimal to no impact to the City of Portland's parking/traffic.
- As outlined in 'Blue' the project's dumpster(s) will be located at the back of the building along Kennebec Street.
- No project trailer will be required.
- Any task specific work that needs additional consideration will be coordinated directly with the City.

Prepared by L/F Construction (MR)
1/3/17

PLANNING BOARD REPORT
PORTLAND, MAINE

502 Deering Center
502 Stevens Avenue
Level III Site Plan and Subdivision Plan
2016-290
Denis Lachman, Applicant

Submitted to Portland Planning Board Public Hearing Date: March 28, 2017	Prepared by: Matthew Grooms Date: March 24, 2017

I. INTRODUCTION

Developer Denis Lachman has requested a preliminary Level III site plan and subdivision review of a mixed-use six-unit commercial and residential infill development at 502 Stevens Avenue immediately east of Lincoln Middle School at the intersection of Stevens Avenue and Hartley Street. The proposed 7,767 SF development includes a three-story mixed-use building, associated 'pocket park' and 10 surface parking spaces located to the rear of the property. The site will be accessed from Stevens Avenue via a newly proposed shared driveway straddling the northerly property line. This lot is currently occupied by a 2,107 SF single family home. The demolition for this structure is currently under review. The site is within the B-1b zone.

Figure 1: Aerial of 502 Stevens Avenue

The Planning Board will review the application for compliance with the site plan and subdivision standards.

A total of 168 notices were sent to property owners within 500 feet of the site and a legal ad ran on February 6th and 7th, 2017 prior to the workshop which was held on February 14th 2017. The legal ad was again run on March 20th and 21st, prior to the public hearing. There were nine public comments that have been received by the Planning Office, see Attachment 7.

Applicant: Denis Lachman
Consultants: Pat Carroll, Caroll Associates, Tom Greer, Pinkham and Greer Civil Engineers, Don Dostie, Four Points Associates, Nelson Toner, Bernstein Shur.

II. REQUIRED REVIEWS

Waiver Requests	***Applicable Standards***
Drive Aisle width – To allow a 21' foot aisle in the parking area. Staff Comments: The review staff recommends waiving this standard.	Technical Manual, *Section 1.14,* requiring that aisle width for right-angle parking be 24 feet per Figure I-27
Driveway width – To allow a 18' foot driveway Staff Comments: The review staff recommends waiving this standard.	Technical Manual, *Section 1.7.2.3 (multi-family residential with 10 or more parking spaces),* requiring that two-way driveway widths be a minimum of 20 feet, with a preferred with of 24 feet. aisle width for right-angle parking be 20 feet per Figure I-27

Infiltration system – To allow infiltration system separation from property line less than 25 feet. Staff Comments: The review staff recommends waiving this standard given the constraints of the lot.	Maine Stormwater Best Management Practices Manual, as referenced by Maine DEP Chapter 500, as referenced by Section 5 of the Technical Manual, requires that a 25-foot separation be provided between a subsurface stormwater infiltration system and an adjacent property boundary. The project is located on a small lot, and the proposed infiltration system is not anticipated to have a negative impact on the adjacent property. A waiver of this requirement is granted to the Applicant.

Review	***Applicable Standards***
Site Plan	*Section 14-526*
Subdivision	*Section 14-497*

III. PROJECT DATA

Existing Zoning	Neighborhood Business B-1b
Existing Use	Residential
Proposed Use	Mixed-Use Residential and Commercial
Proposed Development Program	6 Residential Units and 1,906 SF of Commercial Space
- Bedroom Mix	4 three-bedroom units
Parcel Size	9,562 SF

	Existing	*Proposed*	*Net Change*
Building Footprint	1,295 SF	2,557 SF	1,262 SF
Building Floor Area	2,107 SF	7,767 SF	5,660 SF
Impervious Surface Area	2,828 SF	7,970 SF	5,142 SF
Parking Spaces (on site)	2	10	8
Parking Spaces (off-site)	0	2	2
Bicycle Parking Spaces	0	10	10
Estimated Cost of Project	$1,046,000.00		

IV. BACKGROUND & EXISTING CONDITIONS

The proposed project site is located on Stevens Avenue in proximity to Lincoln Middle School at the intersection of Stevens Avenue and Hartley Street. At present, the site is occupied by a single-family structure under review for demolition. This property is located within a transitional neighborhood, with a mixture of retail and service uses located to the south of the subject site along Stevens Avenue, Lincoln Middle School is located immediately to the west of this site, and the surrounding area away from Stevens Avenue is predominantly single family residential. The project site is located at the northern edge of the Deering Center commercial district.

Figure 2: 502 Stevens Avenue Site

V. PROPOSED DEVELOPMENT

The development is proposed as a mixed-use commercial and residential project with frontage on Stevens Avenue. The project will consist of a three-story building with a commercial suite on the first floor, and two three-bedroom and four one-bedroom units located on the second and third floors. This development will be oriented towards

Stevens Avenue with a new shared driveway and associated curb cut being proposed to provide access to this property and the property immediately to the north along Stevens Avenue. A new access easement has been provided as the proposed point of access will straddle both property lines. The existing curb cut, currently serving as the driveway for the existing single family structure, will be removed.

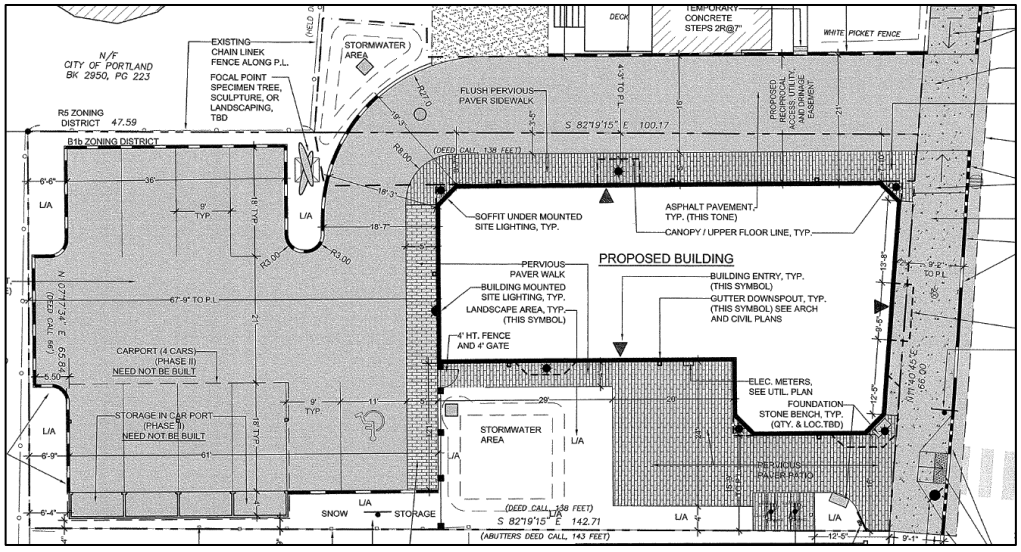
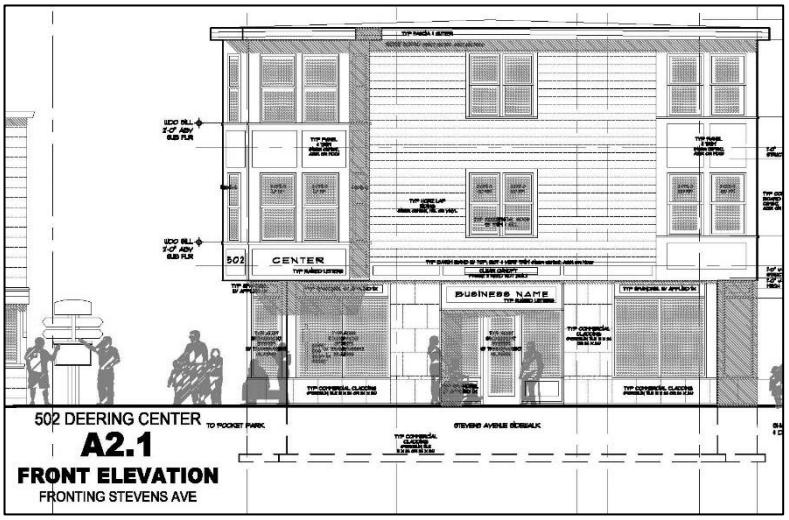
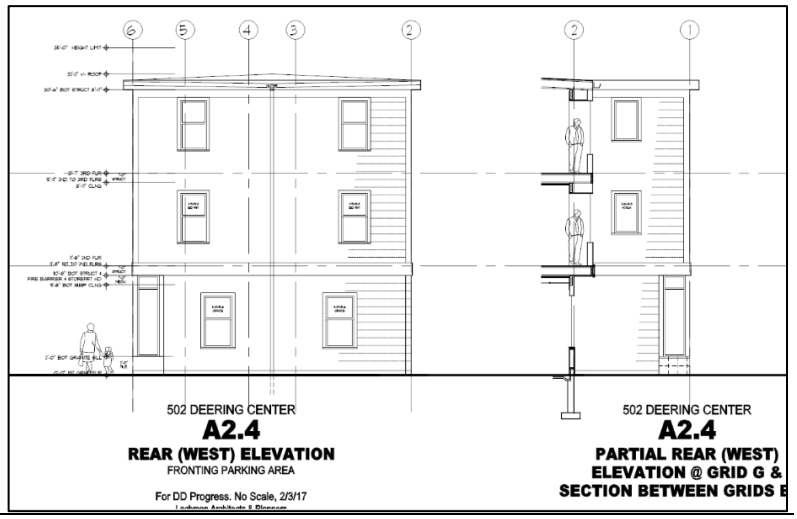


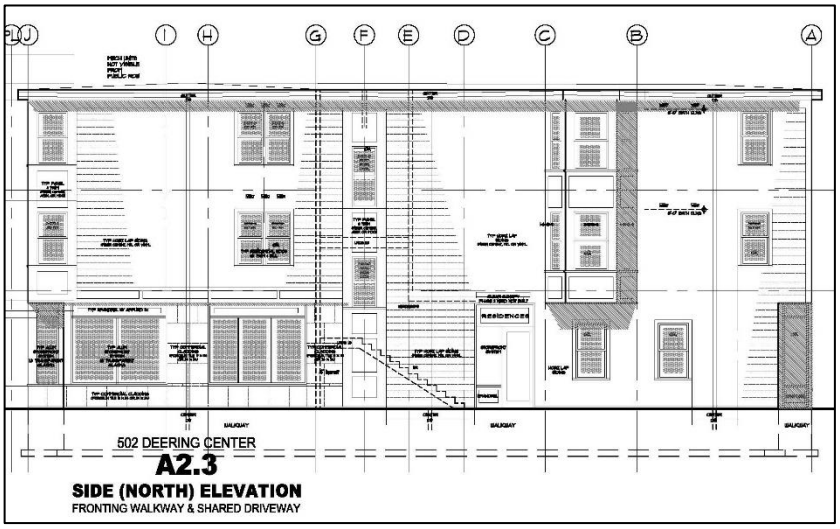
Figure 3: 502 Stevens Avenue Street Site Plan

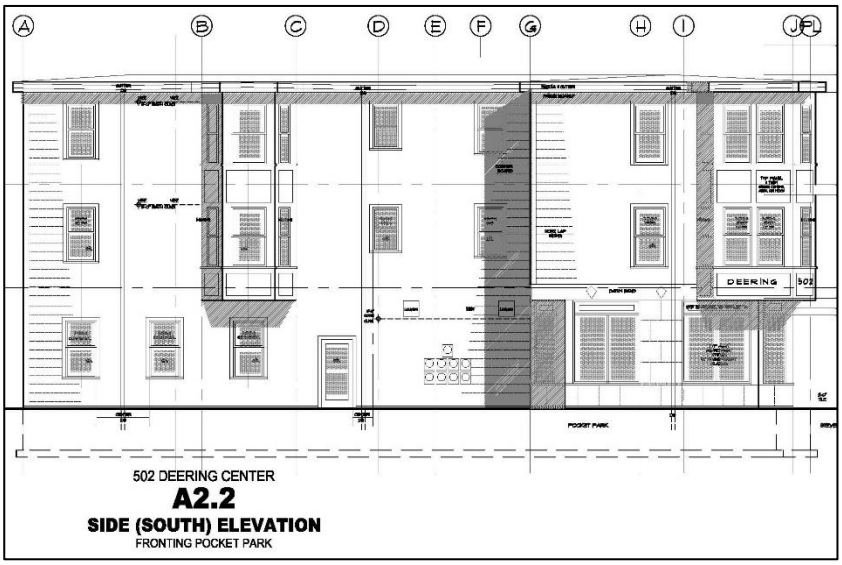
Parking for ten (10) vehicles is proposed on-site, including a space intended for a car-share vehicle, with a single two-way driveway measuring a minimum of 18' feet in width is being proposed along Stevens Avenue. Two (2) additional off-site parking spaces located at 229 Pleasant Street are presently leased. The applicant is seeking a waiver for driveway width, having asked that 18' feet be allowed whereas under the Technical Manual, 1.7.2.3., 20' feet is the minimum allowable for a multi-family residential development and 24' feet is preferred.

Pedestrian access to the site will be provided off Stevens Avenue with an internal walkway being provided around the exterior of the building. Residents will have access to the building via two entrances, one being located along the north elevation and the second being located along the south elevation. The commercial component will have a traditional storefront with primary access being located along Stevens Avenue on the east elevation with secondary access to the other two entrances. This building has no front setback and provides a typical storefront appearance in line with other buildings with a commercial component, notably Roy's Shoe Shop located immediately to the south. New concrete sidewalks are proposed along the development's frontage on Stevens Avenue and as well on the east side of Stevens Avenue on both corners of the intersection between Stevens Avenue and Hartley Street. The existing crosswalk across Stevens Avenue at this location is being removed and relocated from the north side of Hartley Street to the south side so as not to interfere with the newly proposed driveway.









VI. WORKSHOP (2/14/2017)

On February 14, 2017, this proposed development was heard before the Planning Board as a workshop item. At this meeting, two members of the public spoke, both of whom were supportive of the project, stating that the proposed development was appropriately sized, thoughtfully designed and a desirable addition for the Deering Center neighborhood. Members of the Board voiced concerns regarding the balance of the building, particularly of the front façade. The Planning Board directed staff to work with the applicant to clarify outstanding design review comments. Since the Planning Board workshop, the applicant has worked with city staff to address review comments and has since resubmitted revised plans and documents on March 13, 2017.

VII. PUBLIC COMMENT

As of the writing of this report, nine abutters have submitted written comments. These comments have been largely in favor of the proposed project with consensus being that the scope and scale of the project is fitting for this neighborhood, that mixed-use developments are desirable for Deering Center and that this development could invigorate future development within the neighborhood. One public comment was received opposed to this proposal. This comment cited potential traffic impacts within a school zone.

A Neighborhood Meeting is required for this project and the applicant has confirmed that the neighborhood meeting was held on Wednesday, February 1, 2017, attended by 30 people, see Attachment T.

VII. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

a. The owner of the property is Denis Lachman and Karen J Smith. The applicant has provided a City of Portland Assessor Record, Evidence of Right, Title and Interest, for CBL 135 E009001, showing proof of ownership as of April 2016.

b. The estimated cost of the development is $1.046 Million. The applicant has submitted a letter from Androscoggin Bank, dated December 12, 2016, as demonstration of their financial and technical capacity to complete the proposed development.

VIII. ZONING ANALYSIS

The proposed mixed-use commercial and residential building is a permitted use in the Neighborhood Business B-1b which allows multifamily dwellings. Under the B-1b zone all of the dimensional requirements are being met.

IX. DEVELOPMENT REVIEW

A. SUBDIVISION (Section 14-497)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's Subdivision Ordinance and applicable regulations. Staff comments are listed below.

1. *Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) 1), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)*
   Lauren Swett, P.E. with Woodard and Curran Engineering, has reviewed the erosion and sediment control plans and details, and inspection and maintenance requirements. She finds them to be in accordance with the Basic Standard.

2. *Sufficient Water Available (Section 14-497 (a) 2 and 3)*
   The project will be served by a new 2-inch domestic service and 4-inch fire service drawn from the existing water main in Stevens Avenue. The Portland Water District has approved the applicant's application and will provide service to this site.

3. *Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)*
   The applicant is proposing access to the site from a new curb cut on Stevens Avenue for a total of one vehicular access point. Tom Errico, P.E. Ty Lin reviewed this detail and also reviewed the proposal's details including the access, parking, and vehicle circulation (Attachment 1) and states:

   - *I reviewed the trip generation and safety analysis prepared by Maine Traffic Resources and I find the methods used to be acceptable. The project is not expected to generate a significant amount of traffic and there are no documented safety deficiencies in the vicinity of the project. The project does not require a Traffic Movement Permit. In my professional opinion, the project will not have a significant impact on transportation conditions in the project.*

   1. Circulation on Site
   As mentioned before, ten surface parking spaces will be provided to the rear of the proposed building. The circulation for the proposed surface lot will consist of vehicles pulling in out onto Stevens Avenue via a two-way driveway. The city's consulting transportation engineer has no objections to site circulation as proposed. Tom Errico, P.E. Ty Lin reviewed this detail and also reviewed the proposal's details including the access, parking, and vehicle circulation (Attachment 1) and states:

   - *The applicant is requesting a waiver from the City's Technical Standards for parking aisle width. The project is proposing 21 feet (the City standard is 24 feet). Given low trip generating characteristics and the general layout of the site (backing maneuvers onto Stevens Avenue are very unlikely), I support a waiver.*
   - *The applicant is requesting a waiver from the City's Technical Standards for driveway width. The project is proposing 18.24 feet (the City standard for minimum width is 20 feet). Given low trip generating characteristics, I support a waiver.*

4. *Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)*
   The applicant proposed to tie into the existing gravity sewer line located in Stevens Avenue and has submitted a wastewater capacity application to the Department of Public Works. Approval of this request has been suggested as condition of approval.

   The residential units will make use of municipal waste services and the commercial tenant will be responsible for relocating solid waste and recyclable material off site. There will be minimal burden on the municipal solid waste.

5. *Comprehensive Plan (Section 14-497 (a) 9)*

The staff has identified the following goals and policies which are relevant to the proposed housing development and finds the proposal in conformance with the Comprehensive Plan:

Portland Housing Goal: Ensure that an adequate supply of housing is available to meet the needs, preferences, and financial capabilities of all Portland households, now and in the future.

Policies

- Ensure the construction of a diverse mix of housing types that offers a continuum of options across all income levels, which are both renter and owner-occupied, including but not limited to the following:
  ii. Housing units for decreasing household size, such as young professionals, empty nesters, single-parent households, and senior citizens.
- Encourage higher density housing for both rental and home ownership opportunities, particularly located near services, such as schools, businesses, institutions, employers, and public transportation.
- Increase Portland's rental housing stock to maintain a reasonable balance between supply and demand yielding consumer choice, affordable rents, and reasonable return to landlords.
- Identify vacant land and redevelopment opportunities throughout the City to facilitate the construction of new housing.

This project provides higher density than what was previously found at this location in a form compatible with the existing Deering Center Neighborhood.

Portland Housing Goal: Maintain and enhance the livability of Portland's neighborhoods as the City grows and evolves through careful land use regulation, design and public participation that respects neighborhood integrity.

Policies

- While accommodating needed services and facilities, protect the stability of Portland residential neighborhoods from excessive encroachment by inappropriately scaled and obtrusive commercial, institutional, governmental, and other non-residential uses.
- Support Portland's livable neighborhoods by encouraging a mix of uses that provide goods and services needed and are within distance of most residents.
- Encourage innovative new housing development, which is designed to be compatible with the scale, character, and traditional development patterns of each individual residential neighborhood. Encourage new housing development in proximity to neighborhood assets such as open space, schools, community services and public transportation.
- Ensure the integrity and economic value of Portland's neighborhoods.
- Encourage Portland's neighborhoods to address the City's housing issues through the Neighborhood Based Planning Process.
- Encourage neighborhood populations that are economically, socially, culturally and ethnically diverse.

This project provides a mixture of uses at a scale determined to be line with surrounding developments. Design of this building has been carefully considered and based upon surrounding structures and a now destroyed nearby landmark, with a mixture of housing units to serve diverse needs. This development is easily accessed via public transit and is proximate to other neighborhood services, including Lincoln Middle School.

6. *Financial Capability (Section 14-497 (a) 10)*

The estimated cost of the development is $1.046 Million. The applicant has submitted a letter from Androscoggin, dated December 12, 2016, as demonstration of their financial and technical capacity to complete the proposed development.

C. SITE PLAN STANDARDS (Section 14-526)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. Transportation Standards

a. Impact on Surrounding Street Systems and Access and Circulation- see Subdivision, Paragraph IX (B) (3), above.

b. Construction Management Plan

A construction management plan has been submitted by the applicant for review. All the construction is proposed within the limits of the property lines. Tom Errico has reviewed the plan and requests the following:

- *The applicant has submitted a Construction Management document. Given the presence of school children, I do not support the temporary closure of the sidewalk with a detour to the opposite side of the street. The applicant shall maintain a fully ADA compliant sidewalk facility along the project frontage. Additionally, the applicant shall maintain or provide a reasonable alternative to the existing Stevens Avenue Crossing.*
- ***Updated Status (3/24/17):** The construction management plan is not acceptable. A sidewalk detour to the opposite side of the street is not acceptable and the plan shall be revised to include a temporary sidewalk in Stevens Avenue (Attachment 5).*

The applicant has since responded to this comment and submitted a revised document currently under review. See Attachment 1.

c. Sidewalks

The applicant is proposing to install new concrete sidewalks along their frontage as well as at the northeast and southeast corners of the Stevens Avenue and Hartley Street intersection, with an additional internal pervious paver walkway around the perimeter of the proposed building. Mr. Errico has reviewed the plans and recommends the following:

- *The proposed project is relocating the existing crosswalk across Stevens Avenue from the north side of Hartley Street to the south side. Please note the following:*
  - *The applicant will be responsible for the removal of existing pavement markings that meet City requirements.*
  - *Changes to signage (parking, warning, etc.) will be the responsibility of the applicant. It is suggested new pedestrian crossing warning signs be installed. Recommendations for no-street parking regulations should be provided.*
  - *A design detail for the proposed sidewalk ramp at the southeast corner of Hartley Street shall be provided. Specific details on slopes, width dimensions, and curb details shall be provided.*
  - *A detectable warning panel shall be installed at the northeast corner of Hartley Street. Details shall be provided for review.*
  - ***Updated Status (3/24/17):** The plans have been revised and I generally find conditions to be acceptable. The sidewalk ramp design detail at the southeast corner of Hartley Street is not acceptable given some slopes that appear to be non-compliant (exceed 2 percent maximum). I would suggest a condition of approval that requires the applicant to submit a revised detail for review and approval by the Planning Authority (Attachment 5).*

d. Public Transit Access

The public transit requirements do not apply to this project.

e. Parking

Section 14-332.1 (a) – For new residential developments, the parking requirement is two (2) spaces per dwelling unit. The applicant is proposing four one-bedroom and two three-bedroom units.

Section 14-332.1 (h) – For retail stores, one (1) parking space is required for each two-hundred (200) square feet of first floor area in excess of two-thousand (2,000) square feet. The applicant is proposing two thousand (1,906) square feet of retail.

The applicant is proposing a total of ten (10) on-site parking spaces, including one (1) space allocated for a car-share vehicle, and two (2) leased off-site parking spaces at 229 Pleasant Street in conformity with Section 14-331.1.

As noted above in the subdivision analysis, the circulation for the proposed two surface parking spaces on York Street will consist of vehicles pulling in out onto Stevens Avenue. The parking within the surface lot will have a twenty-one foot (21') aisle width that does not meet standard of twenty-four feet (24'), therefore, the applicant has requested a waiver. Mr. Errico supports this waiver given the minimal trip generation.

f. Bicycle Parking

The proposals include twelve bicycle parking spaces outside of the building, which does meet the ordinance standard of two bicycle parking spaces for every five dwelling units.

2. Environmental Quality Standards

a. Preservation of Significant Natural Features

There are no known significant natural features on the site.

b. Landscaping and Landscape Preservation

A landscaping plan was submitted as part of the application. The plan shows no street trees and very minimal landscaping along the development's frontage, in line with existing conditions along Stevens Avenue. The applicant is proposing 15 periwinkles and a sargent cherry within the proposed pocket park, set back roughly 4 feet from the property line at the southern property boundary.

In the original submittal, the applicant proposed landscaping along the periphery of the proposed pocket park, with ornamental grasses being proposed along the rear property line adjacent to Lincoln Middle School and within the parking area. This was done to preserve these locations for snow storage. These elements have since been revised to address initial comments made by Jeff Tarling, the City Arborist, seeking additional landscaping and buffering to meet city standards.

Jeff Tarling, the City Arborist, has reviewed the revised landscaping plan and has requested no further revisions.

c. Water Quality, Storm Water Management and Erosion Control

Prior to the demolition of the existing single family structure, just under 30% of the property is covered by impervious surfaces including a bituminous driveway. Currently the site has very little slope, with all grades being 119' feet, plus or minus one foot. The rest of the site was mature tree growth, vegetation, and exposed soil. The project will result in a net increase of impervious area above 1,000 sf, with proposed impervious surface being 7,970 sf, as such, this project is required to include stormwater management features for stormwater quality & quantity control.

The site will have two subsurface stormwater systems. The first will utilize crushed stone bed for stormwater storage and infiltration into the underlying soils for treatment. The second system will

treat the plaza area with pervious pavers.

The parking lot run off will be pretreated in a small grass bowl located between the proposed pocket park and parking lot. Overflows from the bowl will go to a catch basin with a 3' sump and then to the infiltration area. Overflow from this system is conveyed to the street storm drain system.

The second system is under the previous paver plaza area. The system treats the roof water from the building next door and the plaza area. It stores the stormwater in the stone bedding and infiltrates it. Overflow for the system goes to the street system.

Under Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. Lauren Swett, P.E. with Woodard and Curran Engineering offers the following review comments (Attachment 4);

- *General Standard: The project will result in an increase in impervious surface, and stormwater treatment in conformance with the General Standard is required. The Applicant is proposing to utilize an underdrained infiltration system and pervious pavers to provide treatment. This method of treatment will be acceptable. We have reviewed the proposed design as well as the Maine DEP standards for infiltration systems and have the following comments:*
    - *Maine DEP typically requires 25 feet of separation of infiltration systems from property boundaries. Due to site constraints a waiver of this standard would be supported for the project.*
- *The stormwater system for the site is shown connecting to the combined sewer via an existing catch basin. This is not in conformance with the City of Portland standard, and approval from the City will be required. Public Works has indicated that this type of connection would now be allowed. The Applicant will need to address the connection requirements with the Water Resources Division of Public Works.*
- *It is noted that the stormwater system proposed on the site crosses property boundaries, and includes components on both properties utilizing the shared driveway. The responsibility for maintenance of this system should be clearly defined. The Applicant has acknowledged this, noting that there will be an easement for the access driveway and joint facilities of the two properties. Details of this easement, and information on maintenance agreements should be provided.*

3. Public Infrastructure and Community Safety Standards

a. Public Safety and Fire Prevention

Keith Gautreau, Assistant Fire Chief, has requested that the applicant provide an address for the property consistent with 911, tax assessor, Inspections Division and future mailing address. The applicant is working to comply (Attachment 1).

b. Availability and Adequate Capacity of Public Utilities

The project will be served by the Portland Water District, City Department of Public Works, and underground/power/cable/communications. The Applicant will need to contact the City Department of Public Works, and the other utilities and secure appropriate confirmation letters.

4. Site Design Standards

a. Snow and Ice Loading

The applicant has provided a detailed response for how snow and ice loading will be managed and have similarly indicated on-site snow storage areas on submitted plans.

b. View Corridors

This site is not within a Protected View Corridor as per the "View Corridor Protection Plan" approved by the Portland City Council in 2001.

c. Historic Resources

The site is not in any historic district.

d. Exterior Lighting

The applicant has submitted a lighting and photometric plan. All exterior site lighting including lighting of building entrances will be full cutoff with no light emitted above the horizontal plane. There shall be minimal light trespass of 0.1 foot-candles across the northerly property line along the shared driveway and the easterly property line where the development fronts Stevens Avenue. Staff has no objections. Illumination levels will be adequate but not excessive for the safety, comfort and convenience of occupants and user of the site and will conform to all applicable standards of Section 12 of the Technical Manual.

e. Noise and Vibration

All heating, ventilation and air conditioning equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment will have to be shown on the plans and meet state and federal emissions requirements. These should be located to the interior of the site, away from abutting residential properties and be screened from view from any public street and from adjacent sites by structure walls, evergreen landscaping, fencing, masonry wall or a combination thereof.

f. Signage and Wayfinding

This standard does not apply to the proposal.

g. Zoning Related Design Standards

A design review according to the *City of Portland Design Manual* Standards was performed for the proposed new construction of a mixed-use commercial and residential development at 502 Stevens Avenue. The review was performed by Caitlin Cameron, Urban Designer, Deb Andrews, Historic Preservation Program Manager, and myself. The project was reviewed against the *B-1b Commercial Business Zones Standards (Section (d) of the Design Manual).*

Findings of the Design Review:

The Planning Authority under an Alternative Design Review may approve a design not meeting one or more of the individual standards provided that all of the conditions listed below are met:

A. The proposed design is consistent with all of the Principle Statements.
B. The majority of the Standards within each Principle are met.
C. The guiding principle for new construction under the alternative design review is to be compatible with the surrounding buildings in a two-block radius in terms of size, scale, materials, and siting, as well as the general character of the established neighborhood, thus Standards A-1 through A-3 shall be met.
D. The design plan is prepared by an architect registered in the State of Maine.

The proposed design now passes all of the criteria. On February 23, 2017, city staff including Ms. Cameron met with the applicant and discussed outstanding comments, particularly the material being used for the ground floor façade and the balance of the east (front) façade. Ms. Cameron's recommendations have since been incorporated into the applicant resubmittal, dated March 13, 2017, with no further revisions being requested by the Urban Designer (Attachment 7).

XII. PROPOSED MOTIONS

A. WAIVERS

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the planning board report for the public hearing on March 28, 2017 for application 2016-290 relevant to Portland's technical and design standards and other regulations; and the testimony presented at the Planning Board hearing:

1. The Planning Board [**finds/does not find**], based upon the consulting transportation engineer's review (*Attachment 1*), that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard (*Section 1.14*) which requires that aisle width for right-angle parking be 24 feet per Figure I-27. The Planning Board [**waives/does not waive**] the Technical Manual standard (*Section 1.14*) to allow a 21 foot-wide aisle within the proposed surface parking lot;
2. The Planning Board [**finds/does not find**], based upon the consulting transportation engineer's review (*Attachment 1*), that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard (Section 1.7.2.3) which requires that a two-way driveway width be a minimum of 20 feet per Figure I-27. The Planning Board [**waives/does not waive**] the Technical Manual standard (*Section 1.7.2.3)* to allow an 18 foot-wide two-way driveway.
3. The Planning Board [**finds/does not find**], based upon the consulting stormwater engineer's review (*Attachment 1*), that extraordinary conditions exist or undue hardship may result from strict compliance with the Maine Stormwater Best Management Practices Manual, as referenced by Maine DEP Chapter 500, as referenced by Section 5 of the Technical, which requires that a 25-foot separation be provided between a subsurface stormwater infiltration system and an adjacent property boundary. The Planning Board [**waives/does not waive**] the Technical Manual standard (*Section 5)* to allow a reduction of the minimum separation requirement for a stormwater infiltration system.

B. SUBDIVISION

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the planning board report for the public hearing on March 28, 2017 for application 2016-290 relevant to the subdivision regulations; and the testimony presented at the planning board hearing, the Planning Board finds that the plan [is/is not] in conformance with the subdivision standards of the land use code, subject to the following conditions of approval, which must be met prior to the signing of the plat:

1. Requiring that the revised recording plat be submitted for review and approval by the Planning Authority, Department of Public Works and Associate Corporation Counsel.
2. The applicant shall provide finalized easements for shared site access for review and approval by Planning Authority, Department of Public Works and Associate Corporation Counsel.

C. DEVELOPMENT REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on March 28, 2017 for application 2016-290 relevant to the site plan regulations; and the testimony presented at the planning board hearing, the Planning Board finds that the plan [is/is not] in conformance with the site plan standards of the land use code, subject to the following conditions of approval that must be met prior to the issuance of a building permit, unless otherwise stated:

1. The applicant shall provide a revised construction management plan, including the details regarding safe pedestrian access along the west side of Stevens Avenue adjacent to the proposed development as requested by the city's consulting traffic engineer;
2. The applicant shall provide either a monetary contribution to the City's Tree fund in an amount determined by the City Arborist or shall be responsible for the planting of required trees at a nearby location in order to meet the City's Street Tree standards.
3. The applicant shall provide a maintenance agreement for the stormwater drainage system, shall be submitted, signed and recorded prior to the issuance of a building permit with a copy to the Department of Public Works.
4. The sidewalk ramp design detail at the southeast corner of Hartley Street shall be revised to be in compliance with City Standards (less than 2 percent slope). The revised detail shall be submitted for review and approval by the Planning Authority.
5. The applicant shall provide a revised stormwater plan to address the stormwater engineer's Comment 2 from the review memo dated March 23, 2017 (Attachment 3). This plan shall be reviewed and approved by the Planning Authority and the Department of Public Works prior to the issuance of a building permit.
6. The applicant shall provide an approval letter from the Department of Public Works in regards to their wastewater capacity application prior to the issuance of a building permit.

XIII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Development Review Comments (1.31.2017)
2. Design Review Memo (2.10.2017)
3. Development Review Comments (3.6.2017)
4. Woodard and Curran Review Memo (3.23.2017)
5. Ty Lin Email (3.24.2017)
6. Design Review Memo (3.24.2017)
7. Public Comments
   PC1 Nancy Polito
   PC 2 Margot Fine
   PC 3 Eve Sawyer
   PC 4 Barbara Hager
   PC 5 Bobbi Cope and John Thibodeau
   PC 6 Jennifer Frick
   PC 7 Ethan Croce
   PC 8 Brian Daly
   PC 9 Jennifer Frick

APPLICANT'S SUBMITTALS

A. Preliminary Site Plan Application
B. Application Fees
C. Written Description
D. Evidence of Right, Title, and Interest
E. Zoning Analysis
F. Easements
G. Requested Waivers
H. Financial and Technical Capacity
I. Construction Management Plan
J. Comprehensive Plan Compatibility
K. Utility Capacity Letter
L. Solid Waste Description

M. City of Portland Wastewater Application
N. Water District Capacity Letter
O. Fire Department Technical Standards
P. Design Review Analysis
Q. HVAC Information Sheet
R. Erosion Control Analysis
S. Traffic Analysis
T. Neighborhood Meeting Certification and Minutes
U. Geotechnical Report
V. Applicant Response to Staff Comments (2.7.2017)
W. Applicant Response to Staff Comments (2.7.2017)
X. Applicant Response to Staff Comments (2.7.2017)
Y. Applicant Response to Staff Comments (3.14.2017)

PLANS

Plan 1. Cover Sheet
Plan 2. Lower Level Plan with Site Plan
Plan 3. 1st Floor Plan with Site Plan
Plan 4. 2nd and 3rd Floor Plan with Site Plan
Plan 5. Building Elevation Front (east) with Building Sections
Plan 6. Building Elevation Front (east)
Plan 7. Building Elevation Side (south)
Plan 8. Building Elevation Side (north)
Plan 9. Building Elevation Rear (west)
Plan 10. Carport and Bicycle Shelter Details
Plan 11. Keyed Notes, Features and Descriptions
Plan 12. Site Survey
Plan 13. Site Demolition and Site Preparation Plan
Plan 14. Site Plan
Plan 15. Subdivision Plan
Plan 16. Grading and Stormwater Plaan
Plan 17. Utilities Plan
Plan 18. Civil Details 1
Plan 19. Civil Details 2
Plan 20. Site Details 1
Plan 21. Site Details 2
Plan 22. Erosion Control Plan
Plan 23. Drainage Analysis Plan 1
Plan 24. Drainage Analysis Plan 2
Plan 25. Landscape and Lighting Plan
Plan 26. Landscape Details
Plan 27. Photometric Plan

Planning and Urban Development Department
Planning Division

January 31, 2017

Denis Lachman
55 Hamblet Avenue
Portland, ME 04103

RE: Staff Review Comments for 502 Deering Center (2016-290) – Planning Board Review

Project Name:	502 Deering Center	Project ID:	(2016-290)
Project Address:	502 Stevens Avenue	CBL:	135-E-9
Applicant:	Denis Lachman		
Planner:	Matthew Grooms		

Dear Mr. Lachman,

Thank you for submitting a Level III Final Plan application for a three story mixed-use commercial and residential development at 502 Stevens Avenue. This proposal is being reviewed as a final plan for Planning Board review subject to the following applicable Land Use Code provisions:

- Subdivision Ordinance, Article IV
- Site Plan Ordinance, Arcticle V
- Neighborhood Meeting Regulations, Section 14-32

Final Plan for Planning Board Review: Staff Review Comments

I. Transportation Standards

A. Traffic Engineering Comments (Tom Errico)

1. I reviewed the trip generation and safety analysis prepared by Maine Traffic Resources and I find the methods used to be acceptable. The project is not expected to generate a significant amount of traffic and there are no documented safety deficiencies in the vicinity of the project. The project does not require a Traffic Movement Permit. In my professional opinion the project will not have a significant impact on transportation conditions in the project area.

2. The applicant is requesting a waiver from the City's Technical Standards for parking aisle width. The project is proposing 21 feet (the City standard is 24 feet). Given low trip generating characteristics and the general layout of the site (backing maneuvers onto Stevens Avenue are very unlikely), I support a waiver.

3. The applicant is requesting a waiver from the City's Technical Standards for driveway width. The project is proposing 18.24 feet (the City standard for minimum width is 20 feet). Given low trip generating characteristics, I support a waiver.
4. The proposed project is relocating the existing crosswalk across Stevens Avenue from the north side of Hartley Street to the south side. Please note the following:
    a. The applicant will be responsible for the removal of existing pavements markings that meet City requirements.
    b. Changes to signage (parking, warning, etc.) will be the responsibility of the applicant. It is suggested that new pedestrian crossing warning signs be installed. Recommendations for on-street parking regulations should be provided.
    c. A design detail for the proposed sidewalk ramp at the southeast corner of Hartley Street shall be provided. Specific details on slopes, width dimensions, and curb details shall be provided.
    d. A detectible warning panel shall be installed at the northeast corner of Hartley Street. Details shall be provided for review and approval.

5. The applicant has submitted a Construction Management document. Given the presence of school children, I do not support the temporary closure of the sidewalk with a detour to the opposite side of the street. The applicant shall maintain a fully ADA compliant sidewalk facility along the project frontage. Additionally, the applicant shall maintain or provide a reasonable alternative to the existing Steven Avenue crossing.

II. Environmental Quality Standards

A. Stormwater/Engineering Comments (Lauren Swett)

1. It is noted that not all of the civil engineering plan sheets (sheet C0-C10) are stamped by a professional engineer. The Grading and Stormwater Plan, Utilities Plan, and two of the detail sheets have been stamped by a professional engineer. The Site Plan has not been stamped and the sheet of site details has also not been stamped. The Applicant should verify with the City that this will be acceptable for this project. While a majority of the engineering design components are on the stamped plans, the Site Plan and site details are typically stamped by a professional engineer.

2. The City of Portland requires that all Level III site plan applications submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards (Technical Manual, Section 5. II. Applicability in Portland. C. a. and City of Portland Code of Ordinances Sec. 14-526. Site plan standards. (b). 3. b.). The Applicant has indicated that they are modifying their stormwater management system, and will be providing updated plans. We have not reviewed stormwater system in detail at this time, and will when the material is available.

3. It is noted that the stormwater system proposed on the site crosses property boundaries, and includes components on both properties utilizing the shared driveway. The responsibility for maintenance of this system should be clearly defined.

4. An area of pervious pavers is provided within the driveway and at the southern building entrance as shown on the Site Plan. The detail for the pervious pavers indicates that the

system includes underdrain that connects to the footing drains. The Grading and Stormwater Plan does not include this system. Additional coordination between plans is required.

5. Additional grading detail (i.e. spot grades) should be provided for the shared driveway. As currently shown, the grading appears to drain from the new building towards the existing single family home to the east. It is assumed that the intent is for stormwater to drain to a site stormwater system, but further detail is required.
6. The grading at the western end of the shared driveway, on the adjacent property should be evaluated. It appears that there is an existing 119 contour that crosses through the stormwater detention area. The grading should be adjusted to account for this contour.

7. The utility plan appears to still show the existing overhead utility electrical and telephone lines. Based on the demolition plan, it appears that these lines should be removed.

8. We recommend that the Applicant adjust their grading and utility plans such that the proposed utilities (water, storm drain, sewer, gas, electric, etc.) be shown in a bolder line type. As the plans are scanned for reproduction, some of these systems are difficult to see and may be confused as existing conditions.

9. Two details are provided for reinforced concrete sidewalk, and the bituminous pavement detail does not include specific asphalt types. All site details, including pavement, curbing, sidewalk, and handicap ramps should be in conformance with City of Portland technical standards, including references to appropriate dimensions and materials.

B. Tree & Landscape Comments (Jeff Tarling)

1. Street-trees - the project does not offer street trees along Stevens Avenue, this is in keeping to nearby street-scape conditions and we would not ask or require street trees along the frontage. Street trees could be planted near the site in the vicinity of the project and we would ask for the standard contribution to the Tree Fund to place trees nearby. Street frontage - there could be opportunity to include small planting space between the building and sidewalk. Frequently we see small herbaceous or display plantings in areas like this.

2. Landscape & buffering - The project currently offers little in the way of landscape planting or buffering along the rear Lincoln School boarder. Recommendations would include buffering the school from the project and likely the future project residents would like to see some buffering between active school ground activities and their residence. Solutions include: reducing the proposed lawn area and adding in landscape planting that can best tolerate occasional snow loading while providing some level of screening. Fencing - Installing 5' to 6' high fencing along the City / Lincoln School property line would be recommended. This could be new black vinyl chain link or wooden decorative fencing.

3. Additional trees & woody plant material is recommended for the sites shown as P = perennial planting. Four trees are recommended for the back parking lot area, this includes: 1 in the perennial area bump out near the driveway curve. The curbing should include the entire bump out area from the driveway curve to protect any future landscape or lawn edges, a second tree near the handicap parking spaces, to the left looking at the plan, in the perennial planting area. Trees 3 & 4 would be placed in or near the corners to help meet parking lot landscape standards of shading the parking spaces.

4. Snow removal will be a challenge for the site once constructed as shown as the paved parking area exceeds available snow storage on site.

5. Landscape updates are likely pending to address these concerns. Will also discuss with Portland Schools the best treatment for their boarder.

III. Public Infrastructure and Community Safety Standards

A. Fire Department Comments (Keith Gautreau)

1. Premises Identification
    a. The main entrance of the building must be the address for the property. This should be consistent with 911, tax assessor, Inspections Division and future mailing address.
    b. Street addresses shall be marked on the structure and shall be as approved by the City E-911 Addressing Officer. If the building entry faces a different street, both the street name and number should be large enough to read from the street.
    c. Address numbers must be a minimum of 4 inches high. The number should be in Arabic numerals rather than spelled out (for example, "130" instead of "One Hundred and Thirty').
    d. Color: Addresses should be in a color that contrasts with the background.Whenever possible, should be illuminated.
    e. Provide additional address signs at entrances to the property when the building address is not legible from the public street.
    f. Buildings set back in groups that share common entrances can make quickly locating a specific building and the shortest route difficult. On such sites, additional signs with directional arrows and/or diagrams of the buildings and access layout should be posted.

2. There's a public hydrant located across the street at Hartley and Stevens.

3. Emergency vehicle access is good for the site. The sidewalk being flush with pavement allows for 21 ft of emergency access.

IV. Site Design Standards

A. Site Plan Review Comments (Matthew Grooms)

1. How will waste be handled on site? If a dumpster is required, it shall meet all applicable standards as found in Sec. 14-161, the B-1b Design Standards and Article V. Site Plan, and be screened via an appropriate dumpster enclosure.

2. The applicant shall clearly indicate the proposed commercial use locations and associated dimensions on Sheet A1.1 First Floor Plan with Site.

3. On Sheet C.2. Site Plan, provide the location and dimension of all proposed exterior mechanical equipment.

4. On Sheet C.2. Site Plan, if appropriate, provide a note stating that all exterior mechanical equipment will be screened from public streets and adjacent sites by structure walls, evergreen landscaping, fencing, masonry walls or a combination thereof.

5. On Sheet C.2. Site Plan, is the triangle sign found around the edges of the proposed building indicative of building entrances? If so, please add this symbol to the legend.

6. Per Section 14-526 (d), could the applicant provide information describing how rooftop snow and ice loading is being addressed, specifically along Steven's Avenue.

7. On Sheet L.1. Landscape and Lighting, the applicant shall provide a note stating that all proposed light fixtures are full cutoff, in line with Section 12.2.6 Luminaire Types, of the City's Technical Manual.

8. On Sheet L.2. Landscape Details, the applicant shall provide details for the proposed light fixtures.

9. The applicant shall provide elevation views of the proposed building including corner grades and building height information so that building height may be calculated.

B. Preliminary Subdivision Plan Comments – Section 14-496 (Matthew Grooms)

1. The applicant shall indicate the width of any right-of-way shown on the preliminary subdivision plan.

2. The applicant shall provide the location, width and purpose of any easements that have or are to be recorded.

3. The applicant shall provide the approximate or known location of all existing and proposed public and private infrastructure, including sanitary sewer, water, gas and electric. This shall include new points of connection for the proposed development.

4. The applicant calls out a 8" V.I.T on the preliminary subdivision plan. Could this item be added to the legend.

C. Design Review (Caitlin Cameron)

1. Standard (1) a. Urban Street Wall – Met – Project is located near the property line and creates strong street wall on street-facing façade consistent with other commercial or mixed use building placement while keeping bay projections above private property.

2. Standard (1) b. Mixed Uses – Met - Building is mixed-use with commercial ground floor and residential upper floors.

3. Standard (1) c. Building Entrances – Met – Primary building entrance is oriented to the street.

4. Standard (1) d. Windows – Met – Ground floor street frontage has an adequate amount of fenestration and at a level that provides some views into the building while maintaining some privacy for the users. Fenestration should meet the minimum transparency standard of .7 VT – what is the proposed VT of storefront?

5. Standard (1) e. Façade Character – Met – Street-facing facades are oriented to and/or adjacent to public sidewalk. Façade design implies three retail spaces instead of one – reconsider placement of storefront to appropriately reflect the uses inside.

6. Standard (1) f. Building Design – Not Met – The building design is compatible with the surrounding context in its scale, roof pitch, and fenestration. Vertical orientation of windows appropriate for context. What is material/profile of cornice? – currently depicted as a blunt profile. Building design is treated as though parcel is a corner lot – this is not an appropriate approach for a mid-block building. The chamfered corners are unnecessary, especially without corner condition and without entrances at chamfer. Placement of bays should be front façade-oriented, not corner oriented (similar to façade design of Pat's Market building) and façade composition could be more symmetrical as a result. Why is the service door to basement stair angled?

7. Standard (1) g. Building Materials – More information needed – materials should be called out on elevation drawings. Tile or masonry is not contextual choices on this streetscape – clapboard should be the primary material for whole building. What is the proposed material for trim, bay panels, cornice?

8. Standard (1) h. Building Scale – Met - Proposed building is three stories, one story taller than most surrounding context. The scale is mitigated by elements such as a cornice line and bay windows.

9. Standard (1) i. Landscaping and Buffers – Met – It appears parking areas are screened from neighboring properties – planner will provide more guidance on this site plan criteria.

Additional Submittals Required:

Please upload the digital plans and documents to address staff comments. Upon receipt of the revised material, the City of Portland will review the additional plans and information for conformance with applicable ordinances. Please be aware that an application expires within 120 days of the date upon which this written request for additional information was made and only *one set of revised plans* may be submitted for review. This item is scheduled to go before the Planning Board as a workshop item on February 14, 2017 at 4:30 pm. Following the workshop process, this item will be scheduled for a public hearing at the Planning Board's next available meeting and the staff will provide the Planning Board with a recommendation to approve, approve with conditions, or deny the final site plan.

If you have any questions, feel free to contact me at (207) 874-8725 or by email at mgrooms@portlandmaine.gov.

Sincerely,

Matthew Grooms
Planner

Electronic Distribution:
Tuck O'Brien, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Victoria Morales, Associate Corporation Counsel
Anne Machado, Zoning Administrator
Captain Keith Gautreau, Fire
Jeff Tarling, City Arborist
Tom Errico, P.E., TY Lin Associates
Lauren Swett, P.E., Woodard & Curran

Planning and Urban Development Department
Planning Division

Subject: B-1b Design Review – 502 Stevens Avenue

Written by: Caitlin Cameron, Urban Designer

Date of Review: Friday, February 10 2017

The project at 502 Stevens Avenue was reviewed according to the *City of Portland Design Manual* standards by Caitlin Cameron, Urban Designer, Matt Grooms, Planner, and Deb Andrews, Historic Preservation Program Manager, against *the B-1b Commercial Business Zones Standards* (Section (d) of the Design Manual).

Design Review Comments*:*

- Materials should be called out on elevations
- All future signs are subject to the Sign Ordinance and will require a sign permit

(d) B-1b Neighborhood Business Zones

Standard (1) a. Urban Street Wall – Met – Project is located near the property line and creates strong street wall on street-facing façade consistent with other commercial or mixed use building placement while keeping bay projections above private property.

Standard (1) b. Mixed Uses – Met- Building is mixed-use with commercial ground floor and residential upper floors.

Standard (1) c. Building Entrances – Met – Primary building entrance is oriented to the street.

Standard (1) d. Windows – Met – Ground floor street frontage has an adequate amount of fenestration and at a level that provides some views into the building while maintaining some privacy for the users. Fenestration should meet the minimum transparency standard of .7 VT.

Standard (1) e. Façade Character – Met – Street-facing facades are oriented to and/or adjacent to public sidewalk.

Standard (1) f. Building Design – Not Met – The building design is compatible with the surrounding context in its scale, roof pitch, and fenestration. Vertical orientation of windows is appropriate for context. Building design is treated as though parcel is a corner lot – this is not an appropriate approach for a mid-block building. The chamfered corners are unnecessary, especially without corner condition and without entrances at chamfer. Rather than creating a hierarchical façade composition with emphasis on a corner, placement of bays should be front façade-oriented (similar to façade design of Pat's Market building) and façade composition could be more symmetrical as a result.

Standard (1) g. Building Materials – More information needed, Not Met – Materials should be called out on elevation drawings. Tile or masonry is not contextual choices on this streetscape – clapboard and wood panel are the predominant materials on the streetscape for mixed use and residential buildings (with the exception of the early 20th century brick commercial building at Stevens and Pleasant further down the street). Staff recommends a consistent material for the whole building with clapboard being the most contextual for this off-peninsula, residential neighborhood center.

Standard (1) h. Building Scale – Met - Proposed building is three stories, one story taller than most surrounding context. The scale is mitigated by elements such as a cornice line and bay windows.

Standard (1) i. Landscaping and Buffers – Met – It appears parking areas are screened from neighboring properties – planner will provide more guidance on this site plan criteria.

Planning and Urban Development Department
Planning Division

March 3, 2017

Denis Lachman
55 Hamblet Avenue
Portland, ME 04103

Pat Carroll, Carroll Associates
217 Commercial St, Suite 200
Portland, ME 04101

RE: Staff Review Comments for 502 Deering Center (2016-290) – Planning Board Review

Project Name:	502 Deering Center	Project ID:	(2016-290)
Project Address:	502 Stevens Avenue	CBL:	135-E-9
Applicant:	Denis Lachman		
Planner:	Matthew Grooms		

Dear Mr. Lachman,

Thank you for submitting a Level III Final Plan application for a three story mixed-use commercial and residential development at 502 Stevens Avenue. This proposal is being reviewed as a final plan for Planning Board review subject to the following applicable Land Use Code provisions:

- Subdivision Ordinance, Article IV
- Site Plan Ordinance, Arcticle V
- Neighborhood Meeting Regulations, Section 14-32

Final Plan for Planning Board Review: Staff Review Comments

I. Transportation Standards

A. Traffic Engineering Comments (Tom Errico)

1. The applicant should provide additional detail on the construction management plan. Please see the attached example for 23 Ocean Avenue. I do not support a sidewalk detour and would suggest a temporary barrier protected sidewalk along the frontage.

II. Environmental Quality Standards

A. Stormwater/Engineering Comments (Lauren Swett)

1. The City of Portland requires that all Level II site plan applications submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards (Technical Manual, Section 5. II. Applicability in Portland. C. a. and City of Portland Code of Ordinances Sec. 14-526. Site plan standards. (b). 3. b.). We offer the following comments:

    a. Basic Standard: Plans, notes, and details should be provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500. The Applicant has provided an erosion control plan that includes locations of measures, details and general housekeeping notes.

    b. General Standard: The project will result in an increase in impervious surface, and stormwater treatment in conformance with the General Standard is required. The Applicant is proposing to utilize an underdrained infiltration system and pervious pavers to provide treatment. This method of treatment will be acceptable. We have reviewed the proposed design as well as the Maine DEP standards for infiltration systems and have the following comments:
        - The Applicant should provide sizing calculations for the stormwater treatment systems, verifying that they provide adequate capacity as required for treatment of the tributary areas.
        - Maine DEP requires 25 feet of separation of infiltration systems from property boundaries. The Applicant should consider adjusting the layout to provide adequate separation. Given the nature of the site and the fact that other stormwater systems and the driveway will cross property boundaries, the proximity of the infiltration system and its possible impact on the adjacent project could also be included in the easement.
        - The pervious pavers have been modified to no-longer include underdrain; however the HydroCAD model still includes a 4" pipe as an outlet. This should be clarified.
        - The underdrained infiltration system is relatively shallow. Based on a check of some of the at-grade elevations versus the system inverts, it appears that there will not be enough depth to construct the standard pavement section as defined in the project details. The Applicant should consider whether insulation may be required.

    c. Flooding Standard: The project will result in an increase in impervious surface, and compliance with the flooding standard is required. The HydroCAD model indicates that flows will be reduced in the 2-year, 10-year, and 25-year storm events, and adequate flood control has been provided.

2. Two of the ponds modeled in the HydroCAD model (2P and 5P) have inverts that appear to be 100 feet higher than the correct grade. The model should be corrected with the correct elevation.
3. The stormwater system for the site is shown connecting to the combined sewer via an existing catch basin. This is not in conformance with the City of Portland standard, and approval from the City will be required.
4. The underdrained infiltration system is shown with a system vent attached to an existing fence post. The plan appears to show that this fence post is located on the adjacent property. This feature should be included in any easements with the abutter.

5. *It is noted that the stormwater system proposed on the site crosses property boundaries, and includes components on both properties utilizing the shared driveway. The responsibility for maintenance of this system should be clearly defined.* The Applicant has acknowledged this, noting that there will be an easement for the access driveway and joint facilities of the two properties. Details of this easement, and information on maintenance agreements should be provided.
6. An Inspection and Maintenance of Stormwater Management Facilities plan has been provided. The plan should be modified to include specific requirements for the stormwater features proposed on this site, including the pervious pavers.

B. Tree & Landscape Comments (Jeff Tarling)

1. The redevelopment of the site originally proposed to save the two mature Maple trees, one Norway & one Sugar Maple on the site. After review the likelihood of root damage during construction and the maturity of the trees make 'remove & replace' the best option. Due to site constraints and surrounding land use, no street trees are proposed or recommended for this location. Stevens Avenue street trees are all planted behind the sidewalk due to survivability. The project does add landscape treatment in the form of ornamental grasses and woody shrub planting along the edges.

2. Pavement edge treatment - Always suggest a minimal or bituminous 'Cape Cod' style curbing to protect landscape along pavement edges. It helps reduce deicing salts entering the landscape and reduced vehicle impact.

3. The project contains a small patio area with landscape treatment nearby. Fencing & edge treatment - it appears that the Lincoln School fencing around their playground has been recently updated and in good condition. (this is 8 foot high black vinyl fence) Privacy slats could be added to the degree necessary if the project wanted additional screening. Wood guardrail could be used to reduce snow, vehicle impact and headlight glare.

Additional Submittals Required:

Please upload the digital plans and documents to address staff comments. Upon receipt of the revised material, the City of Portland will review the additional plans and information for conformance with applicable ordinances. Please be aware that an application expires within 120 days of the date upon which this written request for additional information was made and only *one set of revised plans* may be submitted for review. This item is scheduled to go before the Planning Board as a public hearing item on March 28, 2017 at 7:00 pm where staff will provide the Planning Board with a recommendation to approve, approve with conditions, or deny the final site plan.

If you have any questions, feel free to contact me at (207) 874-8725 or by email at mgrooms@portlandmaine.gov.

Sincerely,

Matthew Grooms
Planner

Electronic Distribution:

Tuck O'Brien, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Victoria Morales, Associate Corporation Counsel
Anne Machado, Zoning Administrator
Captain Keith Gautreau, Fire
Jeff Tarling, City Arborist
Tom Errico, P.E., TY Lin Associates
Lauren Swett, P.E., Woodard & Curran

COMMITMENT & INTEGRITY
DRIVE RESULTS

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T 207.774.2112
F 207.774.6635

Att. 4

MEMORANDUM

TO: Matt Grooms, Planner
FROM: Lauren Swett, PE
DATE: March 23, 2017
RE: 502 Stevens Avenue

Woodard & Curran has reviewed the Level III Site Plan Application Response to Comments for the new mixed-use building construction proposed at 502 Stevens Avenue in Portland. The project will include the replacement of an existing single-family residence with a three-story building that includes commercial space on the ground floor and four dwelling units total on the second and third floors.

Documents Reviewed by Woodard & Curran

- Level III Site Plan Response to Comments and attachments, dated March 14, 2017, prepared by Carol Associates Landscape Architects, Lachman Architects & Planners, and Pinkham & Greer Civil Engineers, on behalf of 502 Deering Center, LLC.
- Engineering Plans, dated March 13, 2017, prepared by Carroll Associates and Pinkham & Greer Civil Engineers, on behalf of 502 Deering Center, LLC.

Comments (*Comments repeated from previous memos included in italics)*

1) The City of Portland requires that all Level II site plan applications submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards (Technical Manual, Section 5. II. Applicability in Portland. C. a. and City of Portland Code of Ordinances Sec. 14-526. Site plan standards. (b). 3. b.). We offer the following comments:
   a) Basic Standard: Plans, notes, and details should be provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500. The Applicant has provided an erosion control plan that includes locations of measures, details and general housekeeping notes.
   b) General Standard: The project will result in an increase in impervious surface, and stormwater treatment in conformance with the General Standard is required. The Applicant is proposing to utilize an underdrained infiltration system and pervious pavers to provide treatment. This method of treatment will be acceptable. We have reviewed the proposed design as well as the Maine DEP standards for infiltration systems and have the following comments:
      - Maine DEP typically requires 25 feet of separation of infiltration systems from property boundaries. Due to site constraints a waiver of this standard would be supported for the project.
   c) Flooding Standard: The project will result in an increase in impervious surface, and compliance with the flooding standard is required. The HydroCAD model indicates that flows will be reduced in the 2-year, 10-year, and 25-year storm events, and adequate flood control has been provided.
2) *The stormwater system for the site is shown connecting to the combined sewer via an existing catch basin. This is not in conformance with the City of Portland standard, and approval from the City will be required.* Public Works has indicated that this type of connection would now be allowed. The Applicant will need to address the connection requirements with the Water Resources Division of Public Works.
3) *It is noted that the stormwater system proposed on the site crosses property boundaries, and includes components on both properties utilizing the shared driveway. The responsibility for maintenance of this system should be clearly defined.* The Applicant has acknowledged this, noting that there will be an easement for the access driveway and joint facilities of the two properties. Details of this easement, and information on maintenance agreements should be provided.

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

502 Stevens Avenue - Final Traffic Comments

Tom Errico <thomas.errico@tylin.com> Fri, Mar 24, 2017 at 8:32 AM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>, Jeff Tarling <jst@portlandmaine.gov>

Hi Matt – I have reviewed the application materials and offer the following final traffic comments, as a status update of previous comments.

- I reviewed the trip generation and safety analysis prepared by Maine Traffic Resources and I find the methods used to be acceptable. The project is not expected to generate a significant amount of traffic and there are no documented safety deficiencies in the vicinity of the project. The project does not require a Traffic Movement Permit. In my professional opinion the project will not have a significant impact on transportation conditions in the project area.

Status: I have no further comment.

- The applicant is requesting a waiver from the City's Technical Standards for parking aisle width. The project is proposing 21 feet (the City standard is 24 feet). Given low trip generating characteristics and the general layout of the site (backing maneuvers onto Stevens Avenue are very unlikely), I support a waiver.

Status: I have no further comment.

- The applicant is requesting a waiver from the City's Technical Standards for driveway width. The project is proposing 18.24 feet (the City standard for minimum width is 20 feet). Given low trip generating characteristics, I support a waiver.

Status: I have no further comment.

- The proposed project is relocating the existing crosswalk across Stevens Avenue from the north side of Hartley Street to the south side. Please note the following:
    - The applicant will be responsible for the removal of existing pavements markings that meet City requirements.
    - Changes to signage (parking, warning, etc.) will be the responsibility of the applicant. It is suggested that new pedestrian crossing warning signs be installed. Recommendations for on-street parking regulations should be provided.
    - A design detail for the proposed sidewalk ramp at the southeast corner of Hartley Street shall be provided. Specific details on slopes, width dimensions, and curb details shall be provided.
    - A detectible warning panel shall be installed at the northeast corner of Hartley Street. Details shall be provided for review and approval.

Status: The plans have been revised and I generally find conditions to be acceptable. The sidewalk ramp design detail at the southeast corner of Hartley Street is not acceptable given some slopes that appear to be non-compliant (exceed 2 percent maximum). I would suggest a condition of approval that requires the applicant to submit a revised detail for review and approval by the Planning Authority.

- The applicant has submitted a Construction Management document. Given the presence of school children, I do not support the temporary closure of the sidewalk with a detour to the opposite side of the street. The applicant shall maintain a fully ADA compliant sidewalk facility along the project frontage. Additionally, the applicant shall maintain or provide a reasonable alternative to the existing Steven Avenue crossing.

Status: The construction management plan is not acceptable. A sidewalk detour to the opposite side of the street is not acceptable and the plan shall be revised to include a temporary sidewalk in Stevens Avenue.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY·LIN INTERNATIONAL

12 Northbrook Drive

Falmouth, ME 04105

207.781.4721 (main)

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Planning and Urban Development Department
Planning Division

Subject: B-1b Design Review – 502 Stevens Avenue

Written by: Caitlin Cameron, Urban Designer

Date of Review: Friday, March 24, 2017

The project at 502 Stevens Avenue was reviewed according to the *City of Portland Design Manual* standards by Caitlin Cameron, Urban Designer, Matt Grooms, Planner, and Deb Andrews, Historic Preservation Program Manager, against *the B-1b Commercial Business Zones Standards* (Section (d) of the Design Manual).

Design Review Comments*:*

- All future signs are subject to the Sign Ordinance and will require a sign permit.

(d) B-1b Neighborhood Business Zones

Standard (1) a. Urban Street Wall – Met – Project is located near the property line and creates strong street wall on street-facing façade consistent with other commercial or mixed use building placement while keeping bay projections above private property.

Standard (1) b. Mixed Uses – Met- Building is mixed-use with commercial ground floor and residential upper floors.

Standard (1) c. Building Entrances – Met – Primary building entrance is oriented to the street.

Standard (1) d. Windows – Met – Ground floor street frontage has an adequate amount of fenestration and at a level that provides some views into the building while maintaining some privacy for the users. Fenestration should meet the minimum transparency standard of .7 VT.

Standard (1) e. Façade Character – Met – Street-facing facades are oriented to and/or adjacent to public sidewalk.

Standard (1) f. Building Design – Met – The building design is compatible with the surrounding context in its scale, roof pitch, fenestration, and general character. Vertical orientation of windows and use of bays is appropriate for context as is the use of storefront on the commercial ground floor. The design was revised to add balance to upper stories of what is a hierarchical façade composition; the corner bay is counter-balanced on the street façade with a bay of windows on the other corner with the same size, spacing, and materials as the bay. This special corner treatment is carried around the corner. The window placement at the center of the facade emphasizes the primary building entrance – the floor plans preclude the introduction of more windows on the street façade. The applicant chose to keep the chamfered corners with the argument that they direct people to the parklet and residential entrances on the sides of the building. The chamfers are scaled to allow for future storefront entries if needed.

Standard (1) g. Building Materials – Met – The neighborhood is predominantly clapboard with occasional brick and eclectic materials right in the commercial node. Materials are placed to reflect the mixed-use nature of the building with tile and storefront at the commercial ground floor and clapboard on the upper residential floors. Staff recommended ground floor tile be of larger scale (24"x24") to "ground" the base of the building. The desire is for a relatively smooth and continuous surface with a neutral color in order to be compatible with the predominantly clapboard and brick materials in the mixed-use and residential context. The upper stories are clapboard with panel which is preferred choice to be contextual

Standard (1) h. Building Scale – Met - Proposed building is three stories, one story taller than most surrounding context. The scale is mitigated by elements such as a cornice line and bay windows.

Standard (1) i. Landscaping and Buffers – Met – It appears parking areas are screened from neighboring properties – planner will provide more guidance on this site plan criteria.

Att. A

PROJECT NAME:

502 Deering Center - Level III Site Plan & Subdivision Review

PROPOSED DEVELOPMENT ADDRESS:

502 Stevens Ave, Portland

PROJECT DESCRIPTION:

New mixed use building replaces existing single family residence. Ground floor is commercial. Previously we had (4) 3BR units – (2) in the front and (2) in the rear. At the rear of the building only, at both the 2nd and 3rd floors, 3BR units have changed to (2) 1BR units. At the front there is no change to the 3BR units on both 2nd and 3rd floors. The total number of units increases from 4 to 6. 10 parking spaces are onsite at rear. An additional (2) remote spaces are leased to meet the required (2) spaces for a 1BR unit.

CHART/BLOCK/LOT: 135-E-9

AMENDED APPLICATION 3/14/ 17
PRELIMINARY PLAN _____(date)
FINAL PLAN 12/23/16 (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Denis Lachman Business Name, if applicable: 502 Deering Center LLC Address: 55 Hamblet Ave City/State : Portland, ME Zip Code: 04103	**Applicant Contact Information** Work #: 207 831 8585 Home #: 207 772 1195 Cell #: same as work Fax#: none e-mail: denis@lachmanarchitects.com
Owner – (if different from Applicant) Name: Same Address: City/State : Zip Code:	**Owner Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Agent/ Representative Name: Pat Carroll, Carroll Associates Address: 217 Commercial Street, Suite 200 City/State : Portland, ME Zip Code: 04101	**Agent/Representative Contact information** Work #: 207.772.1552 Home #: Cell #: Fax#: e-mail: pcarroll@carroll-assoc.com
Billing Information Name: same as Applicant/Owner Address: City/State : Zip Code:	**Billing Contact Information** Work #: Home #: Cell #: Fax#: e-mail:

Engineer	**Engineer Contact Information**
Name: Tom Greer, Pinkham and Greer, Civil Engineers Address: 28 Vannah Ave City/State : Portland, ME Zip Code: 04103	Work #: 207.781.5242 Home #: Cell #: Fax#: e-mail: TGreer@pinkhamandgreer.com
Surveyor	**Surveyor Contact Information**
Name: Don Dostie Four Points Associates, Inc Address: 9 Ralph Ave, Unit 1 City/State : Lewiston, ME Zip Code: 04240	Home #: Work #: 207 577 5840 Cell #: Fax#: e-mail: ddostie@fourpoints-survey.com
Architect	**Architect Contact Information**
Name: Lachman Architects & Planners Address: 58 Fore St, Bldg 30 City/State : Portland, ME Zip Code: 04101	Work #: 207 831 8585 Home #: Cell #: same Fax#: none e-mail: denis@lachmanarchitects.com
Attorney	**Attorney Contact Information**
Name: Nelson Toner, Bernstein Shur Address: 100 Middle St City/State : Portland, ME Zip Code: 04101	Work #: 207 228 7299 Home #: Cell #: Fax#: e-mail: ntoner@bernsteinshur.com
Designated person/person(s) for uploading to e-Plan: Name: Denis Lachman e-mail: denis@lachmanarchitects.com Name: e-mail: Name: e-mail:	

APPLICATION FEES:

Level III Development (check applicable reviews)	**Other Reviews (check applicable reviews)**
X Less than 50,000 sq. ft. ($750.00) ___50,000 - 100,000 sq. ft. ($1,000) ___100,000 – 200,000 sq. ft. ($2,000) ___200,000 – 300,000 sq. ft. ($3,000) ___over 300,00 sq. ft. ($5,000) ___Parking lots over 11 spaces ($1,000) ___After-the-fact Review ($1,000.00 plus applicable application fee) **Plan Amendments (check applicable reviews)** ___Planning Staff Review ($250) ___Planning Board Review ($500) _____ The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($50.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	___Traffic Movement ($1,500) ___Stormwater Quality ($250) X Subdivisions ($500 + $25/lot) # of Lots 4 x $25/lot = $600 ___Site Location ($3,500, except for residential projects which shall be $200/lot) # of Lots___x $200/lot = _____ ___Other _____ ___Change of Use ___Flood Plain ___Shoreland ___Design Review ___Housing Replacement ___Historic Preservation

INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov (Please be sure to designate a person who will be responsible for uploading documents and drawings.) This step will generate the project ID number for your project.

2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at Pay Your Invoice , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.

3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
   Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
   Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
   Tab 3 - Preparing and uploading revised drawings and documents

   Applying Online Instructions

5. When ready, upload your files and documents into the following folders:
   "Application Submittal – Drawings"
   "Application Submittal – Documents"

6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

APPLICANT SIGNATURE:

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	**Date:**
	12/22/16 Amended Application 3/14/17

PROJECT DATA Amended Application 3/14/17

The following information is required where applicable, in order to complete the application.

Total Area of Site	9562 +/-	sq. ft.
Proposed Total Disturbed Area of the Site	9562 +/-	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
Impervious Surface Area		
Impervious Area (Total Existing)	2828 +/-	sq. ft.
Impervious Area (Total Proposed)	7970 +/-	sq. ft.
Building Ground Floor Area and Total Floor Area		
Building Footprint (Total Existing)	1295	sq. ft.
Building Footprint (Total Proposed)	2505	sq. ft.
Building Floor Area (Total Existing)	2107	sq. ft.
Building Floor Area (Total Proposed)	10,200 inc basement	sq. ft.
	7767 amended	
Zoning		
Existing	B1-b	
Proposed, if applicable	no change	
Land Use		
Existing	single family residential	
Proposed	mixed use, commercial + residential	
Residential, If applicable		
# of Residential Units (Total Existing)	1	
# of Residential Units (Total Proposed)	4 6 amended	
# of Lots (Total Proposed)	4 6 amended	
# of Affordable Housing Units (Total Proposed)	0	
Proposed Bedroom Mix		
# of Efficiency Units (Total Proposed)	0	
# of One-Bedroom Units (Total Proposed)	0 4 amended	
# of Two-Bedroom Units (Total Proposed)	2 0 amended	
# of Three-Bedroom Units (Total Proposed)	2 same	
Parking Spaces		
# of Parking Spaces (Total Existing)	2	
# of Parking Spaces (Total Proposed)	10 12 (10 onsite + 2 leased remote	
# of Handicapped Spaces (Total Proposed)	1 within 1500') amended	
Bicycle Parking Spaces		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	6	
Estimated Cost of Project	$1.2M	

	FINAL PLAN - Level III Site Plan			
	Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
A	**X**		1	* Completed Application form
B	**X**		1	* Application fees
C	**X**		1	* Written description of project
D	**X**		1	* Evidence of right, title and interest
E	**NA**		1	* Evidence of state and/or federal permits
F	**X**		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
G	**X**			* Summary of existing and/or proposed easements, covenants, public or
H	Waivers **X**		1	private rights-of-way, or other burdens on the site
I	**X**		1	* Evidence of financial and technical capacity
J	**X**		1	Construction Management Plan
K	**X**		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
L	**NA**		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
M	**X**		1	Stormwater management plan and stormwater calculations
N	**X**		1	Written summary of project's consistency with related city master plans
O	**X**		1	Evidence of utility capacity to serve
P	**X**		1	Written summary of solid waste generation and proposed management of solid waste
Q	**X**		1	A code summary referencing NFPA 1 and all Fire Department technical standards
R	**X**		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
S	**X**		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.
T	Erosion **X**			

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	**Final Site Plans including the following:**
X		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
X		Existing and proposed structures on parcels abutting site;	
X		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
X		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
X		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
NA		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
NA		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
X		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
X		Location of all snow storage areas and/or a snow removal plan;	
NA		A traffic control plan as detailed in Section 1 of the Technical Manual;	
X		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
NA		Location and proposed alteration to any watercourse;	
NA		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
NA		Proposed buffers and preservation measures for wetlands;	
X		Existing soil conditions and location of test pits and test borings;	
X		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
X		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
X		Grading plan;	
NA		Ground water protection measures;	
X		Existing and proposed sewer mains and connections;	

- Continued on next page -

X		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
X		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
X		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
X		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
X		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
NA		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
NA		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
X		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
X		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
X		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
X		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

Portland, Maine — Yes. Life's good here.

Jeff Levine, AICP, Director
Planning & Urban Development Department

B. APPLICATION FEES

Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no Site Plan or Historic Preservation Applications can be reviewed until payment of appropriate application fees are ***paid in full*** to the Inspections Office, City of Portland Maine by method noted below:

☐ Within 24-48 hours, once my complete application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☐ Within 24-48 hours, once my application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☒ I intend to deliver a payment method through the U.S. Postal Service mail once my application paperwork has been electronically delivered.

Denis Lachman — 12/23/16

Applicant Signature: Date:

Denis Lachman — 12/23/16

I have provided digital copies and sent them on: Date:

NOTE: All electronic paperwork must be delivered to buildinginspections@portlandmaine.gov or by physical means i.e. a thumb drive or CD to the Inspections Office, City Hall, 3rd Floor, Room 315.

Lachman Architects & Planners
Architecture | Community Planning | Preservation
Building Communities - with community buildings

December 22, 2016

To: Jeff Levine, AICP, Director, Planning & Urban Development
Members of the Planning Board

RE: **502 Deering Center**

We are pleased to submit this application for a Level III Site Plan and Subdivision Review. We believe 502 Deering Center is an excellent project that purposefully demonstrates how key goals for the region, the City, the neighborhood and for our contemporary times might be met by a single small project. Goals such as village mixed-use, good urban design, mixed transportation use, small-lot infill, middle income housing, neighbor-to-neighbor collaborative planning, public access, and context-based design and others are described in the following pages and in the application.

Please do not hesitate to contact us if you have any questions at all. We standby to assist your process, and look forward to a smooth and efficient review. Thank you.

Sincerely,
Denis Lachman

C DESCRIPTION OF PROJECT & INTRODUCTION

Section **1** **Written Introduction & Project Goals**

Section **2** **Shared Infrastructure, Pocket Park & Mixed Transportation**

Section **3** **Village Context & Visual Introduction to Project**

Section 1 Written Introduction & Project Goals

Growing Portland: *The question is not whether Portland will grow, but how well it will manage the growth that is now certain to come. As the City looks to the future, it faces twin challenges: workforce development and housing. Careful urban design can address both issues by creating vibrant mixed-use neighborhood centers and reducing traffic congestions….*

To be successful, Portland must grow its workforce, broaden its property tax base and create greater housing opportunities for all social classes along its connecting thoroughfares and in select neighborhood centers on and off the peninsula. Portland must pay careful attention throughout to good urban design, learning from other successful cities.

Successful cities today …… build mixed-use and mixed-income neighborhoods that bring together housing, businesses, shops, cultural venues, green space and pocket parks, creating settings where residents can walk to shop, work, play, rest, engage and visit.

Over the next decade, Portland can and should aim to have half its population live and work in the city. Portland today teems with possibilities. .... we can make this city even more attractive to new residents, especially those needed to replace retiring workers; to new businesses that will come where talent resides; and to current and future residents who will enjoy a livable city of vibrant, connected neighborhoods. (Maine Sunday Telegram, Growing Portland: Commentary by Richard Barringer, Joseph McDonnell, John Dorrer, Ryan Wallace, 10/16/2016)

Location, Location, Location at the Heart of this Vibrant Mixed-use Neighborhood Center

Portland's recent success is fueling on-peninsula commercial and residential real estate to soar, causing spill over and increased interest off-peninsula. One of Portland's most desirable off-peninsula neighborhoods is Deering Center, well known for its schools, walkability, village center, University of New England and many other features. In fact, Deering Center already is, and has been for generations, a classic *mixed-use and mixed-income neighborhood that bring together housing, businesses, shops, cultural venues, green space and pocket parks, creating settings where residents can walk to shop, work, play, rest, engage and visit. "Perhaps more than any other neighborhood in Portland, Deering Center has the feel of a typical late-nineteenth century small town downtown (Maine Historic Preservation, Forest Avenue and Stevens Avenue, August 2015).* The hub of the neighborhood is its commercial village center, and at the heart of the village is this project - **502 Deering Center**.

Right Project, Right Time, Right Location, Right Goals

As Portland's development spills off the peninsula, and there is significant nearby development around the village center, such as UNE and the Mother House Project, there is increasing interest in Deering Center as an inviting and walkable village center and destination. Unlike other neighborhood centers that were formerly vibrant but have been eroded by ever encroaching

roadways and traffic (such as Morrill's Corner, Rosemont, Woodford's), Deering Center Village has remains fundamentally intact as a village center, so it needs no major investment rebuilding its "bones". A convergence of the right project, at the right time, at the right location with the right goals makes 502 Deering Center an ideal project for Growing Portland.

Overarching Goal: Building Community with Community Buildings

In the village there has been little renovation and no new commercial spaces for decades. 502 Deering Center's goal is to catalyze village and community vitality with Traditional Mixed Uses, such as commercial on the ground floor with residential units on upper floors. This mixed use building type is a perfect match with the current neighborhood business zone, so no zone change is required. Traditional Mixed Uses also encourage neighbors and Portlanders to walk, shop local and socialize - which are essential features for thriving community. In other words - building Maine communities with community buildings

Goal: Make Property Compliant with its Zoning

The property is zoned Neighborhood Business (B1-b), to "*provide appropriate opportunities for the establishment of smallscale ground floor commercial uses to serve a local market, while preserving residential uses and character above the ground floor…… Suitable locations for this zone may include (Main Streets) …… and sites with existing or traditional neighborhood retail and service uses."* No zone change is required. However the property is currently non-conforming with its B1-b zone because the existing house is set back from the street, and consequently does not meet the "Urban Street Wall" requirement. The new addition is purposefully designed to correct the Urban Street Wall and meet all other all B1-b requirements.

Goal: Build Traditional Mixed Uses

502 Deering Center's goal is to catalyze village and community vitality with Traditional Mixed Uses. **Commercial** on the ground floor with **Residential Units** on 2 upper floors will generate a beehive of activity, enlivening the village's already-healthy mix of traditional uses. The mixed use building type is a perfect match with its neighborhood business zone, so no zone change is required.

Goal: Improve Pedestrian Safety

Joint utilization of a single driveway reduces existing curb cuts from 3 to 1, which improves safety by eliminating existing dangerous back-outs across the sidewalk, especially with so many children in the area.

Goal: Build New Housing for Middle Income Portlanders

Portland has a serious housing shortage and 502 Deering Center responds by transforming the existing single family house with 1 dwelling unit into a mixed use project with 4 dwelling units. This housing shortage is especially critical for middle income residents and 502 Deering Center provides desperately needed and rare housing opportunities for average earners who have or seek to set long term roots here to live, work and play. This dynamic - existing limited supply and high demand - makes housing a premium.

Goal: Create a Village Pocket Park

A key building block for a thriving community is a public space - a welcoming, sunny, pause-and-meet spot. The new Village Pocket Park is an extraordinary opportunity to carve out precious private land in the village, devote private resources to its design, construction and maintenance, and program it as a public amenity for public use. The Village Pocket Park is perfectly situated to be a pause-and-meet spot along the Deering Center Walking Trail (yet to be created), that could cross the existing Portland Tails recreational trail to create a complementary recreational/urban trail intersection.

Goal: Demonstrate Smart Neighborhood Infill

Portland has many infill opportunities that need to be developed for smart and sustainable growth. These infill sites are typically small and restricted in size, which creates many steep design and financial challenges. Limited sites underperform for large developers, so it is smaller developers who must overcome with their many challenges. Because their surroundings are tight, expectations are high for them to fit well into their context. This project seeks to demonstrate how smart site and building design on a limited budget can fit while accomplishing multiple goals. Examples include a new urban street wall, new activity-infusing commercial space, new middle income housing, a jointly shared driveway, reduced impervious area and associated stormwater runoff, improved pedestrian safety by reducing curb cuts and eliminating back-outs across sidewalk, a new Village Pocket Park and mixed transportation use opportunities, such as enhanced bus, bike and walking amenities.

Goal: Demonstrate How Village Scale Mixed Transportation Use Can Reduce Car Use & Parking

Mixed Transportation is an approach that encourages a variety of transportation modes – walking, busing and biking - in addition to cars. The project seeks to demonstrate how making it easy and convenient encourages people to choose mixed forms of transportation. 502 Deering Center is perfectly situated to …. *create greater housing opportunities ……. along its connecting thoroughfares and in select neighborhood centers on and off the peninsula.*

Goal: Meet Market Demand for "Live Small"

Some residents, including both downsizing boomers and upcoming millennials are committed to the concept of "living small" to reduce their cost and our carbon footprint. For many who cannot afford to live on peninsula, 502 Deering Center is an ideal opportunity - walkable, mixed transportation friendly in highly desirable close-in neighborhood.

Goal: Demonstrate Neighborhood-Friendly Development Process

We live in the neighborhood, so this project is **of the hood, by the hood and for hood**. As residents ourselves, we are committed to a neighborhood-friendly development process that keeps everyone informed. Frequent communication and clear graphic information helps gets everyone on the same page by fostering common understanding. For many, seeing is a step towards understanding, which in turn is a step towards shared support. In the spring of 2016, in advance of the City-required neighborhood meetings, we met with business owners up and down Stevens Ave, and received support and encouragement. In November 2016, we presented to the Deering Center Neighborhood Association, and again received support and encouragement. Building on this early support will be typical City required neighborhood meetings.

Goal: Demonstrate Collaborative Site Planning & Shared Infrastructure

502 Stevens Ave and 510 Stevens Ave are abutting properties both developing mixed-use infill projects. The two projects are collaborating to achieve better land and resource efficiency and good urban design than each could individually. Sharing a single driveway, utilities and stormwater management is a high priority for both projects, and sharing infrastructure is also a high priority City-wide for land and resource efficiency.

Goal: Design to Fit Gracefully in to Context

Deering Center Village has good Main Street architectural "bones". The overarching design goal is to complement the existing context (emphasis on "we"), rather than make a strong attention-seeking design statement (emphasis on "me"). The design wants to be a graceful neighbor now and a century from now.

Section 2 Shared Infrastructure, Public Park & Mixed Transportation Use

Careful urban design can address … issues by creating vibrant mixed-use neighborhood centers and reducing traffic congestions…. To be successful, ….. Portland must pay careful attention throughout to ***good urban design****, learning from other successful cities…. Successful cities today …… build …. neighborhoods that bring together housing, businesses, shops, cultural venues, green space and* ***pocket parks****, creating settings where residents can walk to shop, work, play, rest, engage and visit.(Maine Sunday Telegram, Growing Portland: Commentary by Richard Barringer, Joseph McDonnell, John Dorrer, Ryan Wallace, 10/16/2016)*

Abutting Projects Share Driveway & Utilities for Land & Resource Efficiency and Good Urban Design

502 Stevens Ave and 510 Stevens Ave are abutting properties both developing mixed use infill projects. The two projects are purposefully collaborating to achieve better land and resource efficiency and good urban design than each could individually. Sharing infrastructure is a high priority for both projects and is also a high priority City-wide for land and resource efficiency. This goal is stated explicitly in Portland Design Manual's standards for B-5 Urban Commercial Business zones (a more intense zone with higher expectations than this B1-b Neighborhood Commercial):

a. Shared infrastructure: Shared ***circulation****,* ***parking****, and* ***transportation*** *infrastructure shall be provided to the extent practicable, with utilization of* ***joint curb cuts****,* ***walkways****, service alleys, bus pull-out areas, and related* ***infrastructure shared with abutting lots*** *and roadways.* ***Easements for access for abutting properties and shared internal access points at property lines shall be provided where possible to facilitate present or future sharing of access and infrastructure****.*

d. Parking lots shall be located to the maximum extent practicable toward the ***rear of the property*** *and* ***shall be located along property lines where joint use or combined parking areas with abutting properties are proposed*** *or anticipated.*

Shared Driveway Provides Multiple Benefits - In the village, land and resources are very limited and sharing a driveway is an efficient use of both. Impervious area and associated storm runoff are reduced. Joint utilization by 502 and 510 reduces curb cuts from 3 to 1 and removing existing curb cuts eliminates dangerous back-outs across the sidewalk, especially with so many children in the area. Sharing a driveway allows precious resources and land otherwise devoted to cars, to instead be reallocated to a Village Pocket Park and Mixed Use Transportation opportunities. See below for a more complete description. Sharing a driveway is also an example of how collaboration by neighbors can create opportunities with multiple benefits, beyond what is individually possible. In addition to the benefits of joint driveway utilization, utility infrastructure is also shared. Power, water and sewer all must be brought underground by deep trenching across Stevens Ave. Shared utility infrastructure by 502 and 510 to a common vault allows a single less invasive trench (rather

than multiple) with a single street closure. In addition, a common vault allows an unsightly power pole in front of the property to be removed, thereby improving the Stevens Ave streetscape

Public Space on Private Property: New Village Pocket Park & Patio

> *Successful cities today …… build …. neighborhoods that bring together housing, businesses, shops, cultural venues, green space and **pocket parks**, creating settings where residents can walk to shop, work, play, rest, engage and visit. (Maine Sunday Telegram, Growing Portland: Commentary by Richard Barringer, Joseph McDonnell, John Dorrer, Ryan Wallace, 10/16/2016)*

The overarching goal is a new project that catalyzes increased economic and social activity in the village center, specifically by encouraging neighbors and Portlanders to walk, shop local and socialize - which are essential features for thriving community. A key building block for a thriving community is a public space - a welcoming, sunny pause-and-meet spot. *"It takes a space to make a community, and a community to make a space"*. The new Village Pocket Park is an extraordinary opportunity to carve out precious private land in the village, devote private resources to its design, construction and maintenance, and program it as an amenity for public use. A sign might say "*Welcome to Deering Center Pocket Park. Please sit, enjoy and respect our park*".

Designed for Both Park and Patio – Land and resources are limited in the village, so the public pocket park is designed to flexibly accommodate multiple uses (like countless other public spaces around the globe where land and resources are also limited). For example, tables and chairs can be brought out each afternoon and evening to transform from public Park to a restaurant's private seating/eating Patio. Even a small park/patio provides ideal opportunities for mini performances, (such as the neighborhood's annual Porch Fest), arts and youth activities. The Patio is an outstanding amenity for a restaurant.

Access, Visibility & Features Set the Stage for Activity – The Park/Patio is accessed directly from the Stevens Ave public sidewalk, or from within the restaurant (when it's a Patio). The Park/Patio is easily visible from the street, making it inviting. It is physically near street activity, but separated enough to be experienced quietly. The Park/Patio has specialty paving that makes it level, safe, attractive and universally accessible. Southeast orientation provides morning sun, while the building protects from the north wind. Pervious paving minimizes stormwater runoff. Plantings (native drought tolerant) soften edges. Reused granite foundation facing slabs provide bench seating + sculptural interest and a Neighborhood Kiosk provides neighbors with happenings. This pocket park sets the stage for many uses, from quiet one-to-one pause-n-meet, to active events such as performances by local school groups, sidewalk fairs, Porchfest (existing neighborhood music event) and many others. Though small in size, this pocket park is poised to make a potentially large contribution to the village identity and pride of the neighborhood and village.

Mixed Transportation Use Reduces Car Use & Parking

Deering Center Village is a concentration of commercial and social activity, and its compactness means land is very limited for sites, buildings and parking. This project, and its neighbor 510 Stevens Ave, are in the heart of the village. Mixed Transportation is a fresh and smarter approach that offsets parking by encouraging use of other transportation modes, primarily Walking, Pubic Transit (bus) and Biking. This project seeks to be an example how small infill development on limited sites can purposefully dedicate features to support a mix of transportation options, in addition to cars.

Shared Driveway Specifically Creates Mixed Transportation Opportunities – Sharing a driveway allows precious resources and land otherwise devoted to cars and parking to instead be reallocated to mixed transportation opportunities, as described below:

Features That Encourage Walking – The neighborhood is renowned for its walkability, and this project offers features to encourage even more. Public seating, safe connections, lighting, signs, benches for resting or pausing to watch or visit are all incentives that encourage walking. Removing the existing curb cut eliminates dangerous back-outs across the sidewalk, especially with so many children in the area. In addition, the Village Pocket Park encourages walking because it is perfectly situated to be a pause-and-meet spot along the Deering Center Walking Trail (yet to be created), that could connect UNE with Deering High School/ Burbank Public Library. The existing Portland Tails recreational trail crosses from Evergreen Cemetery into Baxter Woods diagonally across from the site, creating an exciting opportunity for a complementary recreational /urban trail intersection. Possible sign "Deering Center Village welcomes you to sit here and walk to many local destinations. UNE 500 steps, DHS 500 steps, Burbank Library 400 steps etc".

Features That Encourage Public Transit – 502 Deering Center is perfectly situated to …. *create greater housing opportunities ……. along its connecting thoroughfares and in select neighborhood centers on and off the peninsula.* There is an existing bus stop in front of the property, and this project purposefully enhances it for use by residents of 502 who live above, for residents of 510 who live next door, and neighborhood users. A granite bench (reused foundation block) provides permanent seating sheltered from the weather by the upper floor bay above. The SE facing bench captures morning sun, while the building protects from north wind. The overhang's down light provides safe illumination and safety. The corner bench is purposefully located for excellent sight lines to both inbound and outbound buses. From the protected bench, out-bound riders can see their bus approaching from several block away, then cross the street to catch it. With real-time bus route status, residents who live above can drop (downstairs)-n-ride.

Features That Encourage Biking – Ample, safe and covered bike parking encourages neighborhood residents who may not wish to bike all the way into downtown a convenient alternative - leave their car at home and instead bike to the village. Coordinated with real-time bus route status for efficiency, they can park their bikes and hop n ride the bus. Note: this is a 21st century update of Deering Center's historic 19th and early 20th century transportation pattern, when residents commuted to downtown by streetcar. Bike parking also encourages neighbors to bike into the village to patronize businesses.

Features That Encourage Electric Cars - Electric cars reduce emissions, and to encourage their hassle-free convenient use, a charging station may be provided. The charging station may be part of a larger network or corridor that serves both patrons and neighbors with electric vehicles, and even encourages others to buy these environmentally friendly vehicles.

Cars Share – Car shares (Uhaul CarShare or Zipcar) may be an option to allow some urban dwellers to reduce their car ownership and vehicle trips.

Section 3 Village Context & Visual Introduction to Project

The Neighborhood

> *"Geographic center of city with lovely homes and a feeling of togetherness. The longtime bedroom community features tree-lined streets, a high school and time-saving businesses….. All within a short walk …. are staples of the neighborhood … schools, the Burbank branch of the Portland Public Library, and businesses….".* *(Press Herald, Welcome to Portland: Deering Center, 12/2015)*

Deering Center is the quintessential traditional American neighborhood. It is much loved as a family-friendly, walkable residential neighborhood close to downtown today, as it was in the 19th century, when it was still an independent town. With about 4000 residents, a median household income of $66,830, median age of 43 (2015), 51% of households are owner-occupied and over 80% have a college degree, plus abundant schools, recreation and amenities, Deering Center is one of Portland's most active, affluent and desirable neighborhoods.

Walkable Village

> *Today, Deering Center's most notable characteristic – besides the handsome, treelined residential blocks – is the strip of local businesses and public institutions along Stevens Avenue, a miniature town center.* *(Press Herald, Welcome to Portland: Deering Center, 12/2015)*

The neighborhood's heart has always been, and continues to be, its village center, a collection of local businesses, services and civic and education institutions. At the heart of this village center will be 502 Deering Center, a new mixed-use building.

Walkability was the underlying pattern when Deering Center was first settled as an independent town. Today, there is renewed interest in car-independence and active living. Walkability is a function of safety and convenience. Deering Center has an abundance of opportunities - local businesses, professional services, civic institutions, schools and recreation - all within a **3 Minute Village**, **5 Minute Village** and **10 Minute Village**. Superb walkablity remains one of the outstanding

features that make Deering Center one of Portland's premier neighborhoods, especially for families and boomers.

Deering Center Micro-Community

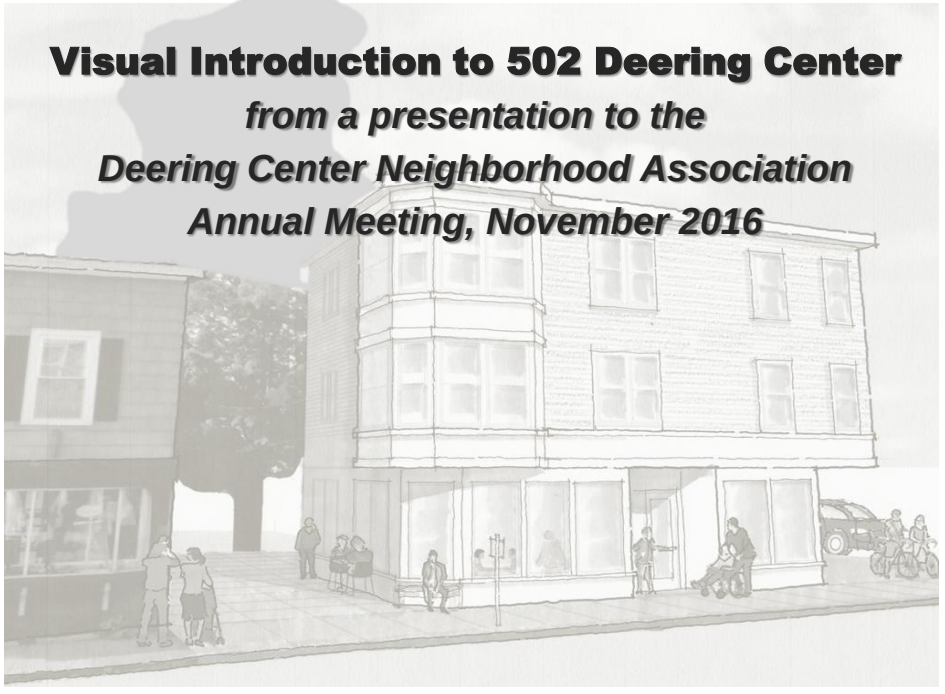
The geographic heart of Portland, Deering Center, is sometimes regarded as one of the "best kept secrets," in terms of living situations. With the average rent hovering around $1,461, below the city-wide average, and wide, tree-lined streets close to time saving businesses, Deering Center is a desirable neighborhood…. Deering Center is an example of the kind of up and coming, micro-community that Portland could leverage to house the people that can't find a livable space on the peninsula.

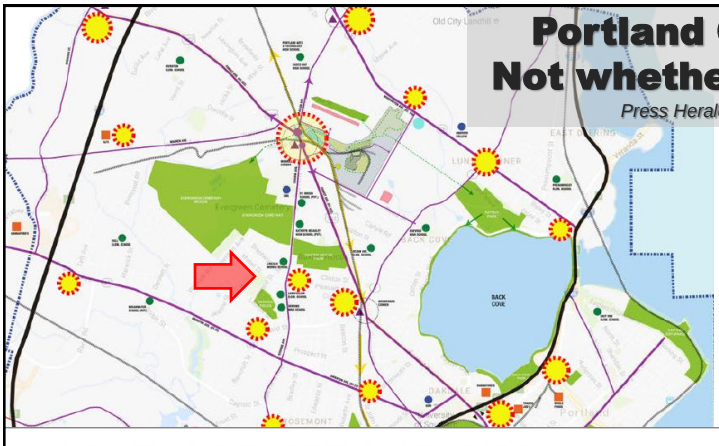
Urban infill spilling into the Deering community would be good news. The redevelopment of vacated schools and institutional buildings, could also create new housing options in this working-class neighborhood. But in order to assure that Deering continues to grow more attractive to potential individuals and families, they need to have reliable transportation to Portland's cultural core…… An increased variety in public transport options and routes, would discourage car usage (and the subsequent space needed for parking), while also addressing the "psychological demand to live on the peninsula." Most people that are itching to live downtown, would probably settle for Deering Center, if they knew they could zip into the Old Port, quickly, easily and affordably.

The city of Portland needs to encourage building projects within our fringe neighborhoods, expand the transit services and gently nudge people off the peninsula so they'll find neighborhoods with enough shops, space and charms to make their lives as enjoyable as it might be downtown. *(Neighborhood By Neighborhood: Solutions To Portland's Housing Crisis, Portland Phoenix, May 13, 2016)*

Visual Introduction to 502 Deering Center

from a presentation to the
Deering Center Neighborhood Association
Annual Meeting, November 2016





Portland Growing: Not whether, but how.

Press Herald, Oct 2016

Project's Overarching Goal: strengthen the vitality of our neighborhood commercial center

HALF - MILE NEIGHBORHOOD

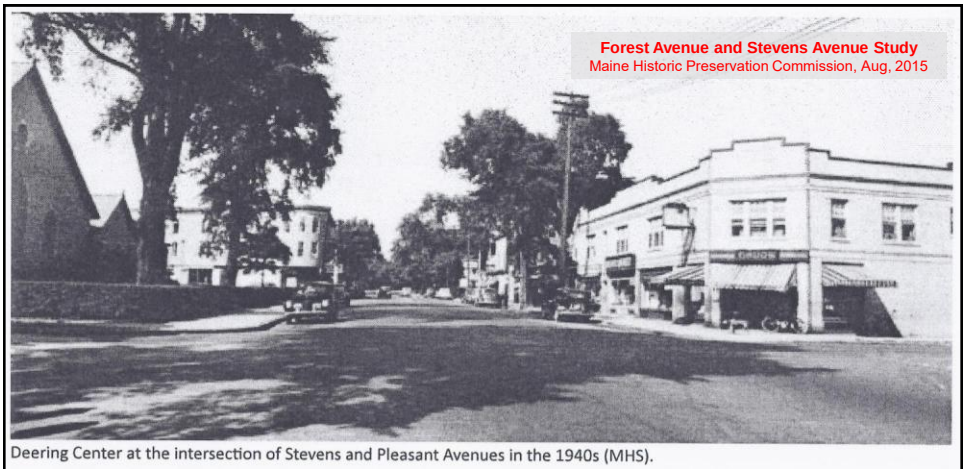
HALF-MILE NEIGHBORHOOD CENTERS

The Half-Mile Neighborhood concept is based in the notion that you should be able to walk to basic services in your neighborhood. Schools, parks + recreation, shopping and public transportation should be accessible within 2600 feet of where we live, a nine minute walk. The Portland Peninsula offers this lifestyle – we propose to expand its presence throughout Portland by strengthening the vitality of neighborhood commercial centers.

PSA

UNIVERSITY
SCHOOL
GROCERY/MARKET
METRO HUB

TRAIL CIRCULATION
RAIL CIRCULATION
MAIN VEHICULAR CIRCULATION



Forest Avenue and Stevens Avenue Study
Maine Historic Preservation Commission, Aug, 2015

Deering Center at the intersection of Stevens and Pleasant Avenues in the 1940s (MHS).

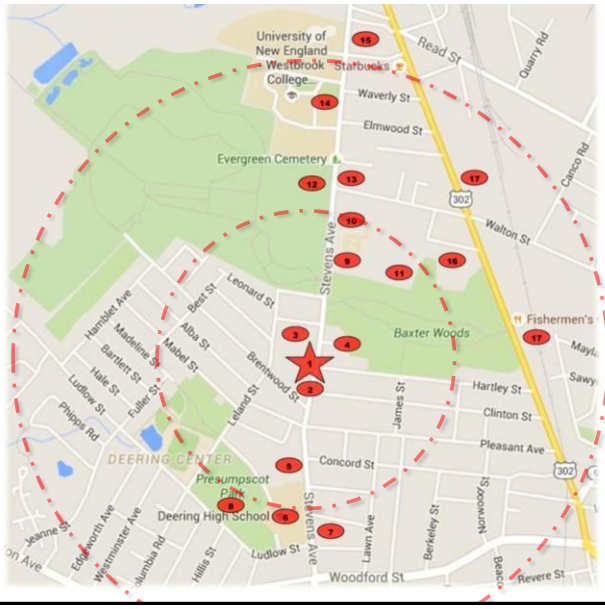
Perhaps more than any other neighborhood in Portland, Deering Center has the feel of a typical late-nineteenth century small town downtown. The concentration of imposing civic and institutional buildings, small group of commercial storefronts, and interspersed residences with long streets of homes adjoining, gives Stevens Avenue this special character. The nearby Evergreen Cemetery and Baxter Woods Park add to the effect. Other areas in Deering once had a similar character, including Woodford's, Morrill's, and Allens Corners, but modifications to the streets in those locations to accommodate arterial traffic to the outer suburbs have altered their character and made them unsuited to pedestrian activities. Deering Center is still an entirely walkable neighborhood, which contributes greatly to its character.

Deering Center Village – *Entirely walkable*

5 min/1/4 mile walk & 10 min/1/2 mile walk

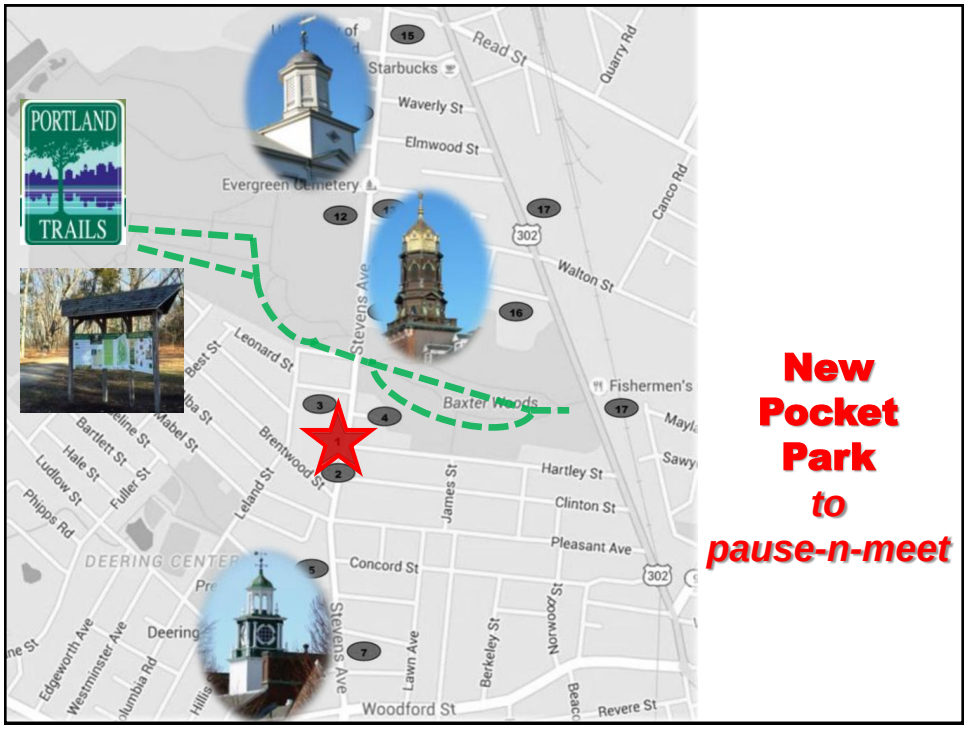
MANY AMENITIES & COMMERCIAL OPPORTUNITIES WITHIN THE 5 MINUTE VILLAGE WALK

1. 502 Deering Center (mixed-use)
2. Businesses & Services in the Village Center (coffee, video, ice cream, market, shoe shop, convenience, hair, nails, tailor, florist, pizza, restaurant, dental, medical, wellness, existing bus connections downtown, and others)
3. Lincoln Middle School (staff)
4. Baxter Woods Trailhead (many runners and dog walkers)
5. Longfellow Elementary School (staff)



MANY AMENITIES & COMMERCIAL OPPORTUNITIES WITHIN THE 10 MINUTE VILLAGE WALK

6. Deering High School (staff, students & adult education)
7. Portland Public Library Burbank Branch (staff & patrons)
8. Deering High School Stadium & Playing fields (heavily used)
9. Mother House Former Convent (88 units active seniors)
10. Catherine McAuley School (staff & students)
11. Mother House Proposed New Buildings (161 units active seniors)
12. Evergreen Cemetery (many runners and dog walkers)
13. St Joseph Church & St Brigid School (attenders, staff)
14. University of New England, Portland Campus (41-acres, College of Health Professions, College of Pharmacy, Art Gallery, Maine Women Writers Collection, College of Dental Medicine.)
15. Park Danforth Current (160 units seniors) + Park Danforth Expansion (55 units seniors)
16. Deering Pavilion (200 units seniors)



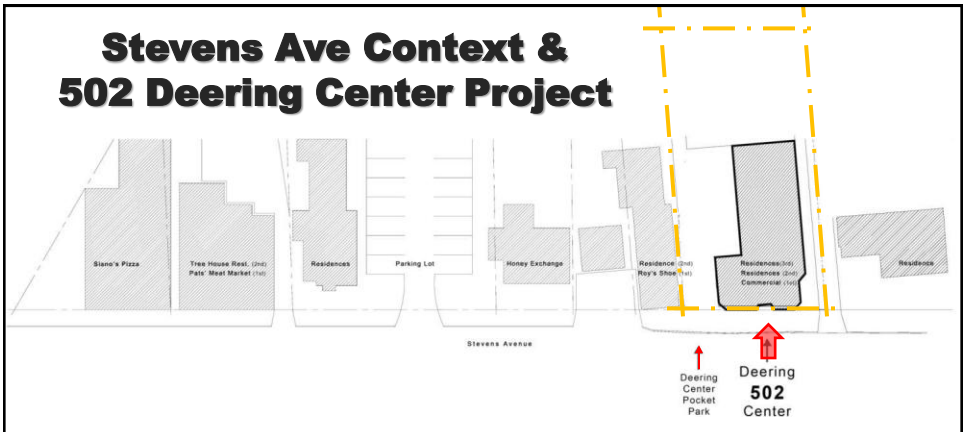
New Pocket Park *to* *pause-n-meet*

Its takes a place to make a community, and a community to make a place:

example pocket pause-n-meet places around Portland

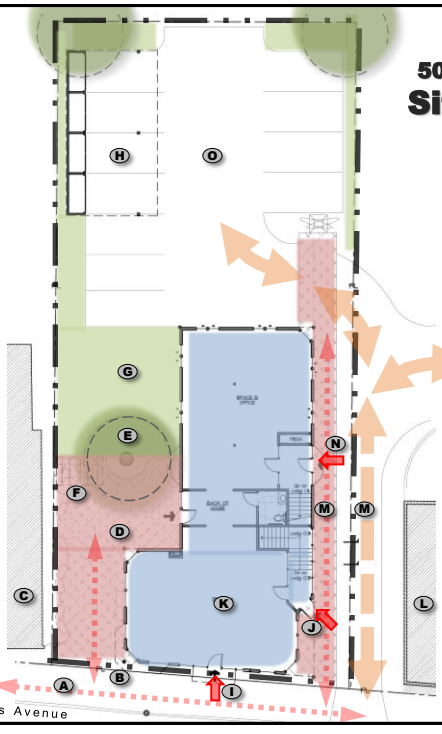
Lachman Architects & Planners

Stevens Ave Context & 502 Deering Center Project



502 Deering Center Site - Existing

502 Deering Center Site Concepts



H Carport (Phase 2) features 4 parking stalls, each with a private secure utility shed.

G Rain Garden Stormwater Treatment & Private Area for Residents

E Existing Featured Tree embraces Pocket Park.

F Covered Bike Parking provides convenient, secure and weather protected for residents and neighbors as incentive to bike-park-n-ride (bus).

D Village Pocket Park features seating, landscaping, paving and provides neighborhood use for pause-n-meet, performances, sidewalk fairs etc.

C Roy's Shoe Shop

B Existing Bus Stop is sheltered by angled corner under projecting bay provides public seating, ideally positioned to visually track approaching inbound and outbound buses.

A Pedestrian Circulation System shown dashed

O Parking at rear of site includes a handicap space. **Mixed Transportation** encourages a variety of transportation modes – walking, busing and biking - in addition to cars.

N Residential Entry & Secondary Commercial Entry

M Pedestrian Walkway and Shared Driveway efficiently allows precious resources and land otherwise devoted to cars, to instead be reallocated to the Village Pocket Park. Curb cuts are reduced which improves safety by eliminating dangerous back-outs across sidewalk and impervious area is reduced reducing stormwater runoff.

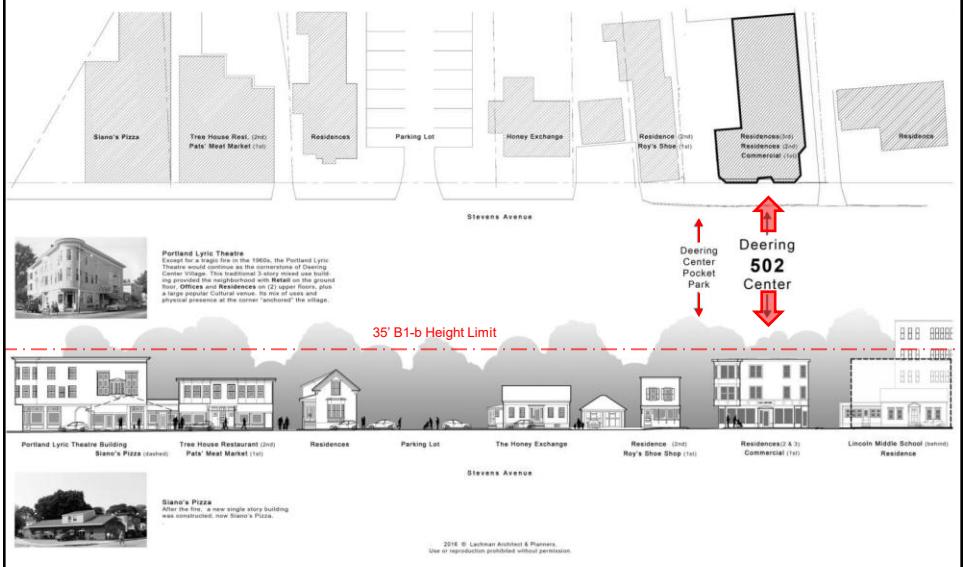
L Abutting Property, future new mixed use building.

K New Building, approx 2500 sf footprint.

J Entry to Lower Level Studio designed for flexibility, so it can be independently accessed from the sidewalk, or internally accessory from the 1st floor commercial space, or both.

I Primary Commercial Entry directly fronts Stevens Ave with high visibility.

Stevens Streetscape – Bldg Height & Mass



Portland Lyric Theatre
Except for a tragic fire in the 1960s, the Portland Lyric Theatre would continue as the cornerstone of Deering Center Village. This traditional 3-story mixed use building provided the neighborhood with **Retail** on the ground floor, **Offices** and **Residences** on (2) upper floors, plus a large popular Cultural venue. Its mix of uses and physical presence at the corner "anchored" the village.

Siano's Pizza
After the fire, a new single story building was constructed, now Siano's Pizza.

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Except for a tragic fire in the 1960s, the Portland Lyric Theatre would continue as the cornerstone of Deering Center Village. This traditional 3-story mixed use building provided the neighborhood with **Retail** on the ground floor, **Offices** and **Residences** on (2) upper floors, plus a large popular Cultural venue. Its mix of uses and physical presence at the corner "anchored" the village.

Portland Lyric Theatre Building
Siano's Pizza (dashed)

Tree House Restaurant (2nd)
Pats' Meat Market (1st)

Residences

Siano's Pizza
After the fire, a new single story building was constructed, now Siano's Pizza.

Portland Lyric Theatre, now Siano's

Existing
35' B1-b Height Limit

Proposed
Concept Sketch
35' B1-b Height Limit
Pocket Park
Sheltered Bus Stop
Commercial Entry
Residential Entry, Shared Driveway & Walkway

Pocket Park Area – Existing

Bus Stop

Pocket Park Area – Proposed

Imagine all the people, enjoying the pocket park, maybe at a concert or poetry slam. We hope you will join us…

Feature Tree
Covered Bikes

Performance Space

Sit-n-Meet

Sheltered Bus Stop

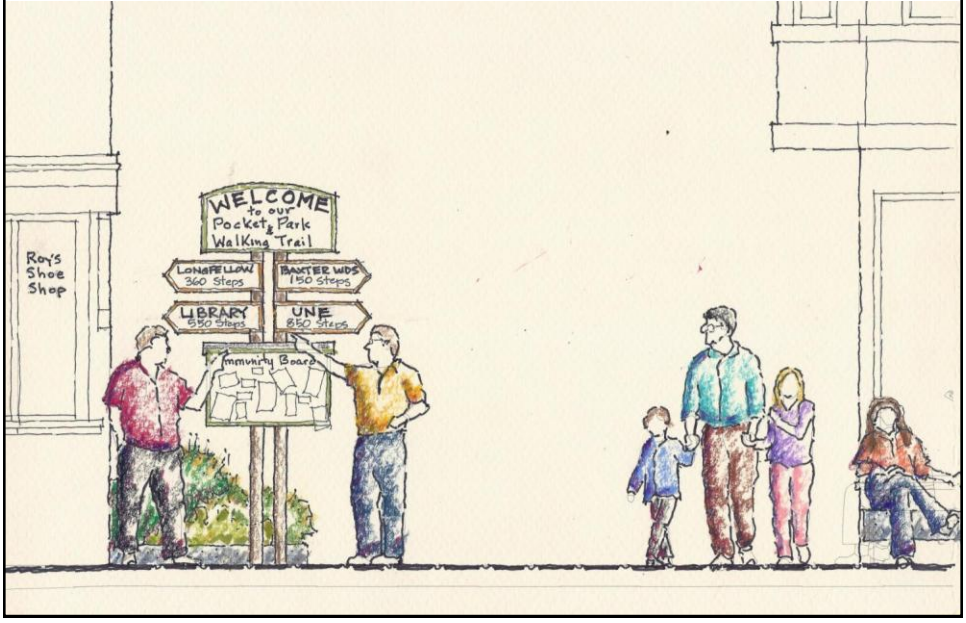
Sidewalk

Stevens Ave

Sheltered Bus Stop

Neighborhood Kiosk & Sheltered Bus Stop

along the Trail & at the Park



Project Goal:

of the hood, by the hood and for the hood

commercial floor plan is flexible to accommodate neighborhood-based uses & combinations

- Food ….
- Retail …..
- Co-working …..
- Classes (kids & adults)
- Artists' Studios …..
- Wellness ….
- Others …..

Residential Units

Space, Energy & Budget Efficient

Unit B (Back)
3BR/2B 1300 sf

Unit A (Front)
2BR/1B 1000 sf

Highlights & Takeaways

Contribute Vitality: social + economic activity = vitality

Local: of the hood, by the hood, for the hood

Mixed Transportation: covered bus stop + covered bike parking + walk friendly + car share (perhaps) = reduce car dependency

Collaborate: neighbor collaboration + shared driveway = pocket park

New Businesses: 2000 sf new commercial = economic & people activity

New Residents: (4) units, middle income = economic & people activity

Pocket Park: it takes a place to create a community and a community to create a place

High Standards: good neighborhood fit, set & meet high expectations for new development

D. EVIDENCE OF RIGHT, TITLE & INTEREST

This page contains a detailed description of the Parcel ID you selected.

New Search!

Services

Applications
Doing Business
Maps
Tax Relief
Tax Roll
Q & A

browse city services a-z

browse facts and links a-z

Best viewed at 800x600, with Internet Explorer

Current Owner Information:

CBL	135 E009001
Land Use Type	SINGLE FAMILY
Verify legal use with Inspections Division	
Property Location	502 STEVENS AVE
Owner Information	LACHMAN DENIS J & KAREN J SMITH JTS 55 HAMBLET AVE PORTLAND ME 04103
Book and Page	32719/274
Legal Description	135-E-9 STEVENS AVE 502-504 9643 SF
Current Rental Registration	Yes
Acres	0.2214

Current Assessed Valuation:

TAX ACCT NO.	20012	**OWNER OF RECORD AS OF APRIL 2016**
LAND VALUE	$92,000.00	LACHMAN DENIS J &
BUILDING VALUE	$118,600.00	KAREN J SMITH JTS
NET TAXABLE - REAL ESTATE	$210,600.00	55 HAMBLET AVE PORTLAND ME 04103
TAX AMOUNT	$4,445.78	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

Building 1	
Year Built	1860
Style/Structure Type	OLD STYLE
# Stories	1
# Units	1
Bedrooms	3
Full Baths	2
Half Baths	0
Total Rooms	7
Attic	FULL FINSH
Basement	FULL
Square Feet	1789

View Sketch View Map View Picture

Outbuildings/Yard Improvements:

	Building 1
Year Built	1994
Structure	SHED-FRAME
Size	12X12
Units	1
Grade	C
Condition	A

Sales Information:

Sale Date	**Type**	**Price**	**Book/Page**
11/6/2015	LAND + BUILDING	$205,000.00	32719/274
3/30/2001	LAND + BUILDING	$148,700.00	15150/57
4/25/1996	LAND + BUILDING	$96,630.00	12468/57

Lachman Architects & Planners
Architecture | Community Planning | Preservation
Building Communities - with community buildings

F COMPLIANCE WITH B1-b NEIGHBORHOOD BUSINESS ZONE & PARKING

Sec. 14-161. Purpose. (a) B-1b Neighborhood Business Zone		
Proposed	*Zoning Requirement*	Meets
Project is a mixed-use, with smallscale ground floor commercial uses to serve a local market, with residential uses and character above the ground floor.	*The purpose of the **B-1b Neighborhood Business Zone** is to provide appropriate opportunities for the establishment of smallscale ground floor commercial uses to serve a local market, while preserving residential uses and character above the ground floor of structures. The zone also provides the opportunity for mixed use and high residential density in on-peninsula locations. Building additions are encouraged but not required to meet the maximum setbacks of 14-165(c)(3). Suitable locations for this zone may include street intersections, arterial streets, and sites with existing or traditional neighborhood retail and service uses.*	Meets

Sec. 14-162 B-1b Permitted Uses		
Proposed	*Zoning Requirement*	Meets
1st Floor - a. Professional, business, and general offices, b. Business services, c. Personal services, e. Retail establishments, g. Studios for artists, photographers and craftspeople.	*Sec. 14-162 Permitted Uses. (a) on the ground floor level of buildings in the B-1b zone. a. Professional, business, and general offices, b. Business services, c. Personal services, e. Retail establishments, g. Studios for artists, photographers and craftspeople. h. Restaurants*	Meets
2nd Floor – Residential Uses	*Sec. 14-162 Permitted Uses. (5) Uses permitted above the ground floor level of buildings in the B-1b zone. (a) Residential*	Meets
3rd Floor – Residential Uses	*Same as 2nd floor.*	Meets

Sec. 14-165 Dimensional Requirements for Site		
Proposed	*Zoning Requirement* ….*nonresidential uses in the B1-b zones shall meet the following minimum requirements*	Meets
Min. Lot Area per D.U. - 4 multifamily dwellings above first floor x 1000 sf = 4000 sf min. lot area. Existing lot area = 9,562 sf.	*Off-peninsula: min. lot area of nearest residential zone, except 1,000 SF for multifamily dwellings above first floor*	Meets
Min. Lot Size - 9,562 sf existing	*Non-Res Uses: None. Residential: None*	Meets
Min. Street Frontage - 66’ existing	*20 ft*	Meets
Min. Lot Width - 66’ existing	*None*	Meets
Min. Front Yard – 0’ proposed	*None*	Meets
Max. Front Yard - 0’ proposed	*10 ft*	Meets

Min. Rear Yard, Principal Structure – Approx 68' from the rear property line.	*Principal: None, except 10 ft. if abutting a residential zone.*	Meets
Min. Rear Yard Accessory Structures: Carport – The side of the carport abuts a residential zone with a 6' setback. Covered Bike Parking – Does not abut the rear property line.	*Accessory: None, except 5 ft. if abutting a residential zone*	Meets
Min. Side Yard, Principal Structure - The Principal structure is 15'-9" from the south side property line (Roy's) and 6'-4" from the north side property line.	*Principal: None, except 5 ft. if abutting residential zone.*	Meets
Min. Side Yard Accessory Structures Carport – The rear of the carport abuts a commercial zone (B1-b) with a 2' setback. Does not abut a residential zone. Covered Bike Parking - The side of the bike parking abuts a commercial zone (B1-b) with a 0' setback. Does not abut a residential zone.	*Accessory: None, except 5 ft. if abutting a residential zone*	Meets
Max. Side Yard on Side Street - No Side Street	*10 ft*	N.A
Structure Stepbacks – No portions of a structure is above 35 ft.	*Portions of a structure above 35 ft shall be no closer than 10 ft from the side property line and no closer than 15 feet from the rear property line when such property line abuts a residential zone*.	N.A
Max. Structure Height - 32 ' proposed. Does not abut R-6 zone.	*Off- peninsula: 35 ft., except where abutting R-6, where max. height shall be the max. height of R-6.[(2)].*	Meets
Max. Floor Area Nonresidential Uses - Total maximum first floor area for nonresidential uses = 2500 sf. Total maximum floor area per retail establishment = 2000 sf.	*Total maximum first floor area for nonresidential uses per structure: 10,000 SF [(3)] Total maximum floor area per retail establishment: 5,000 SF.*	Meets
Max. Impervious Surface – Impervious area 7970 sf/ 9,562sf (site) = 83%	*90%*	Meets

Sec. 14-166 Other Requirements		
Proposed	*Zoning Requirement*	Meets
Landscaping and Screening - The site shall be suitably landscaped for parking, surrounding uses and accessory site elements, see Site Plan by Carroll Associates.	*(a) Landscaping and screening: The site shall be suitably landscaped for parking, surrounding uses and accessory site elements, including storage and solid waste receptacles where required by article IV (subdivisions) and article V (site plan).*	Meets
Curbs and Sidewalks - Curbs and sidewalks are provided, see Site Plan by Carroll Associates.	*(b) Curbs and sidewalks: Curbs and sidewalks as specified in article VI of chapter 25.*	Meets
Off-street Parking and Loading – See Sec. 14-332. Uses Requiring Off-street Parking below.	*(c) Off-street parking and loading: Off-street parking and loading are required as provided in division 20 and division 21 of this article.*	Meets
Front Yard Parking - No off street parking in the front yard between the street line and the required maximum setback line.	*(d) Front yard parking: There shall be no off street parking in the front yard between the street line and the required maximum setback line.*	Meets
Signs – All signs are part of a sign program, where size, font and type are consistent to achieve a coordinated purposeful look that compliments the building and the village Main Street. All sign are scaled for pedestrians, rather than attracting drive-by attention and none will be back-lit box signs. There will be (3) or (4) signs, depending on the number of tenants, not known at this stage.	*(e) Signs: Signs shall be subject to the provisions of division 22 of this article.*	Meets
Exterior Storage – No exterior storage. A carport provides a 4 stalls, one for each residential unit, and is a structure with walls and roof. At the end of each stall there is a 4' deep x 9' wide fully enclosed secure utility shed.	*(f) Exterior storage: There shall be no exterior storage with the exception of fully enclosed containers or receptacles for solid waste disposal. Such containers or receptacles shall be shown on the approved site plan.*	Meets
Storage of Vehicles – No vehicles stored on site.	*(g) Storage of vehicles: Storage of vehicles is subject to the provisions of section 14-335.*	N.A.
Shoreland and flood plain management regulations - Lot is not located in a shoreland zone or in a flood hazard zone.	*(h) Shoreland and flood plain management regulations: If the lot is located in a shoreland zone or in a flood hazard zone, then the requirements of division 26 and/or division 26.5 apply.*	N.A.

Sec. 14-167 External Effects		
Proposed	*Zoning Requirement* *Every use in a B-1 or B-1b zone shall be subject to the following requirements:*	Meets
Enclosed Structure – All uses are operated within a completely enclosed structure.	*(a) Enclosed structure: The use shall be operated within a completely enclosed structure, except for those specific open air activities licensed by the City, including but not limited to outdoor seating, sidewalk sales, etc*	Meets
Noise – No onsite use generates noise that exceeds shall not exceed fifty-five (55) decibels.	*(b) Noise: The volume of sound, measured by a sound level meter with frequency weighting network (manufactured according to standards prescribed by the American Standards Association), generated shall not exceed fifty-five (55) decibels on the A scale, on impulse (less than one (1) second), at lot*	*Meets*

	boundaries, excepting air raid sirens and similar warning devices.	
Vibration and Heat – No onsite use generates vibration and heat perceptible without instruments at lot boundaries.	*(c) Vibration and heat: Vibration inherently and recurrently generated and heat shall be imperceptible without instruments at lot boundaries.*	Meets
Glare, Radiation or Fumes - No onsite use generates glare, radiation or fumes beyond lot boundaries.	*(d) Glare, radiation or fumes: Glare, radiation or fumes shall not be emitted to an obnoxious or dangerous degree beyond lot boundaries.*	Meets
Smoke - No onsite use generates smoke.	*(e) Smoke: Smoke shall not be emitted at a density in excess of twenty (20) percent opacity level as classified in Method 9 (Visible Emissions) of the Opacity Evaluation System of the U.S. Environmental Protection Agency.*	Meets

Sec. 14-332. Uses Requiring Off-street Parking				
Proposed		Required	*Zoning Requirement*	Meets
Residential			*Except as provided in Section 14-332.1, 14-332.2 (exceptions) and 14-345 (fee in-lieu of parking) of this division, for the uses listed below the following minimum off-street parking requirements shall be provided and maintained in the case of new construction, alterations which increase the number of units, and changes of use:*	
(a) Residential Structures (4) dwelling units	X (2)	= 8	*1. For new construction, two, (2) parking spaces for each dwelling unit*	Meets
Total Residential Parking Required		**8 spaces**		

Non-Residential Sec. 14-162 Permitted Uses @ 1st Floor			Note: Non-residential uses will be in the categories below, but actual tenancy is not yet known at this stage.	
e. Retail establishments (Space A= 868 sf) g. Studios for artists (Space C = 1132 sf)	2000sf/0	= 0	*One (1) parking space for each two hundred (200) square feet of first floor area in excess of two thousand (2,000) square feet*	Meets
a. Professional, business, and general offices b. Business services c. Personal services (Space B = 800 sf)	800sf/400	= 2	*One (1) parking space for each four hundred (400) square feet*	Meets
Total Non-Residential Parking Required		**2 spaces**		

Total Residential + Non-Residential Required	**10 spaces**		
Total Residential + Non-Residential Provided	**10 spaces**		Meets

Att. F

G. EASEMENTS

Denis Lachman & Karen Smith
55 Hamblet Avenue, Portland, Maine

December 20, 2016

Roberta S. and Steven E. Cope
172 Concord Street, Portland, ME 04103

Re: Shared Driveway Agreement, 502 & 510 Stevens Ave., Portland

Dear Bobbi and Steven:

Please allow this letter to confirm our intention to enter into a Shared Driveway Easement Agreement (the "Agreement") upon the further terms and conditions stated herein and such additional terms as may be agreed upon. We have both agreed that this letter may be presented to the City of Portland Planning Board to evidence our agreement in support of applications for the development of the Lachman/Smith Property at 502 Stevens Ave., and your property at 510 Stevens Ave. Our respective properties are referred to in the attached agreement as the "502 Property" and the "510 Property" and I will do so in this letter as well.

It is our intent to enter into a mutual and reciprocal agreement for the location and construction of a shared driveway between our two properties and serving both of them for vehicles, pedestrians, and utility connections. We will also coordinate drainage, utility easements, curb cuts, and maintenance and upkeep on terms to be finalized.

Our respective obligations are and shall be contingent upon the receipt of all necessary permits and approvals from the City of Portland and/or other permitting authorities as may be required for the development of the 502 Property and the 510 Property for mixed use commercial/residential development. Access to our respective developments on our two adjacent properties shall be generally harmonious and coordinated, but our projects shall otherwise be completely independent of each other, provided that we have agreed that a shared driveway will be a useful and convenient amenity to both projects as conceived, rather than having the current two driveways.

We both understand that the 502 Property is likely to be developed first, and that we may make cooperative arrangements for the funding and construction of the shared driveway in advance of the 510 Property being fully redeveloped, but the Agreement shall apply to the final configuration notwithstanding such staggered construction or development schedules.

Due to the timing and permitting requirements of our respective projects, we both acknowledge that the final version of the Agreement that we execute and record may need to respond to permitting and final site conditions as approved.

Please sign below to evidence your agreement to the foregoing, and allow our signatures below to do the same.

Very truly yours,

Denis Lachman Karen Smith

Denis Lachman & Karen Smith

Seen and Agreed to:

Roberta S. and Steven E. Cope

DRAFT

SHARED DRIVEWAY EASEMENT AGREEMENT

This Agreement is dated this ____ day of _____, 2017 by and between Denis J. Lachman and Karen J. Smith, having an address of 55 Hamblet Avenue, Portland, Maine ("Lachman"), as the owner of property described in a deed recorded in the Cumberland County Registry of Deeds in Book 32719, Page 274, located generally at 502 Stevens Avenue (the "502 Property") and between Roberta S. and Steven E. Cope, having a mailing address of 172 Concord Street ("Cope") as the owner of property described in a deed recorded in said Registry in Book 33336, Page 109 (the "510 Property"). The 510 Property is generally adjacent to and northerly of the 502 Property and is generally designated on City of Portland Tax Map 135, Block E , Lot 8. The 502 Property is generally designated on City of Portland Tax Map 135, Block E, Lot 9.

W I T N E S S E T H

WHEREAS, Lachman and Cope wish to act harmoniously to configure and provide for the further development of the 502 Property and the 510 Property through this agreement; and

WHEREAS, both Lachman and Cope agree that their respective properties would be best served by the construction of a new shared driveway (referred to herein as the "Driveway") to replace the two separate driveways currently serving both properties; and

WHEREAS, the Driveway will be located generally along and across the common boundary and will serve both the 502 Property and the 510 Property with pedestrian and vehicular access from Stevens Avenue and provide a shared utility interconnection point; and

WHEREAS, Lachman and Cope wish hereby to confirm their respective rights and obligations with respect to the construction and use of the Driveway;

NOW THEREFORE, in consideration of One Dollar, the mutual promises and covenants herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged and agreed, Lachman and Cope do hereby agree as follows:

1) Lachman and Cope hereby grant and accept to and from each other mutually and reciprocally such rights, interests, easements and estates as are necessary to provide access by foot or by vehicle from Stevens Avenue, generally in the location and configuration shown on **Exhibit A** attached hereto and made a part hereof together with the right to install utilities above and below ground within the area depicted as the Driveway. It is acknowledged and agreed that

the rights granted herein shall be sufficient to allow the further commercial and/or residential development of the 502 Property and 510 Property with buildings and further improvements to be served by the Driveway.

2) In connection with the exercise of their rights hereunder, Lachman and Cope, its or their successors and assigns, may enter upon, construct, maintain and use the Driveway including areas on the property of the other, and may install utility lines, drainage, curbing and all other improvements above and below ground as are necessary for access to and development of their respective properties consistent with the terms hereof, provided, however, that: i) any such work shall be performed in a good and workmanlike manner; ii) all parties shall use best efforts to minimize disruption of any activities or business operations on the two respective properties; iii) the parties shall reasonably cooperate and coordinate any scheduling of work and/or interruption of utilities; iv) each party shall, upon completion of any work, repair any damage caused by its own acts or negligence promptly to its state immediately prior to such work; v) the parties shall require any contractor or agent employed for any such work to be duly insured in such reasonable amounts as either party may reasonably require; vi) any driveways, accessways, or other improvements installed may be used in common by the parties hereto and shall provide adequate curb cuts (subject to permit restrictions) as each party may request; vii) any drainage made necessary by improvements within the Driveway area engineered so as to balance the impact on the two respective properties; viii) each party shall indemnify and hold the other, its successors and assigns harmless from and against any and all claims, losses, damages or causes of action arising from its own exercise of the access and/or any other rights granted in this Agreement; ix) any improvements constructed pursuant to this Agreement shall not cause the 502 Property or the 510 Property to become legally non-compliant in any way, and shall otherwise be performed in compliance with all applicable land use code and permit requirements; x) after initial construction of improvements and development of the 502 Property and 510 Property, the parties shall equally and equitably share the cost to maintain and repair the Driveway and other improvements within the area shown on **Exhibit A** excepting only repairs made necessary solely by the use or abuse thereof by only one party, its agents, employees and/or invitees, which repairs shall be the responsibility of the party causing such damage, which shall promptly repair any and all damages caused; (xi) neither party shall use the Driveway for vehicular parking, nor allow it to be so used, as each party shall have parking rights on its own adjacent land. Enforcement of the immediately prior provision ((xi)) shall be enforceable by self-help through towing and removal of vehicles at the expense of the party in violation, which shall be payable upon demand.

3) The rights granted herein are general in nature, and the parties shall reasonably cooperate to minor and reasonable reconfiguration or adjustment the dimensions or locations of the easement areas shown on **Exhibit A** to comply with permit authorities, building codes etc. in effect from time to time to allow for the harmonious development of both the 502 Property and

the 510 Property, and the parties hereto, their successors and assigns, shall grant such further documents, permit applications and instruments as are necessary to carry out the intent hereof.

4) The parties hereto shall each have the right, at any time and from time to time, to relocate the area of the easement and rights herein granted, provided that the other party consents to the relocation, such consent not to be unreasonably withheld. In the event that Lachman or Cope shall elect to relocate the easement, and shall obtain the consent of the other party, the entire costs of the relocation shall be borne by the relocating party. The covenants, agreements, easements, rights and indemnities herein described shall then apply in all respects to the new location. In no event shall it be considered unreasonable for either party to withhold its consent to a relocation that would interfere with that party's existing or contemplated improvements on the 502 Property and/or the 510 Property.

5) This Agreement shall be governed by and construed in accordance with the laws of the State of Maine. This Agreement may only be amended by a written document signed by the parties hereto, their successors and assigns. This Agreement contains the complete understanding of the parties hereto and replaces all prior agreements, written or oral, between the parties as to the subject matter hereof, including but not limited to the Reciprocal Easement. The rights and agreements herein shall bind the successors and assigns of the parties hereto except as expressly provided herein and shall run with the land, and be appurtenant to, and benefit and burden as the case may be, the 502 Property and the 510 Property in perpetuity.

Dated as of _____, 2017

_____ _____

STATE OF MAINE
COUNTY OF CUMBERLAND _____, 2017

Before me appeared the above named _____, and acknowledged the foregoing instrument to be his/her free act and deed.

_____
Notary Public / Attorney at law
Name: _____
Commission Expires:

EXHIBIT A

H WRITTEN REQUEST FOR WAIVERS

502 Deering Center

Waiver Request 1: Driveway and Aisle Width

Request - A waiver is requested of both the minimum driveway width (from a minimum of 20 feet down to +/-18 feet) and of the minimum parking lot aisle width (from 24 feet wide down to 21 feet wide).

Technical Standards, Section *1.7.2.3 (multi-family residential with 10 or more parking spaces).* Minimum driveway width (two-way): Any site with driveway access to a street shall have a minimum width of 20 feet for two-way ingress and egress, with a preferred width of 24 feet.

- The proposed two-way driveway width is 21 feet at Stevens Avenue and between the proposed building and the existing residence at #510. The width of the two-way driveway must narrow to approximately 18 feet at the turn at the back of the proposed building for few reasons due to: lot configuration, compact lot size, and for vehicle maneuvering.

- The aisle width in the parking lot is 21 feet wide with standard 9 feet x 18 feet parking spaces. The width of the two-way aisle is proposed to be narrowed down to allow for standard parking spaces to fit within the property.

Due to the low speed and low volume of anticipated traffic we feel that the reduced driveway width and reduced parking lot aisle width is an acceptable request.

Att. H

Androscoggin Bank

Business Development Office
152 US Route 1, Box 5
Scarborough, ME 04074
p: 1.800.966.9172 • f: 207.289.3123
androscogginbank.com

I. EVIDENCE OF FINANCIAL CAPACITY

TERM SHEET

December 12, 2016

Lachman Architects & Planners
Denis Lachman & Karen Smith
165 State Street
Portland, ME 04101

Dear Denis and Kiya:

The proposed terms and conditions are provided for discussion purposes only and do not constitute an offer, agreement, or commitment to lend. The actual terms and conditions upon which the Bank might extend credit to the Borrower are subject to satisfactory completion of due diligence, internal approval, satisfactory review of documentation, and such other items and conditions as are determined by the Bank.

BORROWER: Lachman Architects & Planners or new entity TBD

AMOUNT: $1,046,000

PURPOSE: To finance redevelopment / construction of mixed-use commercial/residential property located at 502 Stevens Avenue, Portland ME and provide permanent financing following the construction phase

INTEREST RATE:

Interest only at a variable interest rate of Wall Street Journal Prime + 1.00% during construction phase, followed by choice of:

Option 1: A fixed interest rate for five (5) years at the Androscoggin Bank Fixed Rate Equivalent of LIBOR Plus 2.50%. The actual fixed rate shall be set as of the day of closing. The indicative fixed rate as of 12/12/16 is 4.24%.

Option 2: A fixed interest rate for seven (7) years at the Androscoggin Bank Fixed Rate Equivalent of LIBOR Plus 2.50%. The actual fixed rate shall be set as of the day of closing. The indicative fixed rate as of 12/12/16 is 4.46%.

Member FDIC EQUAL HOUSING LENDER

Option 3: A fixed interest rate for ten (10) years at the Androscoggin Bank Fixed Rate Equivalent of LIBOR Plus 2.65%. The actual fixed rate shall be set as of the day of closing. The indicative fixed rate as of 12/12/16 is 4.81%.

Fixed rate period to be followed by a variable rate at WSJ Prime + 1% or a new fixed rate to be negotiated.

TERM: Eighteen (18) month construction phase, followed by Twenty (20) year term

REPAYMENT: Eighteen (18) monthly payments of interest only, followed by Two hundred and forty (240) monthly payments of principal and interest in an amount sufficient to amortize the loan amount over the term of the loan.

PREPAYMENT PENALTY:

No prepayment penalty during construction phase.

Option 1: 5%, 4%, 3%, 2%, and 1%
Option 2: 5%, 4%, 3%, 2%, 2%, 1%, and 1%
Option 3: 5%, 5%, 4%, 4%, 3%, 3%, 2%, 2%, 1%, and 1%

Prepayment penalty applies only in the case of refinance by another lender.

ORIGINATION FEE: 0.25% of loan amount

PROCESSING FEE: $395

COLLATERAL: 1st real estate mortgage and assignment of leases and rents on property located at 502 Stevens Avenue, Portland ME

1st priority assignment of plans, specifications, contracts, permits, and approvals for the project.

GUARANTEES: Unlimited personal guaranties of Denis Lachman and Karen Smith

OTHER TERMS AND CONDITIONS:

- Borrower to establish and maintain its primary deposit relationship with Androscoggin Bank.
- Subject to appraisal completed on subject property showing a value yielding a maximum loan-to-value ratio of 75% on an as-complete basis.
- Subject to satisfactory environmental due diligence on subject property.
- Subject to satisfactory review of budget, plans, contracts and specifications for the project.

- Subject to a fixed price or guaranteed maximum price contract from a general contractor satisfactory to Bank.
- The contractor's performance under the construction contract shall be supported by a payment and performance bond.
- Proceeds shall be advanced under a Construction Loan Agreement to finance the construction of the Project in accordance with plans and specifications and assignable contracts, which shall be subject to Lender's approval.
- Subject to 3rd party construction monitoring with inspection fees to be paid by Borrower.
- Necessary authorizations and resolutions for Borrower

Thank You,

Catherine Buffum
Vice President
Commercial Lending Division
(207) 518-6311

This term sheet contains information from Androscoggin Bank and is intended only for the person and/or business to whom addressed in the text above. As such, it may contain privileged or confidential information. If you are not the intended recipient or the person identified in the text above, any use of this document is prohibited.

I EVIDENCE OF TECHNICAL CAPACITY

Applicant – must be owner, Lessee or Buyer Name: Denis Lachman Business Name, if applicable: 502 Deering Center LLC Address: 55 Hamblet Ave City/State : Portland, ME Zip Code: 04103	**Applicant Contact Information** Work #: 207 831 8585 Home #: 207 772 1195 Cell #: same as work Fax#: none e-mail: denis@lachmanarchitects.com
Owner – (if different from Applicant) Name: Address: City/State : Zip Code:	**Owner Contact Information** Work #: Home #: Cell #: Fax#: e-mail:
Agent/ Representative Name: Pat Carroll, Carroll Associates Address: 217 Commercial Street, Suite 200 City/State : Portland, ME Zip Code: 04101	**Agent/Representative Contact information** Work #: 207.772.1552 Home #: Cell #: Fax#: e-mail: pcarroll@carroll-assoc.com
Engineer Name: Tom Greer, Pinkham and Greer, Civil Engineers Address: 28 Vannah Ave City/State : Portland, ME Zip Code: 04103	**Engineer Contact Information** Work #: 207.781.5242 Home #: Cell #: Fax#: e-mail: TGreer@pinkhamandgreer.com
Surveyor Name: Don Dostie Four Points Associates, Inc Address: 9 Ralph Ave, Unit 1 City/State : Lewiston, ME Zip Code: 04240	**Surveyor Contact Information** Home #: Work #: 207 577 5840 Cell #: Fax#: e-mail: ddostie@fourpoints-survey.com
Architect Name: Lachman Architects & Planners Address: 58 Fore St, Bldg 30 City/State : Portland, ME Zip Code: 04101	**Architect Contact Information** Work #: 207 831 8585 Home #: Cell #: same Fax#: none e-mail: denis@lachmanarchitects.com
Attorney Name: Nelson Toner, Bernstein Shur Address: 100 Middle St City/State : Portland, ME Zip Code: 04101	**Attorney Contact Information** Work #: 207 228 7299 Home #: Cell #: Fax#: e-mail: ntoner@bernsteinshur.com

Ducas Construction Inc.

CONSTRUCTION MANAGEMENT PLAN
502 Deering Center, Portland ME
PREPARED FOR CITY OF PORTLAND, MAINE
March 13th, 2017

Purpose:

This construction management plan has been developed to provide sufficient information to the City of Portland on how the project will interface with the surrounding neighborhood.

Project Synopsis:

The demolition of an existing single family house and the new construction of a 3 story multi-use commercial building providing 1st floor commercial and multi-family residential on the upper floors. The project also includes a "pocket park" that provides community green space for the benefit of the neighborhood.

Construction Administration:

1. Contractor Information

   Ducas Construction Inc
   3 Southgate Road, # 8
   Scarborough, ME 04074

   Phone: 207-303-0634

   Project Executive: Patrick Ducas

2. Ducas Construction shall maintain the following hours.
   Date of Construction: Estimated start date June 10th 2017-January 2018
   - Job site hours are to begin at 7:00 AM – 7:00 PM, Monday – Friday.
   - Saturday 8:00 AM – 5:00 PM.
   - Off Hours by Work Permit Only.
   - No Sunday and Holiday Work.

3. Project Documentation
   - *Permits/Other Documents*- The contractor shall maintain all applicable local, state and federal licenses and permits that apply to the construction project.

- *Public Notification*- All public notification required by the City of Portland will be provided.
- *Project Signage*- Project signage will be constructed and posted including the contractors name, architects name, a project description, contact information, and any other applicable project information.

4. Project Implementation
    - *Construction Schedule*- A construction schedule will be developed and be available from the contractor upon request.
    - *Sequence (Phasing) of Construction*- A construction schedule including all project phasing will be developed by the Contractor and shall be available from the contractor on-site upon request. In general, the following Construction Sequencing will be followed:
        1. Mobilization of equipment to the site.
        2. Site Preparation. Establish Site Limits, install Temporary Erosion Control and Construction Fencing
        3. Clear and grub site, remove vegetation, demolish and remove structures and necessary materials within new building footprint
        4. Excavate for building foundation
        5. Site Work, including utilities, grading, and hardscaping on site and within street
        6. New Building Construction (Interior and Exterior)
        7. Install Landscaping and other site Improvements
        8. Occupy new building

Neighborhood Interface:

- The work for this project will remain substantially within the property lines of the site, however there will be some work in the public right of way. These activities include.
    - New utility connection in Stevens Avenue.
    - The removal of 1 crosswalk and the creation of another.
    - Removal and replacement of the sidewalk along the building frontage.
    - The supply and installation of ADA tip downs on both sides of Stevens Avenue.
- *Adjoining Properties*- No person shall excavate on land close enough to a property line to endanger any adjacent public street, sidewalk, and alley, other public or private property, or easement, without supporting and protecting the property from any damage that might result from construction operations.

- Work in Stevens Avenue and on the sidewalks will be scheduled and coordinated to minimize the disturbance to normal pedestrian

traffic. Work will happen during the summer holiday when school is not in session. During this work, traffic will have to be diverted to the opposite side of the road.

- *Project Fencing*- When not working in Stevens Avenue and on the sidewalks the site will be protected with a 6' construction fence with gates at both entries to the site.
- *Parking Management:*
    - Emergency Vehicle Access- The site is on Stevens Ave which provides ample and unobstructed access for Emergency personnel.
    - Construction Parking Details- Specific construction parking may be provided on site. Subcontractors will be encouraged to park off site, and to carpool whenever possible. See attached Logistics Plan.
    - Delivery Vehicle Parking- Short term parking for delivery vehicles only shall be allowed on Stevens Ave, directly in front of site if internal site access is not feasible.
- *Pedestrian Protection*- Signage directing pedestrians to use the sidewalk on the opposite side of Stevens Ave will be posted throughout construction to maintain a safe pedestrian passage.
- *Noise Suppression*- The installation of noise barriers will be used to suppress noise when necessary. Portable loud equipment including generators, compressors, and cement mixers shall be located on the property to reduce impacts on individual neighbors. The use of radios on the site before 8:00 am is not allowed.

Site Work

- Utility connections will be coordinated with the city, and Ducas Construction will supervise and enforce flagging, street and sidewalk closures and pedestrian re-routing as required for the safe and timely execution of the work.
- All trucks entering and exiting the site will be accompanied by flagmen, and trucking will be limited to neighborhood friendly hours.
- Catch basins near any disturbed areas shall be protected and cleaned following construction as necessary, and if the site disturbance results in the tracking of sediment onto the surrounding streets they will be swept.
- A Storm Water Pollution Prevention Plan has been submitted as part of the City of Portland Site Plan Approval process.

Site Access

- All traffic control operations shall be managed by the general contractor.
- All Deliveries will be scheduled for none “rush hour” times Monday – Friday, and after 8:00 AM on Saturdays.
    - *Delivery Requirments*- Deliveries to the project site will be via public way on Stevens Ave. Access to the site will be via the existing curb cut on Stevens Ave.
- All vehicles and equipment used on site will be properly maintained such that the engines will function within manufacture’s standards or parameters.
- No idling or start-up of equipment before 7:00 AM Monday-Friday, and before 8:00 AM on Saturdays.

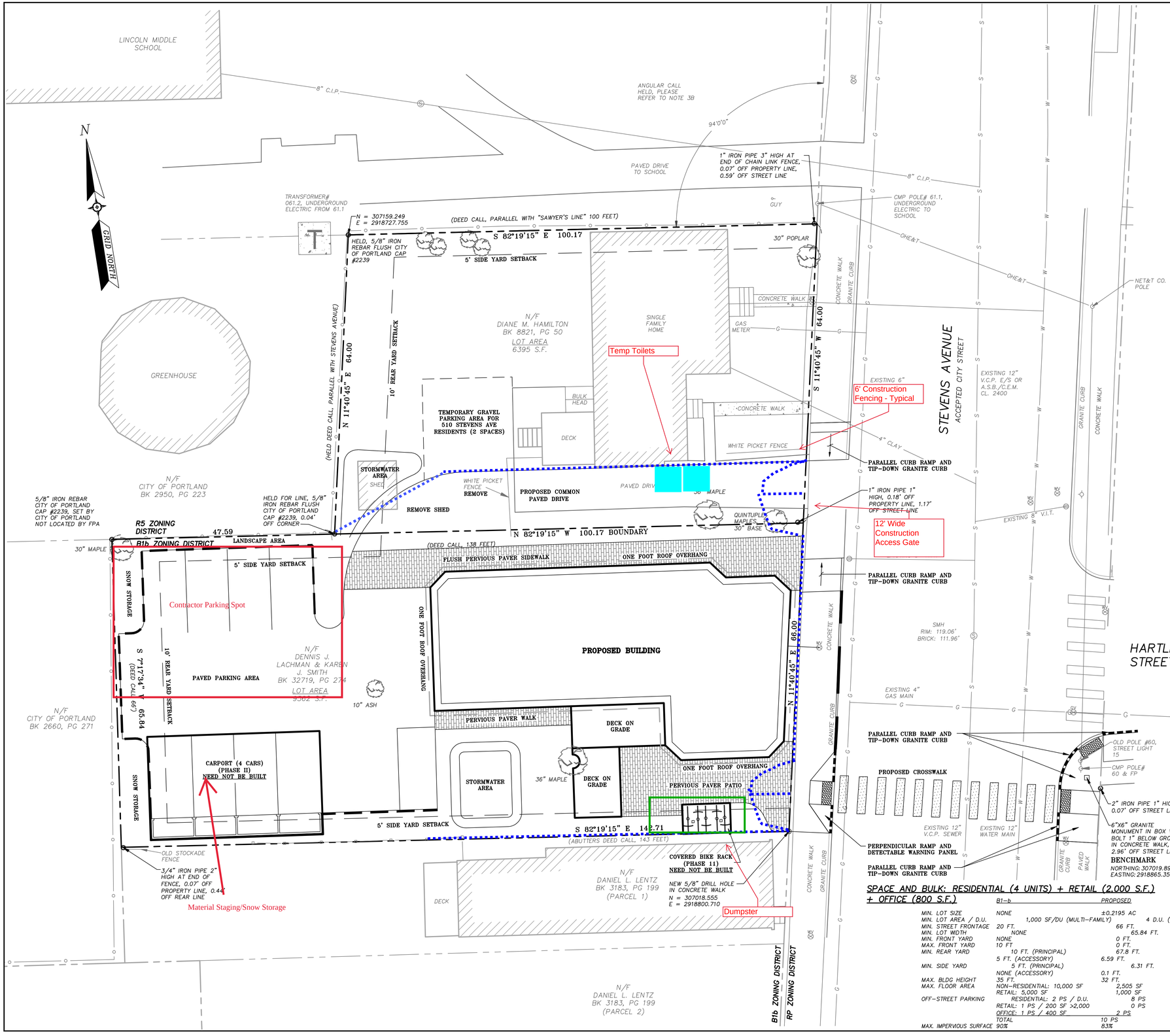
Storage/Parking/Ancillary Services

- Ducas Construction shall take appropriate steps to eliminate dust generation. These steps shall include but are not limited to: wetting down material, placing stone mats where necessary, and requiring all equipment transporting materials that create dust, to be covered.
- Ducas Construction will provide adequate sanitary facilities within the construction fence.
- Temporary drinking water will be provided.
- Dumpsters on site will be located within the construction fence. Removal and replacement will take place during construction hours.
- Material and equipment staging will be accommodated within the project site. See attached logistics plan.
- Ducas Construction will post appropriate signage including but not limited to the following: Parking Restrictions Construction Entrance, Staging Area, Site Phone Number, and Contact Information.
- A Pre-Construction meeting will be held with the Owner, Architect, Ducas Construction, and Subcontractors. It will outline, Ducas Construction Policies, and all necessary rules and procedures.

We feel this plan represents practical and safety conscious solutions that will ensure this project fits in to the neighborhood while creating minimal disturbance to others in the vicinity of the site.

Respectfully
Patrick Ducas

SITE LOGISTICS PLAN WHILE SCHOOL IN SESSION



GENERAL NOTES:

1. RECORD OWNERS – DENNIS J. LACHMAN & KAREN J. SMITH BY DEED DATED NOVEMBER 05, 2015 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 32719, PAGE 274.

   APPLICANT – 502 DEERING CENTER, LLC
   55 HAMBLET AVENUE
   PORTLAND, ME 04103

2. THE PROPERTY IS SHOWN ON THE CITY OF PORTLAND MAINE TAX MAP 18NE, AS BEING LOT 135–E009 AND IS LOCATED IN THE NEIGHBORHOOD BUSINESS ZONE (B1–b).

3. PLAN REFERENCES:

   A) STANDARD BOUNDARY SURVEY OF LINCOLN MIDDLE SCHOOL PROPERTY STEVENS AVENUE PORTLAND, MAINE, BY WILLIAM G. SCOTT OF CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION, DATED DECEMBER 1993, AND RECORDED IN THE (CCRD) IN PLAN BOOK 937, PAGE 5.

   B) PLAN OF HIGH SCHOOL LOT, BOUGHT OF GEO. MEAD STEVENS, DATED SEPTEMBER 3, 1897, AND RECORDED IN THE (CCRD) IN PLAN BOOK 9, PAGE 7. DEED REFERENCE IS BOOK 657, PAGE 17.

   C) LELAND ST. AND VICINITY, BY CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, DATED FEBRUARY 15, 1978, AND RECORDED IN THE (CCRD) IN PLAN BOOK 396, PAGE 3.

4. BEARINGS AND COORDINATES ARE BASED ON GRID NORTH NAD 1983 MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE.

5. VERTICAL DATUM IS NGVD 1929 AND WAS DETERMINED BY STATIC OBSERVATION USING A DUAL FREQUENCY GPS UNIT ON TWO CONTROL POINTS. THE DATA WAS PROCESSED BY USING THE OPUS PROGRAM ON THE NGS WEBSITE. SITE BENCHMARK ELEVATION CONFIRMED WITH CITY OF PORTLAND MONUMENT AT INTERSECTION OF HARTLEY STREET & STEVENS AVE.

6. CATCH BASIN & MANHOLE INVERTS PROVIDED BY THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT AND NEED CONFIRMATION PRIOR TO ANY NEW CONNECTIONS DURING CONSTRUCTION. SEE EXISTING CONDITIONS SURVEY FOR RIM AND INVERT ELEVATIONS.

7. THIS PLAN IS BASED ON A SURVEY COMPLETED TO THE BEST OF MY KNOWLEDGE IN ACCORDANCE WITH THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS STANDARDS OF PRACTICE. FIELD WORK WAS COMPLETED USING ROBOTICS INSTRUMENTATION OFF A BASELINE AND SPUR STATIONS. POINTS LOCATED WITHIN A POSITIONAL TOLERANCE OF 0.05 FEET, MORE OR LESS.

8. THIS PLAN IS SUBJECT TO REVISION UPON RECEIPT OF A TITLE OPINION WHICH MAY NOTE OTHER POSSIBLE RESTRICTIONS, EASEMENTS OR CONDITIONS ENCUMBERING OR BENEFITING THE SITE.

9. NO EXCAVATION OF ANY KIND CAN BE PERMITTED WITHOUT THE CONTRACTOR CONTACTING DIG–SAFE FOR LOCATION OF POSSIBLE UNDERGROUND UTILITIES. ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE BASED ON VISIBLE ABOVE GROUND STRUCTURES.

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- ABUTTER BOUNDARY
- SETBACK
- MONUMENT
- IRON PIPE/ROD
- DRILLHOLE
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- STOCKADE FENCE
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PROPOSED IMPROVEMENTS

- BUILDING
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GRAPHIC SCALE

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(IN FEET)
1 inch = 10 ft.

SPACE AND BULK: RESIDENTIAL (4 UNITS) + RETAIL (2,000 S.F.) + OFFICE (800 S.F.)

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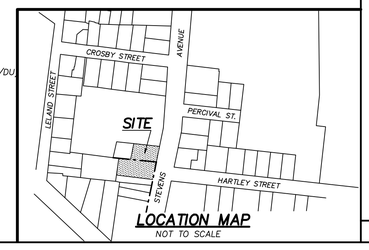

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A | 12/22/16
REV: | DATE:
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NAME: . .
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DONALD E. DOSTIE
PLS #2147

PRELIMINARY SUBDIVISION PLAN
OF
510 STEVENS AVENUE
PORTLAND, MAINE
FOR APPLICANT:
502 DEERING CENTER LLC
RECORD OWNER: DENNIS LACHMAN
55 HAMBLET AVE., PORTLAND, MAINE 04104

Four Points Associates, Inc.
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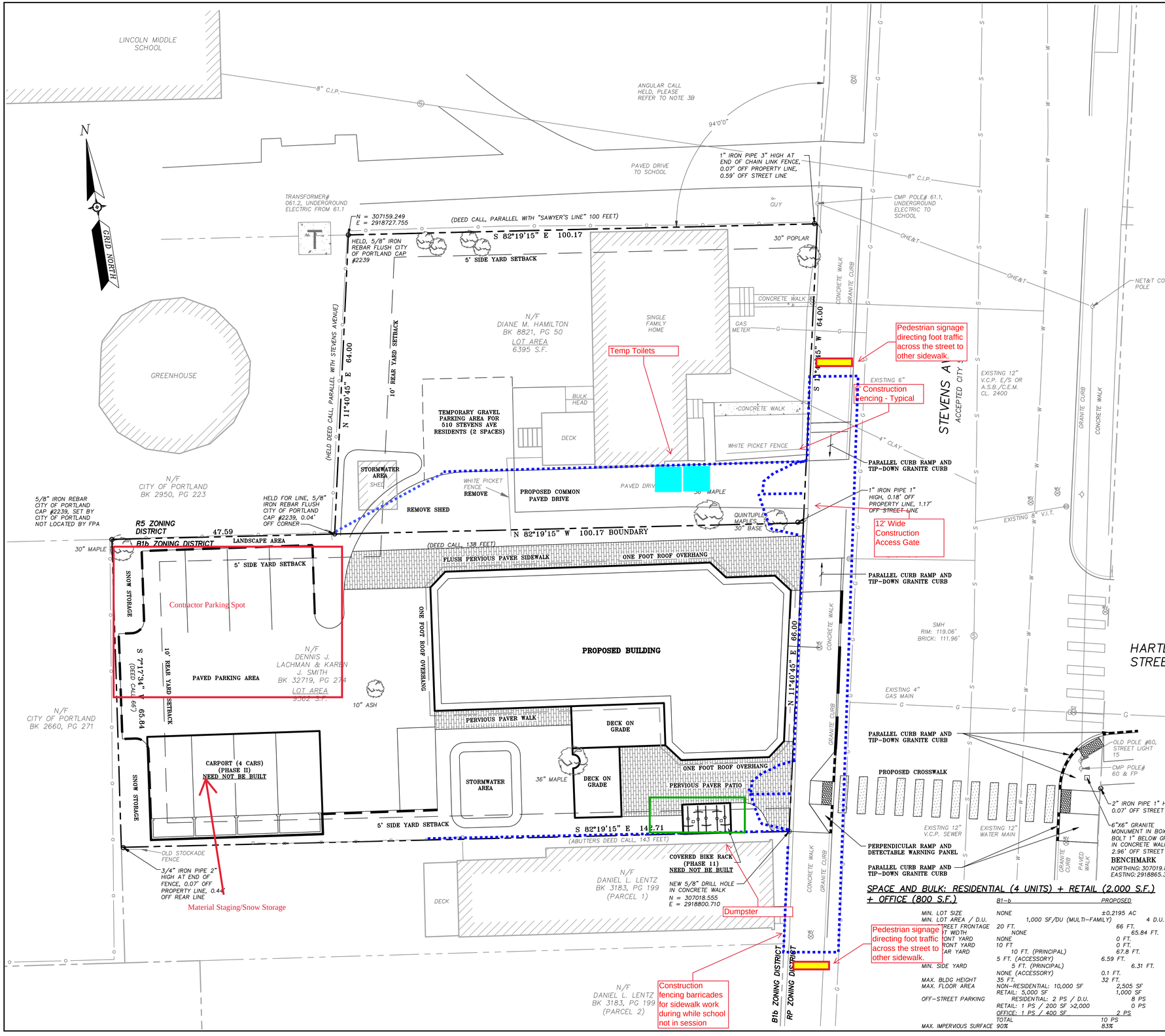
SITE LOGISTICS PLAN WHILE SCHOOL NOT IN SESSION



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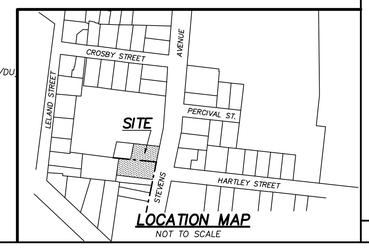

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RECORD OWNER: DENNIS LACHMAN
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Civil Engineering • Land Planning
Douglas E. Dostie, P.E.
9 Ralph Avenue, Lewiston, ME 04240 Tel. 207–577–5840

SHEET C 3.0

Ducas Construction Inc.

CONSTRUCTION MANAGEMENT PLAN
502 Deering Center, Portland ME
PREPARED FOR CITY OF PORTLAND, MAINE
March 13th, 2017

Purpose:

This construction management plan has been developed to provide sufficient information to the City of Portland on how the project will interface with the surrounding neighborhood.

Project Synopsis:

The demolition of an existing single family house and the new construction of a 3 story multi-use commercial building providing 1st floor commercial and multi-family residential on the upper floors. The project also includes a "pocket park" that provides community green space for the benefit of the neighborhood.

Construction Administration:

1. Contractor Information

   Ducas Construction Inc
   3 Southgate Road, # 8
   Scarborough, ME 04074

   Phone: 207-303-0634

   Project Executive: Patrick Ducas

2. Ducas Construction shall maintain the following hours.
   Date of Construction: Estimated start date June 10th 2017-January 2018
   - Job site hours are to begin at 7:00 AM – 7:00 PM, Monday – Friday.
   - Saturday 8:00 AM – 5:00 PM.
   - Off Hours by Work Permit Only.
   - No Sunday and Holiday Work.

3. Project Documentation
   - *Permits/Other Documents*- The contractor shall maintain all applicable local, state and federal licenses and permits that apply to the construction project.

- *Public Notification*- All public notification required by the City of Portland will be provided.
- *Project Signage*- Project signage will be constructed and posted including the contractors name, architects name, a project description, contact information, and any other applicable project information.

4. Project Implementation
    - *Construction Schedule*- A construction schedule will be developed and be available from the contractor upon request.
    - *Sequence (Phasing) of Construction*- A construction schedule including all project phasing will be developed by the Contractor and shall be available from the contractor on-site upon request. In general, the following Construction Sequencing will be followed:
        1. Mobilization of equipment to the site.
        2. Site Preparation. Establish Site Limits, install Temporary Erosion Control and Construction Fencing
        3. Clear and grub site, remove vegetation, demolish and remove structures and necessary materials within new building footprint
        4. Excavate for building foundation
        5. Site Work, including utilities, grading, and hardscaping on site and within street
        6. New Building Construction (Interior and Exterior)
        7. Install Landscaping and other site Improvements
        8. Occupy new building

Neighborhood Interface:

- The work for this project will remain substantially within the property lines of the site, however there will be some work in the public right of way. These activities include.
    - New utility connection in Stevens Avenue.
    - The removal of 1 crosswalk and the creation of another.
    - Removal and replacement of the sidewalk along the building frontage.
    - The supply and installation of ADA tip downs on both sides of Stevens Avenue.
- *Adjoining Properties*- No person shall excavate on land close enough to a property line to endanger any adjacent public street, sidewalk, and alley, other public or private property, or easement, without supporting and protecting the property from any damage that might result from construction operations.

- Work in Stevens Avenue and on the sidewalks will be scheduled and coordinated to minimize the disturbance to normal pedestrian

traffic. Work will happen during the summer holiday when school is not in session. During this work, traffic will have to be diverted to the opposite side of the road.

- *Project Fencing*- When not working in Stevens Avenue and on the sidewalks the site will be protected with a 6' construction fence with gates at both entries to the site.
- *Parking Management:*
    - Emergency Vehicle Access- The site is on Stevens Ave which provides ample and unobstructed access for Emergency personnel.
    - Construction Parking Details- Specific construction parking may be provided on site. Subcontractors will be encouraged to park off site, and to carpool whenever possible. See attached Logistics Plan.
    - Delivery Vehicle Parking- Short term parking for delivery vehicles only shall be allowed on Stevens Ave, directly in front of site if internal site access is not feasible.
- *Pedestrian Protection*- Signage directing pedestrians to use the sidewalk on the opposite side of Stevens Ave will be posted throughout construction to maintain a safe pedestrian passage.
- *Noise Suppression*- The installation of noise barriers will be used to suppress noise when necessary. Portable loud equipment including generators, compressors, and cement mixers shall be located on the property to reduce impacts on individual neighbors. The use of radios on the site before 8:00 am is not allowed.

Site Work

- Utility connections will be coordinated with the city, and Ducas Construction will supervise and enforce flagging, street and sidewalk closures and pedestrian re-routing as required for the safe and timely execution of the work.
- All trucks entering and exiting the site will be accompanied by flagmen, and trucking will be limited to neighborhood friendly hours.
- Catch basins near any disturbed areas shall be protected and cleaned following construction as necessary, and if the site disturbance results in the tracking of sediment onto the surrounding streets they will be swept.
- A Storm Water Pollution Prevention Plan has been submitted as part of the City of Portland Site Plan Approval process.

Site Access

- All traffic control operations shall be managed by the general contractor.
- All Deliveries will be scheduled for none “rush hour” times Monday – Friday, and after 8:00 AM on Saturdays.
    - *Delivery Requirments*- Deliveries to the project site will be via public way on Stevens Ave. Access to the site will be via the existing curb cut on Stevens Ave.
- All vehicles and equipment used on site will be properly maintained such that the engines will function within manufacture’s standards or parameters.
- No idling or start-up of equipment before 7:00 AM Monday-Friday, and before 8:00 AM on Saturdays.

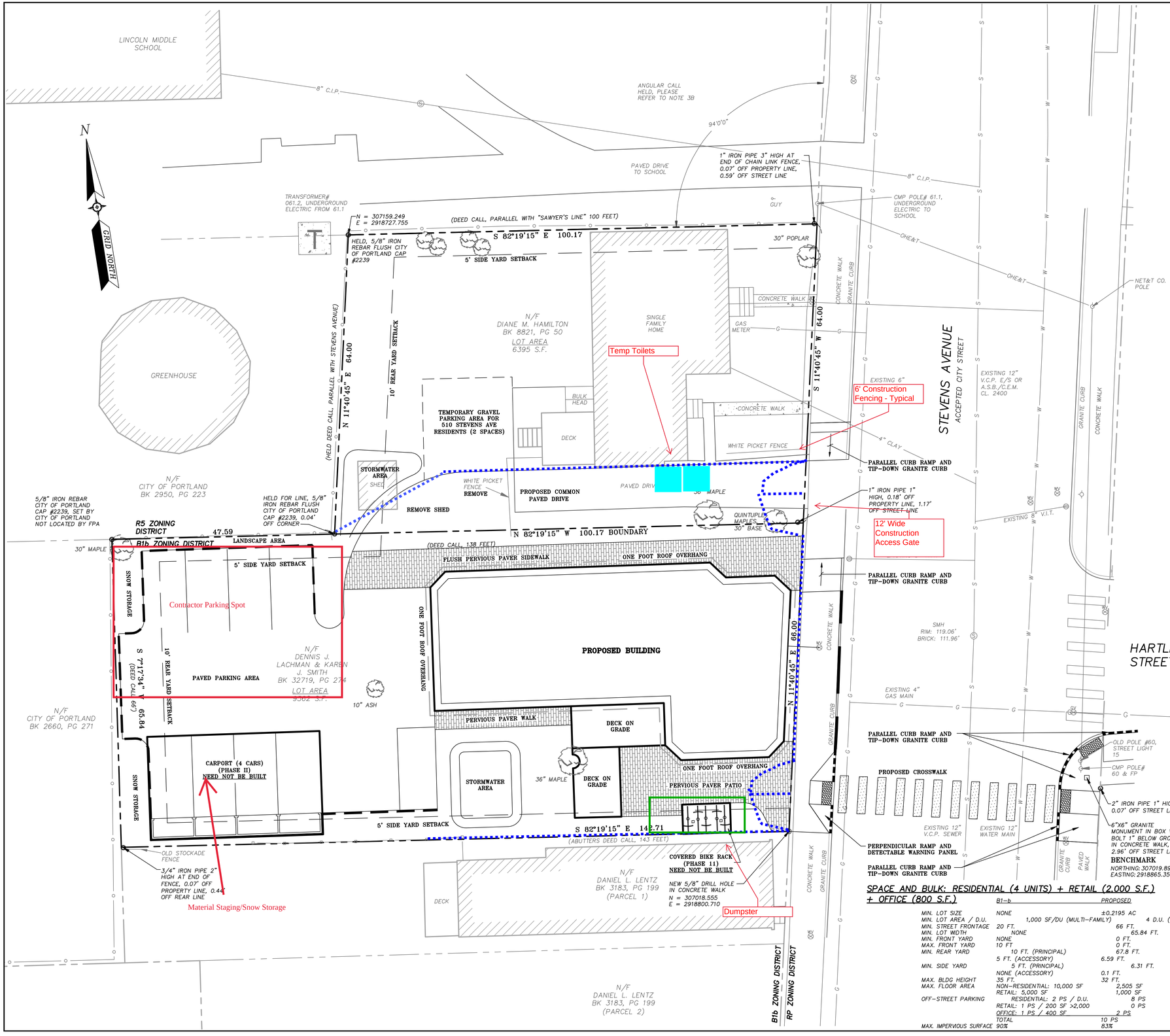
Storage/Parking/Ancillary Services

- Ducas Construction shall take appropriate steps to eliminate dust generation. These steps shall include but are not limited to: wetting down material, placing stone mats where necessary, and requiring all equipment transporting materials that create dust, to be covered.
- Ducas Construction will provide adequate sanitary facilities within the construction fence.
- Temporary drinking water will be provided.
- Dumpsters on site will be located within the construction fence. Removal and replacement will take place during construction hours.
- Material and equipment staging will be accommodated within the project site. See attached logistics plan.
- Ducas Construction will post appropriate signage including but not limited to the following: Parking Restrictions Construction Entrance, Staging Area, Site Phone Number, and Contact Information.
- A Pre-Construction meeting will be held with the Owner, Architect, Ducas Construction, and Subcontractors. It will outline, Ducas Construction Policies, and all necessary rules and procedures.

We feel this plan represents practical and safety conscious solutions that will ensure this project fits in to the neighborhood while creating minimal disturbance to others in the vicinity of the site.

Respectfully
Patrick Ducas

SITE LOGISTICS PLAN WHILE SCHOOL IN SESSION



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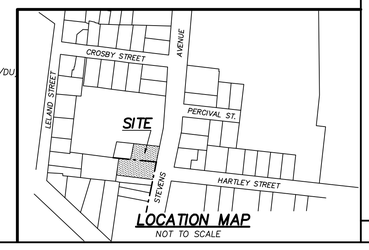

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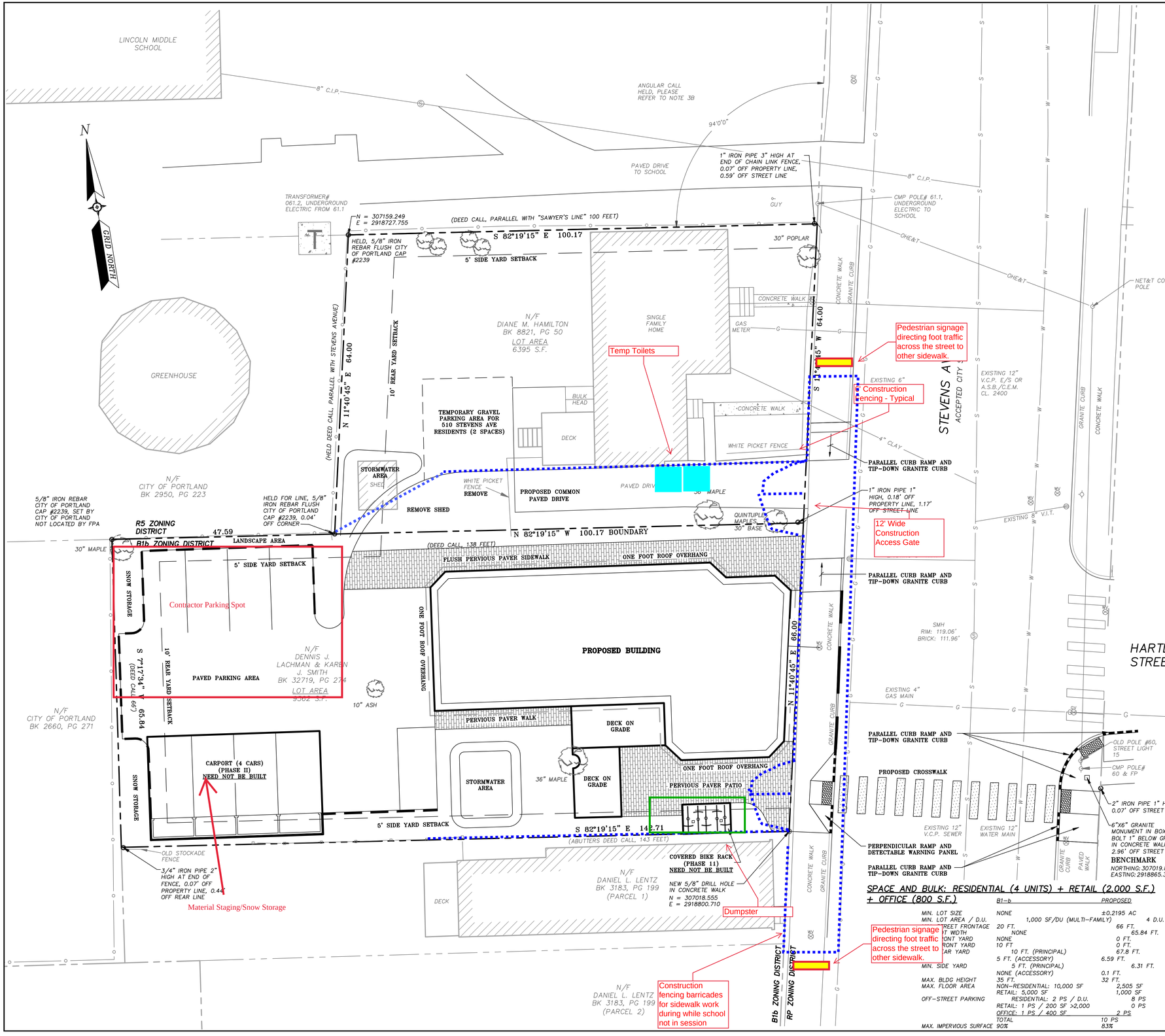

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5. VERTICAL DATUM IS NGVD 1929 AND WAS DETERMINED BY STATIC OBSERVATION USING A DUAL FREQUENCY GPS UNIT ON TWO CONTROL POINTS. THE DATA WAS PROCESSED BY USING THE OPUS PROGRAM ON THE NGS WEBSITE. SITE BENCHMARK ELEVATION CONFIRMED WITH CITY OF PORTLAND MONUMENT AT INTERSECTION OF HARTLEY STREET & STEVENS AVE.

6. CATCH BASIN & MANHOLE INVERTS PROVIDED BY THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT AND NEED CONFIRMATION PRIOR TO ANY NEW CONNECTIONS DURING CONSTRUCTION. SEE EXISTING CONDITIONS SURVEY FOR RIM AND INVERT ELEVATIONS.

7. THIS PLAN IS BASED ON A SURVEY COMPLETED TO THE BEST OF MY KNOWLEDGE IN ACCORDANCE WITH THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS STANDARDS OF PRACTICE. FIELD WORK WAS COMPLETED USING ROBOTICS INSTRUMENTATION OFF A BASELINE AND SPUR STATIONS. POINTS LOCATED WITHIN A POSITIONAL TOLERANCE OF 0.05 FEET, MORE OR LESS.

8. THIS PLAN IS SUBJECT TO REVISION UPON RECEIPT OF A TITLE OPINION WHICH MAY NOTE OTHER POSSIBLE RESTRICTIONS, EASEMENTS OR CONDITIONS ENCUMBERING OR BENEFITING THE SITE.

9. NO EXCAVATION OF ANY KIND CAN BE PERMITTED WITHOUT THE CONTRACTOR CONTACTING DIG–SAFE FOR LOCATION OF POSSIBLE UNDERGROUND UTILITIES. ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE BASED ON VISIBLE ABOVE GROUND STRUCTURES.

10. PROPERTY IS NOT LOCATED WITHIN A FLOOD HAZARD ZONE AS DEPICTED ON FEMA FIRM FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 230051 007 C, MAP REVISED DECEMBER 8, 1998.

LEGEND

EXISTING CONDITIONS

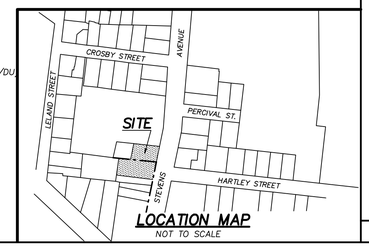
- SITE BOUNDARY
- ABUTTER BOUNDARY
- SETBACK
- MONUMENT
- IRON PIPE/ROD
- DRILLHOLE
- CHAIN LINK FENCE
- STOCKADE FENCE
- EDGE PAVEMENT
- CURBLINE
- BUILDING
- SIGN
- WATER VALVE
- GAS VALVE
- UTILITY POLE
- GUY WIRE
- HYDRANT
- CATCH BASIN
- SEWER MANHOLE
- CONTOURS
- 6"G GAS
- 8"W WATER
- 8"S SEWER
- OHE&T OVERHEAD ELEC. & TEL.
- DECIDUOUS TREE

PROPOSED IMPROVEMENTS

- BUILDING
- EDGE PAVEMENT
- CURBING
- ZONE BOUNDARY

SPACE AND BULK: RESIDENTIAL (4 UNITS) + RETAIL (2,000 S.F.) + OFFICE (800 S.F.)

	B1–b	PROPOSED
MIN. LOT SIZE	NONE	±0.2195 AC
MIN. LOT AREA / D.U.	1,000 SF/DU (MULTI–FAMILY)	4 D.U. (2,390 SF/DU)
STREET FRONTAGE	20 FT.	66 FT.
FRONT WIDTH	NONE	65.84 FT.
FRONT YARD	NONE	0 FT.
REAR YARD	10 FT	0 FT.
	10 FT. (PRINCIPAL)	67.8 FT.
MIN. SIDE YARD	5 FT. (ACCESSORY)	6.59 FT.
	5 FT. (PRINCIPAL)	6.31 FT.
	NONE (ACCESSORY)	0.1 FT.
MAX. BLDG HEIGHT	35 FT.	32 FT.
MAX. FLOOR AREA	NON–RESIDENTIAL: 10,000 SF	2,505 SF
	RETAIL: 5,000 SF	1,000 SF
OFF–STREET PARKING	RESIDENTIAL: 2 PS / D.U.	8 PS
	RETAIL: 1 PS / 200 SF >2,000	0 PS
	OFFICE: 1 PS / 400 SF	2 PS
	TOTAL	10 PS
MAX. IMPERVIOUS SURFACE	90%	83%



LOCATION MAP
NOT TO SCALE

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM FOUR POINTS ASSOCIATES, INC. ANY ALTERATIONS AUTHORIZED BY OTHERS SHALL BE AT THEIR SOLE RISK AND WITHOUT LIABILITY TO FOUR POINTS ASSOCIATES, INC.

SUBMITTED FOR REVIEW
STATUS:
DWG NAME: 16014 SB | SCALE: 1"=10' | PLAN BY: DED & SMM
DATE: 12/22/16
PROJ. NO: 16014
REV: A

DONALD E. DOSTIE
PLS #2147
NAME: . .
LIC. # . .

PRELIMINARY SUBDIVISION PLAN
OF
510 STEVENS AVENUE
PORTLAND, MAINE
FOR APPLICANT:
502 DEERING CENTER LLC
RECORD OWNER: DENNIS LACHMAN
55 HAMBLET AVE., PORTLAND, MAINE 04104

Four Points Associates, Inc.
Civil Engineering • Land Planning
Douglas E. Dostie, P.E.
9 Ralph Avenue, Lewiston, ME 04240 Tel. 207–577–5840

SHEET C 3.0

Ducas Construction Inc.

CONSTRUCTION MANAGEMENT PLAN
502 Deering Center, Portland ME
PREPARED FOR CITY OF PORTLAND, MAINE
February 5th, 2017

Purpose:

This construction management plan has been developed to provide sufficient information to the City Of Portland on how the project will interface with the surrounding neighborhood.

Project Synopsis:

The demolition of an existing single family house and the new construction of a 3 story multi-use commercial building providing 1st floor commercial and multi-family residential on the upper floors. The project also includes a "pocket park" that provides community green space for the benefit of the neighborhood.

Construction Administration:

1. Contractor Information

   Ducas Construction Inc
   3 Southgate Road, # 8
   Scarborough, ME 04074

   Phone: 207-536-0838

   Project Executive: Patrick Ducas

2. Ducas Construction shall maintain the following hours.
   - Job site hours are to begin at 7:00 AM – 7:00 PM, Monday – Friday.
   - Saturday 8:00 AM – 5:00 PM.
   - Off Hours by Work Permit Only.
   - No Sunday and Holiday Work.

Neighborhood Interface:

Overview

- The work for this project will remain substantially within the property lines of the site, however there will be some work in the public right of way. These activities include.
    - New utility connection in Stevens Avenue.
    - The removal of 1 crosswalk and the creation of another.
    - Removal and replacement of the sidewalk along the building frontage.
    - The supply and installation of ADA tip downs on both sides of Stevens Avenue.
- Work in Stevens Avenue and on the sidewalks will be scheduled and coordinated to minimize the disturbance to normal pedestrian traffic. Work will happen during the summer holiday when school is not in session. During this work, traffic will have to be diverted to the opposite side of the road.
- When not working in Stevens Avenue and on the sidewalks the site will be protected with a 6’ construction fence with gates at both entries to the site.

Demolition

- The existing building will be demolished using a standard excavator.
- Debris will be direct loaded onto trucks and removed from the site.
- The site will be prepared with a stabilized construction entrance.
- Trucks will be checked before existing the site to ensure they are not trafficking material onto the streets.

Site Work

- Utility connections will be coordinated with the city, and Ducas Construction will supervise and enforce flagging, street and sidewalk closures and pedestrian re-routing as required for the safe and timely execution of the work.
- All trucks entering and exiting the site will be accompanied by flagmen, and trucking will be limited to neighborhood friendly hours.
- Catch basins near any disturbed areas shall be protected and cleaned following construction as necessary, and if the site disturbance results in the tracking of sediment onto the surrounding streets they will be swept.

Site Access

- All Deliveries will be scheduled for none “rush hour” times Monday – Friday, and after 8:00 AM on Saturdays.
- No idling or start-up of equipment before 7:00 AM Monday-Friday, and before 8:00 AM on Saturdays.

Storage/Parking/Ancillary Services

- Ducas Construction shall take appropriate steps to eliminate dust generation. These steps shall include but are not limited to: wetting down material, placing stone mats where necessary, and requiring all equipment transporting materials that create dust, to be covered.
- Ducas Construction will provide adequate sanitary facilities within the construction fence.
- Temporary drinking water will be provided.
- Dumpsters on site will be located within the construction fence. Removal and replacement will take place during construction hours.
- Ducas Construction will post appropriate signage including but not limited to the following: Parking Restrictions Construction Entrance, Staging Area, Site Phone Number, and Contact Information.
- A Pre-Construction meeting will be held with the Owner, Architect, Ducas Construction, and Subcontractors. It will outline, Ducas Construction Policies, and all necessary rules and procedures.

We feel this plan represents practical and safety conscious solutions that will ensure this project fits in to the neighborhood while creating minimal disturbance to others in the vicinity of the site.

Respectfully

Patrick Ducas

N SUMMARY OF PROJECT'S CONSISTENCY WITH CITY'S COMPREHENSIVE PLAN

The Housing component of The Portland Comprehensive Plan, City titled "Housing, Sustaining Portland's Future" outlines a number of Policies which this project is consistent with.

- **Policy 1: "Ensure an Adequate and Diverse Supply of Housing for All."** This project provides housing units built at a density compatible with the existing Deering Center Neighborhood. The City's goal of adding additional units is supported by this project which introduces four new residential units as well as new retail space on the street level.
- **Policy 3: "Neighborhood Stability and Integrity."** This project creates new commercial space as well as housing within an existing vibrant residential neighborhood thus bolstering the integrity and stability of the Deering Center Neighborhood. The building scale and materials of the neighborhood are respected and reflected in the proposed new structures. This project will be an asset to Deering Center, which currently serves as a vibrant Off-Peninsula Urban Center anchored between Deering High School and the University of New England. This project has access to existing City assets such as public transportation, Baxter Woods, Evergreen Cemetery, Lincoln Middle School, and wide variety of active retail businesses. The proposed neighborhood park associated with this project will provide a natural gathering place for residents and neighbors and add to the vitality of the streetscape.
- **Policy 5: "Sustainable Development."** This project aids the City's goal to achieve and maintain a 25% share of Cumberland County's population by creating new multi-family housing within the City. Its location in Deering Center and adjacent to a designated Metro Bus Stop fulfills the desire for creating development with minimal infrastructure cost. As outlined above, the project site is within walking distance of neighborhood schools and many community, recreation, and retail amenities.
- This project meets the goals of **Objective 5.d**.: relating to encouraging business centers in the city that reduce dependence on the car and make neighborhood life without a car more practical. Its location on a designated Metro Stop, the addition of a neighborhood open space and the mixed uses proposed all encourage a work/ live situation with minimal dependence on the automobile and integrate seamlessly with the Deering Center neighborhood.
- The Comprehensive Plan indicates "Portland has limited vacant land suitable for development, thus redevelopment options are the primary opportunities for creating new housing." The proposed project assists Portland in tackling the challenge of increased population and density within the City. This project will allow new residents and business to support the continued growth of Deering Center neighborhood in Portland.

Att. K

Tom Greer

Hi Robert or Heather,

Can you provide an ability to serve letter for the attached project. Below are the fixture counts for the units. Let me know if the taps that we are proposing are acceptable as well.

3A = **6** (kitch sink + DW + bath sink + tub + WC + washing mach)
3B = **8** (kitch sink + DW + bath sink + tub + WC + washing mach + ½ bath sink + WC)
2A = **6** (kitch sink + DW + bath sink + tub + WC + washing mach)
2B = **8** (kitch sink + DW + bath sink + tub + WC + washing mach + ½ bath sink + WC)
1st = **2** (sink + WC)
Low Lev = **3** (sink + WC + working sink)
Exterior = **2** (hose)
Total - **35**

Tom Greer
Pinkham and Greer, Civil Engineers
207.781.5242
tgreer@pinkhamandgreer.com

Tom Greer
Pinkham and Greer, Civil Engineers
28 Vannah Avenue, Portland, ME 04103
207.781.5242
tgreer@pinkhamandgreer.com

P SOLID WASTE GENERATION & MANAGEMENT

502 Deering Center

Site Waste

All construction waste will be collected and sorted/separated on-site and managed by the general contractor. Required tree clearing and grubbing will be performed by qualified personnel and the logs, brush, and stumps will be either taken off-site for disposal or ground/chipped on-site by a portable stump grinder and used as erosion control mulch.

Residential Waste

There are 4 residential units, and waste is typically domestic goods such as paper, miscellaneous trash, and cardboard which is generated from residential uses. Waste and recycling removal for residents will be served by the City of Portland curbside trash and recycling collection. Tenants will be informed of collection day and appropriate interim in-unit storage of waste and recycling.

Business and Retail Waste

Waste from business and/or retail tenants will be similar to typical domestic waste such as paper, miscellaneous trash, and cardboard. These will be stored in appropriate trash/recycling containers internally in a central utility room. These containers will be serviced by an independent solid waste contractor, on a regular basis, via doors that provide access to the driveway.

Att. M

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

STORMWATER MANAGEMENT REPORT
502 DEERING CENTER
PORTLAND, MAINE

December 22, 2016
Revised February 3, 2017

Project Description:

The project is the redevelopment of 502 Stevens Avenue from a single family home to a 4 unit apartment complex and 2,400 square feet of commercial space. The existing home will be removed as well as the existing sidewalk and replaced with a 2,400 square foot building, 4,130 square feet of parking and driveway and 860 square feet of plaza.

Existing Conditions:

The 9,562 square foot lot has an existing home of 1,277 square feet and a driveway of 780 square feet. The site is very flat at elevation 119, plus or minus one foot. There are several large trees that provide canopy over the lot. The soils are Windsor sandy loam, a well-drained soil, based on the county soils mapping.

Developed Conditions:

The project will have a 2,400 square foot building with a flat roof, parking spaces in the rear with a carport and storage on one side of the lot. It will be redeveloped using a shared driveway with the lot adjacent to this one, #510 Stevens Avenue. This reduces the curb cuts on Stevens Avenue.

There will be defined walkway along the side of the building using pervious pavers. There will be plaza on the side of the building using pervious pavers. This are will provide a small community gathering space.

Stormwater Treatment and Control:

The site will have two subsurface stormwater systems. The first will utilize crushed stone bed for stormwater storage and infiltration into the underlying soils for treatment. The second system will treat the plaza area with pervious pavers.

The parking lot run off will be pretreated is a small grass bowl just off the edge. Overflows from the bowl will go to a catch basin with a 3' sump and then to the infiltration area. Overflow from this system is conveyed to the street storm drain system.

The second system is under the previous paver plaza area. The system treats the roof water from the building next door and the plaza area. It stores the stormwater in the stone bedding and infiltrates it. Overflow for the system goes to the street system.

Peak Flows from the systems will be conveyed around the building to the existing catchbasin in Stevens Avenue.

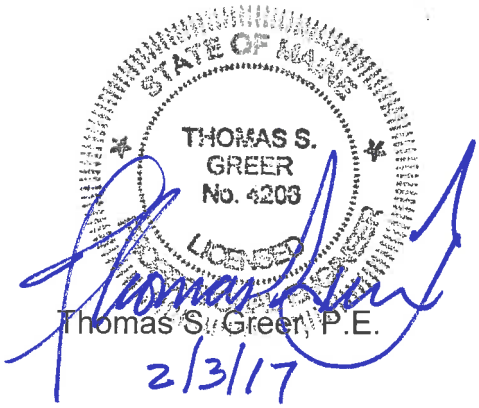
Results:

The Drainage Analysis shows that runoff from a 2 ½" rainstorm will infiltrate into the soils. During a 25 year rainstorm some overflow can be expected. This includes water coming up through the pervious pavers and some water overflowing to the pipe connected to the city's stormdrain. In general the flows are very small. Below is a chart showing peak flows.

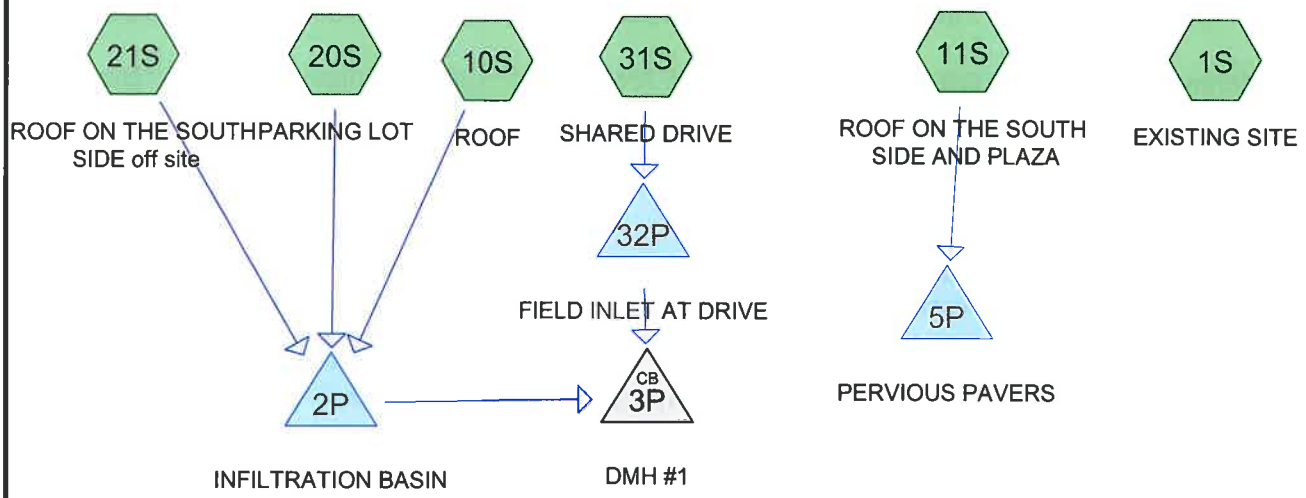
Peak Flows Cubic Feet Per Second (cfs)			
	2 Year	10 Year	25 Year
Developed	0.27	0.39	0.50
Existing	0.46	0.87	1.21

Conclusion:

The use of infiltration systems on this site will reduce the stormwater flows and have minimal impacts on downstream systems.



Thomas S. Greer, P.E.
2/3/17



Subcat Reach Pond Link

Routing Diagram for 502 STEVENS AVE TSG 12-2016
Prepared by Hewlett-Packard Company, Printed 2/2/2017
HydroCAD® 10.00-16 s/n 01454 © 2015 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EXISTING SITE Runoff Area=11,815 sf 33.56% Impervious Runoff Depth>0.92"
Tc=5.0 min CN=82 Runoff=0.31 cfs 0.021 af

Subcatchment 10S: ROOF Runoff Area=2,665 sf 100.00% Impervious Runoff Depth>2.13"
Tc=4.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment 11S: ROOF ON THE SOUTH Runoff Area=1,105 sf 100.00% Impervious Runoff Depth>2.13"
Tc=4.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment 20S: PARKING LOT Runoff Area=4,536 sf 79.59% Impervious Runoff Depth>1.68"
Flow Length=75' Slope=0.0050 '/' Tc=1.7 min CN=93 Runoff=0.23 cfs 0.015 af

Subcatchment 21S: ROOF ON THE SOUTH Runoff Area=328 sf 100.00% Impervious Runoff Depth>2.13"
Tc=2.0 min CN=98 Runoff=0.02 cfs 0.001 af

Subcatchment 31S: SHARED DRIVE Runoff Area=2,985 sf 80.50% Impervious Runoff Depth>1.68"
Tc=4.0 min CN=93 Runoff=0.15 cfs 0.010 af

Pond 2P: INFILTRATION BASIN Peak Elev=216.18' Storage=267 cf Inflow=0.40 cfs 0.027 af
Discarded=0.10 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.027 af

Pond 3P: DMH #1 Peak Elev=115.99' Inflow=0.15 cfs 0.010 af
8.0" Round Culvert n=0.010 L=90.0' S=0.0052 '/' Outflow=0.15 cfs 0.010 af

Pond 5P: PERVIOUS PAVERS Peak Elev=217.01' Storage=4 cf Inflow=0.06 cfs 0.005 af
Discarded=0.02 cfs 0.001 af Primary=0.05 cfs 0.003 af Outflow=0.06 cfs 0.005 af

Pond 32P: FIELD INLET AT DRIVE Peak Elev=116.08' Storage=1 cf Inflow=0.15 cfs 0.010 af
8.0" Round Culvert n=0.010 L=8.0' S=0.0100 '/' Outflow=0.15 cfs 0.010 af

Total Runoff Area = 0.538 ac Runoff Volume = 0.062 af Average Runoff Depth = 1.37"
39.93% Pervious = 0.215 ac 60.07% Impervious = 0.323 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EXISTING SITE Runoff Area=11,815 sf 33.56% Impervious Runoff Depth>1.35"
Tc=5.0 min CN=82 Runoff=0.46 cfs 0.031 af

Subcatchment 10S: ROOF Runoff Area=2,665 sf 100.00% Impervious Runoff Depth>2.68"
Tc=4.0 min CN=98 Runoff=0.19 cfs 0.014 af

Subcatchment 11S: ROOF ON THE SOUTH Runoff Area=1,105 sf 100.00% Impervious Runoff Depth>2.68"
Tc=4.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment 20S: PARKING LOT Runoff Area=4,536 sf 79.59% Impervious Runoff Depth>2.22"
Flow Length=75' Slope=0.0050 '/' Tc=1.7 min CN=93 Runoff=0.30 cfs 0.019 af

Subcatchment 21S: ROOF ON THE SOUTH Runoff Area=328 sf 100.00% Impervious Runoff Depth>2.68"
Tc=2.0 min CN=98 Runoff=0.02 cfs 0.002 af

Subcatchment 31S: SHARED DRIVE Runoff Area=2,985 sf 80.50% Impervious Runoff Depth>2.22"
Tc=4.0 min CN=93 Runoff=0.19 cfs 0.013 af

Pond 2P: INFILTRATION BASIN Peak Elev=216.28' Storage=404 cf Inflow=0.51 cfs 0.035 af
Discarded=0.10 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.035 af

Pond 3P: DMH #1 Peak Elev=116.03' Inflow=0.19 cfs 0.013 af
8.0" Round Culvert n=0.010 L=90.0' S=0.0052 '/' Outflow=0.19 cfs 0.013 af

Pond 5P: PERVIOUS PAVERS Peak Elev=217.01' Storage=5 cf Inflow=0.08 cfs 0.006 af
Discarded=0.02 cfs 0.001 af Primary=0.06 cfs 0.004 af Outflow=0.08 cfs 0.006 af

Pond 32P: FIELD INLET AT DRIVE Peak Elev=116.11' Storage=1 cf Inflow=0.19 cfs 0.013 af
8.0" Round Culvert n=0.010 L=8.0' S=0.0100 '/' Outflow=0.19 cfs 0.013 af

Total Runoff Area = 0.538 ac Runoff Volume = 0.084 af Average Runoff Depth = 1.86"
39.93% Pervious = 0.215 ac 60.07% Impervious = 0.323 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EXISTING SITE Runoff Area=11,815 sf 33.56% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=82 Runoff=0.87 cfs 0.058 af

Subcatchment 10S: ROOF Runoff Area=2,665 sf 100.00% Impervious Runoff Depth>4.05"
Tc=4.0 min CN=98 Runoff=0.29 cfs 0.021 af

Subcatchment 11S: ROOF ON THE SOUTH Runoff Area=1,105 sf 100.00% Impervious Runoff Depth>4.05"
Tc=4.0 min CN=98 Runoff=0.12 cfs 0.009 af

Subcatchment 20S: PARKING LOT Runoff Area=4,536 sf 79.59% Impervious Runoff Depth>3.60"
Flow Length=75' Slope=0.0050 '/' Tc=1.7 min CN=93 Runoff=0.48 cfs 0.031 af

Subcatchment 21S: ROOF ON THE SOUTH Runoff Area=328 sf 100.00% Impervious Runoff Depth>4.05"
Tc=2.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment 31S: SHARED DRIVE Runoff Area=2,985 sf 80.50% Impervious Runoff Depth>3.60"
Tc=4.0 min CN=93 Runoff=0.30 cfs 0.021 af

Pond 2P: INFILTRATION BASIN Peak Elev=216.59' Storage=768 cf Inflow=0.79 cfs 0.054 af
Discarded=0.11 cfs 0.054 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.054 af

Pond 3P: DMH #1 Peak Elev=116.10' Inflow=0.30 cfs 0.021 af
8.0" Round Culvert n=0.010 L=90.0' S=0.0052 '/' Outflow=0.30 cfs 0.021 af

Pond 5P: PERVIOUS PAVERS Peak Elev=217.04' Storage=13 cf Inflow=0.12 cfs 0.009 af
Discarded=0.02 cfs 0.002 af Primary=0.07 cfs 0.006 af Outflow=0.09 cfs 0.009 af

Pond 32P: FIELD INLET AT DRIVE Peak Elev=116.20' Storage=1 cf Inflow=0.30 cfs 0.021 af
8.0" Round Culvert n=0.010 L=8.0' S=0.0100 '/' Outflow=0.30 cfs 0.021 af

Total Runoff Area = 0.538 ac Runoff Volume = 0.141 af Average Runoff Depth = 3.15"
39.93% Pervious = 0.215 ac 60.07% Impervious = 0.323 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EXISTING SITE Runoff Area=11,815 sf 33.56% Impervious Runoff Depth>3.57"
Tc=5.0 min CN=82 Runoff=1.21 cfs 0.081 af

Subcatchment 10S: ROOF Runoff Area=2,665 sf 100.00% Impervious Runoff Depth>5.15"
Tc=4.0 min CN=98 Runoff=0.36 cfs 0.026 af

Subcatchment 11S: ROOF ON THE SOUTH Runoff Area=1,105 sf 100.00% Impervious Runoff Depth>5.15"
Tc=4.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment 20S: PARKING LOT Runoff Area=4,536 sf 79.59% Impervious Runoff Depth>4.71"
Flow Length=75' Slope=0.0050 '/' Tc=1.7 min CN=93 Runoff=0.61 cfs 0.041 af

Subcatchment 21S: ROOF ON THE SOUTH Runoff Area=328 sf 100.00% Impervious Runoff Depth>5.15"
Tc=2.0 min CN=98 Runoff=0.05 cfs 0.003 af

Subcatchment 31S: SHARED DRIVE Runoff Area=2,985 sf 80.50% Impervious Runoff Depth>4.70"
Tc=4.0 min CN=93 Runoff=0.39 cfs 0.027 af

Pond 2P: INFILTRATION BASIN Peak Elev=216.94' Storage=1,070 cf Inflow=1.01 cfs 0.070 af
Discarded=0.12 cfs 0.070 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.070 af

Pond 3P: DMH #1 Peak Elev=116.15' Inflow=0.39 cfs 0.027 af
8.0" Round Culvert n=0.010 L=90.0' S=0.0052 '/' Outflow=0.39 cfs 0.027 af

Pond 5P: PERVIOUS PAVERS Peak Elev=217.06' Storage=22 cf Inflow=0.15 cfs 0.011 af
Discarded=0.02 cfs 0.003 af Primary=0.09 cfs 0.008 af Outflow=0.11 cfs 0.011 af

Pond 32P: FIELD INLET AT DRIVE Peak Elev=116.25' Storage=2 cf Inflow=0.39 cfs 0.027 af
8.0" Round Culvert n=0.010 L=8.0' S=0.0100 '/' Outflow=0.39 cfs 0.027 af

Total Runoff Area = 0.538 ac Runoff Volume = 0.189 af Average Runoff Depth = 4.21"
39.93% Pervious = 0.215 ac 60.07% Impervious = 0.323 ac

Summary for Subcatchment 1S: EXISTING SITE

Runoff = 1.21 cfs @ 12.07 hrs, Volume= 0.081 af, Depth> 3.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	2,474	98	BUILDING AND DECKS
*	1,491	98	WALKS AND DRIVE
*	7,850	74	LANDSCAPED
	11,815	82	Weighted Average
	7,850		66.44% Pervious Area
	3,965		33.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Summary for Subcatchment 10S: ROOF

Runoff = 0.36 cfs @ 12.06 hrs, Volume= 0.026 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	2,665	98	ROOF
	2,665		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry, DIRECT**

Summary for Subcatchment 11S: ROOF ON THE SOUTH SIDE AND PLAZA

Runoff = 0.15 cfs @ 12.06 hrs, Volume= 0.011 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	480	98	ROOF
*	625	98	PLAZA
	1,105	98	Weighted Average
	1,105		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry, DIRECT**

Summary for Subcatchment 20S: PARKING LOT

Runoff = 0.61 cfs @ 12.03 hrs, Volume= 0.041 af, Depth> 4.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	3,610	98	PAVED
*	926	75	LANDSCAPED
	4,536	93	Weighted Average
	926		20.41% Pervious Area
	3,610		79.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	75	0.0050	0.73		**Sheet Flow, SHEET** Smooth surfaces n= 0.011 P2= 3.10"

Summary for Subcatchment 21S: ROOF ON THE SOUTH SIDE off site

Runoff = 0.05 cfs @ 12.03 hrs, Volume= 0.003 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	328	98	ROOF
	328		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, DIRECT**

Summary for Subcatchment 31S: SHARED DRIVE

Runoff = 0.39 cfs @ 12.06 hrs, Volume= 0.027 af, Depth> 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	2,403	98	PAVED
*	582	74	LANDSCAPED
	2,985	93	Weighted Average
	582		19.50% Pervious Area
	2,403		80.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry, DIRECT**

Summary for Pond 2P: INFILTRATION BASIN

Inflow Area = 0.173 ac, 87.70% Impervious, Inflow Depth > 4.88" for 25 YEAR event
Inflow = 1.01 cfs @ 12.04 hrs, Volume= 0.070 af
Outflow = 0.12 cfs @ 12.56 hrs, Volume= 0.070 af, Atten= 88%, Lag= 31.5 min
Discarded = 0.12 cfs @ 12.56 hrs, Volume= 0.070 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 216.94' @ 12.56 hrs Surf.Area= 697 sf Storage= 1,070 cf

Plug-Flow detention time= 67.8 min calculated for 0.070 af (100% of inflow)
Center-of-Mass det. time= 66.9 min (806.9 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	216.00'	1,481 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
216.00	1,590	0	0
217.00	636	1,113	1,113
218.00	100	368	1,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	216.00'	**2.540 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 213.00'
#2	Primary	217.00'	**4.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 217.00' / 216.10' S= 0.0900 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

Discarded OutFlow Max=0.12 cfs @ 12.56 hrs HW=216.94' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=216.00' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Summary for Pond 3P: DMH #1

Inflow Area = 0.241 ac, 85.66% Impervious, Inflow Depth > 1.34" for 25 YEAR event
Inflow = 0.39 cfs @ 12.06 hrs, Volume= 0.027 af
Outflow = 0.39 cfs @ 12.06 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min
Primary = 0.39 cfs @ 12.06 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 116.15' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	115.77'	**8.0" Round Culvert** L= 90.0' Ke= 0.500 Inlet / Outlet Invert= 115.77' / 115.30' S= 0.0052 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.38 cfs @ 12.06 hrs HW=116.14' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.38 cfs @ 2.73 fps)

Summary for Pond 5P: PERVIOUS PAVERS

Inflow Area = 0.025 ac,100.00% Impervious, Inflow Depth > 5.15" for 25 YEAR event
Inflow = 0.15 cfs @ 12.06 hrs, Volume= 0.011 af
Outflow = 0.11 cfs @ 12.12 hrs, Volume= 0.011 af, Atten= 25%, Lag= 3.9 min
Discarded = 0.02 cfs @ 12.12 hrs, Volume= 0.003 af
Primary = 0.09 cfs @ 12.12 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 217.06' @ 12.12 hrs Surf.Area= 337 sf Storage= 22 cf

Plug-Flow detention time= 1.5 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (734.1 - 732.9)

Volume	Invert	Avail.Storage	Storage Description
#1	217.00'	298 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
217.00	350	0	0
218.00	140	245	245
218.50	70	53	298

Device	Routing	Invert	Outlet Devices
#1	Discarded	217.00'	**2.540 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 213.00'
#2	Primary	216.85'	**4.0" Round Culvert** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 216.85' / 216.00' S= 0.0567 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

Discarded OutFlow Max=0.02 cfs @ 12.12 hrs HW=217.06' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.09 cfs @ 12.12 hrs HW=217.06' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 0.09 cfs @ 1.56 fps)

Summary for Pond 32P: FIELD INLET AT DRIVE

Inflow Area = 0.069 ac, 80.50% Impervious, Inflow Depth > 4.70" for 25 YEAR event
Inflow = 0.39 cfs @ 12.06 hrs, Volume= 0.027 af
Outflow = 0.39 cfs @ 12.06 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min
Primary = 0.39 cfs @ 12.06 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 116.25' @ 12.06 hrs Surf.Area= 4 sf Storage= 2 cf

Plug-Flow detention time= 0.3 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (747.1 - 747.0)

Volume	Invert	Avail.Storage	Storage Description
#1	115.85'	222 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.85	4	0	0
116.85	4	4	4
117.00	103	8	12
118.00	316	210	222

Device	Routing	Invert	Outlet Devices
#1	Primary	115.85'	**8.0" Round Culvert** L= 8.0' Ke= 0.500 Inlet / Outlet Invert= 115.85' / 115.77' S= 0.0100 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.38 cfs @ 12.06 hrs HW=116.24' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.38 cfs @ 2.54 fps)

502 Deering Center
Portland, MAINE

February 3, 2017

INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

The owner will be responsible for the inspection and maintenance of all stormwater management facilities, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book as described herein. At a minimum, the appropriate and relevant activities for each of the stormwater management facilities should be performed on the prescribed schedule. Periodic inspection and maintenance of these site features and devices is necessary to prevent erosion and remove pollutants from stormwater runoff.

SWALES, DITCHES AND PAVED SURFACES:

Swales, ditches and paved surfaces are easily inspected during a site walk or even a ride-by. Since visual inspection is easy, their condition should be assessed during and/or after significant rainfall events such as thundershowers and periods of heavy or extended rainfall and during periods of significant snowmelt. Any damage or unusual condition such as sedimentation of a ditch, erosion, damaged pavement or dying vegetation should be recorded, dated and initialed by the inspector when observed. Even if there is no damage, the inspector should make record of these inspections at least twice annually.

Paved surfaces should be visually inspected monthly during the winter. The inspector should pay particular attention to the build up of ice and sand along the edge of the road and remove accumulations that block the free flow of surface runoff to the catch basins. Paved areas should be swept at least once annually. The date and initials of the inspector should be recorded on the forms provided as well as a notation of any cleanup effort that was made.

CATCH BASINS, FIELD INLETS AND DRAIN MANHOLES:

Catch Basins and field inlets are precast concrete structures with sumps and cast iron grates used to collect stormwater and trap heavy sediments. Drain Manholes are similar structures constructed with a channel instead of a sump and a solid cast iron cover instead of a grate. Drain Manholes exist at changes in direction and/or size of storm drain pipe. Catch Basins, field inlets and drain manholes provide access to the closed storm drain system for inspection and maintenance.

Throughout the winter / spring sanding period, inspect catch basins and field inlets monthly and after every significant rainfall event or period of heavy snowmelt. Clean catch basin and field inlet sumps when sediment level is within 3 inches of the outlet pipe invert. Record dates of inspections, observations and maintenance measures

implemented (if any) on the forms provided and initial the entry.

Confined space entry safety procedures should be practiced when entering these structures.

DRAIN PIPES:

Drain pipes connect catch basins and field inlets. Inspect drain pipes when inspecting other stormwater maintenance facilities. At least annually make a visual inspection of the pipe. During the daylight you should be able to see light through most pipes as they have been laid to a straight line and grade. In some cases (e.g. pipe runs to a catch basin, or is blocked) you will need a light to inspect pipes.

Clean pipes as necessary. Record inspections on the forms provided noting condition of pipe and any maintenance procedures implemented.

INFILTRATION BASINS:

Infiltration systems are impoundments designed to temporarily store runoff and release it at a controlled rate. The system for 502 Deering Avenue is designed to infiltrate stormwater and attenuate peak flow from the project. This system is providing subsurface treatment of stormwater runoff. The system is designed to capture and treat rain that falls on the developed portion of the site from storms with frequencies of 2, 10 and 25 years.

The system should be inspected semi-annually for efficiency, signs of structural failure, and loss of storage volume due to sediment accumulation. Corrective action should be taken immediately upon identification of problems.

Inspection and maintenance of the system is critical to the long-term performance of the infiltration basin. In addition to the inspections and maintenance measures described above the depth of water in the system should be monitored closely to verify the performance characteristics of the system. This is done by measuring how quickly the pond/basin de-waters following storms and how quickly sediments build up. Sediment buildup is monitored visually. Observations and volume of sediment removed should be recorded in the inspection/maintenance log. The rate at which the system de-waters is determined by periodically measuring and recording the water level following significant rainfall events and the time of the measurements. This can be done in the catch basin.

Inspections should be documented on forms similar to those provided. The date and initials of the inspector should be recorded as well as a description of conditions and any repair effort. Following significant rainfall events the water depth and times of the measurements should also be recorded.

502 DEERING CENTER
PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

SWALES, DITCHES AND PAVED SURFACES

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
2/3/17	ABC	I, C	EXAMPLE: removed sand along the edge of the road. Heavy rain over the weekend.

502 DEERING CENTER
PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

CATCH BASINS, FIELD INLETS, DRAIN MANHOLES AND OUTLET CONTROL STRUCTURE

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
2/3/17	ABC	I, C	EXAMPLE: Remove sand deposits and debris as necessary.

502 DEERING CENTER
PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

DRAIN PIPES

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
2/3/17	DEF	I, C	EXAMPLE: Cleared debris from ends of pipes. Called ACME to clean debris from field inlets.

502 DEERING CENTER PORTLAND, MAINE			
INSPECTION / MAINTENANCE LOG			
INFILTRATION BASIN			
I: INSPECTED - C: CLEANED - R: REPAIRED			
DATE	**INITIALS**	**ACTION**	**COMMENT**
2/3/17	GHI	I, C	EXAMPLE: Units cleaned by ACME, 2 truckloads to Pike.

STORMWATER MANAGEMENT SYSTEM
MAINTENANCE PROGRAM
SUMMARY CHECKLIST

Item	Commentary	Frequency			
		Month	Semi-Annual	Annual	Long-Term
Open Swale, Ditches & Inlet Structures	Inspect for debris accumulation, erosion and excessive vegetation. Mow monthly, remove debris, repair and revegetate any area of erosion	**X Mow**		**X**	
Pavement	Review for damage and buildup of debris and sand.	**X**	**X Sweep**		
Catchbasin and Drain Manholes	Inspect grates to assure optimum water flows into the structures. Inspect sump and casco traps for blockage and sediment accumulation. Clean out sumps.	**X Inspect**		**X Sediment removal**	
Pipelines	Inspect for sediment build-up in pipe. Flush and remove as required.			**X**	
Infiltration Basin	Inspect catch basin to make sure it is draining.		**X**		

HOUSEKEEPNG REPORT

502 Deering Center
PORTLAND, MAINE
February 3, 2017

Housekeeping:

This project is located in a pond watershed. Protection of the groundwater quality is ensured by having good housekeeping practices and maintenance of the stormwater systems. Spill prevention must be incorporated into the plan. The business should follow the following steps:

1. Identify any products that if spilled will create contamination of the groundwater.

The maintenance of the landscaping and parking lots should include the sweeping of the parking lots and removal of the materials that may cause dust.

During construction follow the erosion control measures outlined on the plans.

During construction, develop a waste handling program that identified potential contaminates that could be introduced to the aquifer. Follow hazardous waste rules if any items used are considered a hazardous waste. It is critical to the site that uncontrolled releases be prevented.

This site will require dewatering of trenches. During construction, monitor stormwater runoff from the equipment and ground areas to minimize contamination of groundwater.

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division

Date: January 17, 2017

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 502 Stevens Avenue

Chart Block Lot Number: Map 16NE, Lot 135-E009

Proposed Use: Residential / Retail
Previous Use: Residential
Existing Sanitary Flows: _____ GPD
Existing Process Flows: _____ GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

_____

_____

Site Category		
	Commercial *(see part 4 below)*	X
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	X
	Other *(specify)*	

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: Barbara Barhydt Phone: (207) 874-8699
Owner/Developer Name: 502 Deering Center LLC (Denis Lachman / Karen Smith)
Owner/Developer Address: 55 Hamblet Ave, Portland, ME 04103
Phone: (207) 773-3811 Fax: (207) 773-3801 E-mail: denis@lachmanarchitects.com
Engineering Consultant Name: Carroll Associates
Engineering Consultant Address: 217 Commercial St, Suite 200 Portland, ME 04101
Phone: (207) 772-1552 Fax: (207) 772-0712 E-mail: pcarroll@carroll-assoc.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 5 units at 300 for 1,500 GPD
Peaking Factor/ Peak Times: am & pm typical residential
Specify the source of design guidelines: *(i.e. "Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify)* Maine Subsurface Wastewater

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: n/a

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: n/a GPD

Do you currently hold Federal or State discharge permits? Yes_____No ____

Is the process wastewater termed categorical under CFR 40? Yes_____No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

Portland Water District
FROM SEBAGO LAKE TO CASCO BAY

January 18, 2017

Tom Greer
Pinkham and Greer
28 Vannah Avenue
Portland, ME 04103

Re: 502 Stevens Avenue, PO
Ability to Serve with PWD Water

Dear Mr. Greer:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on December 21, 2016. Based on the information provided per PWD marked up plans dated 12/23/16, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter does not constitute approval of this project from the District. Review and approval of final plans is required.**

Conditions of Service

The following conditions of service apply:

- A new 2-inch domestic service and 4-inch fire service may be installed from the water main in Stevens Avenue. The service should enter through the properties frontage on Stevens Avenue at least 10-feet from any side property lines.

- The existing ¾-inch service must be retired per PWD standards. This includes shutting the corporation valve and cutting the pipe from the water main.

- Water District approval of water infrastructure plans will be required for the project prior to construction. As your project progresses, we advise that you submit any preliminary design plans to MEANS for review of the water main and water service line configuration. We will work with you to ensure that the design meets our current standards.

- Once the project is ready for construction, the owner or contractor will need to make an appointment to come in and complete a service application form and pay the necessary fees.

Existing Site Service

According to District records, the project site does currently have existing water service. A 3/4-inch diameter copper water service line provides water service to this site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 12-inch diameter cast iron water main in Stevens Avenue and a public fire hydrant located 70 feet from the site. The most recent static pressure reading was 65 psi on March 17, 2016.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

Gordon S. Johnson, P.E.
Engineering Services Manager

Lachman Architects & Planners
Architecture | Community Planning | Preservation
Building Communities - with community buildings

Q SUMMARY REFERENCING NFPA 1 AND ALL FIRE DEPARTMENT TECHNICAL STANDARDS

This is a Summary for Site Plan Review

A separate drawing[s] shall be provided as part of the site plan application for the Portland Fire Department's review.

Please refer to documents submitted electronically:

C 0.0 Existing Conditions Survey
C 1.0 Demolition and Site Prep Plan
C 2.0 Site Plan
C 5.0 Utilities Plan

1. Name, Address, Telephone Number Of Applicant

Denis Lachman & Kiya Smith
502 Deering Center LLC
55 Hamblet Ave
Portland, ME 04103
207-831-8585

2. Name, Address, Telephone Number Of Architect

Denis Lachman
Lachman Architects & Planners
58 Fore St. Bldg 30
Portland, ME 04101
207-831-8585

3. Proposed Uses Of Any Structures [NFPA and IBC classification]

Structure

Multiple Occupancy (NFPA 6.1.14) (IBC 1604.5.1)
Separated Occupancy (NFPA6.1.14.2.3, multiple occupancy where the occupancies are separated by fire resistive-rated assemblies)

Basement - Commercial Use

Artist Studio (Zoning category)
Business (Group B) (NFPA 6.1.10) (IBC 309)

Floor 1 - Commercial Use

Retail & Office (Zoning category)

Mercantile (Group M) & Business (Group B) (NFPA 6.1.10) (IBC 309)

Floor 2 & 3 - Residential Use

4 dwelling units, 2 per floor

Apartment Building, 3 or more dwelling units (NFPA 6.1.8.1.5)

Residential (Group R-2) (IBC 310)

4. Square Footage Of All Structures [total and per story]

Total Structure - Total – 10,288 sf gross

Basement - Commercial Use – 2505 sf gross

Floor 1 - Commercial Use - 2,505 sf gross

Floor 2 - Residential Use - 2nd Floor 2,639 sf gross

Floor 3 - Residential Use - 2nd Floor 2,639 sf gross

5. Elevation Of All Structures

Elevations are shown on documents submitted electronically:

A1.0 Lower Level Floor Plan with Site

A1.1 1st Floor Plan with Site

A1.2 2nd & 3rd Floor Plan

A2.1 Front (East) Elevation

A2.2 Side (South) Elevation

A2.3 Side (North) Elevation

A2.4 Rear (West) Elevations

6. Proposed Fire Protection Of All Structures

The structure is fully sprinkled to NFPA 13. (NFPA 9.7.1.1)

9. Hydrant Locations

Hydrant is directly across Stevens Ave on the north side of Hartley St. It is shown on documents submitted electronically: Existing Conditions Survey C 0.0, Site Plan C 2.0 and Utilities Plan C 5.0.

10. Water Main[S] Size And Location

Water mains are shown on shown on documents submitted electronically: Existing Conditions Survey C 0.0 and on Utilities Plan C 5.0

11. Access to All Structures [min. 2 sides]

Access is available on two sides, but depending on which truck, a third side may be possible. Access to structure is shown on shown on documents submitted electronically: Site Plan C 2.0.

12. A Code Summary Referencing NFPA 1 and All Fire Department Technical Standards.

Applicable Codes:

IBC, 2009 Edition; NFPA 101, 2009 Edition

Classification of Occupancy:

Basement - Commercial Use

Artist Studio (Zoning category)
Business (Group B) (NFPA 6.1.10) (IBC 309)

Floor 1 - Commercial Use

Retail & Office (Zoning category)
Mercantile (Group M) & Business (Group B) (NFPA 6.1.10) (IBC 309)

Floor 2 & 3 - Residential Use

4 dwelling units, 2 per floor
Apartment Building, 3 or more dwelling units (NFPA 6.1.8.1.5)
Residential (Group R-2) (IBC 310)

Construction Type:

Type V(A) Construction (IBC 602.5)
Floor, walls, and roof framing are of wood materials and structure is sprinkler to NFPA 13.

Fire Rating Required of Building Elements: (IBC Table 601)

Structural Frame:	0 hours
Bearing Walls [Interior]:	0 hours
Bearing Walls [Exterior]:	0 hours
Non Bearing Walls [Interior]:	0 hours
Floor Construction:	0 hours
Roof:	0 hours

Fire Rating Required of Exterior Walls and Roof Between 5' to 10' of Property Boundary (IBC Table 602)

Walls [Exterior]:	1 hour
Openings	t.b.d

Sprinkled:

To NFPA 13. (NFPA 9.7.1)

Allowable Area: (IBC; Table 503)

Business (B) use of Type V(A) construction has an allowable area of 18,000 sf and a maximum allowable height of 3 stories.
Mercantile (M) use of Type V(A) construction has an allowable area of 14,000 sf and a maximum allowable height of 3 stories.
Residential (R-2) use of Type V(A) construction has an allowable area of 12,000 sf and a maximum allowable height of 3 stories.

Total building area = 10,288 sf gross
Building height is 3 stories.

Means of Egress Components, Occupant Load (IBC Table 1004.1.2)

Basement – Function of Space: Business
Gross sqft = 1,132/ Occupant Load = 100 Occupancy = 12

Floor 1 – Function of Space: Business
Gross sqft = 890/ Occupant Load = 60 Occupancy = 9
Floor 1 – Function of Space: Mercantile
Gross sqft = 868/ Occupant Load = 60 Occupancy = 15

Floor 2 - Function of Space: Residential
Gross sqft = 2,349 / Occupant Load = 200 Occupancy = 12

Floor 2 - Function of Space: Residential
Gross sqft = 2,349 / Occupant Load = 200 Occupancy = 12

Accessory (mechanical and storage space)/300 = 5

Means of Egress Components (IBC Table 1021.2)

One enclosed fire stair from the 3rd floor to exit discharge at the 1st floor. Total travel distance within the units to entering the exit stairway enclosure does not exceed 50 ft. Building up to (3) stories in height+ Occupancy R=-2 & max 4 dwelling units + <50' travel = single exit allowed.

Fire Rating – Stairway enclosure 1 hr for < 4 stories (102.2.1)
Fire Doors – 1 hr rating, Table 715.4

Fire Separation Between Units – 0 hr (to be confirmed)

Arrangement of Means of Egress:

One enclosed fire stair from the 3rd floor to exit discharge at the 1st floor allowed. (IBC Table 1021.2)

Dimensional Criteria of Stairs:

Width of Egress Path = exceeds 44" (IBC 1009.1)
Headroom along Egress Path = min 80" (IBC 1009.2)
Stair Rise/Run = max 7" rise, 11" run. (IBC 1009.4)
Landings min 36" x 36" (IBC 1009.5)
Handrails – (IBC 1009.11)

Accessibility

Site

Accessible route - An accessible route connects the parking area to the sidewalk and all entries (IBC 1104)
Parking – There are 10 spaces onsite, including 1 accessible space (IBC 1106).

Basement – Function of Space: Business
No elevator is provided.

Floor 1 – Function of Space: Business
Entries - All entries to the 1st Floor are accessible (IBC 1105)

Floor 2 & 3 - Function of Space: Residential Use
No elevator is provided.

Lachman Architects & Planners
Architecture | Community Planning | Preservation
Building Communities - with community buildings

R ASSESSMENT OF THE DEVELOPMENT'S CONSISTENCY WITH APPLICABLE DESIGN STANDARDS IN THE PORTLAND DESIGN MANUAL

Design Manual Standards & Guidelines

Written Introduction + Shared Infrastructure, Public Park & Mixed Transportation + Village Context

Design Illustrations
(Please also see **C Description of Project – Visual Introduction**)

A1.0 thru A2.5 Drawings

A3 Keyed Notes, Features & Descriptions for Drawings

Design Goal: Fit in Gracefully - Deering Center Village has good Main Street architectural "bones". The overarching design goal is to complement the existing context (emphasis on "we") , rather than make a strong attention-seeking design statement (emphasis on "me"). The design wants to be a graceful neighbor now and a century from now.

Design Manual (d) B1 & B1-b Neighborhood Business Zones		
STANDARDS. Development located in the B-1, B-1b, B-2, and B-2b zones shall meet the following additional Standards		
GUIDELINES. Please refer to Appendix 2. Development located in the B-1, B-1b, B-2, and B-2b zones shall meet the following additional Guidelines. In the B-1b and B-2 zones, buildings are specifically encouraged to adhere to the guidelines contained in the B-1, B-1b, B-2, B-2b Design Guidelines of this section concerning the creation and preservation of an urban street wall of this section concerning building entrances.		
Standard a. Urban Street Wall: *In the B-1, B-1b, and B-2b zone it shall be required that buildings shall be located to create and preserve an urban street wall.*		Meets
Guideline 1. Building Location and Form: *Buildings shall be located near the street so as to create an urban street wall. An urban street wall is created by a pattern of buildings which line the street in a consistent manner, thereby establishing a desirable spatial relationship between the building*		Meets

in the commercial district and the major object. Location is one of several related factors defining the street environment. Building Form, including height, bulk, and massing, contribute to the development of a street wall. The desired condition is to have the building frame and enclose the street, which is achieved by providing building height that is proportionate to the width of the adjoining major street. A ratio of building height to street width of one-to-two creates a strong "room-like" street, while a one-to- three ratio provides good street definition and proportion. Shorter buildings of one story facing broad streets will not achieve the desired relationship.	Please see following **Written Introduction** + **Visual Introduction** + **Drawings** + **Keyed Notes** + **Design Illustrations**	
Guideline 7. Development Relationship to Street: *Building facades and site amenities shall form a cohesive wall of enclosure along a street. Where buildings are not located at the street line, site amenities, including masonry walls, fences, and landscaping, shall be placed along the street to provide a sense of enclosure or definition.*		Meets
Standard b. Mixed Uses*: In B-1b zone buildings shall be multi-storied with mixed uses.*		
Guideline 2. Building Function: *An urban street and business district requires a substantial intensity and variety of uses.* ***I****t is beneficial to have mixed uses within portions of buildings situated near the street. For example, a retail first floor might have office or residential on the second or third floors. This provides both scale of building height desired, as well as economic vitality of the business district.*		Meets
Standard c. Building Entrances*: In the B-1 and B-2b zone building entrances shall be oriented toward, located adjacent to, and directly accessible from, a sidewalk in a public right-of-way.*		Meets
Guideline 3. Orientation of Buildings and their Entrances to the Street: *Major building entries shall be designed and located to provide the primary building access oriented to the public street and sidewalk. Doorways should be prominent and obvious in appearance, so as to attract the users toward the entry. Major entry features should primarily address the street, with entry courts, display windows, signage, lights, walkways, and vestibules, as appropriate. Major entries should be adjacent to, or very close to, the street and public sidewalk.*		Meets
Standard d. Windows*: In the B-1, B-1b, B-2, and B-2b zones windows shall be required along the street frontage of a building. Windows shall be transparent (with a visible transmittance (VT) of .7 or greater) and installed at a height to allow views into the building by passersby.*		Meets
Guideline 4. Windows: *Windows shall be located in all building facades visible from the public way, especially on building facades along the major public street. Retail uses with store fronts are the most desirable feature for locations adjacent to the public sidewalk; and active, transparent (minimum visible transmittance (VT) of .7 or greater), and interesting windows contribute the maximum value. Limitations on transparency, such as dark or reflective glass, or interior coverings, should be avoided. Where uses (such as office) are not conducive to transparent viewing from the public way, windows can still convey a sense of activity and presence along the street. Even these more private windows can convey occupancy and habitation when lighted from within, as during evening hours, even if the interior is screened from view.*		Meets
Standard e. Facade Character: *In the B-1, B-1b, B-2, B-2b zones, active and public portions of buildings (e.g. doors, windows, entries, retail displays) shall be oriented to and, where possible, be located adjacent to the public sidewalk to create an active presence along the sidewalk. 1. Where building facades situated along a public way have no interactive use or function, such facades shall be designed to provide sufficient architectural and graphic amenities to provide visual interest along the street and relate the building, and its use, to passersby.*		Meets
Guideline 5. Building Character, Detail, Scale, and Graphic Qualities: *Building design will include various architectural and graphic amenities to provide a strong presence along a street and relate a building to its community. Awnings, canopies, and flags may be utilized to highlight entryways and to further identify the activity and identity of a use. Facade lighting may be used to highlight entryways or to provide visual interest along an otherwise blank façade Building scale, roof pitch, architectural detail, and fenestration shall be designed to complement and be compatible with surrounding residential and commercial buildings.*		Meets

Guideline 6. Signage and Building Entrances: *Building entrances and building signage in the B-1, B-1b, and B-2b zones will be designed and constructed at the pedestrian scale.*	Please see following **Written Introduction** + **Visual Introduction** + **Drawings** + **Keyed Notes + Design Illustrations**	Meets
Standard f. Building Design: *B-1, B-1b, B-2, and B-2b commercial buildings shall be designed to be compatible with their residential and commercial neighbors. In the B-1 and B-1b zones building scale, roof pitch, and fenestration shall be designed to complement surrounding residential structures.*		Meets
Standard g. Building Materials: *Facade materials of buildings located in the B-1, B-1b, B-2, and B-2b zones shall be compatible with those materials of surrounding residential and commercial uses.*		Meets.
Standard h. Building Scale: *In the B-1 and B-1b zones building scale must relate and be compatible with surrounding residential structures.*		Meets
Standard i. Landscaping and Buffers: *In the B-1, B- 1b, B-2 and B-2b zones buildings and associated parking areas must be screened to buffer abutting properties. A densely planted landscape buffer and/or fencing will be required to protect neighboring properties from the impacts associated with the development, including lighting, parking, traffic, noise, odor, smoke, or other incompatible uses. Where buildings are setback from the street, a landscaped area must be planted along the front yard street line.*		Meets
Guideline 8. Parking Lots: *Parking Lots shall be screened from view of the public way. Landscaping or fencing shall be used to screen parking lots from public ways and residential neighbors. Where parking is located within the front yard (or side yard of a corner lot), a landscaped buffer or fence shall be placed along the street line to distinguish the private space from the public space and to help define the street wall. Parking lots shall be screened from neighboring properties. A densely planted landscape buffer or fencing shall be installed to protect neighboring properties from the impacts associated with the parking lot and the use it serves. Crosswalks shall be provided within parking lots and across entrance driveways, directing pedestrians to building entrances. Street trees shall be planted along property street frontage 25ft. on center.*		Meets
Guideline 9. Transit Connections: *Development proposed along established transit corridors must design uninterrupted access from the proposed development to the transit stop. An easement to place a transit shelter may be requested for development located along a transit corridor.*		Meets

Written Introduction & Project Goals

Growing Portland: *The question is not whether Portland will grow, but how well it will manage the growth that is now certain to come. As the City looks to the future, it faces twin challenges: workforce development and housing. Careful urban design can address both issues by creating vibrant mixed-use neighborhood centers and reducing traffic congestions….*

To be successful, Portland must grow its workforce, broaden its property tax base and create greater housing opportunities for all social classes along its connecting thoroughfares and in select neighborhood centers on and off the peninsula. Portland must pay careful attention throughout to good urban design, learning from other successful cities.

Successful cities today …… build mixed-use and mixed-income neighborhoods that bring together housing, businesses, shops, cultural venues, green space and pocket parks, creating settings where residents can walk to shop, work, play, rest, engage and visit.

Over the next decade, Portland can and should aim to have half its population live and work in the city. Portland today teems with possibilities. …. we can make this city even more attractive to new residents, especially those needed to replace retiring workers; to new businesses that will come where talent resides; and to current and future residents who will enjoy a livable city of vibrant, connected neighborhoods. *(Maine Sunday Telegram, Growing Portland: Commentary by Richard Barringer, Joseph McDonnell, John Dorrer, Ryan Wallace, 10/16/2016)*

Location, Location, Location at the Heart of this Vibrant Mixed-use Neighborhood Center

Portland's recent success is fueling on-peninsula commercial and residential real estate to soar, causing spill over and increased interest off-peninsula. One of Portland's most desirable off-peninsula neighborhoods is Deering Center, well known for its schools, walkability, village center, University of New England and many other features. In fact, Deering Center already is, and has been for generations, a classic *mixed-use and mixed-income neighborhood that bring together housing, businesses, shops, cultural venues, green space and pocket parks, creating settings where residents can walk to shop, work, play, rest, engage and visit. "Perhaps more than any other neighborhood in Portland, Deering Center has the feel of a typical late-nineteenth century small town downtown* *(Maine Historic Preservation, Forest Avenue and Stevens Avenue, August 2015).* The hub of the neighborhood is its commercial village center, and at the heart of the village is this project - **502 Deering Center**.

Right Project, Right Time, Right Location, Right Goals

As Portland's development spills off the peninsula, and there is significant nearby development around the village center, such as UNE and the Mother House Project, there is increasing interest in Deering Center as an inviting and walkable village center and destination. Unlike other neighborhood centers that were formerly vibrant but have been eroded by ever encroaching roadways and traffic (such as Morrill's Corner, Rosemont, Woodford's), Deering Center Village has remains fundamentally intact as a village center, so it needs no major investment rebuilding its "bones". A convergence of the right project, at the right time, at the right location with the right goals makes 502 Deering Center an ideal project for Growing Portland.

Overarching Goal: Building Community with Community Buildings

In the village there has been little renovation and no new commercial spaces for decades. 502 Deering Center's goal is to catalyze village and community vitality with Traditional Mixed Uses, such as commercial on the ground floor with residential units on upper floors. This mixed use building type is a perfect match with the current neighborhood business zone, so no zone change is required. Traditional Mixed Uses also encourage neighbors and Portlanders to walk, shop local and socialize - which are essential features for thriving community. In other words - building Maine communities with community buildings.

Goal: Make Property Compliant with its Zoning

The property is zoned Neighborhood Business (B1-b), to "*provide appropriate opportunities for the establishment of smallscale ground floor commercial uses to serve a local market, while preserving residential uses and character above the ground floor…… Suitable locations for this zone may include (Main Streets) …… and sites with existing or traditional neighborhood retail and service uses."* No zone change is required. However the property is currently non-conforming with its B1-b zone because the existing house is set back from the street, and consequently does not meet the "Urban Street Wall" requirement. The new addition is purposefully designed to correct the Urban Street Wall and meet all other all B1-b requirements.

Goal: Build Traditional Mixed Uses

502 Deering Center's goal is to catalyze village and community vitality with Traditional Mixed Uses. **Commercial** on the ground floor with **Residential Units** on 2 upper floors will generate a beehive of activity, enlivening the village's already-healthy mix of traditional uses. The mixed use building type is a perfect match with the its neighborhood business zone, so no zone change is required.

Goal: Improve Pedestrian Safety

Joint utilization of a single driveway reduces existing curb cuts from 3 to 1, which imporves safety by eliminating existing dangerous back-outs across the sidewalk, especially with so many children in the area.

Goal: Build New Housing for Middle Income Portlanders

Portland has a serious housing shortage and 502 Deering Center responds by transforming the existing single family house with 1 dwelling unit into a mixed use project with 4 dwelling units. This housing shortage is especially critical for middle income residents and 502 Deering Center provides desperately needed and rare housing opportunities for average earners who have or seek to set long term roots here to live, work and play. This dynamic - existing limited supply and high demand - makes housing a premium.

Goal: Create a Village Pocket Park

A key building block for a thriving community is a public space - a welcoming, sunny, pause-and-meet spot. The new Village Pocket Park is a extraordinary opportunity to carve out precious private land in the village, devote private resources to its design, construction and maintenance, and program it as a public amenity for public use. The Village Pocket Park is perfectly situated to be a pause-and-meet spot along the Deering Center Walking Trail (yet to be created), that could cross the existing Portland Tails recreational trail to create a complementary recreational/urban trail intersection.

Goal: Demonstrate Smart Neighborhood Infill Example

Portland has many infill opportunities that need to be developed for smart and sustainable growth. These infill sites are typically small and restricted in size, which creates many steep design and financial challenges. Limited sites underperform for large developers, so it is smaller developers who must overcome with their many challenges. Because their surroundings are tight, expectations are high for them to fit well into their context. This project seeks to demonstrate how smart site and building design on a limited budget can fit while accomplishing multiple goals. Examples include a new urban street wall, new activity-infusing commercial space, new middle income housing, a jointly shared driveway, reduced impervious area and associated stormwater runoff, improved pedestrian safety by reducing curb cuts and eliminating back-outs across sidewalk, a new Village Pocket Park and mixed transportation use opportunities, such as enhanced bus, bike and walking amenities.

Goal: Demonstrate How Village Scale Mixed Transportation Use Can Reduce Car Use & Parking

Mixed Transportation is an approach that encourages a variety of transportation modes – walking, busing and biking - in addition to cars. The project seeks to demonstrate how making it easy and convenient encourages people to choose mixed forms of transportation. 502 Deering Center is perfectly situated to …. *create greater housing opportunities ……. along its connecting thoroughfares and in select neighborhood centers on and off the peninsula.*

Goal: Meet Market Demand for "Live Small"

Some residents, including both downsizing boomers and upcoming millennials are committed to the concept of "living small" to reduce their cost and our carbon footprint. For many who cannot afford to live on peninsula, 502 Deering Center is an ideal opportunity - walkable, mixed transportation friendly in highly desirable close-in neighborhood.

Goal: Demonstrate Neighborhood-Friendly Development Process

We live in the neighborhood, so this project is **of the hood, by the hood and for hood**. As residents ourselves, we are committed to a neighborhood-friendly development process that keeps everyone informed. Frequent communication and clear graphic information helps gets everyone on the same page by fostering common understanding. For many, seeing is a step towards understanding, which in turn is a step towards shared support. In the spring of 2016, in advance of the City-required neighborhood meetings, we met with business owners up and down Stevens Ave, and received support and encouragement. In November 2016, we presented to the Deering Center Neighborhood Association, and again received support and encouragement. Building on this early support will be typical City required neighborhood meetings.

Goal: Demonstrate Collaborative Site Planning & Shared Infrastructure

502 Stevens Ave and 510 Stevens Ave are abutting properties both developing mixed-use infill projects. The two projects are collaborating to achieve better land and resource efficiency and good urban design than each could individually. Sharing a single driveway, utilities and stormwater management is a high priority for both projects, and sharing infrastructure is also a high priority City-wide for land and resource efficiency.

Goal: Design to Fit into Context Gracefully

Deering Center Village has good Main Street architectural "bones". The overarching design goal is to complement the existing context (emphasis on "we") , rather than make a strong attention-seeking design statement (emphasis on "me"). The design wants to be a graceful neighbor now and a century from now.

Shared Infrastructure, Public Park & Mixed Transportation Use

Careful urban design can address … issues by creating vibrant mixed-use neighborhood centers and reducing traffic congestions…. To be successful, ….. Portland must pay careful attention throughout to ***good urban design****, learning from other successful cities…. Successful cities today …… build …. neighborhoods that bring together housing, businesses, shops, cultural venues, green space and* ***pocket parks****, creating settings where residents can walk to shop, work, play, rest, engage and visit.(Maine Sunday Telegram, Growing Portland: Commentary by Richard Barringer, Joseph McDonnell, John Dorrer, Ryan Wallace, 10/16/2016)*

Abutting Projects Share Driveway & Utilities for Land & Resource Efficiency and Good Urban Design

502 Stevens Ave and 510 Stevens Ave are abutting properties both developing mixed use infill projects. The two projects are purposefully collaborating to achieve better land and resource efficiency and good urban design than each could individually. Sharing infrastructure is a high priority for both projects and is also a high priority City-wide for land and resource efficiency. This goal is stated explicitly in Portland Design Manual's standards for B-5 Urban Commercial Business zones (a more intense zone with higher expectations than this B1-b Neighborhood Commercial):

a. Shared infrastructure: Shared ***circulation****,* ***parking****, and* ***transportation*** *infrastructure shall be provided to the extent practicable, with utilization of* ***joint curb cuts****,* ***walkways****, service alleys, bus pull-out areas, and related* ***infrastructure shared with abutting lots*** *and roadways.* ***Easements for access for abutting properties and shared internal access points at property lines shall be provided where possible to facilitate present or future sharing of access and infrastructure****.*

d. Parking lots shall be located to the maximum extent practicable toward the ***rear of the property*** *and* ***shall be located along property lines where joint use or combined parking areas with abutting properties are proposed*** *or anticipated.*

Shared Driveway Provides Multiple Benefits - In the village, land and resources are very limited and sharing a driveway is an efficient use of both. Impervious area and associated storm runoff are reduced. Joint utilization by 502 and 510 reduces curb cuts from 3 to 1 and removing existing curb cuts eliminates dangerous back-outs across the sidewalk, especially with so many children in the area. Sharing a driveway allows precious resources and land otherwise devoted to cars, to instead be reallocated to a Village Pocket Park and Mixed Use Transportation opportunities. See below for a more complete description. Sharing a driveway is also an example of how collaboration by neighbors can create opportunities with multiple benefits, beyond what is individually possible. In addition to the benefits of joint driveway utilization, utility infrastructure is also shared. Power, water and sewer all must be brought underground by deep trenching across Stevens Ave. Shared utility infrastructure by 502 and 510 to a common vault allows a single less invasive trench (rather

than multiple) with a single street closure. In addition, a common vault allows an unsightly power pole in front of the property to be removed, thereby improving the Stevens Ave streetscape

Public Space on Private Property: New Village Pocket Park & Patio

> *Successful cities today …… build …. neighborhoods that bring together housing, businesses, shops, cultural venues, green space and **pocket parks**, creating settings where residents can walk to shop, work, play, rest, engage and visit. (Maine Sunday Telegram, Growing Portland: Commentary by Richard Barringer, Joseph McDonnell, John Dorrer, Ryan Wallace, 10/16/2016)*

The overarching goal is a new project that catalyzes increased economic and social activity in the village center, specifically by encouraging neighbors and Portlanders to walk, shop local and socialize - which are essential features for thriving community. A key building block for a thriving community is a public space - a welcoming, sunny pause-and-meet spot. *"It takes a space to make a community, and a community to make a space"*. The new Village Pocket Park is an extraordinary opportunity to carve out precious private land in the village, devote private resources to its design, construction and maintenance, and program it as an amenity for public use. A sign might say "*Welcome to Deering Center Pocket Park. Please sit, enjoy and respect our park*"*.*

Designed for Both Park and Patio – Land and resources are limited in the village, so the public pocket park is designed to flexibly accommodate multiple uses (like countless other public spaces around the globe where land and resources are also limited). For example, tables and chairs can be brought out each afternoon and evening to transform from public Park to a restaurant's private seating/eating Patio. Even a small park/patio provides ideal opportunities for mini performances, (such as the neighborhood's annual Porch Fest), arts and youth activities. The Patio is an outstanding amenity for a restaurant.

Access, Visibility & Features Set the Stage for Activity – The Park/Patio is accessed directly from the Stevens Ave public sidewalk, or from within the restaurant (when it's a Patio). The Park/Patio is easily visible from the street, making it inviting. It is physically near street activity, but separated enough to be experienced quietly. The Park/Patio has specialty paving that makes it level, safe, attractive and universally accessible. Southeast orientation provides morning sun, while the building protects from the north wind. Pervious paving minimizes stormwater runoff. Plantings (native drought tolerant) soften edges. Reused granite foundation facing slabs provide bench seating + sculptural interest and a Neighborhood Kiosk provides neighbors with happenings. This pocket park sets the stage for many uses, from quiet one-to-one pause-n-meet, to active events such as performances by local school groups, sidewalk fairs, Porchfest (existing neighborhood music event) and many others. Though small in size, this pocket park is poised to make a potentially large contribution to the village identity and pride of the neighborhood and village.

Mixed Transportation Use Reduces Car Use & Parking

Deering Center Village is a concentration of commercial and social activity, and its compactness means land is very limited for sites, buildings and parking. This project, and its neighbor 510 Stevens Ave, are in the heart of the village. Mixed Transportation is a fresh and smarter approach that offsets parking by encouraging use of other transportation modes, primarily Walking, Pubic Transit (bus) and Biking. This project seeks to be an example how small infill development on limited sites can purposefully dedicate features to support a mix of transportation options, in addition to cars.

Shared Driveway Specifically Creates Mixed Transportation Opportunities – Sharing a driveway allows precious resources and land otherwise devoted to cars and parking to instead be reallocated to mixed transportation opportunities, as described below:

Features That Encourage Walking – The neighborhood is renowned for its walkability, and this project offers features to encourage even more. Public seating, safe connections, lighting, signs, benches for resting or pausing to watch or visit are all incentives that encourage walking. Removing the existing curb cut eliminates dangerous back-outs across the sidewalk, especially with so many children in the area. In addition, the Village Pocket Park encourages walking because it is perfectly situated to be a pause-and-meet spot along the Deering Center Walking Trail (yet to be created), that could connect UNE with Deering High School/ Burbank Public Library. The existing Portland Tails recreational trail crosses from Evergreen Cemetery into Baxter Woods diagonally across from the site, creating an exciting opportunity for a complementary recreational /urban trail intersection. Possible sign "Deering Center Village welcomes you to sit here and walk to many local destinations. UNE 500 steps, DHS 500 steps, Burbank Library 400 steps etc".

Features That Encourage Public Transit – 502 Deering Center is perfectly situated to …. *create greater housing opportunities ……. along its connecting thoroughfares and in select neighborhood centers on and off the peninsula.* There is an existing bus stop in front of the property, and this project purposefully enhances it for use by residents of 502 who live above, for residents of 510 who live next door, and neighborhood users. A granite bench (reused foundation block) provides permanent seating sheltered from the weather by the upper floor bay above. The SE facing bench captures morning sun, while the building protects from north wind. The overhang's down light provides safe illumination and safety. The corner bench is purposefully located for excellent sight lines to both inbound and outbound buses. From the protected bench, out-bound riders can see their bus approaching from several block away, then cross the street to catch it. With real-time bus route status, residents who live above can drop (downstairs)-n-ride.

Features That Encourage Biking – Ample, safe and covered bike parking encourages neighborhood residents who may not wish to bike all the way into downtown a convenient alternative - leave their car at home and instead bike to the village. Coordinated with real-time bus route status for efficiency, they can park their bikes and hop n ride the bus. Note: this is a 21st century update of Deering Center's historic 19th and early 20th century transportation pattern,

when residents commuted to downtown by streetcar. Bike parking also encourages neighbors to bike into the village to patronize businesses.

Features That Encourage Electric Cars - Electric cars reduce emissions, and to encourage their hassle-free convenient use, a charging station may be provided. The charging station may be part of a larger network or corridor that serves both patrons and neighbors with electric vehicles, and even encourages others to buy these environmentally friendly vehicles.

Cars Share – Car shares (Uhaul CarShare or Zipcar) may be an option to allow some urban dwellers to reduce their car ownership and vehicle trips.

Village Context

The Neighborhood

> *"Geographic center of city with lovely homes and a feeling of togetherness. The longtime bedroom community features tree-lined streets, a high school and time-saving businesses….. All within a short walk …. are staples of the neighborhood … schools, the Burbank branch of the Portland Public Library, and businesses….". (Press Herald, Welcome to Portland: Deering Center, 12/2015)*

Deering Center is the quintessential traditional American neighborhood. It is much loved as a family-friendly, walkable residential neighborhood close to downtown today, as it was in the 19th century, when it was still an independent town. With about 4000 residents, a median household income of $66,830, median age of 43 (2015), 51% of households are owner-occupied and over 80% have a college degree, plus abundant schools, recreation and amenities, Deering Center is one of Portland's most active, affluent and desirable neighborhoods.

Walkable Village

> *Today, Deering Center's most notable characteristic – besides the handsome, treelined residential blocks – is the strip of local businesses and public institutions along Stevens Avenue, a miniature town center. (Press Herald, Welcome to Portland: Deering Center, 12/2015)*

The neighborhood's heart has always been, and continues to be, its village center, a collection of local businesses, services and civic and education institutions. At the heart of this village center will be 502 Deering Center, this a new mixed-use building.

Walkability was the underlying pattern when Deering Center was first settled as an independent town. Today, there is renewed interest in car-independence and active living. Walkability is a function of safety and convenience. Deering Center has an abundance of opportunities - local

businesses, professional services, civic institutions, schools and recreation - all within a **3 Minute Village**, **5 Minute Village** and **10 Minute Village**. Superb walkablity remains one of the outstanding features that makes Deering Center one of Portland's premier neighborhoods, especially for families and boomers.

Deering Center Micro-Community

The geographic heart of Portland, Deering Center, is sometimes regarded as one of the "best kept secrets," in terms of living situations. With the average rent hovering around $1,461, below the city-wide average, and wide, tree-lined streets close to time saving businesses, Deering Center is a desirable neighborhood…. Deering Center is an example of the kind of up and coming, micro-community that Portland could leverage to house the people that can't find a liveable space on the peninsula.

Urban infill spilling into the Deering community would be good news. The redevelopment of vacated schools and institutional buildings, could also create new housing options in this working-class neighborhood. But in order to assure that Deering continues to grow more attractive to potential individuals and families, they need to have reliable transportation to Portland's cultural core…… An increased variety in public transport options and routes, would discourage car usage (and the subsequent space needed for parking), while also addressing the "psychological demand to live on the peninsula." Most people that are itching to live downtown, would probably settle for Deering Center, if they knew they could zip into the Old Port, quickly, easily and affordably.

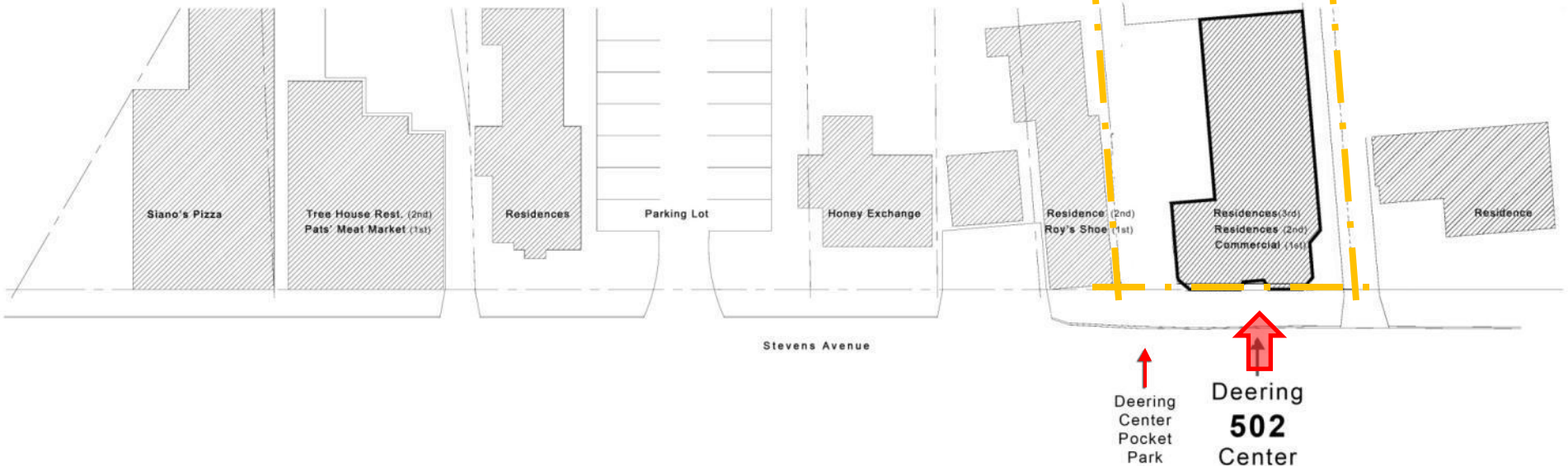
The city of Portland needs to encourage building projects within our fringe neighborhoods, expand the transit services and gently nudge people off the peninsula so they'll find neighborhoods with enough shops, space and charms to make their lives as enjoyable as it might be downtown. *(Neighborhood By Neighborhood: Solutions To Portland's Housing Crisis, Portland Phoenix, May 13, 2016)*

Design Illustrations

please also see

C Description of Project - Visual Introduction

Stevens Ave Context & 502 Deering Center Project



502 Deering Center Site - Existing

502 Deering Center
Site Concepts

H Carport (Phase 2) features 4 parking stalls, each with a private secure utility shed.

G Rain Garden Stormwater Treatment & Private Area for Residents

E Existing Featured Tree embraces Pocket Park.

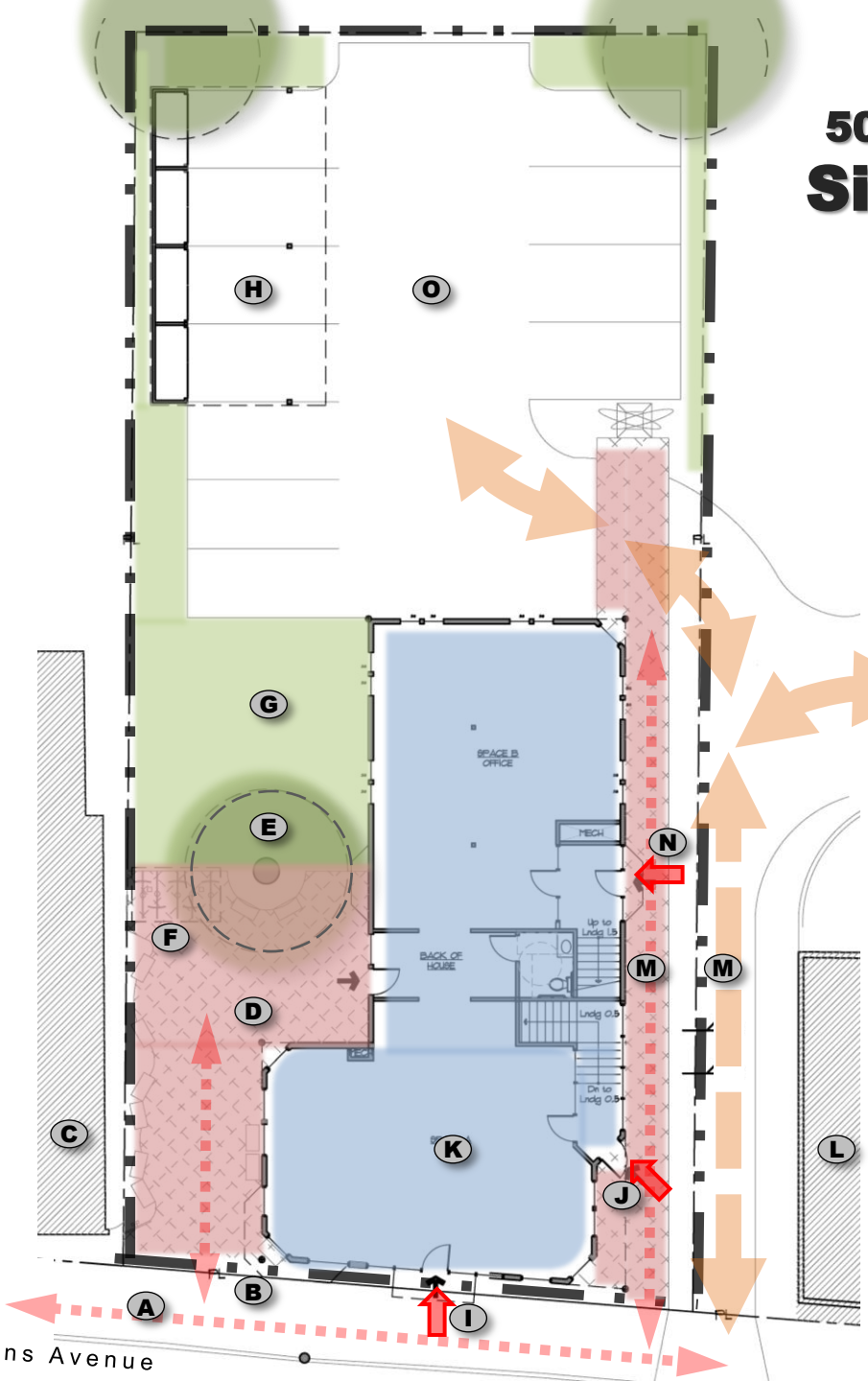
F Covered Bike Parking provides convenient, secure and weather protected for residents and neighbors as incentive to bike-park-n-ride (bus).

D Village Pocket Park features seating, landscaping, paving and provides neighborhood use for pause-n-meet, performances, sidewalk fairs etc.

C Roy's Shoe Shop

B Existing Bus Stop is sheltered by angled corner under projecting bay provides public seating, ideally positioned to visually track approaching inbound and outbound buses.

A Pedestrian Circulation System shown dashed



O Parking at rear of site includes a handicap space. **Mixed Transportation** encourages a variety of transportation modes – walking, busing and biking - in addition to cars.

N Residential Entry & Secondary Commercial Entry

M Pedestrian Walkway and Shared Driveway efficiently allows precious resources and land otherwise devoted to cars, to instead be reallocated to the Village Pocket Park. Curb cuts are reduced which improves safety by eliminating dangerous back-outs across sidewalk and impervious area is reduced reducing stormwater runoff.

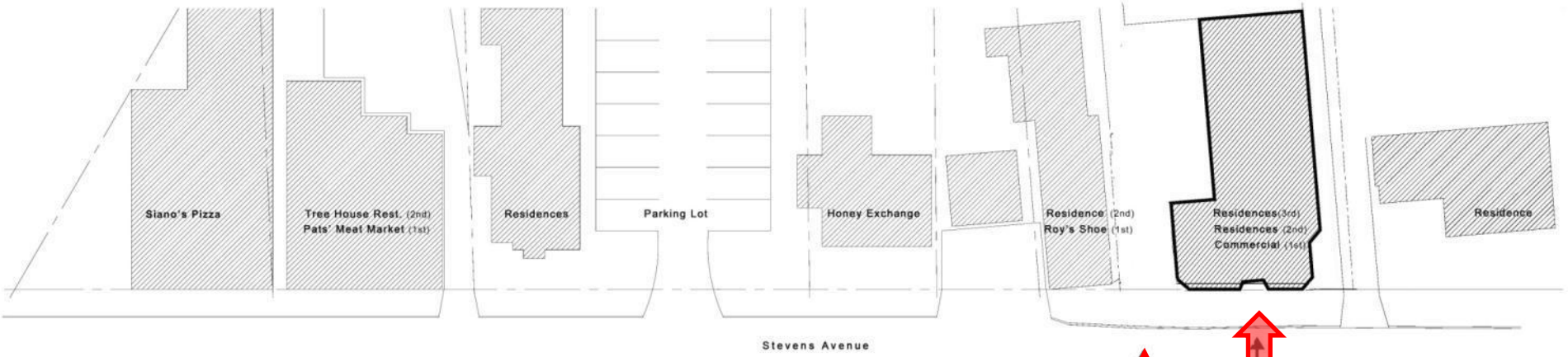
L Abutting Property, future new mixed use building.

K New Building, approx 2500 sf footprint.

J Entry to Lower Level Studio designed for flexibility, so it can be independently accessed from the sidewalk, or internally accessory from the 1st floor commercial space, or both.

I Primary Commercial Entry directly fronts Stevens Ave with high visibility.

Stevens Streetscape – Bldg Height & Mass



Portland Lyric Theatre
Except for a tragic fire in the 1960s, the Portland Lyric Theatre would continue as the cornerstone of Deering Center Village. This traditional 3-story mixed use building provided the neighborhood with **Retail** on the ground floor, **Offices** and **Residences** on (2) upper floors, plus a large popular Cultural venue. Its mix of uses and physical presence at the corner "anchored" the village.

Deering Center Pocket Park

Deering 502 Center

35' B1-b Height Limit

Siano's Pizza
After the fire, a new single story building was constructed, now Siano's Pizza.

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Portland Lyric Theatre
Except for a tragic fire in the 1960s, the Portland Lyric Theatre would continue as the cornerstone of Deering Center Village. This traditional 3-story mixed use building provided the neighborhood with **Retail** on the ground floor, **Offices** and **Residences** on (2) upper floors, plus a large popular Cultural venue. Its mix of uses and physical presence at the corner "anchored" the village.

35' B1-b Height Limit

Portland Lyric Theatre Building
Siano's Pizza (dashed)

Tree House Restaurant (2nd)
Pats' Meat Market (1st)

Residences

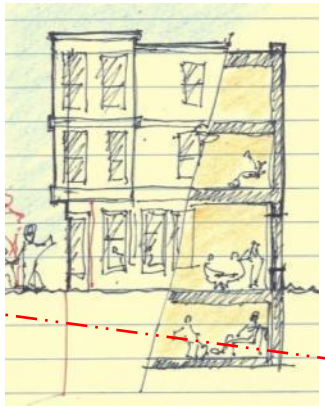
Siano's Pizza
After the fire, a new single story building was constructed, now Siano's Pizza.
.

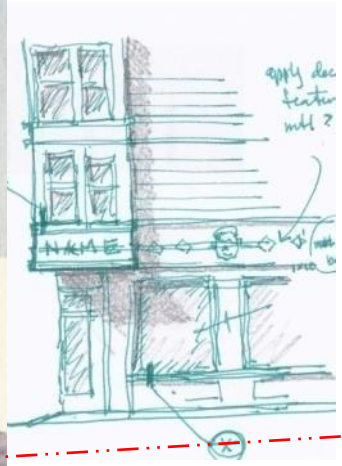
Portland Lyric Theatre, now Siano's

Existing

Proposed

Concept Sketch





Pocket Park Area – Existing

Bus Stop

Pocket Park Area – Proposed

Imagine all the people, enjoying the pocket park, maybe at a concert or poetry slam. We hope you will join us…

Feature Tree

Covered Bikes

Performance Space

Sit-n-Meet

Sheltered Bus Stop

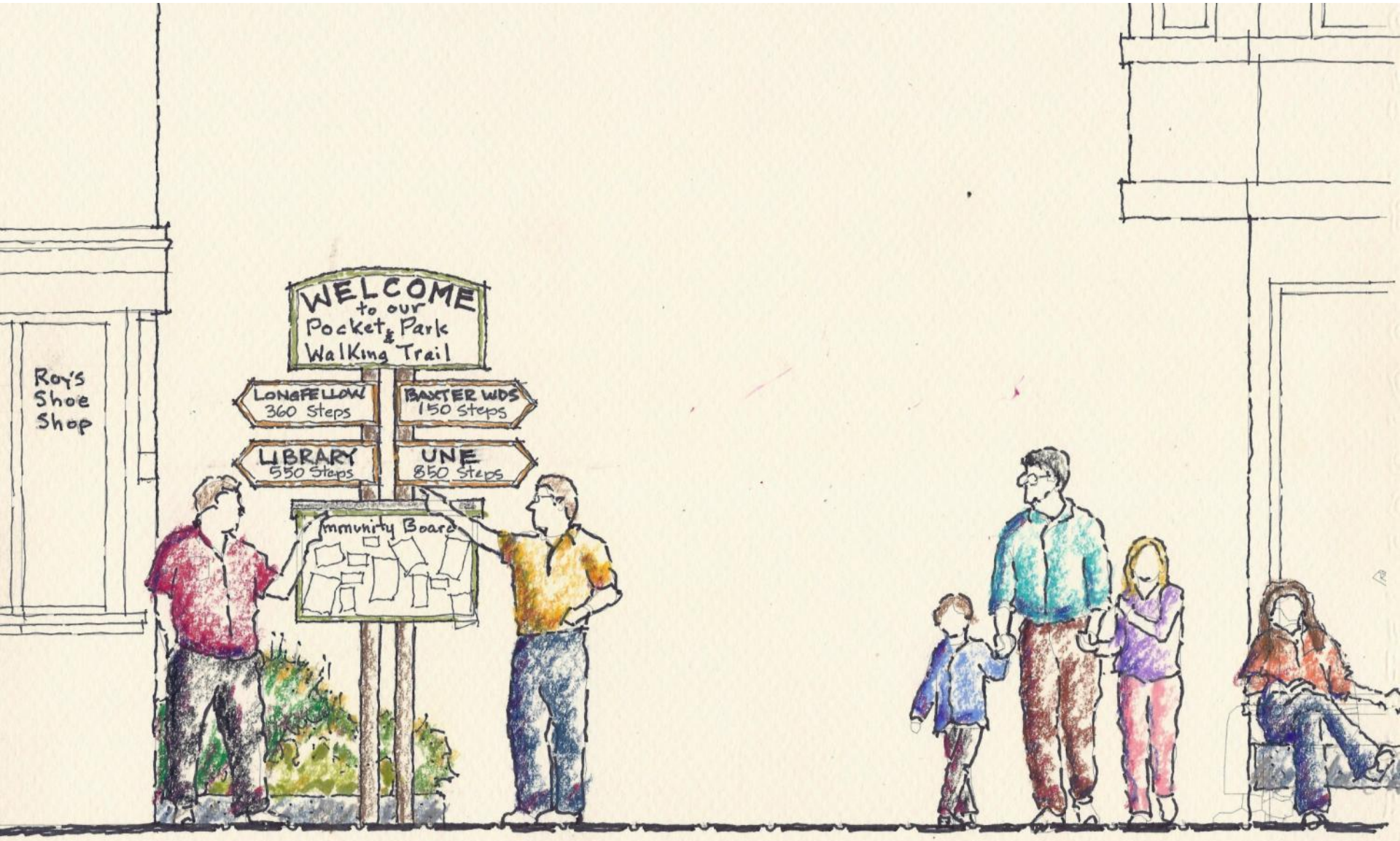
Sidewalk

Stevens Ave

Sheltered Bus Stop

Neighborhood Kiosk & Sheltered Bus Stop

along the Trail & at the Park



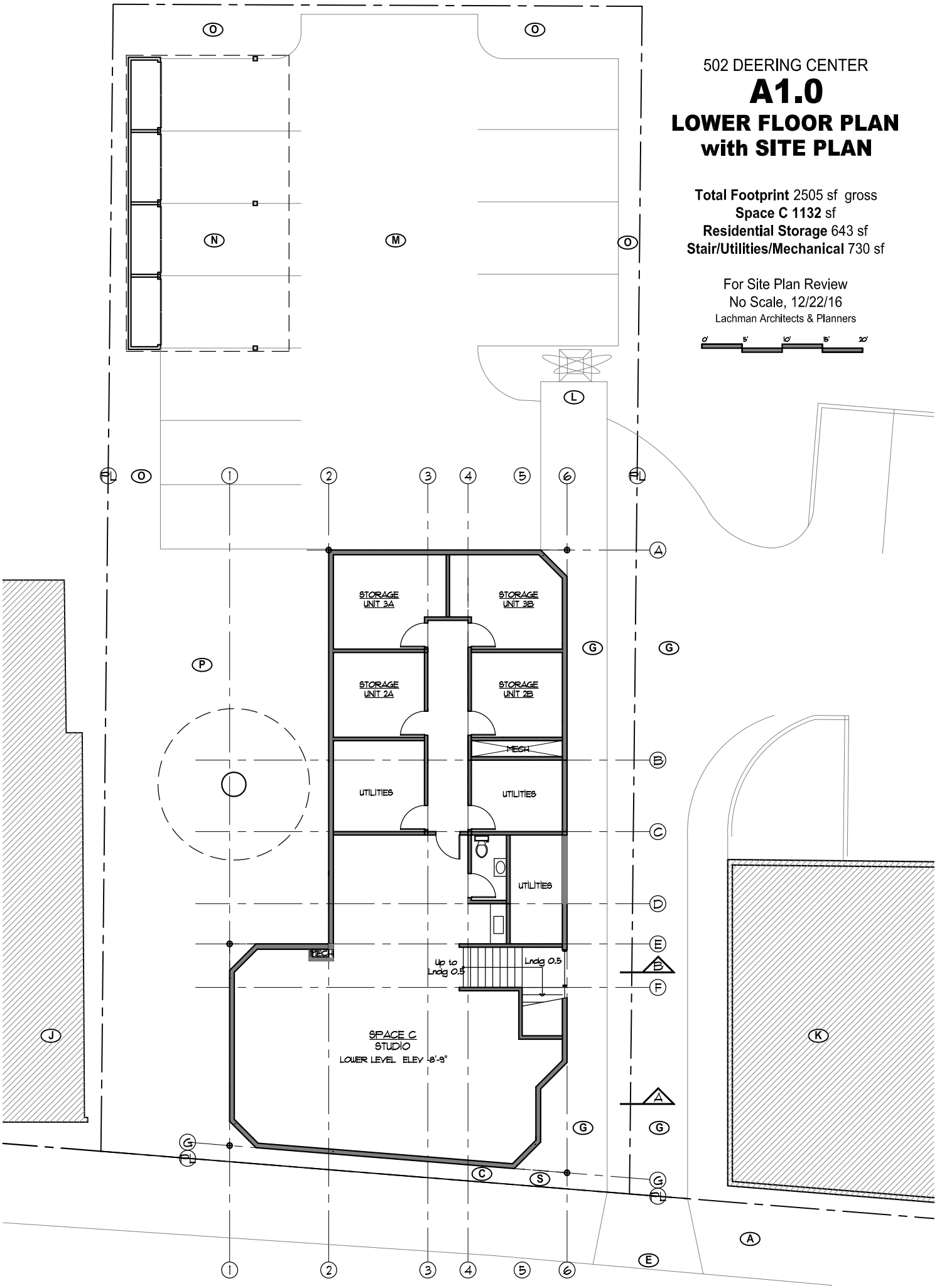
502 DEERING CENTER

A1.0

LOWER FLOOR PLAN with SITE PLAN

Total Footprint 2505 sf gross
Space C 1132 sf
Residential Storage 643 sf
Stair/Utilities/Mechanical 730 sf

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners



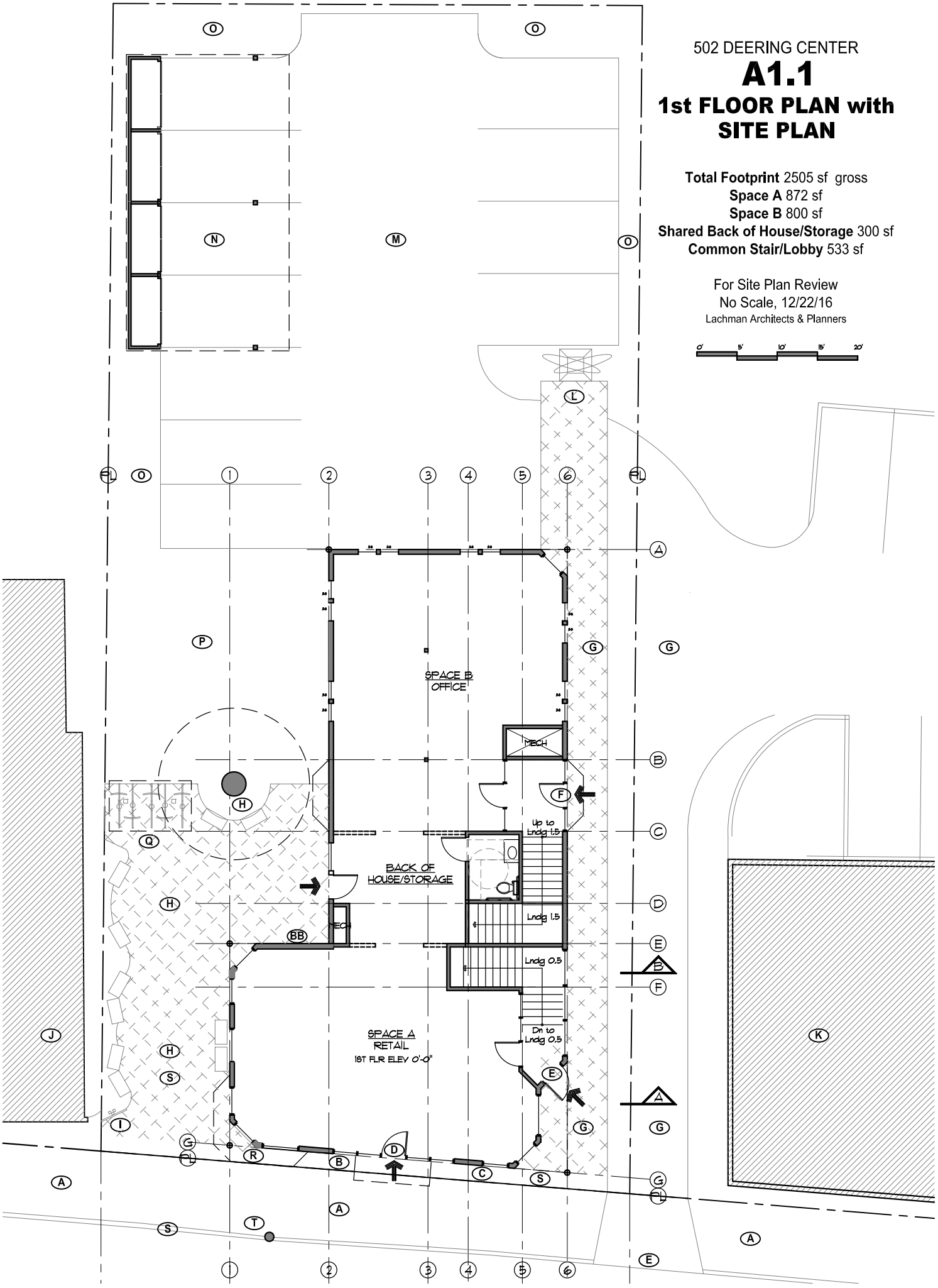
502 DEERING CENTER

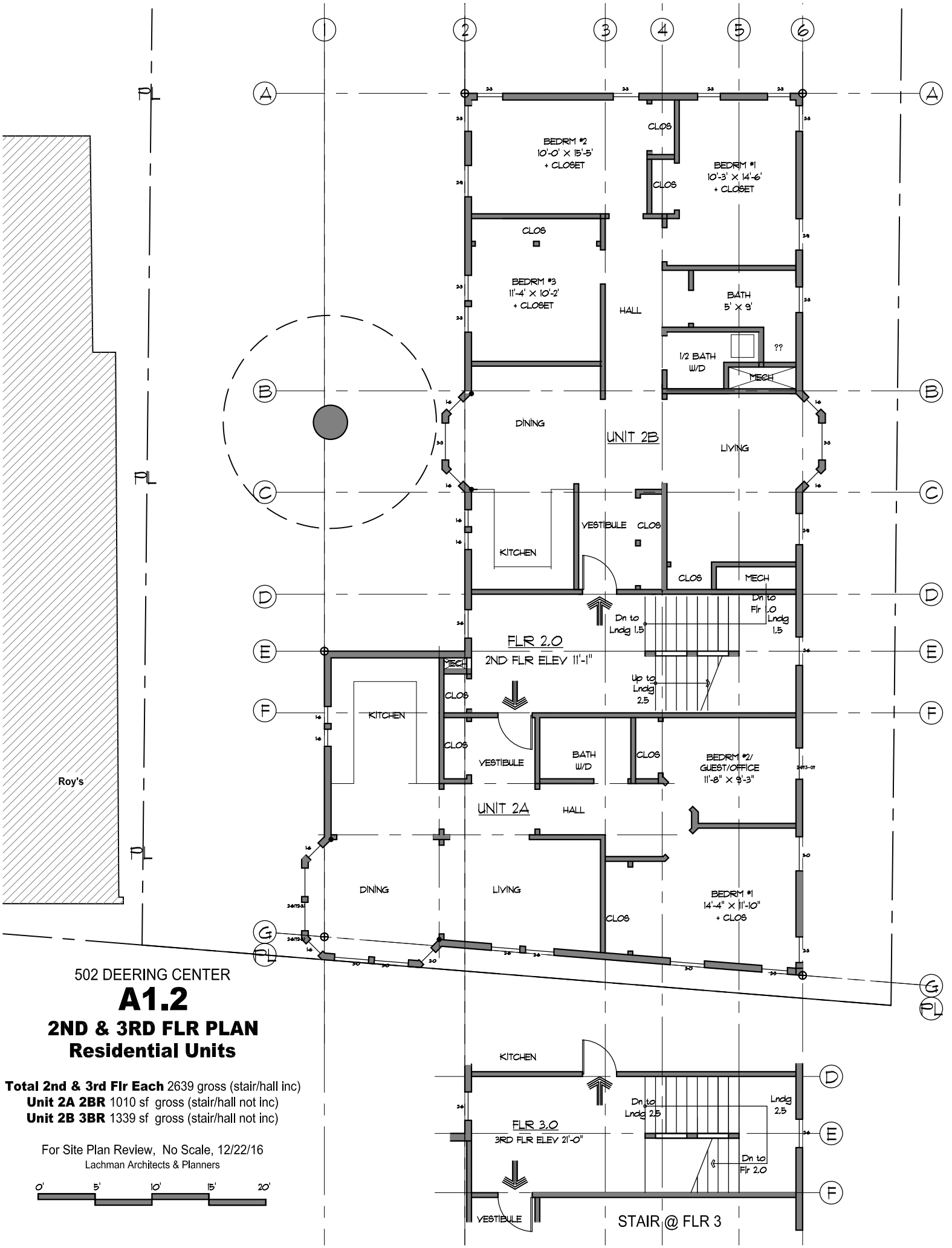
A1.1

1st FLOOR PLAN with SITE PLAN

Total Footprint 2505 sf gross
Space A 872 sf
Space B 800 sf
Shared Back of House/Storage 300 sf
Common Stair/Lobby 533 sf

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners





502 DEERING CENTER

A1.2

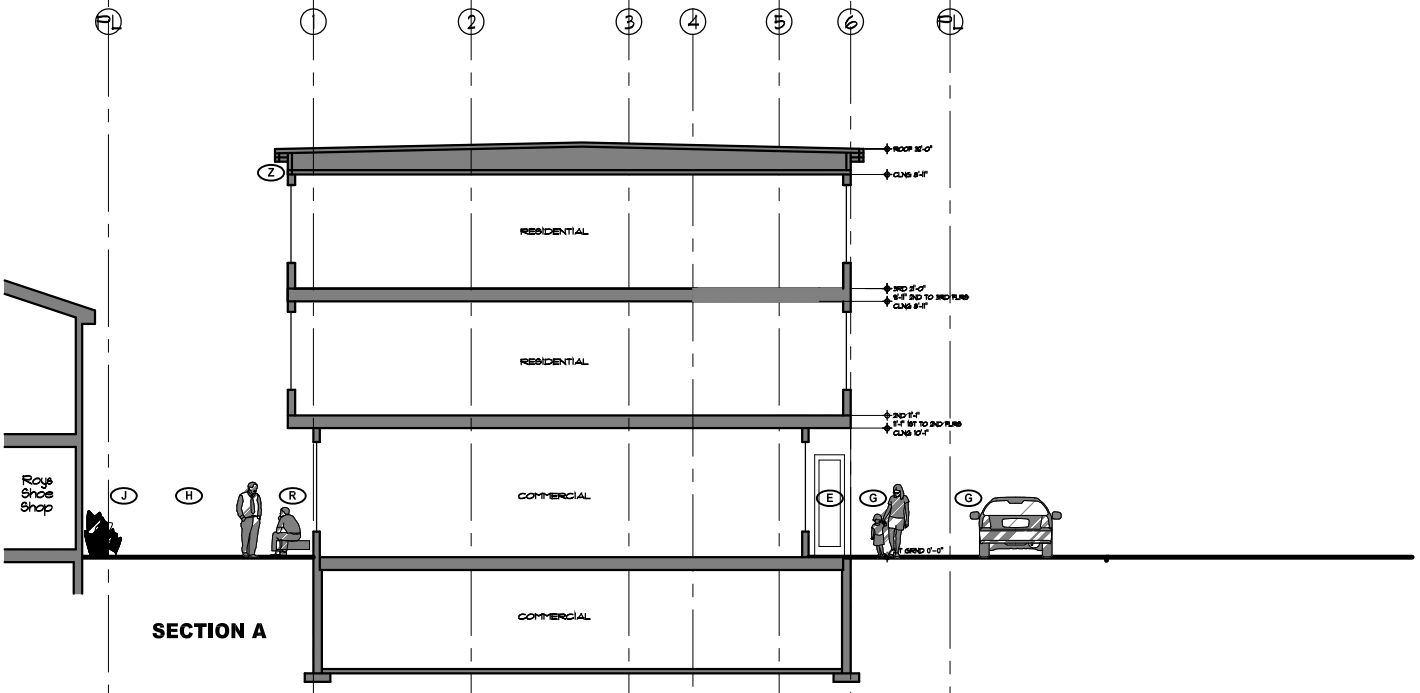
2ND & 3RD FLR PLAN
Residential Units

Total 2nd & 3rd Flr Each 2639 gross (stair/hall inc)
Unit 2A 2BR 1010 sf gross (stair/hall not inc)
Unit 2B 3BR 1339 sf gross (stair/hall not inc)

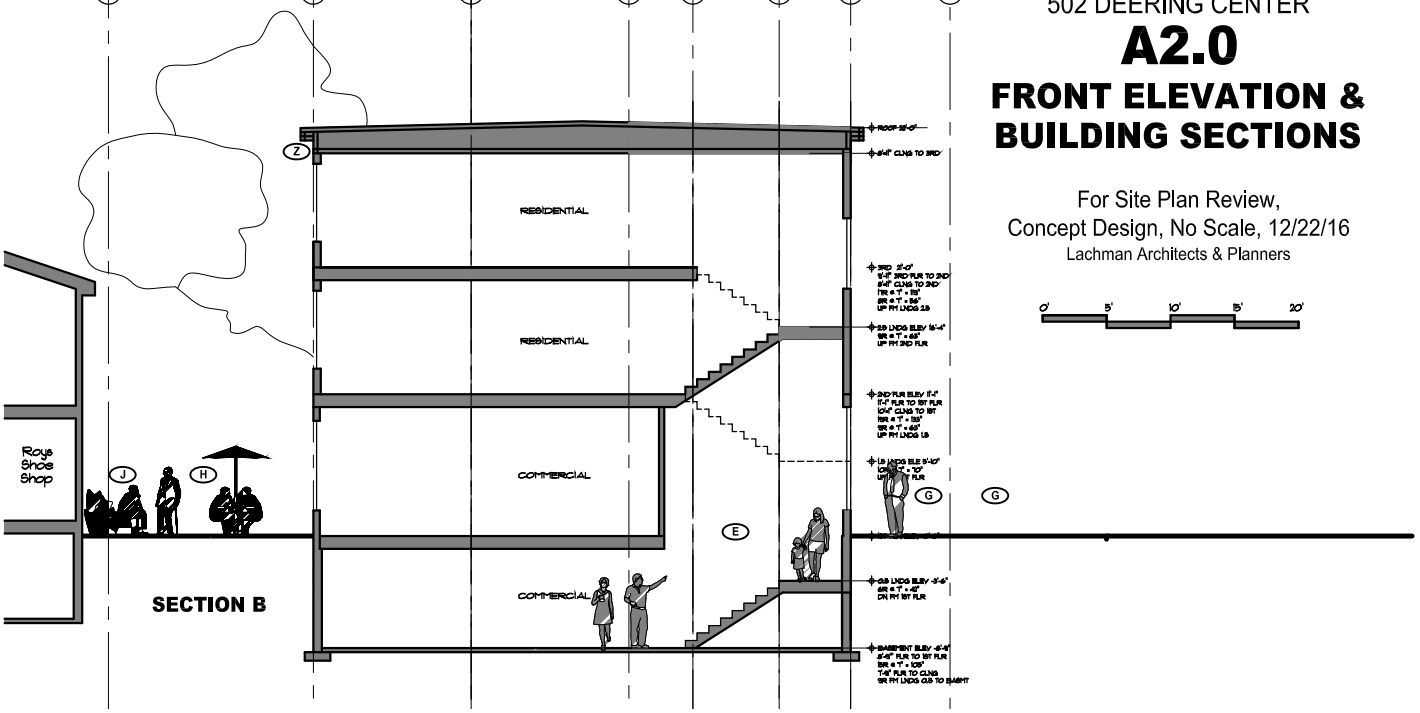
For Site Plan Review, No Scale, 12/22/16
Lachman Architects & Planners

0' 5' 10' 15' 20'

FRONT ELEVATION @ Stevens Ave



SECTION A



SECTION B

502 DEERING CENTER

A2.0

FRONT ELEVATION & BUILDING SECTIONS

For Site Plan Review,
Concept Design, No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'

FRONT ELEVATION @ Stevens Ave

502 DEERING CENTER

A2.1

FRONT ELEVATION

FRONTING STEVENS AVE

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners

0' 5' 10' 15' 20'

PL 1 2 3 4 5 6 PL

502 DEERING CENTER

A2.2

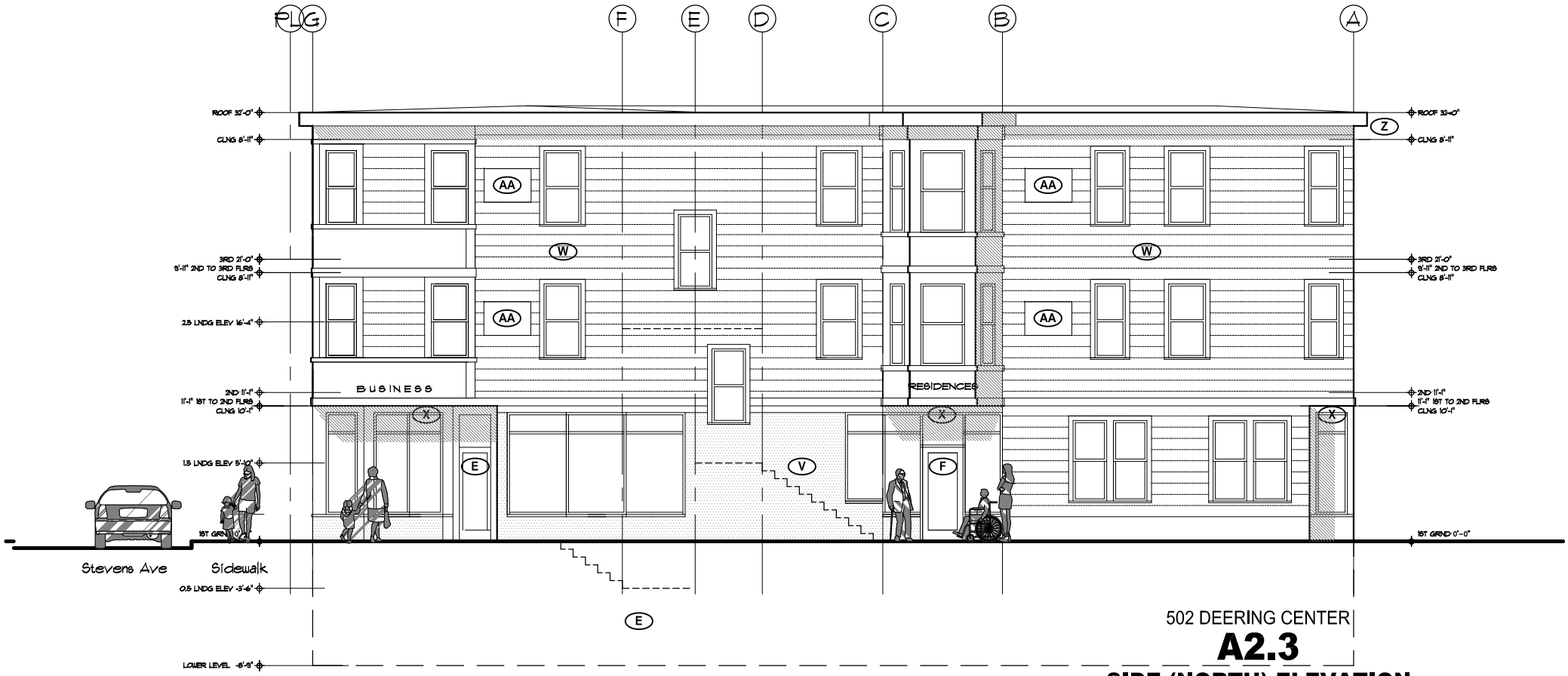
SIDE (SOUTH) ELEVATION

FRONTING POCKET PARK

For Site Poan Review, No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.3

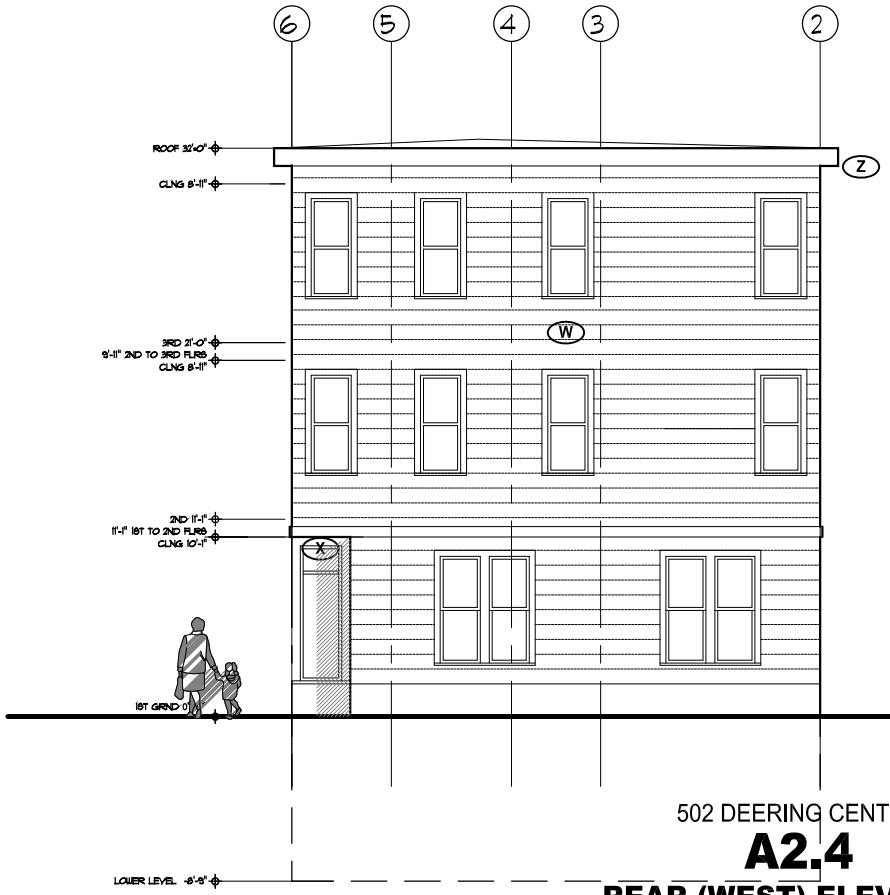
SIDE (NORTH) ELEVATION

FRONTING WALKWAY & SHARED DRIVEWAY

For Site Plan Review. No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.4

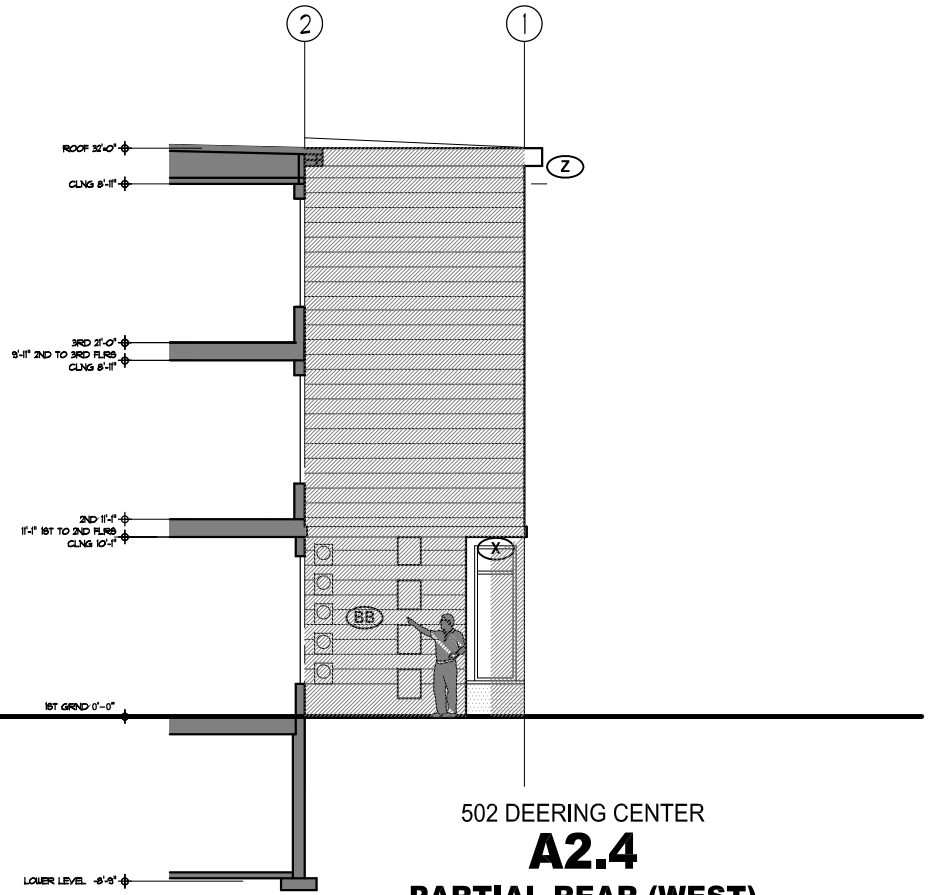
REAR (WEST) ELEVATION

FRONTING PARKING AREA

For Site Plan Review. No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

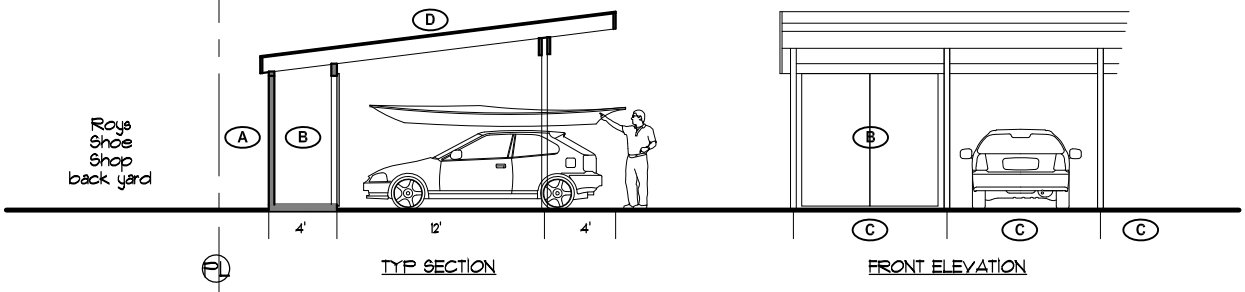
A2.4

PARTIAL REAR (WEST) ELEVATION @ GRID E

For Site Plan Review. No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'

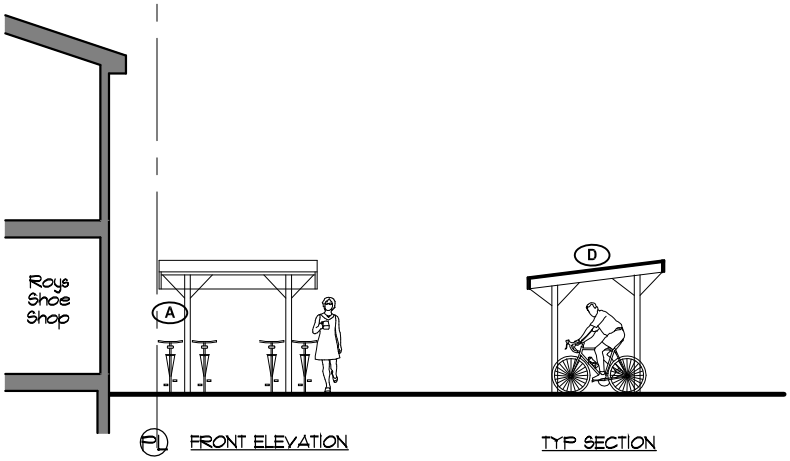


A Setback, Bl-b to Bl-b none required

B Utility Shed for residents, 1 per unit, 4' d x 8'h, each with pair of 4 x 8 sliding barn doors.

C Typ Parking Stall, 9' w x 17.5' d.

D Roof, shallow pitch



502 DEERING CENTER

A2.5

CARPORT (Phase 2) & BIKE SHELTER (Phase 2)

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners

A3 Keyed Notes, Features & Descriptions for Architectural Drawings

A. **Stevens Avenue Public Sidewalk** – Generous for comfortable public use, approx 9' wide.

B. **ROW Setback** – 2- setback so upper floor bay does not extend into the ROW

C. **New Urban Street Wall & Mixed Use**

- **Urban Street Wall.** The existing property is currently non-conforming with its B1-b zoning because the existing house is set back from the street, and consequently does not meet the "Urban Street Wall" requirement. New building is purposefully designed to correct the Urban Street Wall, and therefore meeting "*Buildings shall be located near the street so as to create an urban street wall".*
- **Mixed Use.** The proposed building is multi-storied with mixed uses, therefore meeting " *An urban street and business district requires a substantial intensity and variety of uses. **I**t is beneficial to have mixed uses within portions of buildings situated near the street. For example, a retail first floor might have office or residential on the second or third floors. This provides both the scale of building height desired, as well as the economic vitality of the business district."*
- Meets the following Portland Design Manual Standards & Guidelines for B1-b: *Standard a. Urban Street Wall, Guideline 1. Building Location and Form, Guideline 7. Development Relationship to Street, Standard b. Mixed Uses, Guideline 2. Building Function.*

D. **Primary Commercial Entry with Universal Access, Active & Transparent Facade & Character**

- **Entrances**. Highly visible, universally accessible, welcoming entry fronts directly onto wide sidewalk. Downlight creates inviting pool of light to highlight nighttime entry. Generous 3' w x 7' h glazed door is welcoming. Glass canopy above provides weather protection shown dashed.
- **Active & Transparent Façade**. Windows on 3 sides, ceiling are 10" high, providing generous light and visual connection to and from the street, therefore meeting "*Retail uses with store fronts are the most desirable feature for locations adjacent to the public sidewalk; and active, transparent (minimum visible transmittance (VT) of .7 or greater), and interesting windows contribute the maximum value."*
- **Building Character, Detail, Scale, and Graphic Qualities.** Deering Center Village has good Main Street architectural "bones". The overarching design goal is to complement the existing context (emphasis on "we") , rather than make a strong attention-seeking design statement (emphasis on "me"). The design wants to be a graceful neighbor now and a century from now. The facade is village scaled, with traditional storefront proportions and components. Front façade has a traditional tripartite organization, both horizontally (A-B-A) and vertically (base-middle-top), therefore meeting " *Building design will include various architectural and graphic amenities to provide a strong presence along a street and relate a building to its community. Awnings, canopies, and flags may be utilized to highlight entryways and to further identify the activity and identity of a use. Facade lighting may be used to highlight entryways or to provide visual interest along an otherwise blank façade Building scale, roof pitch, architectural detail, and fenestration shall be designed to complement and be compatible with surrounding residential and commercial buildings.*
- **Meets the following Portland Design Manual Standards & Guidelines for B1-b**: *Standard c. Building Entrances, Guideline 3. Orientation of Buildings and their Entrances to the Street, Standard d. Windows, Guideline 4. Windows, Standard e. Facade Character, Guideline 5. Building Character, Detail, Scale, and Graphic Qualities, Guideline 6. Signage and Building Entrances, Standard f. Building Design, Standard g. Building Materials, Standard h. Building Scale.*

E. **Commercial Entry to Lower Level Studio –** Walkway widened for easily identifiable, welcoming, generously glazed entry with lobby. Angled corner at front enhances welcoming transition from sidewalk. Recessed for weather protection and deep shadows. Soffit downlight creates inviting pool of light to highlight nighttime entry. Abundant glazing provides views and light in and out and nighttime glow. Natural light cascades from glazing down the 5' wide stair to the lower level. Lower Level Studio is designed for flexibility, so it can be independently accessed from the sidewalk, or internally accessory from the 1st floor commercial space, or both. Soffit downlight creates inviting pool of light to highlight nighttime entry. Generous 3' w x 7' h glazed door is welcoming. Meets the following Portland Design Manual Standards & Guidelines for B1-b: *Standard c. Building Entrances, Guideline 3. Orientation of Buildings and their Entrances to the Street, Standard d. Windows, Guideline 4. Windows, Standard e. Facade Character, Guideline 5. Building Character, Detail, Scale, and Graphic Qualities, Guideline 6. Signage and Building Entrances, Standard f. Building Design, Standard g. Building Materials, Standard h. Building Scale*.

F. **Residential Entry + Secondary Commercial Entry –** Highly visible, universally accessible, welcoming entry fronts directly onto pedestrian walkway. Abundant glazing provides views and light in and out and nighttime glow. Generous 3' w x 7' h glazed door is welcoming. Positioned directly under upper floor projecting residential bay to signify entry, provide weather protection and downlight. Meets the following Portland Design Manual Standards & Guidelines for B1-b: *Standard c. Building Entrances, Guideline 3. Orientation of Buildings and their Entrances to the Street, Standard d. Windows, Guideline 4. Windows, Standard e. Facade Character, Guideline 5. Building Character, Detail, Scale, and Graphic Qualities, Guideline 6. Signage and Building Entrances, Standard f. Building Design, Standard g. Building Materials, Standard h. Building Scale*.

G. **Shared Driveway & Walkways –** Neighboring property 510 Stevens Ave is also developing a new mixed use building. The driveway is shared and straddles the property line, which is an efficient use of land (limited in the village) and resources. Impervious area and associated storm runoff is reduced. Consolidation reduces curb cuts from 2 to 1 and removing the existing curb cut eliminates dangerous back-outs across the sidewalk, especially with so many children in the area. Sharing a driveway allows precious resources and land otherwise devoted to cars, to instead be reallocated to a Village Pocket Park and Mixed Use Transportation opportunities. New building (502) to new building (510) is 20'wide, including 10' driveway + (2) 5' walkways flush with driveway. Angled corner at building rear improves vehicle and pedestrian sightlines for safety. Existing curb cut modified and used. See Shared Driveway for Land & Resource Efficiency for a more complete description.

H. **Village Pocket Park/Patio & Featured Tree -** Public seating, landscaping, pervious pavers, neighborhood kiosk. Angled corner at rear provides enhanced visual connection to and from sidewalk. See Public Space on Private Property: New Village Pocket Park for a more complete description.

I. **Neighborhood Kiosk –** Easily visible and accessible from Stevens Ave sidewalk, enhances pocket park. "Welcome to Deering Center" sign + walking signs + bulletin board.

J. **Abutting Property & Setback -** Roy's Shoe Shop (also B1-B Neighborhood Business). No setback required B1-b to B1-b.

K. **Abutting Property -** Existing single family house to be removed, zone changed from R-5 to B1-b to allow new mixed use development with retail at the ground floor with (3) condos above.

L. **Walkway Safe Spot & New Focal Point**– Widened area at end of walkway provides safe spot for pedestrians to avoid any vehicles in driveway. Sculptural feature or tree creates attractive focal point to driveway and screen views into parking area, filtration area absorbs storm runoff.

M. **Parking** – Aisle 22' wide. Stalls 9' s x 17 ½' d. (1) HC stall. Vehicle backup and turnaround.

N. **Carport (Phase 2, need not be built in Phase 1) –** Location for 4-stall carport for 4 units. Included with each stall is a 4'd x 9'w private secure utility shed. No Side Setback required for principal or accessory structures abutting commercial zone (B1-b to B1-b Roy's). 5 ft. Rear Setback for accessory structures abutting residential zone (LM School in R-5).

O. **Buffer, Snow Storage & Pervious Area –** Screening plants and fencing buffer adjacent properties from parking area. Property corners at rear are used for snow storage and absorbing runoff.

P. **Rain Garden Stormwater Treatment Pervious Area & Private Outdoor Space for Residents**

Q. **Covered Bike Parking –** Convenient, secure and weather protected for residents and neighbors as incentive to bike-park-n-ride (bus). No Side Setback required for principal or accessory structures abutting commercial zone (B1-b to B1-b Roy's).

R. **Existing Bus Stop Enhanced by Sheltered Public Seating –** Angled corner provides weather-sheltered public seating for the existing bus stop, ideally positioned to visually track approaching inbound and outbound buses. Building projection above (shown dashed) provides weather-protection. Public seating encourages walking, bus taking, pausing and greeting. See Features That Encourage Bus Riding for a more complete description.

S. **Existing Curb Cut & Surface Parking Removed –** Conforms with B1-b zoning (no parking at property front), reduces curb cuts from 2 to 1, eliminates dangerous back-out across the sidewalk, especially with so many children in the area and creates the new public pocket park.

T. **Existing Power Pole Removed to Improve Streetscape** – Coordination with abutting property owners and CMP is underway to remove the existing power pole, provide service underground from an existing pole across Stevens Ave to a shared vault, thereby greatly visually improving Stevens Ave streetscape.

U. **Reserved**

V. **Typical Exterior Commercial 1st Floor Materials –** Cladding is durable quality material, such as tile or stone. Openings are storefront system with clear glazing (no reflective).

W. **Typical Exterior Residential Upper Floor Materials –** Typical horizontal siding with standing and running trim. Openings are typical residential windows.

X. **Typical Exterior Lighting –** Lighting is discreetly provided by soffit downlights at each of the 1st floor angled building corners and under projecting upper floor bays.

Y. **Typical Signs –** All signs are part of a sign program, where size, font and type are consistent to achieve a coordinated purposeful look that compliments the building and the village Main Street. All sign are scaled for pedestrians, rather than attracting drive-by attention and none will be back-lit box signs. There will be (3) or (4) signs, depending on the number of tenants, not known at this stage.

Z. **Typical Roof & Downspouts** – Roof is shallow pitched to perimeter gutters and downspouts. Overhangs are nominally 12" with nominally 12" fascia.

AA. **Typical HVAC Units** - The HVAC system is small electric air-source mini split heat pumps, which have no emissions. Suit-case sized units will typically be wall-mounted near its destination to minimize runs and maximize efficiency.

BB. **Utility Meters** - Gas meters on the outside corner need to be 5 feet from the electrical meters, on inside corner. No openings 3 feet horizontally and 7 feet vertically from gas meters.

S MANUFACTURER'S VERIFICATION THAT ALL PROPOSED HVAC AND MANUFACTURING EQUIPMENT MEETS APPLICABLE STATE AND FEDERAL EMISSIONS REQUIREMENTS

The HVAC system is small electric air-source heat pumps, which have no emissions. There will be one for each unit and several commercial space. These Energy Star, virtually quiet suitcase-sized units are typically mounted on exterior walls near where heat is delivered, to reduce runs and maintain efficiency.

MITSUBISHI ELECTRIC
COOLING & HEATING

ENERGY STAR

M-SERIES

SUBMITTAL DATA: MXZ-8C48NAHZ

4-TON MULTI-INDOOR INVERTER HEAT-PUMP SYSTEM

Job Name:

System Reference: Date:

GENERAL FEATURES

- Quiet operation
- Built-in base pan heater to prevent ice in drain pan
- M-Net adaptor kits are available as an option*
- Limited warranty: five years parts and seven years compressors

*Included standard in PAC-MKA30/50BC Branch Box

ACCESSORIES

- □ Three-port Branch Box (PAC-MKA30BC)
- □ Five-port Branch Box (PAC-MKA50BC)
- □ Distribution Pipe for Flare Connection (MSDD-50AR; necessary for installing two branch boxes)
- □ Distribution Pipe for Brazed Connection (MSDD-50BR; necessary for installing two branch boxes)
- □ 3/8" x 1/2" Port Adapter (MAC-A454JP)
- □ 1/2" x 3/8" Port Adapter (MAC-A455JP)
- □ 1/2" x 5/8" Port Adapter (MAC-A456JP)
- □ 1/4" x 3/8" Port Adapter (PAC-493PI)
- □ 3/8" x 5/8" Port Adapter (PAC-SG76RJ)
- □ M-NET Adapter (PAC-IF01MNT-E)
- □ Drain Socket (PAC-SH71DS-E)
- □ Airflow Guide (PAC-SH96SG-E)

Outdoor Unit: MXZ-8C48NAHZ

INVERTER

R410A

(For data on specific indoor units, see the MXZ-C Technical and Service Manual.)

Specifications			Model Name
Unit Type			MXZ-8C48NAHZ
Cooling* (Non-ducted / Ducted)	Rated Capacity	Btu/h	48,000 / 48,000
	Capacity Range	Btu/h	6,000 - 48,000
	Rated Total Input	W	4,000 / 5,050
Heating at 47°F* (Non-ducted / Ducted)	Rated Capacity	Btu/h	54,000 / 54,000
	Capacity Range	Btu/h	7,200 - 54,000
	Rated Total Input	W	4,220 / 4,990
Heating at 17°F* (Non-ducted/Ducted)	Rated Capacity	Btu/h	40,000 / 43,000
	Maximum Capacity	Btu/h	54,000 / 54,000
	Rated Total Input	W	4,340 / 5,250
Heating at 5°F*	Maximum Capacity	Btu/h	54,000
Electrical Requirements	Power Supply	Voltage, Phase, Hertz	208 / 230V, 1-Phase, 60 Hz
	Recommended Fuse/Breaker Size	A	50
	MCA	A	42
Voltage	Indoor - Outdoor S1-S2	V	AC 208 / 230
	Indoor - Outdoor S2-S3	V	DC ±24
Compressor			Hermetic
Fan Motor (ECM)		F.L.A.	0.4+0.4
Sound Pressure Level	Cooling	dB(A)	51
	Heating		54

Att. R

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

T. EROSION CONTROL

STORMWATER MANAGEMENT REPORT
502 DEERING CENTER
PORTLAND, MAINE

December 22, 2016

Project Description:

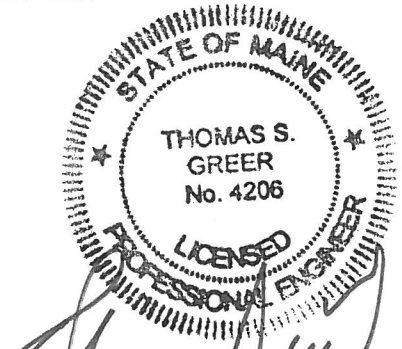
This project is the removal of the existing structure at 502 Stevens Avenue and the construction of a 2,400 square foot structure with commercial space on the first floor and four residential units over it. There will be eight parking spaces in the rear. It is a small site, less than 10,000 square feet. The site is fully utilized.

Soils:

The soils are Windsor silty loams. These have high infiltration rates and will have lower erosion potential.

Erosion Control:

The site plans show erosion control measures. They include stabilized construction entrances, catch basin protection, silt barriers and mulching criteria. The contractor is responsible for controlling erosion, including the sweeping of Stevens Avenue in the event soil is tracked off site.



Thomas S. Greer, P.E.
12/22/16

Maine Traffic Resources
25 Vine Street Gardiner, ME 04345
(207) 582-5252 FAX (207) 582-1677
mainetrafficresources.com

SUMMARY MEMORANDUM

TO: Mr. Patrick J. Carroll
Principal
Carroll Associates
217 Commercial Street, Suite 200
Portland, ME 04101

DATE: January 3, 2017

RE: Trip Generation and Safety Analyses for Proposed New Retail/Office Space and Apartments at 502 Stevens Avenue in Portland

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The purpose of this memorandum is to summarize trip generation analysis prepared for a proposed new building at 502 Stevens Avenue in Portland, Maine. The site is currently occupied by a single-family house. The proposed new building is expected to provide for up to 2,000 gross square feet (S.F.) of retail space and 800 S.F. of office space on the first floor and two (2) apartment units on each of the second and third floors for a total of four (4) dwelling units. In terms of safety, accident data and sight distances were obtained and reviewed for the site. Access management was also reviewed for the site.

Trip Generation Analysis

The number of trips to be generated by the proposed retail/office space and apartment units was estimated using the most recent Institute of Transportation Engineers (ITE) "Trip Generation, 9th Edition," published in 2012. The trips were estimated using land use code (LUCs) 826 – Specialty Retail Center on the basis of 2,000 S.F. of gross leasable area, 710 – General Office on the basis of 800 S.F. and 220 – Apartment on the basis of four (4) dwelling units. The results are summarized below:

	ITE Projected Trip Generation (one-way trip ends)			
Time Period	Retail	Office	Apartments	Total
Weekday	90	10	28	128
AM Peak Hour – Adjacent Street	14	1	2	17
Entering	7	1	0	8
Exiting	7	0	2	9
AM Peak Hour – Generator	14	1	2	17
Entering	7	1	0	8
Exiting	7	0	2	9
PM Peak Hour – Adjacent Street	5	1	3	9
Entering	2	0	2	4
Exiting	3	1	1	5
PM Peak Hour – Generator	10	1	3	14
Entering	6	0	2	8
Exiting	4	1	1	6

As shown in the preceding table, the proposed development is expected to generate just 17 one-way trips during the AM peak hour trips and 14 one-way trips during the PM peak hour. Because the existing single-family home generated one (1) trip during both the AM and PM peak hours, only 16 AM and 13 PM peak hour trips are expected to be new to the site. This minimal level of new traffic would not be expected to have any significant impact off-site on traffic operations. Typically, a project will not have any measurable impact unless it generates in excess of 25 to 35 new lane hour trips. The proposed residential and retail/office development will generate a maximum of eight (8) new trips either entering or exiting the development. The number of lane hour trips will be even less when these eight trips are further assigned northbound and southbound on Stevens Avenue. This minimal level of new traffic will have no impact off-site on traffic operations beyond the site drive.

Safety Analysis

Accident Review

The Maine Department of Transportation uses two criteria to determine high crash locations (HCLs). The first is the critical rate factor (CRF), which is a measure of the accident rate. A CRF greater than one indicates a location which has a higher than expected accident rate. The expected rate is calculated as a statewide average of similar facilities.

The second criterion, which must also be met, is based upon the number of accidents that occur at a particular location. Eight or more accidents must also occur over the three-year study period for the location to be considered a high crash location. Accident data was obtained from MaineDOT for Stevens Avenue, as well as Hartley Street, within the vicinity of the site for the most recent three-year period, 2013 - 2015. The data is attached to this memorandum and is summarized by location in the following tables:

Stevens Avenue Location Description	# of Acc.	CRF
Intersection of Pleasant Avenue	5	0.29
Between Pleasant Avenue and Brentwood Street	2	0.64
Intersection of Brentwood Street	5	0.95
Between Brentwood Street and Clinton Street	1	0.41
Intersection of Clinton Street	4	0.79
Between Clinton Street and Hartley Street	2	0.55
Between Hartley Street and Percival Street	1	0.27
Intersection of Crosby Street	1	0.18
Between Crosby Street and New Street	3	0.79
Intersection of New Street	2	0.37
Between New Street and Walton Street	3	0.17
Intersection of Walton Street	3	0.17

Hartley Street Location Description	# of Acc.	CRF
Intersection of Stevens Avenue	0	0.00
Between Stevens Avenue and James Street	1	0.70
Intersection of Forest Avenue	2	0.28

As seen in the preceding accident tables, there are no high crash locations (or locations approaching the high crash criteria) within the vicinity of the proposed retail/office and residential development. Given the minimal trip generation and given that there are no high crash locations, no additional accident review or evaluation is necessary.

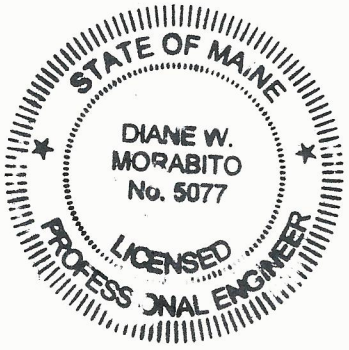
Sight Distance Review

One of the most important factors to consider for a project with limited trip generation, such as this development, is sight distance from the access drive. Sight distance is measured ten feet back from the edge of travel way at a driver's eye height of 3.5 feet to an object height of 4.25 feet. Maine Traffic Resources recommends a minimum sight distance of 300 feet for the 30 mph area speed zone while the City's Technical Standards require a lesser 250 feet. Sight distance was measured from the proposed access drive and found to exceed 325 feet in both directions at the time of the field visit since there was no on street parking in the immediate vicinity of the drive. There is an existing no parking zone south of the proposed drive at the existing crosswalk that should keep sight distance to the south adequate. A small no parking zone north of the proposed drive is recommended to assure safe sight distance to the north (left).

Access Management

Access Management improves the capacity of a roadway while improving safety by reducing conflict points. The existing site currently has one curb cut. In addition, the adjacent site to the north has one curb cut. As shown on the site plan by Carroll Associates, dated December 22, 2016, the existing southerly curb cut is proposed to be closed and both properties will share the existing northerly curb cut. The reduction in curb cuts from two to one, will reduce allowable driveway movements from eight to four. Also, the two existing driveways do not allow a vehicle that has pulled into either drive to turn around. Instead, to access Stevens Avenue, the vehicle must back out into traffic. The proposed new plan eliminates this, with the added parking lot and turnaround space to the rear of the site.

As always, please do not hesitate to contact me if you or the City of Portland have any questions or concerns regarding the trip generation or safety analyses.



Sincerely,

Diane W. Morabito, P.E. PTOE
President

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Stevens Ave

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 3200987	Start Node: 12842	Start Offset: 0	☐ Exclude First Node
	End Node: 13190	End Offset: 0	☐ Exclude Last Node

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
12842	3200987 - 0.29	Int of PLEASANT AV STEVENS AV	9	5	0	0	0	1	4	20.0	4.772	0.35	1.19	0.29
											Statewide Crash Rate:	0.67		
13166	3200987 - 0.33	Int of BRENTWOOD ST STEVENS AV	2	5	0	0	0	1	4	20.0	4.583	0.36	0.38	0.95
											Statewide Crash Rate:	0.15		
12848	3200987 - 0.36	Int of CLINTON ST, STEVENS AV	2	4	0	0	0	1	3	25.0	4.306	0.31	0.39	0.79
											Statewide Crash Rate:	0.15		
13185	3200987 - 0.41	Int of HARTLEY ST STEVENS AV	2	0	0	0	0	0	0	0.0	4.398	0.00	0.39	0.00
											Statewide Crash Rate:	0.15		
13183	3200987 - 0.46	Int of PERCIVAL ST STEVENS AV	2	0	0	0	0	0	0	0.0	4.387	0.00	0.39	0.00
											Statewide Crash Rate:	0.15		
13182	3200987 - 0.49	Int of CROSBY ST STEVENS AV	2	1	0	0	0	0	1	0.0	4.509	0.07	0.38	0.18
											Statewide Crash Rate:	0.15		
13181	3200987 - 0.54	Int of NEW ST, STEVENS AV	2	2	0	0	0	0	2	0.0	4.610	0.14	0.38	0.37
											Statewide Crash Rate:	0.15		
13190	3200987 - 0.75	Int of STEVENS AV, WALTON ST	9	3	0	0	0	0	3	0.0	4.944	0.20	1.18	0.17
											Statewide Crash Rate:	0.67		
Study Years: 3.00		NODE TOTALS:		20	0	0	0	3	17	15.0	36.509	0.18	0.42	0.44

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
12842	13166	3116026	0 - 0.04	3200987 - 0.29	0.04	2	2	0	0	0	0	2	0.0	0.00171	389.51	606.97	0.64
Int of PLEASANT AV	STEVENS AV			RD INV 3200987											Statewide Crash Rate: 198.22		
12848	13166	3123926	0 - 0.03	3200987 - 0.33	0.03	2	1	0	0	0	0	1	0.0	0.00125	266.80	657.21	0.41
Int of CLINTON ST, STEVENS AV				RD INV 3200987											Statewide Crash Rate: 198.22		
12848	13185	3122189	0 - 0.05	3200987 - 0.36	0.05	2	2	0	0	0	1	1	50.0	0.00212	314.23	574.26	0.55
Int of CLINTON ST, STEVENS AV				RD INV 3200987											Statewide Crash Rate: 198.22		
13183	13185	3119201	0 - 0.05	3200987 - 0.41	0.05	2	1	0	0	0	0	1	0.0	0.00218	153.19	570.51	0.27
Int of PERCIVAL ST	STEVENS AV			RD INV 3200987											Statewide Crash Rate: 198.22		
13182	13183	3130460	0 - 0.03	3200987 - 0.46	0.03	2	0	0	0	0	0	0	0.0	0.00132	0.00	648.30	0.00
Int of CROSBY ST	STEVENS AV			RD INV 3200987											Statewide Crash Rate: 198.22		
13181	13182	3123618	0 - 0.05	3200987 - 0.49	0.05	2	3	0	0	0	0	3	0.0	0.00223	448.62	566.95	0.79
Int of NEW ST, STEVENS AV				RD INV 3200987											Statewide Crash Rate: 198.22		
13181	13190	187848	0 - 0.21	3200987 - 0.54	0.21	2	4	0	0	0	3	1	75.0	0.00951	140.26	395.45	0.35
Int of NEW ST, STEVENS AV				RD INV 3200987											Statewide Crash Rate: 198.22		
Study Years: 3.00				Section Totals:	0.46		13	0	0	0	4	9	30.8	0.02031	213.32	336.93	0.63
				Grand Totals:	0.46		33	0	0	0	7	26	21.2	0.02031	541.51	470.35	1.15

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Hartley St

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: 0560351	Start Node: 13185	Start Offset: 0	☐ Exclude First Node
	End Node: 16858	End Offset: 0	☐ Exclude Last Node

Crash Summary I

Nodes

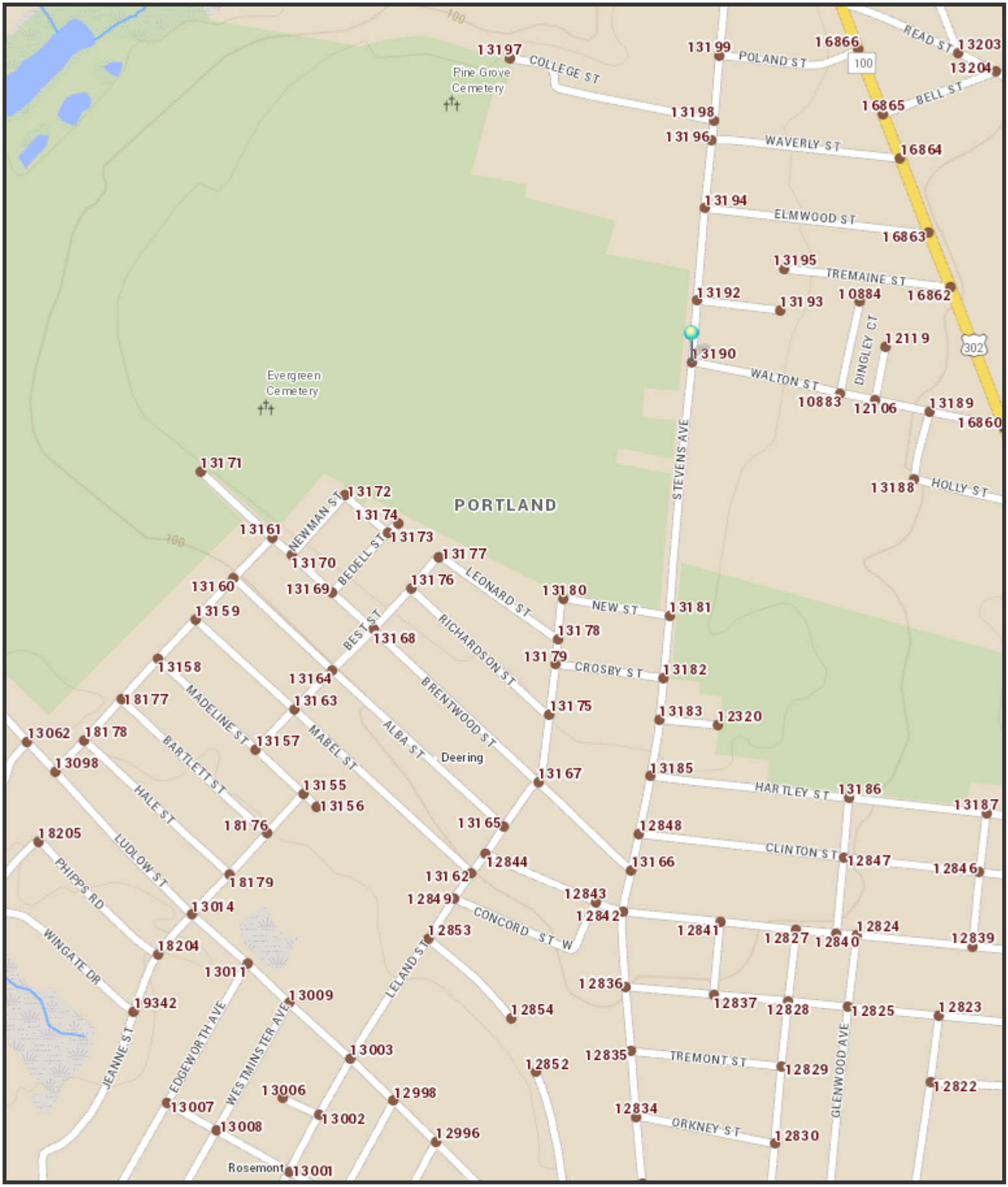
Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
13185	0560351 - 0	Int of HARTLEY ST STEVENS AV	2	0	0	0	0	0	0	0.0	4.398	0.00	0.39	0.00
												Statewide Crash Rate:	0.15	
13186	0560351 - 0.16	0503600 POR,HARTLEY,JAMES ST.	2	0	0	0	0	0	0	0.0	0.234	0.00	0.58	0.00
												Statewide Crash Rate:	0.14	
13187	0560351 - 0.27	0503601 POR,HARTLEY,FLORENCE ST.	2	0	0	0	0	0	0	0.0	0.285	0.00	0.60	0.00
												Statewide Crash Rate:	0.14	
16858	0560351 - 0.42	Int of FOREST AV HARTLEY ST	2	2	0	0	0	0	2	0.0	8.722	0.08	0.29	0.28
												Statewide Crash Rate:	0.13	
Study Years:	3.00	NODE TOTALS:		2	0	0	0	0	2	0.0	13.639	0.05	0.27	0.18

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
13185	13186	187853	0 - 0.16	0560351 - 0	0.16	2	1	0	0	0	0	1	0.0	0.00032	1037.78	1491.58	0.70
Int of HARTLEY ST STEVENS AV				RD INV 05 60351											Statewide Crash Rate: 384.10		
13186	13187	187854	0 - 0.11	0560351 - 0.16	0.11	2	0	0	0	0	0	0	0.0	0.00027	0.00	1537.69	0.00
0503600 POR,HARTLEY,JAMES ST.				RD INV 05 60351											Statewide Crash Rate: 384.10		
13187	16858	187855	0 - 0.15	0560351 - 0.27	0.15	2	0	0	0	0	0	0	0.0	0.00045	0.00	1385.44	0.00
0503601 POR,HARTLEY,FLORENCE ST.				RD INV 05 60351											Statewide Crash Rate: 384.10		
Study Years: 3.00				Section Totals:	0.42		1	0	0	0	0	1	0.0	0.00105	318.20	1125.57	0.28
				Grand Totals:	0.42		3	0	0	0	0	3	0.0	0.00105	954.61	1332.52	0.72

STEVENS AVE



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0.1 Miles

1 inch = 0.14 miles

Date: 12/20/2016
Time: 12:15:33 PM

Lachman Architects & Planners
Architecture | Community Planning | Preservation
Building Maine Communities - with community buildings

February 8, 2017

To: **City Staff and Planning Board**

RE: **502 Deering Center (2016-290) – Neighborhood Meeting**

I, Denis Lachman, hereby certify that a neighborhood meeting was held on February 1, 2017 at the Deering Center Community Church at 7pm.

I also certify that on January 19,2017, invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 1000 feet of a proposed industrial subdivision or industrial zone change.
2. Residents on the "interested parties" list.
3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Signed,

Denis Lachman _____ 2/8/2017

Attachments to this certification are:

1. Invitation letter
2. Graphic Flyer that was mailed as an enclosure with the Initiation Letter
3. Sign-in sheet
4. Meeting Topics & PowerPoint Presentation
5. Meeting minutes

Kiya Smith & Denis Lachman
55 Hamblet Ave
Portland, ME 04103

January 19, 2017

Re: **502 Deering Center, New Mixed-Use Project**
Public Discussion/Meeting

Dear Neighbor,

We are local residents writing to inform you about our project at 502 Stevens Avenue (next to Roy's), and invite you to a public discussion/meeting to learn more.

Location: Deering Center Community Church, 4 Brentwood St., Portland, ME 04103
Date: Wednesday, February 1
Time: 7 – 8pm

The attached flyer provides a graphic introduction to our project. We are interested in your thoughts – what excites or concerns you – and hope you will join us. If you are not able to attend, or wish to offer additional comments, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov.

If you have any questions, please contact us.

Sincerely,

Kiya Smith & Denis Lachman
55 Hamblet Ave, 831-0651

(City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list", be invited to participate in a neighborhood meeting. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board. For a final site plan application the meeting must be within 21 days of submitting, and must be at least seven days prior to the Planning Board public hearing on the proposal.)

Kiya Smith & Denis Lachman
55 Hamblet Ave
Portland, ME 04103

502 Deering Center

New Mixed-Use Development

in the heart of the Village

at 502 Stevens Avenue

Commercial

New ground floor commercial space, 1,000 to 2,000 +/- sf. Flexible configuration for single or double tenants to join Deering Center's long-established "Main Street". Large storefront windows provide high in/out visibility.

Ideal for Neighborhood-oriented Uses

Zoned Neighborhood Business (B1-b), no zone change required.

Residential

Four 3BR/1.5B units on 2nd & 3rd floors, in the heart of walkable Deering Center surrounded by schools, recreation, UNE, services & shops.

Available

Construction starts Summer 2017. Available for tenant fit-out Fall 2017 and residential move-in late 2017.

Learn More & Direct Contact

www.lachmanarchitects.com denis@lachmanarchitects.com

Stevens Avenue Front Facade

Roy's Shoe Shop | New Village Pocket Park | Covered Bus Stop | New 502 Deering Center | Pedestrian Walkway to Residential Entry + Shared Drive to Parking

Stevens Avenue Streetscape

Formerly Mixed-Use Portland Lyric Theatre & Shops, Now Siano's | Pat's Market & Treehouse | Residences | Parking Lot | Honey Exchange | Roy's Shoe Shop | New 502 Deering Center Mixed Use | Residence/New Mixed Use with Lincoln School beyond

Site Concepts

A Primary Commercial Entry directly fronts Stevens Ave with high visibility.

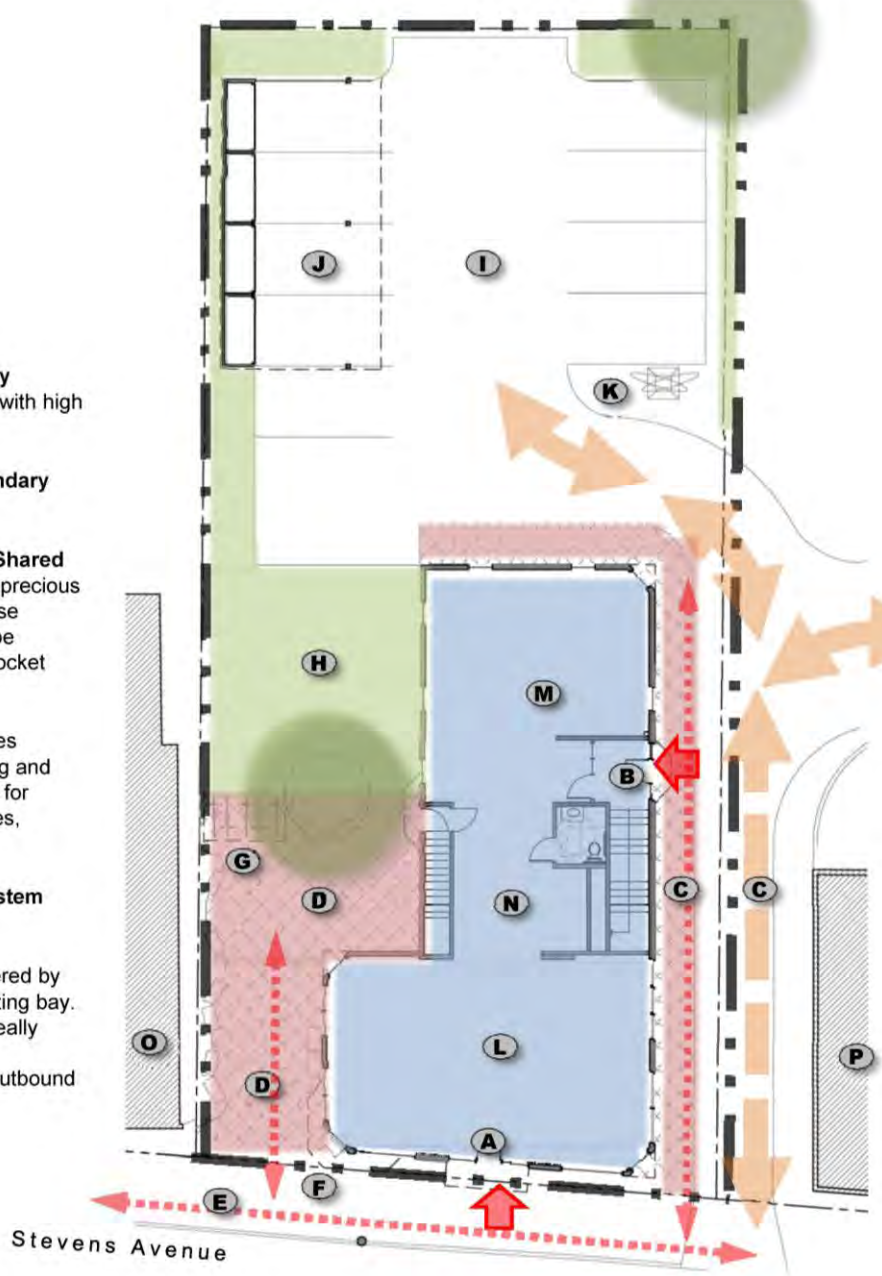
B Residential Entry & Secondary Commercial Entry

C Pedestrian Walkway and Shared Driveway efficiently allows precious resources and land otherwise devoted to cars to instead be reallocated to the Village Pocket Park.

D Village Pocket Park features seating, landscaping, paving and provides neighborhood use for pause-n-meet, performances, sidewalk fairs etc.

E Pedestrian Circulation System shown dashed.

F Existing Bus Stop is sheltered by angled corner under projecting bay. Provides public seating, ideally positioned to visually track approaching inbound and outbound buses.



G Covered Bike Parking provides convenient, secure and weather protected spaces as incentive to bike-park-n-ride (bus).

H Rain Garden Stormwater Treatment & Private Area for Residents

I Parking at rear of site includes a handicap space. **Mixed Transportation** encourages a variety of transportation modes – walking, busing and biking - in addition to cars.

J Carport (Possible) features 4 parking stalls, each with a private secure utility shed.

K Sculptural Feature

L Commercial Space Front

M Commercial Space Back

N Commercial Support Area

O Roy's Shoe Shop

P Abutting Property, future new mixed use building.

New Village Pocket Park

Covered Bike Parking | Gathering, Performance, Street Fair & other…… | Pause-n-Meet | Covered Bus Stop | Sidewalk | Stevens Ave

502 Deering Center

I am interested as a community member.

Please update me occasionally by email.

Name	Email
Jeremey Zela	jeremey.zela@gmail.com
Jill Finberg	jfinberg@hotmail.com
CATHERINE Wentworth	ctwentworth@hotmail.com
Joy Gallant	gallant-joy@yahoo.com
Jennifer Frick	jfrick47@gmail.com
Katherine Kilcullen	kcec@maine.rr.com
Ann Dodd Collins	doddco@gmail.com
JON LYNCH	JPLYNCH15@YAHOO.com
Elliot Vacchiano	ejvacch@icloud.com
Kim Cook	KCook@gsmaine.com
Gregg & Kathy Adams	glassman21@yahoo.com
Jon Graffius	graffius@gmail.com
Alex Jackson	alias_adrianna@yahoo.com
KEVIN MOQUIN	kevin@km-a.me
Carol Pickering	cpicky@gmail.com
Vicky Poole	poolevictoria@gmail.com
MIKKI Jones-Little	mikkijl@earthlink.net
Maria Dascoll	maria8@maine.rr.com
Brian Daly	LBDaly26@gmail.com

502 Deering Center

I am interested as a community member.

Please update me occasionally by email.

Name	Email
Rob Michael	rcmichal@yahoo.com
Ethan Croce	ethan-sarah@juno.com
Michael Charek	mcharek@me.com
Dick Hall	DickHall@maine.rr.com
Andrea Hall	AndyHall@maine.rr.com
Ben	bguerette@gmail.com
Janet	Janetvgunn@gmail.com
Chris Jordan	CTustinJordan@att.net
Nancy Keast + Mark Keast	nancy@nancykeast.com
Eve Sawyer	myzzle@gmail.com
Ellen Profenno	eprofenno@yahoo.com

Deering Center at the intersection of Stevens and Pleasant Avenues in the 1940s (MHS).

Neighborhood Meeting

Feb 1, 2017

Welcome

Lachman Architects & Planners

Deering Center at the intersection of Stevens and Pleasant Avenues in the 2010s

City

Village

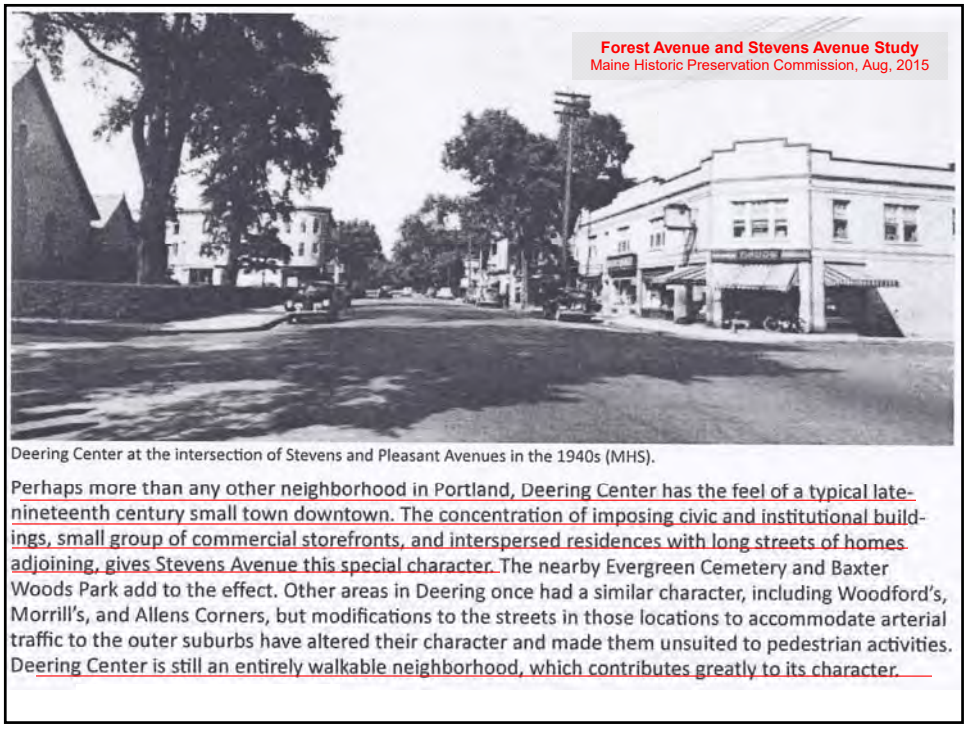
Project

Topics Covered Tonight

- Existing Site
- New Site Concepts
- Relocated Crosswalk
- New Pocket Park
- Improved Safety &Traffic
- Zoning
- Parking
- Stevens Ave Streetscape
- New Residential Units
- New Commercial Space
- Sustainability

Lachman Architects & Planners

Portland Growing:
Not whether, but how.
Press Herald, Oct 2016
Project's Overarching Goal: strengthen the vitality of our neighborhood commercial center
HALF - MILE NEIGHBORHOOD
HALF-MILE NEIGHBORHOOD CENTERS
The Half-Mile Neighborhood concept is based in the notion that you should be able to walk to basic services in your neighborhood. Schools, parks + recreation, shopping and public transportation should be accessible within 2600 feet of where we live, a nine minute walk. The Portland Peninsula offers this lifestyle – we propose to expand its presence throughout Portland by strengthening the vitality of neighborhood commercial centers.
PSA
UNIVERSITY
SCHOOL
GROCERY/MARKET
METRO HUB
TRAIL CIRCULATION
RAIL CIRCULATION
MAIN VEHICULAR CIRCULATION

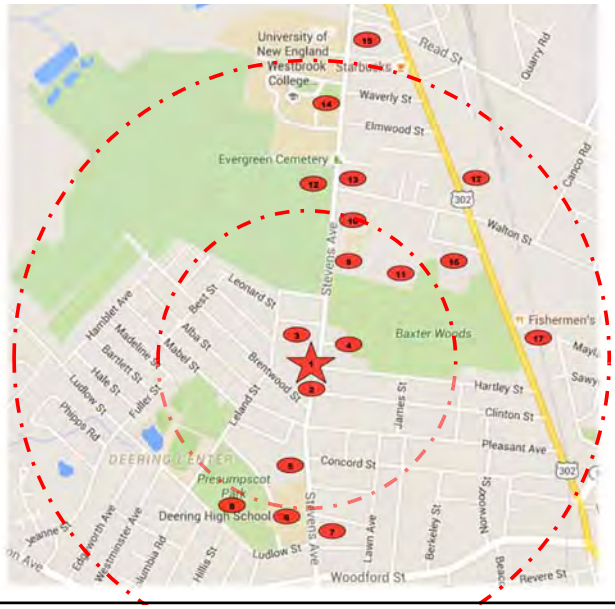

Forest Avenue and Stevens Avenue Study
Maine Historic Preservation Commission, Aug, 2015
Deering Center at the intersection of Stevens and Pleasant Avenues in the 1940s (MHS).
Perhaps more than any other neighborhood in Portland, Deering Center has the feel of a typical late-nineteenth century small town downtown. The concentration of imposing civic and institutional buildings, small group of commercial storefronts, and interspersed residences with long streets of homes adjoining, gives Stevens Avenue this special character. The nearby Evergreen Cemetery and Baxter Woods Park add to the effect. Other areas in Deering once had a similar character, including Woodford's, Morrill's, and Allens Corners, but modifications to the streets in those locations to accommodate arterial traffic to the outer suburbs have altered their character and made them unsuited to pedestrian activities. Deering Center is still an entirely walkable neighborhood, which contributes greatly to its character.

Deering Center Village – *Entirely walkable*

5 min/1/4 mile walk & 10 min/1/2 mile walk

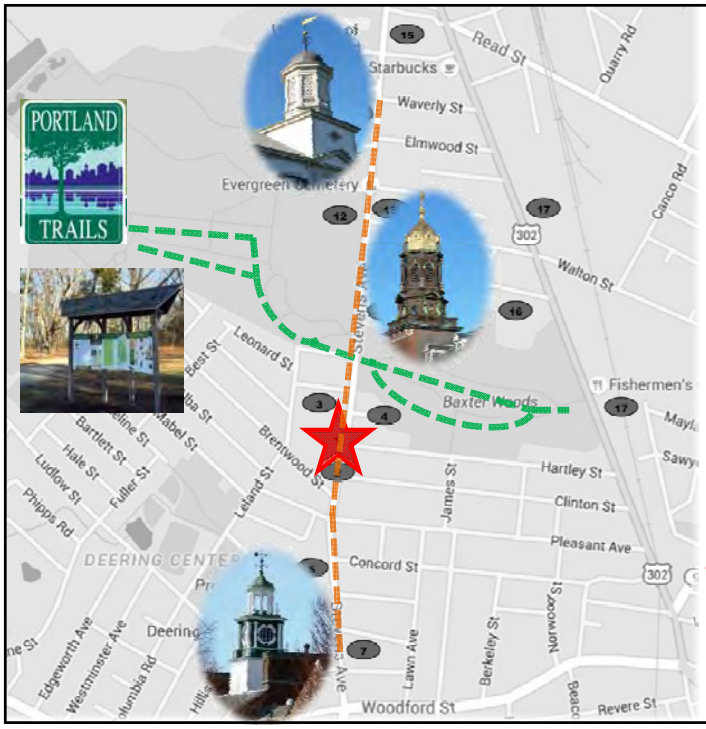
MANY AMENITIES & COMMERCIAL OPPORTUNITIES WITHIN THE 5 MINUTE VILLAGE WALK

1. 502 Deering Center (mixed-use)
2. Businesses & Services in the Village Center (coffee, video, ice cream, market, shoe shop, convenience, hair, nails, tailor, florist, pizza, restaurant, dental, medical, wellness, existing bus connections downtown, and others)
3. Lincoln Middle School (staff)
4. Baxter Woods Trailhead (many runners and dog walkers)
5. Longfellow Elementary School (staff)



MANY AMENITIES & COMMERCIAL OPPORTUNITIES WITHIN THE 10 MINUTE VILLAGE WALK

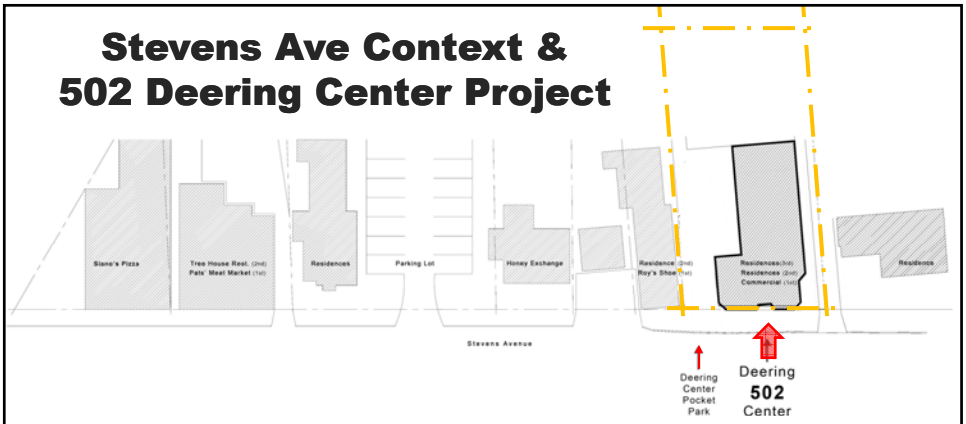
6. Deering High School (staff, students & adult education)
7. Portland Public Library Burbank Branch (staff & patrons)
8. Deering High School Stadium & Playing fields (heavily used)
9. Mother House Former Convent (88 units active seniors)
10. Catherine McAuley School (staff & students)
11. Mother House Proposed New Buildings (163 units active seniors)
12. Evergreen Cemetery (many runners and dog walkers)
13. St Joseph Church & St Brigid School (attenders, staff)
14. University of New England, Portland Campus (41-acres, College of Health Professions, College of Pharmacy, Art Gallery, Maine Women Writers Collection, College of Dental Medicine.)
15. Park Danforth Current (160 units seniors) + Park Danforth Expansion (55 units seniors)
16. Deering Pavilion (200 units seniors)



New Pocket Park *to pause-n-meet*

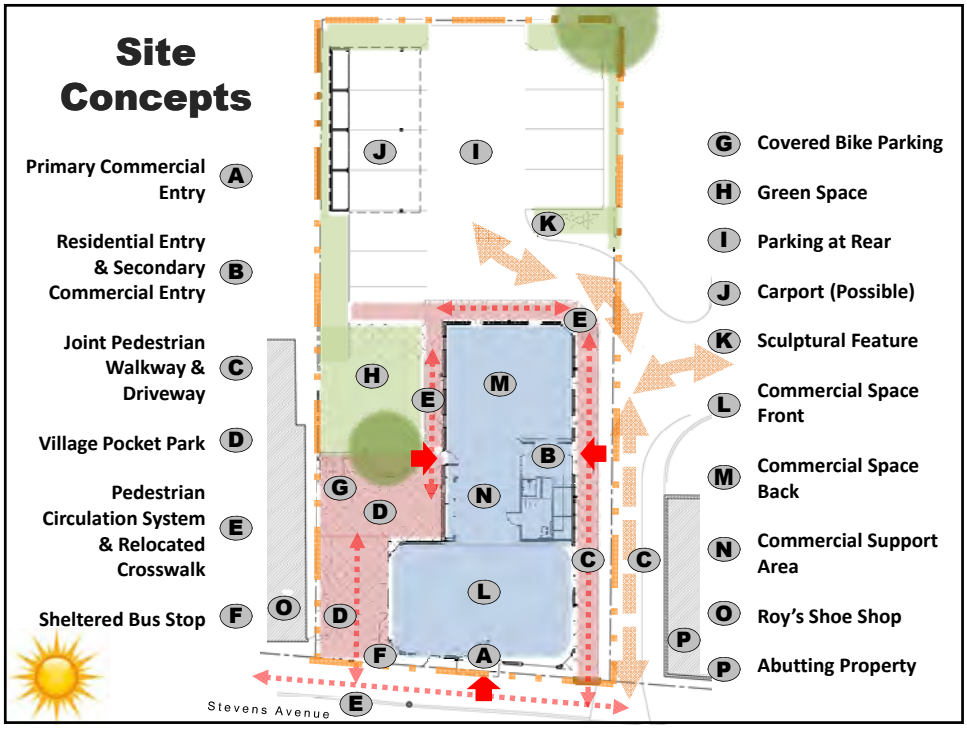
Stevens Ave Context & 502 Deering Center Project

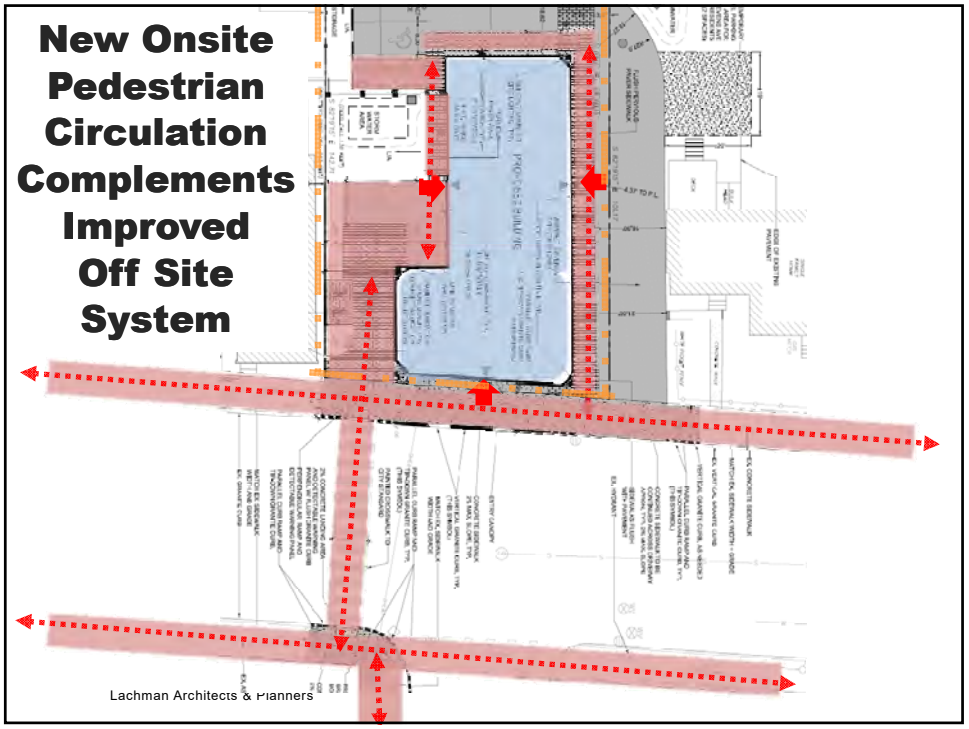
Stevens Ave Context & 502 Deering Center Project

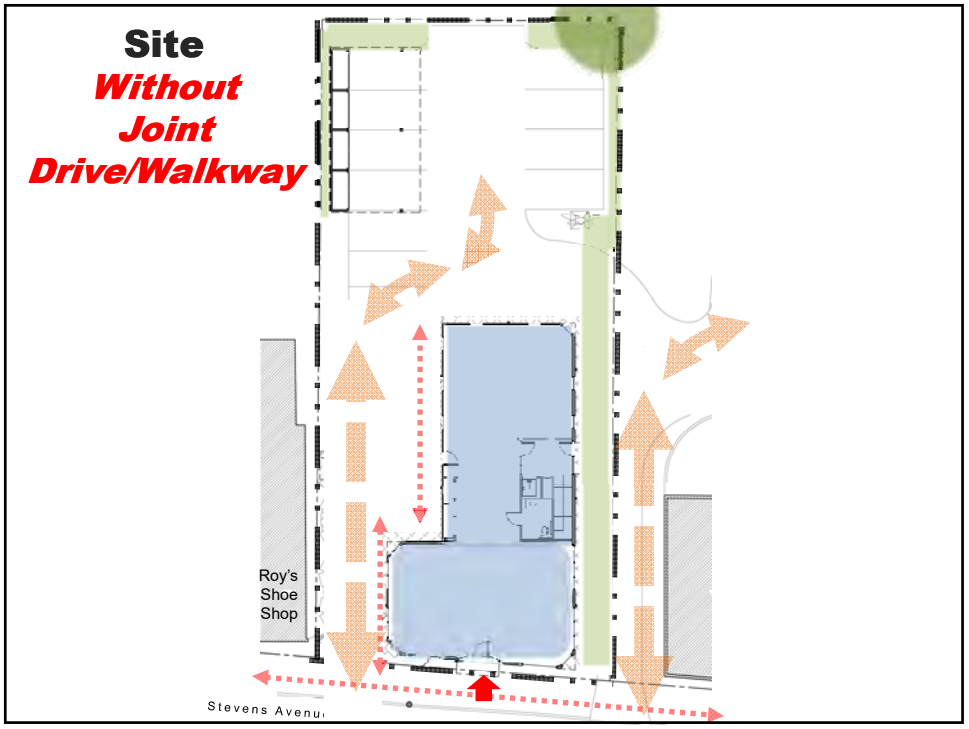


502 Deering Center Site - Existing

Site Concepts




New Onsite Pedestrian Circulation Complements Improved Off Site System
Lachman Architects & Planners


Site
Without
Joint
Drive/Walkway
Roy's
Shoe
Shop
Stevens Avenu

Joint Driveway/ Pedestrian Walkway Creates Many Opportunities

- ✓Allows **Pocket Park**
- ✓**Safety**: Reduces Curb Cuts
- ✓**Safety**: Allows front-out rather than back out
- ✓**Shared Uses** (People/Bikes/ Cars)

Pocket Park Instead of Driveway

Pocket Park Area

It takes a park to make a community, and a community to make a park.

...maybe a concert, poetry slam, street fair, Halloween parade..

Sheltered Bus Stop

Neighborhood Kiosk & Sheltered Bus Stop

Existing Parking & Danger

Improved Safety

Maine Traffic Resources
25 Vine Street Gardiner, ME 04345
(207) 582-5252 FAX (207) 582-1677
mainetrafficresources.com

SUMMARY MEMORANDUM

TO: Mr. Patrick J. Carroll
Principal
Carroll Associates
217 Commercial Street, Suite 200
Portland, ME 04101

RE: Trip Generation and Safety Analyses for Proposed Ne
Apartments at 502 Stevens Avenue in Portland

dated December 22, 2016, the existing southerly
properties will share the existing northerly curb
one, will reduce allowable driveway movements
driveways do not allow a vehicle that has pulled
access Stevens Avenue, the vehicle must back o
eliminates this, with the added parking lot and t

Lachman Architects & Planners

Reduced Curb Cuts

"The reduction in curb cuts from 2 to 1 will reduce allowable driveway movements from 8 to 4.

Improved Safety

The proposed new plan eliminates (back outs), with the added parking lot and turn around space to the rear of the site."

Traffic Impact

Maine Traffic Resources
25 Vine Street Gardiner, ME 04345
(207) 582-5252 FAX (207) 582-1677
mainetrafficresources.com

SUMMARY MEMORANDUM

TO: Mr. Patrick J. Carroll
Principal
Carroll Associates
217 Commercial Street, Suite 200
Portland, ME 04101

RE: Trip Generation and Safety Analyses for Proposed New R
Apartments at 502 Stevens Avenue in Portland

peak hour. Because the existing single-family home
AM and PM peak hours, only 16 AM and 13 PM peal
the site. This minimal level of new traffic would not
impact off-site on traffic operations. Typically, a pro
impact unless it generates in excess of 25 to 35 new l
and retail/office development will generate a maximu
or exiting the development. The number of lane hour
trips are further assigned northbound and southbound on Stevens Avenue. This minimal
level of new traffic will have no impact off-site on traffic operations beyond the site drive.

Commercial Traffic

"This level of new traffic would not be expected to have any significant impact on traffic operations"

Residential Traffic

"This minimal level of new traffic will have no impact on traffic operations"

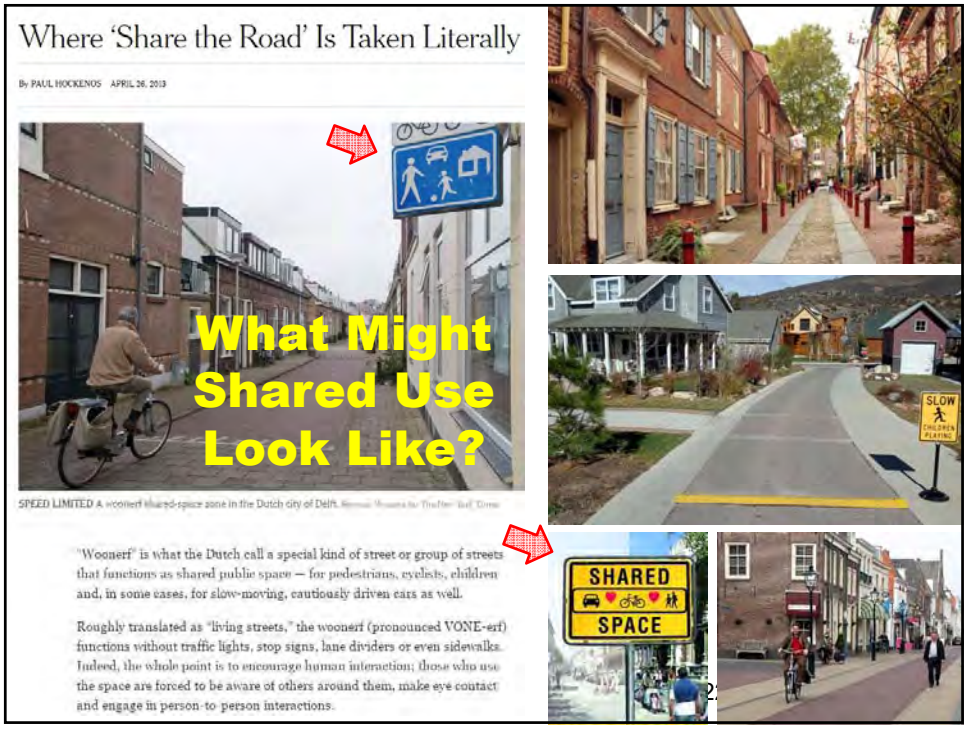
Joint Driveway/ Pedestrian Walkway Creates Many Opportunities

✓Allows **Pocket Park**

✓**Safety**: Reduces Curb Cuts

✓**Safety**: Allows front-out rather than back out

✓**Shared Uses** (People/Bikes/ Cars)



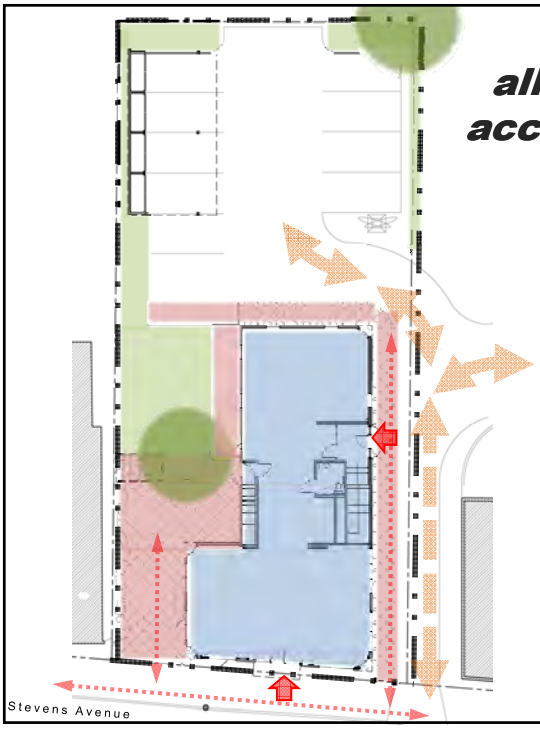
Purpose

…provide appropriate opportunities for the establishment of smallscale ground floor commercial uses to serve a local market, while preserving residential uses and character above the ground floor of structures.

Permitted Uses

Ground Floor	*Upper Floors*
1a. Residential	*a. Residential*
1c. Live/work studios	
2a. Professional, business, offices	
2b. Business services,	
2c. Personal services,	
2e. Retail establishments,	
2g. Studios for artists	
2h. Restaurants	

B1-b Neighborhood Business Zone



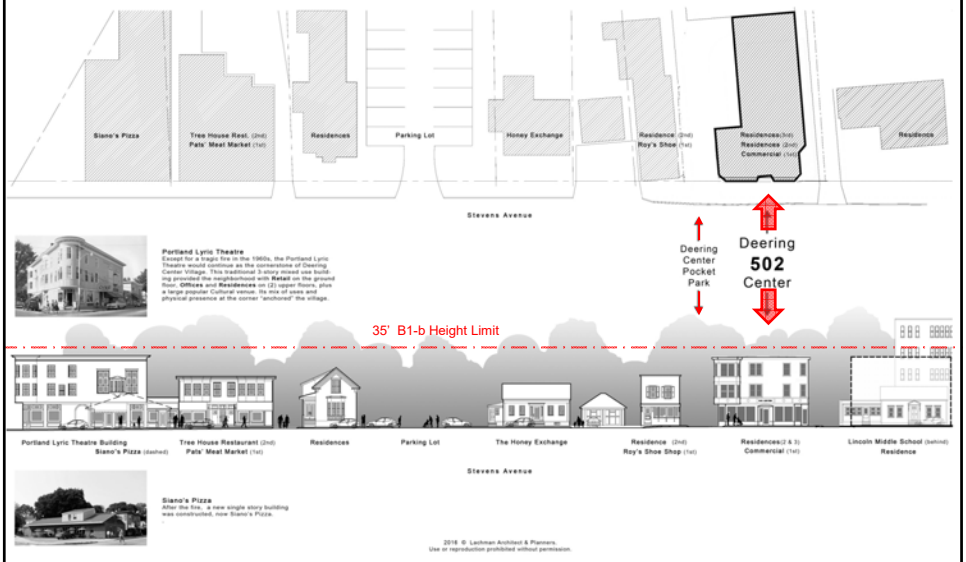
Parking

all required parking accommodated onsite

Residential Use	
2 stalls/DU x 4 units =	8
Retail Use	
0 stall <2000sf =	0
Stalls Required	8
Stalls Provided	10
Balance	**+2**

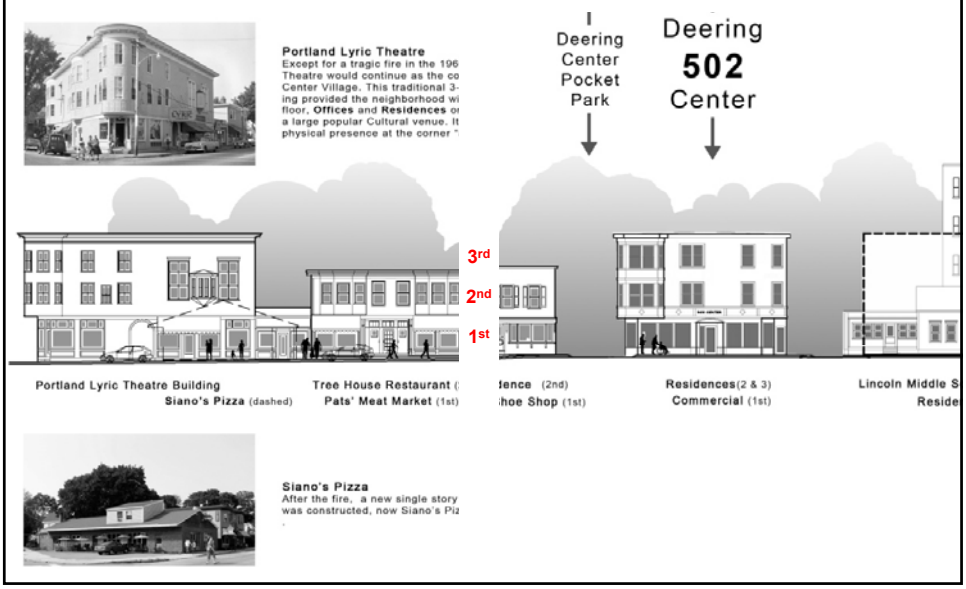
Residential Use	
2 stalls/DU x 4 units =	8
Office Use	
1 stall/400sf/800sf =	2
Retail Use	
0 stall <2000sf =	0
Stalls Required	10
Stalls Provided	10
Balance	**0**

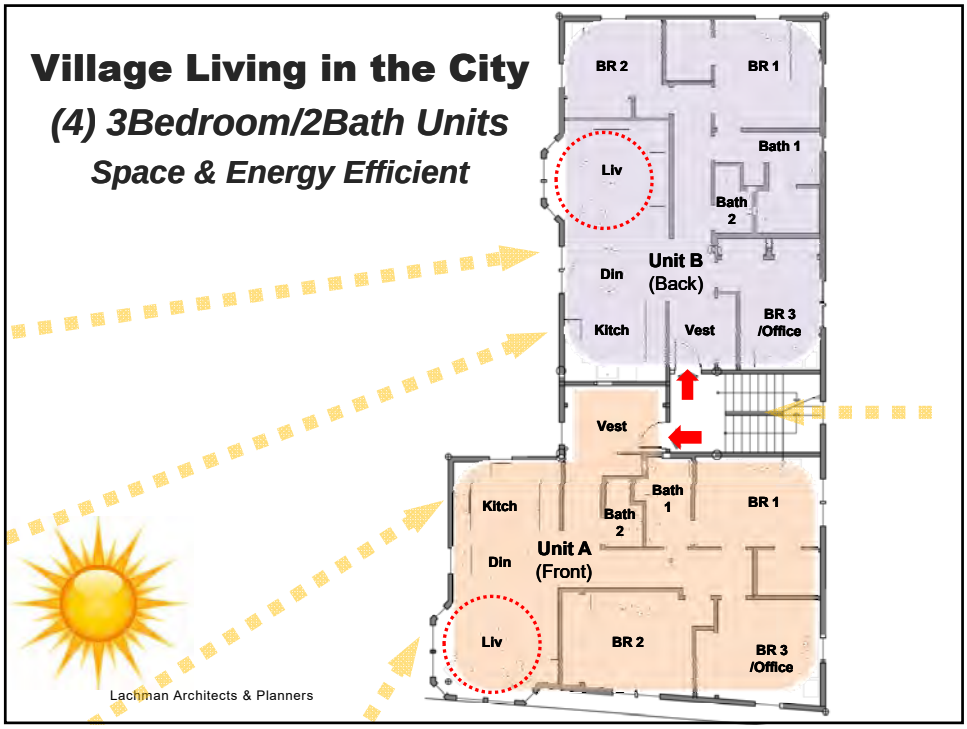
Stevens Streetscape – Bldg Height & Mass



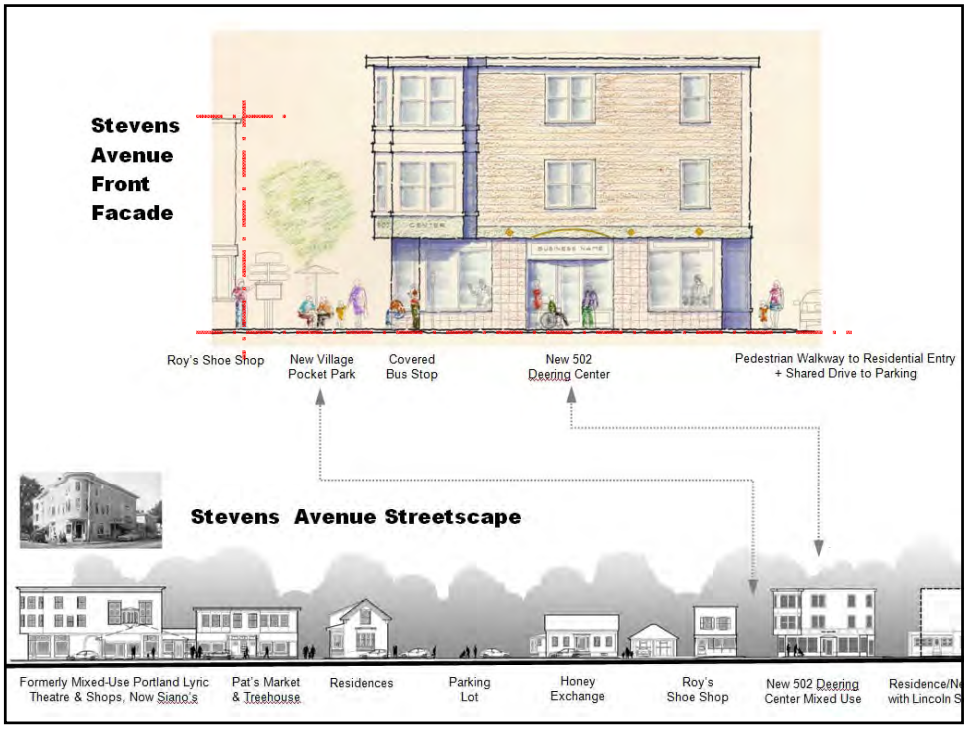
Stevens Streetscape

complement gracefully, rather than make a trendy statement

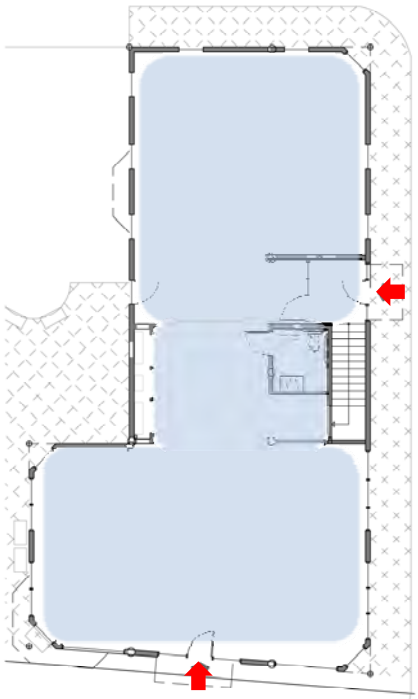



Village Living in the City
(4) 3Bedroom/2Bath Units
Space & Energy Efficient
BR 2
BR 1
Bath 1
Liv
Bath 2
Din
Unit B
(Back)
Kitch
Vest
BR 3 /Office
Vest
Kitch
Bath 2
Bath 1
BR 1
Din
Unit A
(Front)
Liv
BR 2
BR 3 /Office
Lachman Architects & Planners

Existing


Stevens Avenue Front Facade
Roy's Shoe Shop
New Village Pocket Park
Covered Bus Stop
New 502 Deering Center
Pedestrian Walkway to Residential Entry + Shared Drive to Parking
Stevens Avenue Streetscape
Formerly Mixed-Use Portland Lyric Theatre & Shops, Now Siano's
Pat's Market & Treehouse
Residences
Parking Lot
Honey Exchange
Roy's Shoe Shop
New 502 Deering Center Mixed Use
Residence/N with Lincoln S

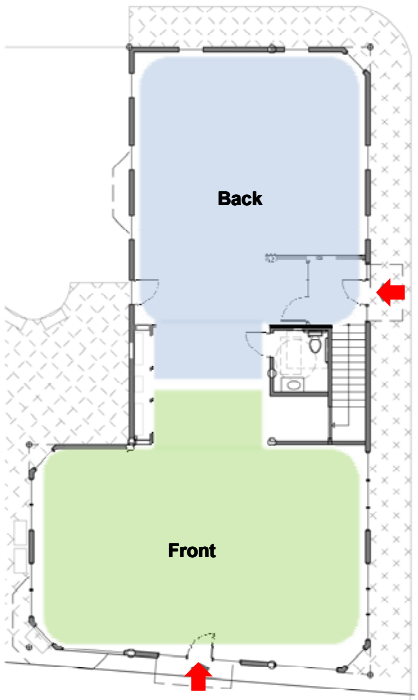
Stevens Avenue Front Facade
Stevens Avenue Streetscape



Commercial Space

flexible to accommodate single or double tenant(s) with neighborhood-based uses

- Retail …..
- Co-working …..
- Classes (kids & adults)
- Food ….
- Artists' Studios …..
- Wellness ….
- Others …..

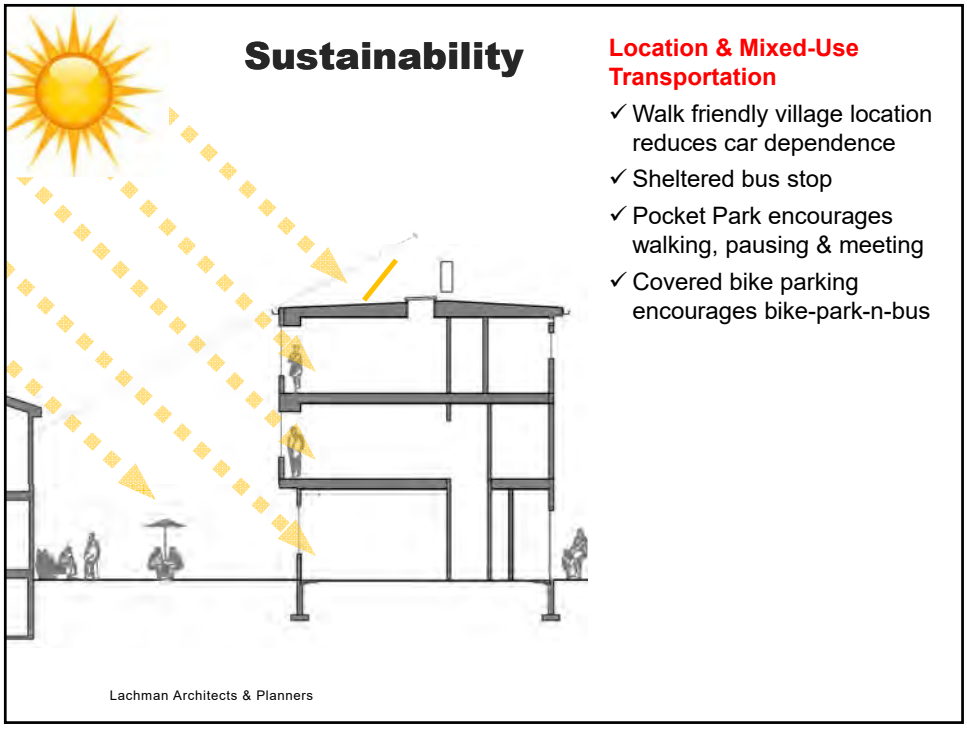


Commercial Space

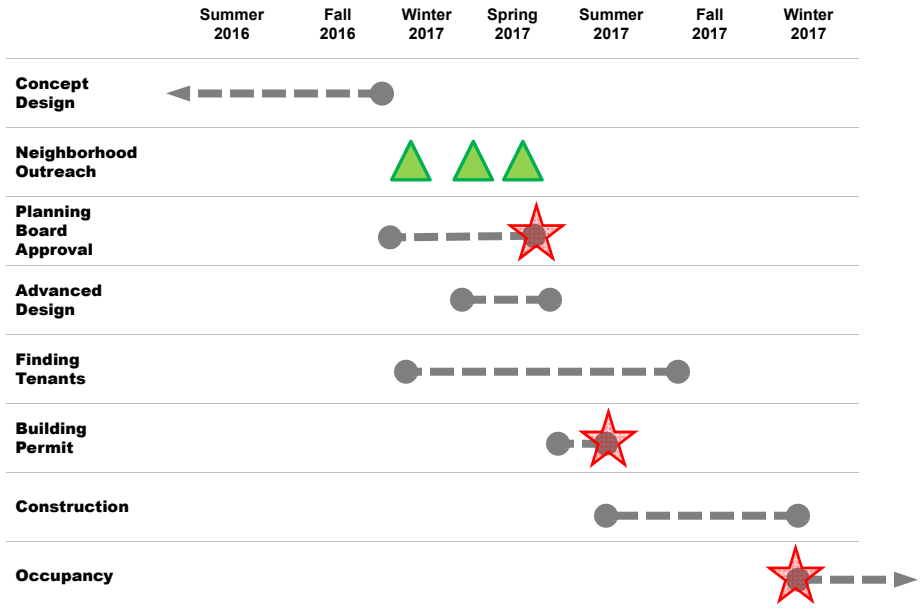
flexible to accommodate single or double tenant(s) with neighborhood-based uses

- Retail …..
- Co-working …..
- Classes (kids & adults)
- Food ….
- Artists' Studios …..
- Wellness ….
- Others …..

What might commercial be?
MAINE FICTION


Sustainability
Location & Mixed-Use Transportation
✓ Walk friendly village location reduces car dependence
✓ Sheltered bus stop
✓ Pocket Park encourages walking, pausing & meeting
✓ Covered bike parking encourages bike-park-n-bus
Lachman Architects & Planners

Overall Schedule & Milestones



502 Deering Center

I am interested as a community member.

Please update me occasionally by email.

Name	Email

Please Sign In

Denis Lachman & Kiya Smith
55 Hamblet Ave, Portland
831-8585
www.lachmanarchitects. com

Highlights & Takeaways

Contribute Vitality: social + economic activity = vitality

Local: of the hood, by the hood, for the hood

Mixed Transportation: covered bus stop + covered bike parking + walk friendly = reduce car dependency

Collaborate: neighbor collaboration + shared driveway = pocket park

New Businesses: 2000 sf new commercial = economic & people activity

New Residents: (4) units = economic & people activity

Pocket Park: it takes a place to create a community and a community to create a place

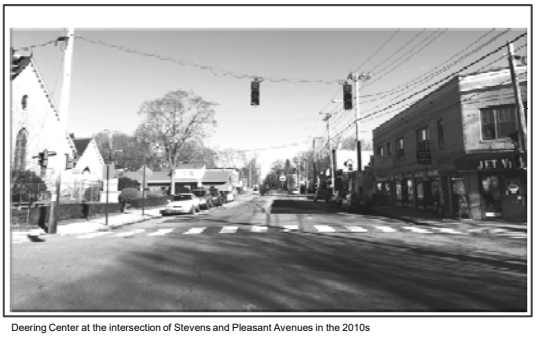
High Standards: good neighborhood fit, set & meet high expectations for new development

Deering Center at the intersection of Stevens and Pleasant Avenues in the 1940s (MHS).

Thank you

The best way to shape our future is to create it.

Lachman Architects & Planners



Deering Center at the intersection of Stevens and Pleasant Avenues in the 2010s

Lachman Architects & Planners
Architecture | Community Planning | Preservation
Building Maine Communities - with community buildings

February 8, 2017

To: **City Staff and Planning Board**

RE: **502 Deering Center (2016-290) – Neighborhood Meeting Minutes**

The Neighborhood Meeting was held February 1 at the Central Square Baptist Church at 7 pm. About 45 neighborhood people attended.

The meeting began with a PowerPoint presentation by Denis Lachman, describing the location in the neighborhood, the new building, off street parking, and the proposed pocket park. It also showed floor plans for commercial first floor and second and third floor apartments. People asked many questions, but as the presentation continued most of the questions were answered.

Comments following the PowerPoint were mostly to get more information about the project, and interest in first floor commercial possibilities. Several questions were asked pertaining to parking and traffic impact. It was explained that the parking is within current zoning requirements and that the traffic report stated that this small development will have no real impact on traffic. On street parking is readily available all around these city streets. People were happy to learn that when the project is complete there will be fewer curb cuts overall and no more backing into the traffic lane.

Other comments were all supportive, including:

- Great model for infill project.
- Appropriate size
- Sensitive design
- The public space use much appreciated.

Meeting adjorned at about 8:15.

Submitted by Kiya Smith, Feb. 3, 2017

58 Fore St. Bldg 30 Portland, Me 04101 207.831.8585 denis@lachmanarchitects.com

REPORT

17-0034

February 10, 2017

Geotechnical Engineering Services

Proposed 502 Deering Center
Mixed Use Building
502 Stevens Avenue
Portland, Maine

Prepared For:
Lachman Architects & Planners
Attention: Denis Lachman
58 Fore Street, Building 300
Portland, Maine 04101

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

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1.1 Scope and Purpose 1
1.2 Proposed Construction 1
2.0 EXPLORATIONS 2
3.0 SUBSURFACE CONDITIONS 2
3.1 Soil and Bedrock 2
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4.4 Foundation Drainage 4
4.5 Floor Slabs 4
4.6 Entrance Slabs 5
4.7 Backfill and Compaction 5
4.8 Design Review and Construction Testing 6
5.0 CLOSURE 7

Attachment A	Limitations
Sheet 1	Exploration Location Plan
Sheets 2 & 3	Test Pit Logs
Sheet 4	Key to Notes and Symbols used on Logs

17-0034

February 10, 2017

Lachman Architects & Planners
Attention: Denis Lachman
58 Fore Street, Building 300
Portland, ME 04101

Subject: Geotechnical Engineering Services
Proposed 502 Deering Center Mixed Use Building
502 Stevens Avenue
Portland, Maine

Dear Denis,

In accordance with our Agreement, dated January 3, 2017, we have observed test pit explorations and made a bearing capacity assessment of the subsurface findings for the subject project. The contents of this report are subject to the limitations set forth in Attachment A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information in order to develop geotechnical recommendations for foundations and earthwork associated with the proposed building construction. Our scope of services included observation of test pit explorations, an assessment of allowable soil bearing capacity, and preparation of this report.

1.2 Proposed Construction

The site is located at 502 Stevens Avenue in the Deering Center area of Portland. The site is relatively flat and level and is currently occupied by a single story residential building with partial basement. We understand development plans call for demolition of

the existing building and site improvements for construction of a three-story mixed commercial and residential building with associated paved areas. We understand the first floor elevation will be within one foot of Steven Avenue and the building may have a full basement under the front portion. Proposed and existing site features are shown on the "Exploration Location Plan" attached as Sheet 1.

2.0 EXPLORATIONS

Four test pit explorations (TP-1 through TP-4) were made on the site on January 17, 2017. The explorations were made by Boulanger's Earthworks & Property Maintenance working under subcontract to others. A plan showing the approximate exploration locations is attached as Sheet 1. Logs of the test pits are attached as Sheets 2 and 3. A key to the notes and symbols used on the logs is attached as Sheet 4. It should be noted a planned fifth test pit along Stevens Avenue was not excavated due to conflicts with buried utilities.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

Test pits TP-1 through TP-4 encountered a soil profile consisting of about 6 inches of topsoil fill overlying about 1 foot of relic topsoil overlying a native deposit of sand with some silt and occasional cobbles overlying refusal surfaces (bedrock) at depths of 5 to 8 feet.

3.2 Groundwater

Groundwater was encountered at depths of 5 to 7 feet in the test pit explorations and is likely perched on top of shallow bedrock.

3.3 Frost and Seismic

The 100-year Air Freezing Index for the Portland, Maine area is about 1,407-Fahrenheit degree-days, which corresponds to a frost penetration depth on the order of 4.5 feet. Based on the subsurface findings, we interpret the site soils to correspond to Seismic Soil Site Class C according to 2009 IBC.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings and our understanding of the proposed construction, spread footing foundations and on-grade floor slabs bearing on properly prepared subgrades appear feasible from a geotechnical standpoint. The principle geotechnical considerations are:

- The topsoil fill and relic topsoil encountered to depths of up to 1.5 feet below the ground surface must be removed and replaced with compacted granular borrow beneath the proposed building footprint. Likewise, existing foundations, utilities and uncontrolled fills must be removed within the building footprint and backfilled with compacted Granular Borrow.

- As discussed, bedrock was encountered at depths of 5 to 8 feet. If a basement is constructed, we anticipate bedrock removal by blasting or hoe-ramming would be needed. Additionally, groundwater was perched on top of the bedrock and would inundate a basement excavation; as such a basement would need to be waterproofed and a pumped sump with battery back-up would be needed to mitigate groundwater. We understand blasting and waterproofing are not desired and thus do not discuss a basement further in this report.

- The native sand may be reused as compacted Granular Borrow. Imported Underdrain Sand and Structural Fill will be needed for building construction

4.2 Site and Subgrade Preparation

The building site should be stripped of prior structures, foundations, topsoil, uncontrolled fill, relic topsoil and utilities to expose native undisturbed non-organic soils and then backfilled with compacted Granular Borrow up to the bottom of slab base material.

Based on the subsurface findings and our understanding of the proposed construction, we anticipate that footings will be founded on native sandy soils. We recommend that excavation to subgrade be completed with a smooth-edged bucket and that footing subgrades be recompacted with a vibratory plate compactor prior to installing formwork. We recommend that footing subgrades be protected with 3-inches of Crushed Stone.

The crushed stone pad will provide a working mat for foundation construction and a media for temporary and long-term dewatering.

Groundwater seepage may be encountered during excavation work, particularly during periods of precipitation. Sump and pump dewatering techniques should be adequate to control groundwater within foundation excavations. Excavations must be properly sloped or shored according to OSHA Regulations.

4.3 Spread Footings

Based on the subsurface findings and our understanding of the proposed construction, the proposed building may be supported on spread footing foundations. For footings bearing on properly prepared subgrades, we offer the following geotechnical parameters for design consideration:

Geotechnical Parameters for Spread Footings and Foundation Walls	
Design Frost Depth	4.5 feet
Net Allowable Soil Bearing Pressure	2.0 ksf
Base Friction Factor	0.35
At-Rest Lateral Earth Pressure	0.65 pcf (equivalent fluid)
Seismic Soil Site Class (IBC 2009)	C

We anticipate post-construction settlement may approach 1-inch total and ½ inch differential.

4.4 Foundation Drainage

We recommend that perimeter underdrains be provided around the outside edge of perimeter footings at footing subgrade. We recommend a 4-inch diameter slotted foundation drain pipe enveloped in Underdrain Sand. The underdrain pipe must have a positive gravity outlet.

4.5 Floor Slabs

On-grade floor slabs in heated areas may be designed using a subgrade reaction modulus of 120 pci provided the slab is underlain by at least 12-inches of compacted Structural Fill (on-grade) placed over properly prepared subgrades. The structural

engineer or concrete consultant must design steel reinforcing and joint spacing appropriate to slab thickness and function.

We recommend a sub-slab vapor retarder particularly in areas of the building where the concrete slab will be covered with an impermeable surface treatment or floor covering that may be sensitive to moisture vapors. The vapor retarder must have a permeance that is less than the floor cover or surface treatment that is applied to the slab. The vapor retarder must have sufficient durability to withstand direct contact with the sub-slab base material and construction activity. The vapor retarder material should be placed according to the manufacturer's recommended method, including the taping and lapping of all joints and wall connections. The architect and/or flooring consultant should select the vapor retarder products compatible with flooring and adhesive materials.

The floor slab should be appropriately cured using moisture retention methods after casting. Typical floor slab curing methods should be used for at least 7 days. The architect or flooring consultant should assign curing methods consistent with current applicable American Concrete Institute (ACI) procedures with consideration of curing method compatibility to proposed surface treatments, flooring and adhesive materials.

4.6 Entrance Slabs

Entrance slabs to the building must be designed to reduce the effects of differential frost action between adjacent pavement and doorways. We recommend that clean, non-frost susceptible sand and gravel meeting the requirements of Structural Fill be provided to a depth of at least 4.5 feet below the top of entrance thresholds. This thickness of Structural Fill should extend the full width of the entrance thresholds and at least 4.5 feet outward; thereafter transitioning up to the bottom of the adjacent pavement subbase gravel at a 3H:1V or flatter slope.

4.7 Backfill and Compaction

Based on the subsurface findings, the native sands may be reused as compacted Granular Borrow. The existing topsoil and relic topsoil may be blended for reuse as loam in landscape areas. We recommend the following materials for building areas:

Granular Borrow: Fill to raise grades in building areas and backfill for utility trenches should be sand or silty sand meeting the requirements of 2014 MaineDOT Standard Specification 703.19 Granular Borrow.

Structural Fill: Backfill for foundations and base material below on-grade floor slabs should be a clean, non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below.

Structural Fill	
Sieve Size	**Percent Finer by Weight**
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
#40	0 to 30
#200	0 to 5

Underdrain Sand: Clean, free-draining underdrain sand used around perimeter footing drains should meet the requirements for MaineDOT Standard Specification 703.22 Type B "Underdrain Aggregate".

Placement and Compaction: Fill and backfill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should generally not exceed 12 inches. We recommend that fill and backfill in building and paved areas be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557.

4.8 Design Review and Construction Testing

S. W. Cole Engineering, Inc. (S.W.COLE) should be retained to review the construction documents prior to bidding to determine that our foundation and earthwork recommendations have been properly interpreted and implemented.

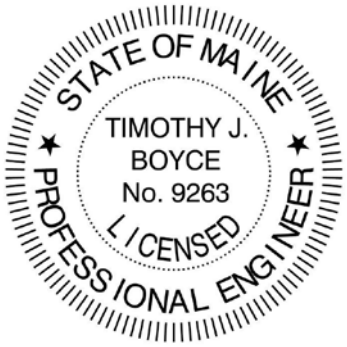
A soils and concrete testing program should also be implemented during construction to observe compliance with the design concepts, plans, and specifications. S.W.COLE should be engaged to observe subgrade soils for footings and is available to provide field and laboratory testing services for soil, concrete, steel and asphalt construction materials.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of this project.

Sincerely,

S. W. COLE ENGINEERING, INC.



Timothy J. Boyce, P. E.
Senior Geotechnical Engineer

TJB:rec

Attachment A
Limitations

This report has been prepared for the exclusive use of Lachman Architects & Planners for specific application to the proposed 502 Deering Center Mixed Use Building at 502 Stevens Avenue in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct the work in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

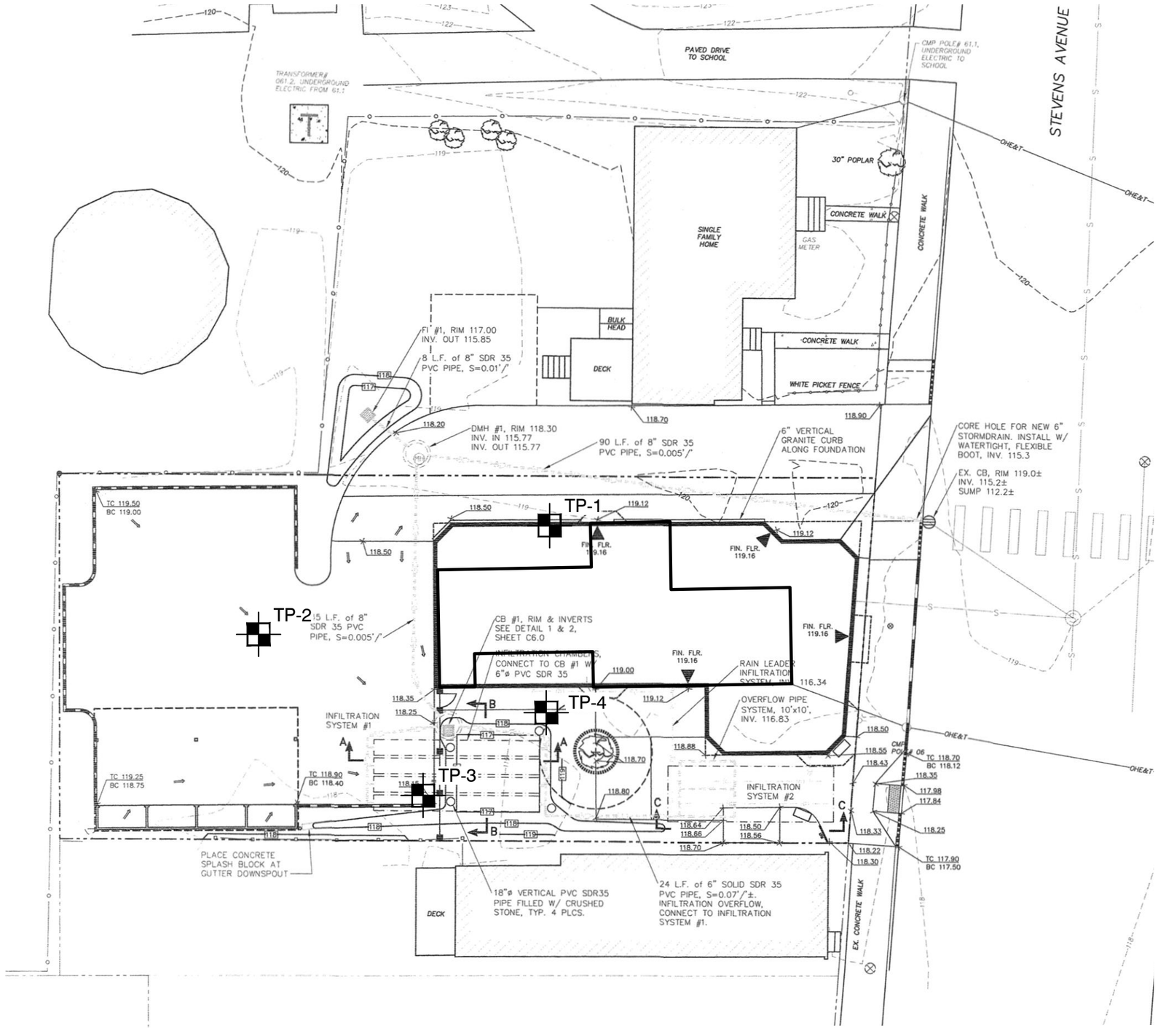
The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of work has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.



LEGEND:

APPROXIMATE TEST PIT LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=10' SCALE PLAN OF THE SITE ENTITLED "GRADING AND STORMWATER MANAGEMENT PLAN," PREPARED BY PINKHAM & GREER CIVIL ENGINEERS, DATED 12/22/2016.
2. THE TEST PITS WERE LOCATED IN THE FIELD BY MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 20 40 Feet

S.W.COLE ENGINEERING, INC.

LACHMAN ARCHITECTS & PLANNERS

EXPLORATION LOCATION PLAN

PROPOSED MIXED USE BUILDING
STEVENS AVENUE
PORTLAND, MAINE

Job No.:	17-0034	Scale:	1" =20'
Date :	02/10/2017	Sheet:	1

R:\2017\17-0034\CAD\Drawings\17-0034 ELP.dwg, 2/10/2017 10:31:18 AM, 1:1, CEM, S. W. Cole Engineering, Inc.

TEST PIT LOGS

S.W.COLE ENGINEERING, INC.

CLIENT: Lachman Architects & Planners
PROJECT: Proposed 502 Deering Mixed Use Building
PROJECT LOCATION: 502 Stevens Avenue, Portland, Maine

PROJECT NO. 17-0034
LOGGED BY: Tim Boyce
CONTRACTOR: Boulanger's Earthwork
EQUIPMENT:

TEST PIT TP- 1

DATE: 1/17/17 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION:** _____ **COMPLETION DEPTH:** 5.8
WATER LEVEL DEPTHS (ft): ▽ 5.60

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Brown sandy LOAM (FILL)					
		0.5 Dark brown sandy LOAM (RELIC TOPSOIL)					
		1.5 Oxide-stained SAND some silt					
		2.5 Tan SAND some silt with cobbles					
5			▽ 5.6				
		5.8 Refusal @ 5.8' (bedrock)					

TEST PIT TP- 2

DATE: 1/17/17 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION:** _____ **COMPLETION DEPTH:** 5.0
WATER LEVEL DEPTHS (ft): No free water observed

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Brown sandy LOAM (FILL)					
		0.5 Dark brown sandy LOAM (RELIC TOPSOIL)					
		1.5 Oxide-stained SAND some silt					
		2.5 Tan SAND some silt with cobbles					
5							
		5.0 Refusal @ 5.0' (bedrock)					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

S.W.COLE ENGINEERING, INC.

TEST PIT LOGS

CLIENT: Lachman Architects & Planners
PROJECT: Proposed 502 Deering Mixed Use Building
PROJECT LOCATION: 502 Stevens Avenue, Portland, Maine

PROJECT NO. 17-0034
LOGGED BY: Tim Boyce
CONTRACTOR: Boulanger's Earthwork
EQUIPMENT:

TEST PIT TP- 3

DATE: 1/17/17 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION:** _____ **COMPLETION DEPTH:** 7.2
WATER LEVEL DEPTHS (ft):

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Brown sandy LOAM (FILL)					
		0.5 Dark brown sandy LOAM (RELIC TOPSOIL)					
		1.5 Oxide-stained SAND some silt					
		2.5 Tan SAND some silt with cobbles					
5							
		7.2 Refusal @ 7.2' (bedrock)					

TEST PIT TP- 4

DATE: 1/17/17 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION:** _____ **COMPLETION DEPTH:** 8.0
WATER LEVEL DEPTHS (ft): ▽ 6.00

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Brown sandy LOAM (FILL)					
		0.5 Dark brown sandy LOAM (RELIC TOPSOIL)					
		1.5 Oxide-stained SAND some silt					
		2.5 Tan SAND some silt with cobbles					
5			▽ 6				
		8.0 Refusal @ 7' to 8' (sloping bedrock)					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

KEY TO NOTES & SYMBOLS
Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

Lachman Architects & Planners
Architecture | Community Planning | Preservation
Building Maine Communities - with community buildings

February 3, 2017

To: **City Staff and Planning Board**

RE: **Responses to: Staff Review Comments for 502 Deering Center (2016-290) – Planning Board Review**

Thank you for staff review comments. Please find written responses below, followed by slides that graphically address the topics. These slides are excerpted from a comprehensive PowerPoint presented to the Deering Center Neighborhood Association in November, 2015, presented at a Neighborhood Meeting on February 1, 2017, and will be presented to the Planning Board at the Workshop on February 14.

IV. Site Design Standards

A. Site Plan Review Comments (Matthew Grooms)

2. The applicant shall clearly indicate the proposed commercial use locations and associated dimensions on Sheet A1.1 First Floor Plan with Site.

Response: Please see Sheet A1.1 First Floor Plan with Site for commercial use locations and associated dimensions.

3. On Sheet C.2. Site Plan; provide the location and dimension of all proposed exterior mechanical equipment.

4. On Sheet C.2. Site Plan, if appropriate, provide a note stating that all exterior mechanical equipment will be screened from public streets and adjacent sites by structure walls, evergreen landscaping, fencing, masonry walls or a combination thereof.

Response: No mechanical equipment is located at the ground. Six exterior air-source heat pumps (approx 3'h x 4' w) are on the roof, located along the centerline where they are not visible from public ROW or adjacent properties. A conversation with Matt Grooms confirmed that screening is not required. Please see attached slide #11 Rooftop Mechanical Not Visible.

6. Per Section 14-526 (d), could the applicant provide information describing how rooftop snow and ice loading is being addressed, specifically along Steven's Avenue.

Response: The roof is flat with a gutter the entire perimeter. Because the roof is flat, snow or ice will not slide off and therefore not fall onto the Stevens Ave sidewalk or walkway. Because the perimeter is guttered, roof rain water will be collected, managed and will not drain onto the Stevens Ave sidewalk or walkway.

9. The applicant shall provide elevation views of the proposed building including corner grades and building height information so that building height may be calculated.

Response: The site is flat and the ground floor is aligned with the sidewalk to make the 1st floor universally accessible. The ground floor is 0'=0" (elevation 119.16), the 2nd floor is 11'-8", the 3rd floor is 21'-7" and the roof is approximately 32'-2", which is below the B1-b height limit of 35'-0". Please see uploaded Drawings A2.0 Front Elevation & Building Section, A2.1 Front Elevation, A2.2 Side South Elevation, A2.3 Side North Elevation, and A2.4 Rear Elevation.

Sign Program – Per conversation with Matt Grooms, a Sign Program is provided, showing locations of signs, letter sizes and sign area. Please see attached slide #12 Sign Program.

C. Design Review (Caitlin Cameron)

4. Standard (1) d. Windows – Met – Ground floor street frontage has an adequate amount of fenestration and at a level that provides some views into the building while maintaining some privacy for the users. Fenestration should meet the minimum transparency standard of .7 VT – what is the proposed VT of storefront?

Response: The goal for ground floor fenestration is to maximize transparency & views in and out, and will meet the minimum transparency standard of .7 VT.

5. Standard (1) e. Façade Character – Met – Street-facing facades are oriented to and/or adjacent to public sidewalk. Façade design implies three retail spaces instead of one – reconsider placement of storefront to appropriately reflect the uses inside. (6.) Why is the service door to basement stair angled?

Response: There is a single unified commercial space fronting Stevens Ave, and the façade/storefront reflects this with a single primary entry. No other entries front Stevens Ave. There is no basement so no basement door. Please see attached slides #1 Site Concepts and #9 Stevens Ave Façade Organization.

6. Standard (1) f. Building Design – Not Met –What is material/profile of cornice? – currently depicted as a blunt profile.

Response to Cornice: Please see attached slide #10 Typical Façade Features & Materials

Building design is treated as though parcel is a corner lot – this is not an appropriate approach for a mid-block building. The chamfered corners are unnecessary, especially without corner condition and without entrances at chamfer. Placement of bays should be front façade-oriented, not corner oriented (similar to façade design of Pat's Market building) and façade composition could be more symmetrical as a result.

Response to Bays, Corners & Symmetries – Please see #1 thru #10.

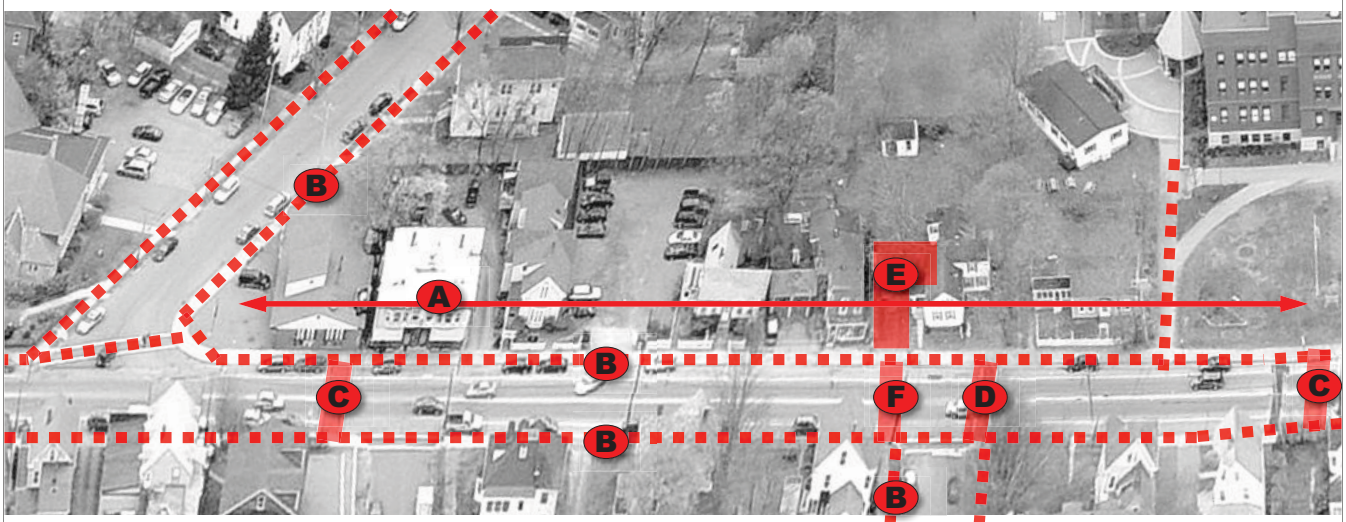
7. Standard (1) g. Building Materials – More information needed – materials should be called out on elevation drawings. Tile or masonry is not contextual choices on this streetscape – clapboard should be the primary material for whole building. What is the proposed material for trim, bay panels, cornice?

Response to Materials on Elevations: Please see attached slide #10 Typical Façade Features & Materials.

1 Site Concepts

- A — Primary Commercial Entry
- B — Residential Entry & Secondary Commercial Entry
- C — Pedestrian Walkway & Driveway Shared with Abutter
- D — Village Pocket Park
- E — Pedestrian Circulation System & Relocated Crosswalk
- F — Sheltered Bus Stop
- G — Covered Bike Parking
- H — Green Space
- I — Parking at Rear
- J — Carport (Possible)
- K — Sculptural Feature
- L — Commercial Space Front
- M — Commercial Space Back
- N — Commercial Support Area
- O — Roy's Shoe Shop
- P — Abutting Property

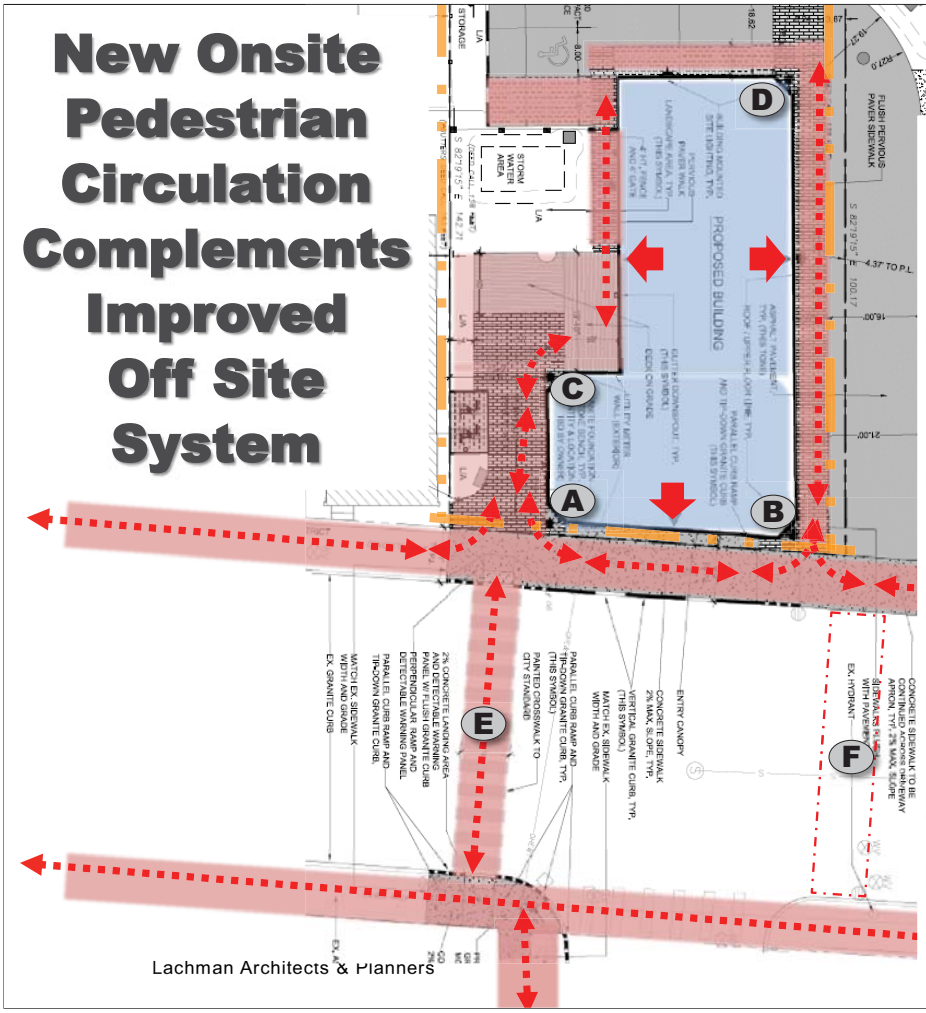
2 Pocket Park Provides Mid-Block Public Space



- A — **Existing Super Block** with no public space
- B — **Exist Sidewalk Pedestrian Circulation System**
- C — **Existing Crosswalk Remains**
- D — **Existing Crosswalk Removed**
- E — **New Pocket Park** creates needed & welcome mid-block public space.
- F — **New Crosswalk** aligns with new Pocket Park to reinforce it as a featured mid-block public space.

New Onsite Pedestrian Circulation Complements Improved Off Site System

3



Site is purposefully designed to make pedestrian circulation primary, inviting, convenient, attractive & safe.

A **Eased Corner at Front** provides inviting transition from Sidewalk into new Pocket Park, and communicates *"Please enter, you are welcome here".*

B **Eased Corner at Front** provides inviting transition from Sidewalk to Walkway & Residential entry, and communicates *"Please enter, you are welcome here".*

C **Eased Corner at Park** provides inviting transition and safe visibility around corner.

D **Eased Corner at Rear** provides safety for pedestrians on walkway at driveway curve.

E **New Crosswalk** aligns with new Pocket Park to reinforce it as a featured mid-block public space.

F **Existing Unsafe Crosswalk Removed**

Lachman Architects & Planners

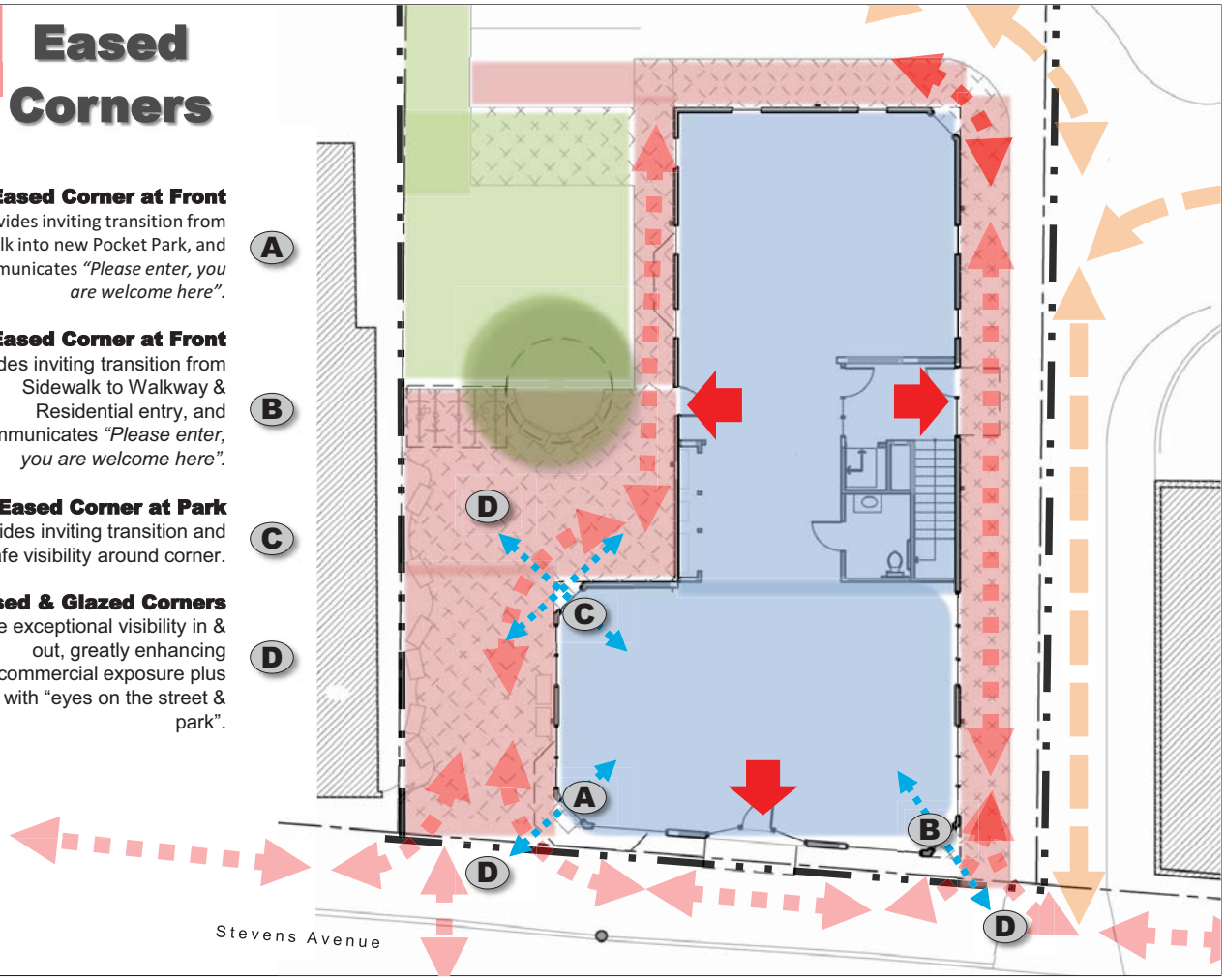
4 Eased Corners

Eased Corner at Front provides inviting transition from Sidewalk into new Pocket Park, and communicates *"Please enter, you are welcome here".*

Eased Corner at Front provides inviting transition from Sidewalk to Walkway & Residential entry, and communicates *"Please enter, you are welcome here".*

Eased Corner at Park provides inviting transition and safe visibility around corner.

Eased & Glazed Corners provide exceptional visibility in & out, greatly enhancing commercial exposure plus safety with "eyes on the street & park".



Projecting Bay, Eased Corners & Park are Purposefully Integrated

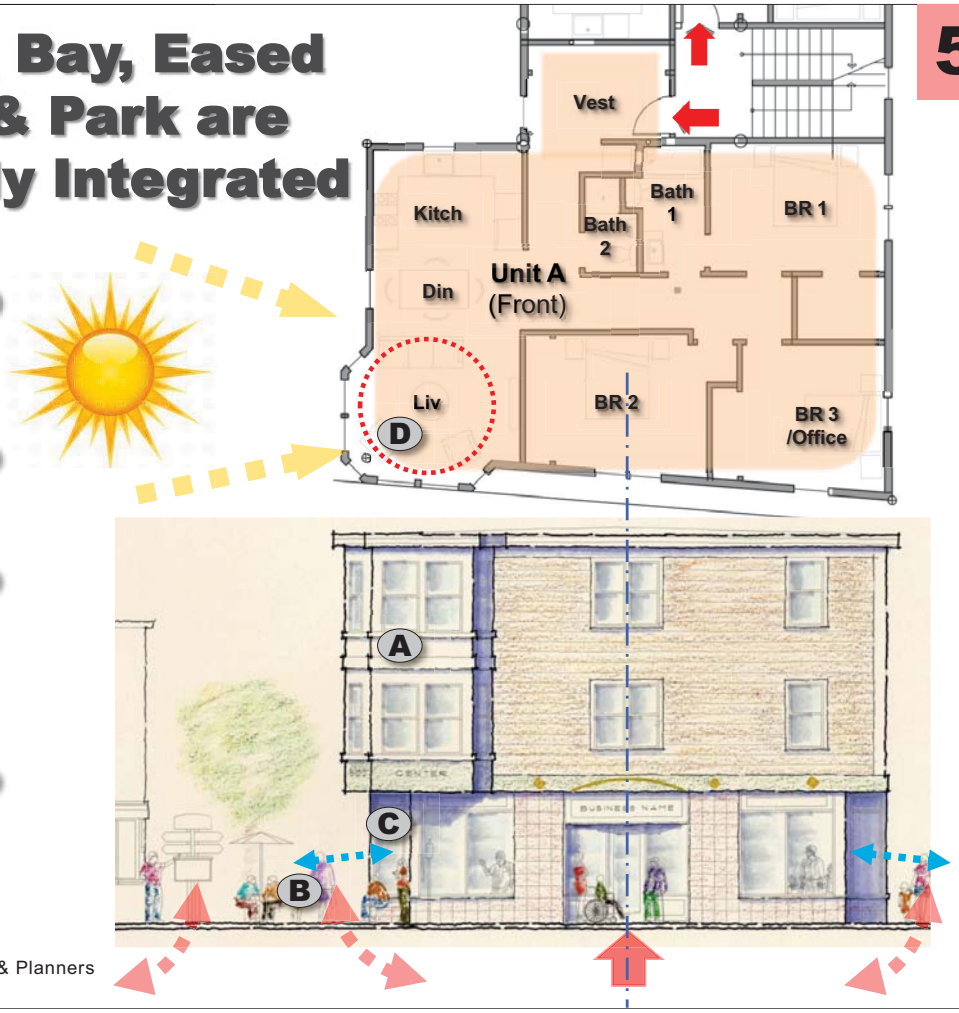
5

Projecting Bay is a significant visual feature that purposefully indentifies new Pocket Park from street.

Eased Corners With Glazing Provides Exceptional Visibility

Design Integration of eased corners (at ground level) + projecting bay (at 2nd floor) provides ideal location to shelter new bench for existing bus stop.

Projecting Bay is also a **interior feature** that makes the Living Room a unique space with abundant natural light, and a "beacon" at night.



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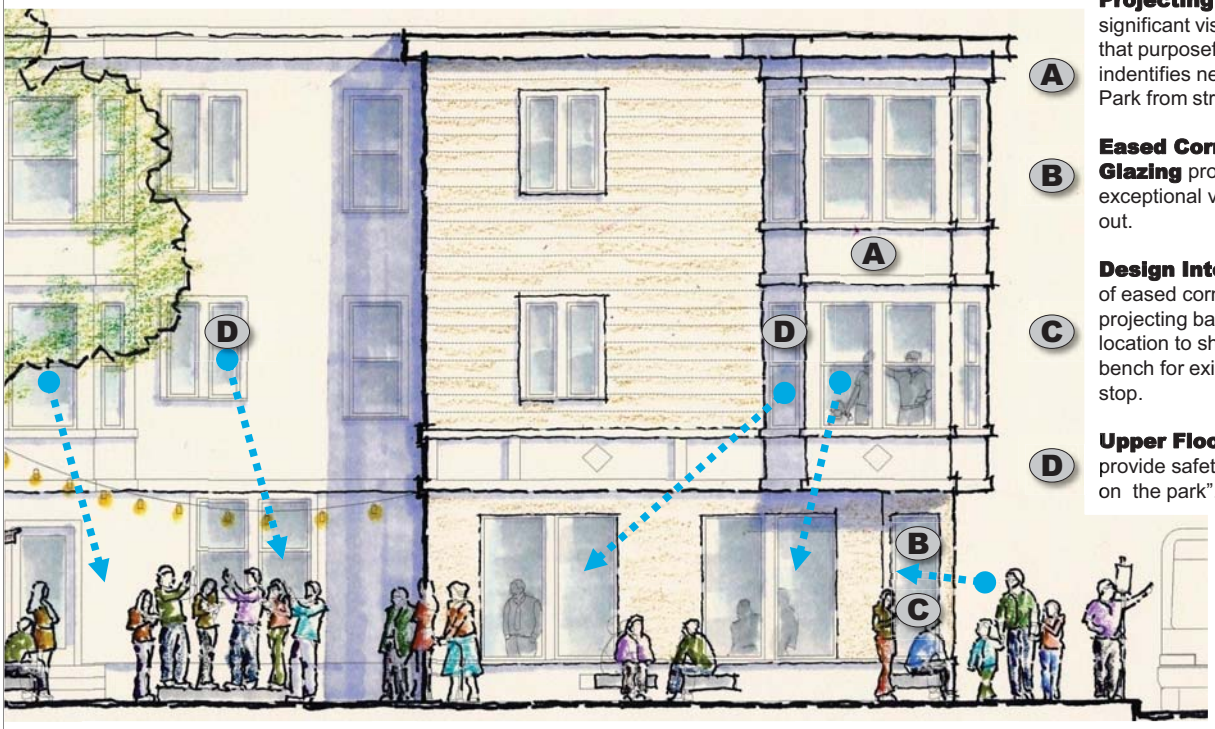
6

New Pocket Park & Features

It takes a park to make a community, and a community to make a park.

...maybe a concert, poetry slam, street fair, Halloween parade..



Projecting Bay is a significant visual feature that purposefully indentifies new Pocket Park from street.

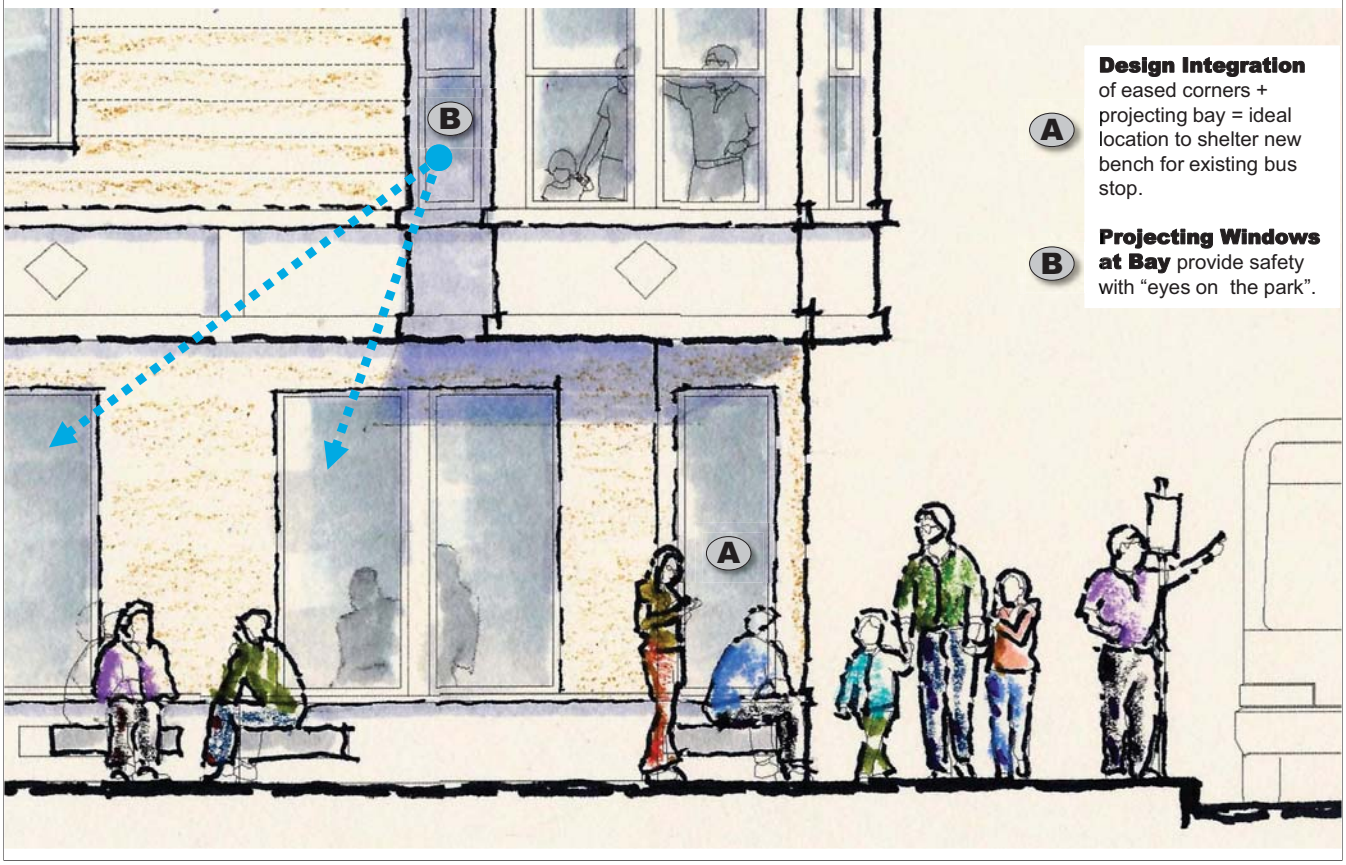
Eased Corners With Glazing provides exceptional visibility in & out.

Design Integration of eased corners + projecting bay = ideal location to shelter new bench for existing bus stop.

Upper Floor Wdos provide safety with "eyes on the park".

Performance Space | Sit-n-Meet | Sheltered Bus Stop | Sidewalk | Stevens Ave

7 Eased Corner, Bay & Sheltered Bus Stop



Design Integration of eased corners + projecting bay = ideal location to shelter new bench for existing bus stop.

Projecting Windows at Bay provide safety with “eyes on the park”.

8 Stevens Streetscape – Bldg Height & Mass

Portland Lyric Theatre
Except for a tragic fire in the 1960s, the Portland Lyric Theatre would continue as the cornerstone of Deering Center Village. This traditional 3-story mixed use building provided the neighborhood with **Retail** on the ground floor, **Offices** and **Residences** on (2) upper floors, plus a large popular Cultural venue. Its mix of uses and physical presence at the corner “anchored” the village.

Siano's Pizza
After the fire, a new single story building was constructed, now Siano's Pizza.

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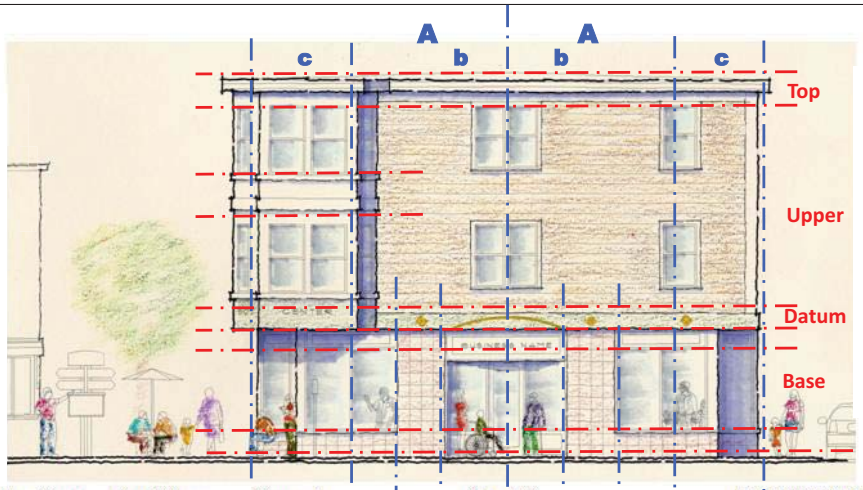
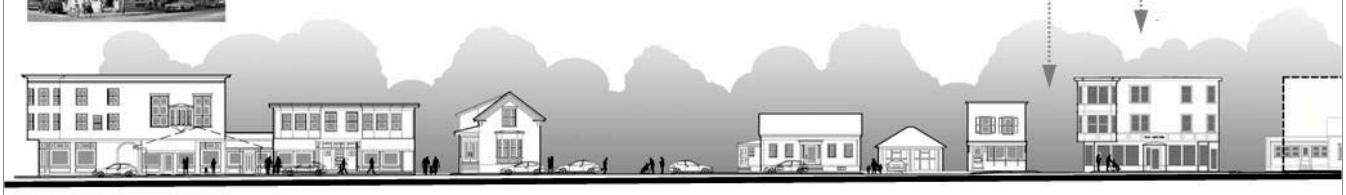
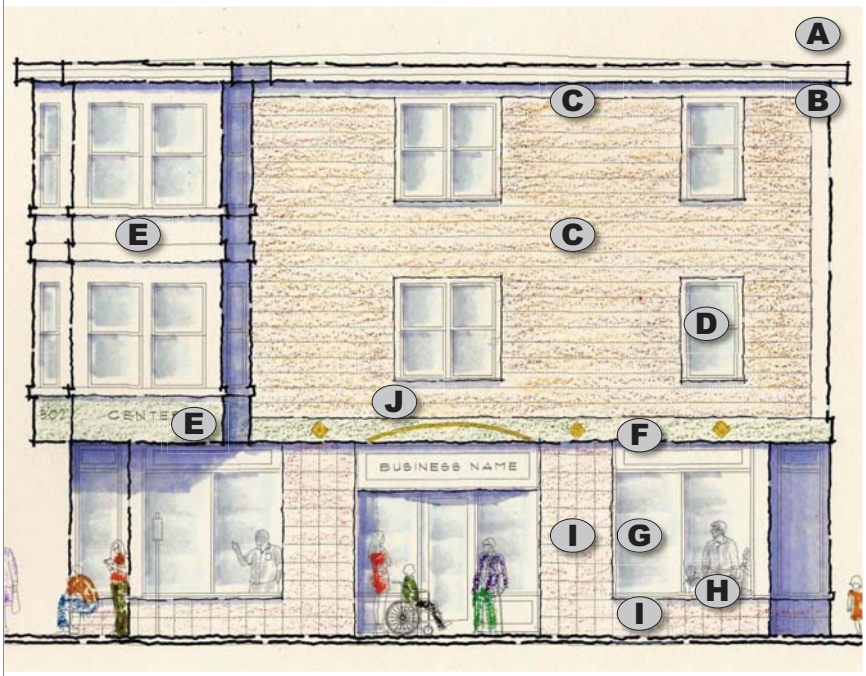
9 Stevens Avenue Front Façade Organization



Stevens Avenue Streetscape



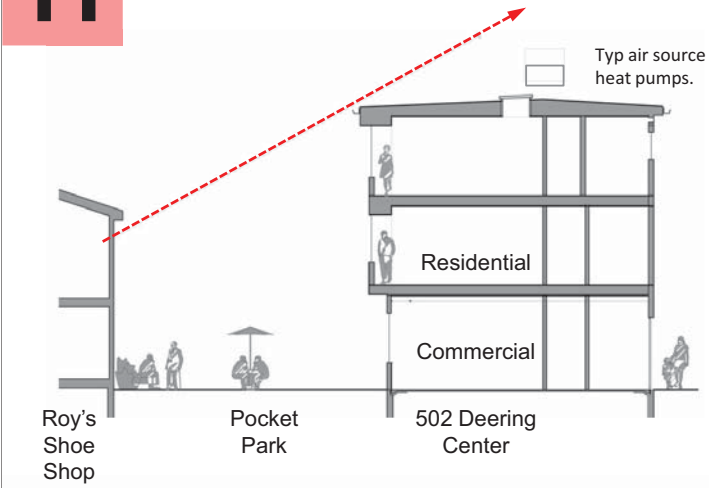
10 Typical Façade Features & Materials



- **A** **Typ Roof:** Flat membrane
- **B** **Typ Cornice, Fascia & Frieze:** Fascia - 12" fiber cement, Overhang & Soffitt -12", Perimeter Gutter - continuous alum + down spouts, Frieze - 10" fiber cement.
- **C** **Typ Siding & Trim:** Horizontal lap siding & flat trim - fiber cement.
- **D** **Typ Upper Floor Wdos:** Double hung, insulated
- **E** **Typ Bay Trim:** Panels & Trim - fiber cement
- **F** **Horizontal Datum:** Panels - fiber cement, 16" h
- **G** **Storefront:** Alum framing w/ transparent glazing.
- **H** **Storefront Sills** – Granite, ties into Park materials, creates a drip edge & shadow.
- **I** **Ground Floor Cladding:** Tile (porcelain or granite, 12" x 12") for durable, maintenance free material to withstand impact from sidewalk plows, deterioration from salt & rain spatter, graffiti etc.
- **J** **Canopy:** Simple glazed canopy signifies entry and provides weather protection and natural light.

11

Rooftop Mechanical Not Visible



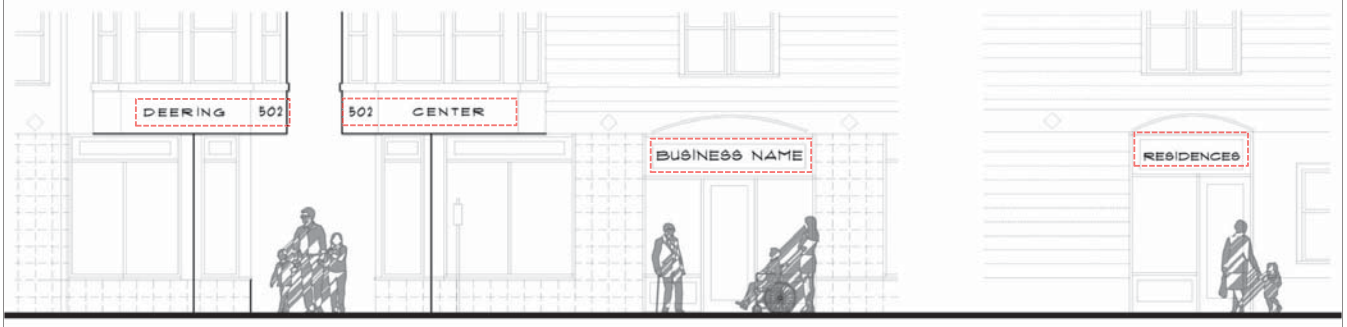
12

Sign Program

Building Name Sign
(not commercial)
5" H individual letters = 1000 sq in
Scaled for pedestrians, no backlit box sign

Commercial Business Sign
6" H individual letters = 700 sq in
Scaled for pedestrians, no backlit box sign

Residential Entry Sign
(not visible from public ROW)
5" H individual letters = 400 sq in
Scaled for pedestrians



Fronting Pocket Park

Fronting Stevens Avenue

Fronting Private Walkway

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS

Project Memo: 502 Stevens Avenue
To: Matt Grooms, City of Portland Planning Department
Date: February 6, 2017

RE: Response to Staff Comments: Sitework

After review of the Staff Comments Carroll Associates has prepared the following Responses:

I. Transportation Standards

A. A. Traffic Engineering Comments (Tom Errico)

1. I reviewed the trip generation and safety analysis prepared by Maine Traffic Resources and I find the methods used to be acceptable. The project is not expected to generate a significant amount of traffic and there are no documented safety deficiencies in the vicinity of the project. The project does not require a Traffic Movement Permit. In my professional opinion the project will not have a significant impact on transportation conditions in the project area.
RESPONSE: No response required.

2. The applicant is requesting a waiver from the City's Technical Standards for parking aisle width. The project is proposing 21 feet (the City standard is 24 feet). Given low trip generating characteristics and the general layout of the site (backing maneuvers onto Stevens Avenue are very unlikely), I support a waiver.
RESPONSE: No response required.

3. The applicant is requesting a waiver from the City's Technical Standards for driveway width. The project is proposing 18.24 feet (the City standard for minimum width is 20 feet). Given low trip generating characteristics, I support a waiver.
RESPONSE: No response required.

4. The proposed project is relocating the existing crosswalk across Stevens Avenue from the north side of Hartley Street to the south side. Please note the following:

a. The applicant will be responsible for the removal of existing pavements markings that meet City requirements.

RESPONSE: The applicant agrees to remove the existing crosswalk pavement markings. See sheet C-1.0 Demolition and Site Prep Plan.

b. Changes to signage (parking, warning, etc.) will be the responsibility of the applicant. It is suggested new pedestrian crossing warning signs be installed. Recommendations for on-street parking regulations should be provided.

RESPONSE: The Applicant agrees to install parking and crosswalk warning signs meeting City Standards.

c. A design detail for the proposed sidewalk ramp at the southeast corner of Hartley Street shall be provided. Specific details on slopes, width dimensions, and curb details shall be provided.

RESPONSE: The sidewalk ramp at the SE corner of Hartley Street is indicated on Sheet C-2.0 Site Plan.

d. A detectible warning panel shall be installed at the northeast corner of Hartley Street. Details shall be provided for review and approval.

RESPONSE: We agree and a detectible warning panel and tip-down curbs are show on the site plans and a detail is shown on C-8.0Site Details.

5. The applicant has submitted a Construction Management document. Given the presence of school children, I do not support the temporary closure of the sidewalk with a detour to the opposite side of the street. The applicant shall maintain a fully ADA compliant sidewalk facility along the project frontage. Additionally, the applicant shall maintain or provide a reasonable alternative to the existing Steven Avenue crossing.
RESPONSE: We agree and have submitted a revised Construction Management Plan for further City Review.

II. Environmental Quality Standards

A. A. Stormwater/Engineering Comments (Lauren Swett)

1. It is noted that not all of the civil engineering plan sheets (sheet C0-C10) are stamped by a professional engineer. The Grading and Stormwater Plan, Utilities Plan, and two of the detail sheets have been stamped by a professional engineer. The Site Plan has not been stamped and the sheet of site details has also not been stamped. The Applicant should verify with the City that this will be acceptable for this project. While a majority of the engineering design components are on the stamped plans, the Site Plan and site details are typically stamped by a professional engineer.
RESPONSE: We agree and all Site Plans and Details will be stamped by a PE.

2. The City of Portland requires that all Level III site plan applications submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards (Technical Manual, Section 5. II. Applicability in Portland. C. a. and City of Portland Code of Ordinances Sec. 14-526. Site plan standards. (b). 3. b.). The Applicant has indicated that they are modifying their stormwater management system, and will be providing updated plans. We have not reviewed stormwater system in detail at this time, and will when the material is available.
RESPONSE: See revised Stormwater Plans and responses from Pinkham and Greer.

3. It is noted that the stormwater system proposed on the site crosses property boundaries, and includes components on both properties utilizing the shared driveway. The responsibility for maintenance of this system should be clearly defined.
RESPONSE: See revised Stormwater Plans and responses from Pinkham and Greer.

4. An area of pervious pavers is provided within the driveway and at the southern building entrance as shown on the Site Plan. The detail for the pervious pavers indicates that the system includes underdrain that connects to the footing drains. The Grading and Stormwater Plan does not include this system. Additional coordination between plans is required.
RESPONSE: See revised Stormwater Plans and responses from Pinkham and Greer.

5. Additional grading detail (i.e. spot grades) should be provided for the shared driveway. As currently shown, the grading appears to drain from the new building towards the existing single family home to the east. It is assumed that the intent is for stormwater to drain to a site stormwater system, but further detail is required.
RESPONSE: We agree, see revised Grading and Stormwater Plans and responses from Pinkham and Greer.

6. The grading at the western end of the shared driveway, on the adjacent property should be evaluated. It appears that there is an existing 119 contour that crosses through the stormwater detention area. The grading should be adjusted to account for this contour.
RESPONSE: We agree, this has been corrected on the revised grading Plan.

7. The utility plan appears to still show the existing overhead utility electrical and telephone lines. Based on the demolition plan, it appears that these lines should be removed.
RESPONSE: The Demolition and Site Prep Plan has been revised to indicate relocation of the utility pole, guy wire, and overhead wires per direction from CMP. Please see sheet C-5.0 Utilities Plan.

8. We recommend that the Applicant adjust their grading and utility plans such that the proposed utilities (water, storm drain, sewer, gas, electric, etc.) be shown in a bolder line type. As the plans are scanned for reproduction, some of these systems are difficult to see and may be confused as existing conditions.
RESPONSE: We agree, this has been corrected on the revised grading Plan.

9. Two details are provided for reinforced concrete sidewalk, and the bituminous pavement detail does not include specific asphalt types. All site details, including pavement, curbing, sidewalk, and handicap ramps should be in conformance with City of Portland technical standards, including references to appropriate dimensions and materials.
RESPONSE: All site details illustrating work within the right-of-way are within conformance with the City of Portland Technical Standards.

B. Tree & Landscape Comments (Jeff Tarling)

1. Street-trees - the project does not offer street trees along Stevens Avenue, this is in keeping to nearby street-scape conditions and we would not ask or require street trees along the frontage. Street trees could be planted near the site in the vicinity of the project and we would ask for the standard contribution to the Tree Fund to place trees nearby. Street frontage - there could be opportunity to include small planting space between the building and sidewalk. Frequently we see small herbaceous or display plantings in areas like this.
RESPONSE: The applicant agrees to pay into the Tree Fund in lieu of planting street trees. Please provide the dollar amount required for this fee in lieu. The Applicant prefers to extend the sidewalk directly to the building along Stevens Avenue to allow greater pedestrian movement and gathering at the building entrance. At Owner/ tenants' option, movable planters may be added to provide seasonal color.

2. Landscape & buffering - The project currently offers little in the way of landscape planting or buffering along the rear Lincoln School boarder. Recommendations would include buffering the school from the project and likely the future project residents would like to see some buffering between active school ground activities and their residence. Solutions include: reducing the proposed lawn area and adding in landscape planting that can best tolerate occasional snow loading while providing some level of screening. Fencing - Installing 5' to 6' high fencing along the City / Lincoln School property line would be recommended. This could be new black vinyl chain link or wooden decorative fencing.
RESPONSE: The Applicant agrees to install herbaceous plantings along the school boundaries to provide buffer and screening of the parking lot from the school. Large ornamental grasses have been proposed for these areas so to soften the boxy-ness of the fence, provide buffering while still allowing for snow to be stored in the area when needed. Existing chain link fencing provides security and separation between the uses and it is proposed that this remain, the Applicant believes no new fencing is required.

3. Additional trees & woody plant material is recommended for the sites shown as P = perennial planting. Four trees are recommended for the back parking lot area, this includes: 1 in the perennial area bump out near the driveway curve. The curbing should include the entire bump out area from the driveway curve to protect any future landscape or lawn edges, a second tree near the handicap parking spaces, to the left looking at the plan, in the perennial planting area. Trees 3 & 4 would be placed in or near the corners to help meet parking lot landscape standards of shading the parking spaces.
RESPONSE: Three trees have been added to the parking area. It is the opinion of the project landscape architect that there is not sufficient room for trees at the SW corner of the parking lot. Additionally, we are concerned that woody shrubs within the parking area will be difficult to maintain as snow loading would be a serious hazard to the survival of both trees and shrubs if planted in these locations.

4. Snow removal will be a challenge for the site once constructed as shown as the paved parking area exceeds available snow storage on site.
RESPONSE: The applicant understands this and intends to remove snow when it begins to impact the usability of the parking spaces. See snow removal note on the Site Plan

5. Landscape updates are likely pending to address these concerns. Will also discuss with Portland Schools the best treatment for their boarder.
RESPONSE: Landscape revision have been made to the Landscape and Lighting Plan.

III. Public Infrastructure and Community Safety Standards

A. A. Fire Department Comments (Keith Gautreau)

1. *Premise Identification*

a. Premises Identification a. The main entrance of the building must be the address for the property. This should be consistent with 911, tax assessor, Inspections Division and future mailing address.

b. Street addresses shall be marked on the structure and shall be as approved by the City E-911 Addressing Officer. If the building entry faces a different street, both the street name and number should be large enough to read from the street.

c. Address numbers must be a minimum of 4 inches high. The number should be in Arabic numerals rather than spelled out (for example, "130" instead of "One Hundred and Thirty').

d. Color: Addresses should be in a color that contrasts with the background. Whenever possible, should be illuminated.

e. Provide additional address signs at entrances to the property when the building address is not legible from the public street.

f. Buildings set back in groups that share common entrances can make quickly locating a specific building and the shortest route difficult. On such sites, additional signs with directional arrows and/or diagrams of the buildings and access layout should be posted.

RESPONSE: We agree with Fire Department comments and will work with the City E-911 staff to incorporate all elements into the Final Plan

2. *There's a public hydrant located across the street at Hartley and Stevens.*
RESPONSE: No comment required.

3. Emergency vehicle access is good for the site. The sidewalk being flush with pavement allows for 21 ft of emergency access.
RESPONSE: No comment required.

IV. Site Design Standards

A. Site Plan Review Comments (Matthew Grooms)

1. How will waste be handled on site? If a dumpster is required, it shall meet all applicable standards as found in Sec. 14-161, the B-1b Design Standards and Article V. Site Plan, and be screened via an appropriate dumpster enclosure.
RESPONSE: No dumpster is proposed for the project. Residential tenants will store private trash within their dwelling units and utilize curbside pickup. Commercial tenants will store trash in bins inside the building and contract with a private hauler to remove on a weekly basis.

2. The applicant shall clearly indicate the proposed commercial use locations and associated dimensions on Sheet A1.1 First Floor Plan with Site.
RESPONSE: The Commercial Use locations and dimensions have been added to Sheet A.1.1.

3. On Sheet C.2. Site Plan; provide the location and dimension of all proposed exterior mechanical equipment.
RESPONSE: Electrical and gas meters have been added to the Site Plan with a note referencing the Utilities Plan for more specifics.

4. On Sheet C.2. Site Plan, if appropriate, provide a note stating that all exterior mechanical equipment will be screened from public streets and adjacent sites by structure walls, evergreen landscaping, fencing, masonry walls or a combination thereof.
RESPONSE: A note has been added to the plan indicating the requirement of screening all exterior mechanical equipment. The intent at this time is that all mechanical equipment be located on the roof.

6. On Sheet C.2. Site Plan, is the triangle sign found around the edges of the proposed building indicative of building entrances? If so, please add this symbol to the legend.

RESPONSE: Yes, the triangle symbol indicates an entry/exit point. They have been called out on the plan as well as added to the legend.

7. Per Section 14-526 (d), could the applicant provide information describing how rooftop snow and ice loading is being addressed, specifically along Steven's Avenue?
RESPONSE: The building has a flat roof with gutters that will collect melting snow and ice and discharge into the proposed stormwater system.

8. On Sheet L.1. Landscape and Lighting, the applicant shall provide a note stating that all proposed light fixtures are full cutoff, in line with Section 12.2.6 Luminaire Types, of the City's Technical Manual.
RESPONSE: A note has been added to the plan indicating that all proposed lights are full cutoff.

9. *On Sheet L.2. Landscape Details, the applicant shall provide details for the proposed light fixtures.*
RESPONSE: Cut sheets for the proposed lights have been added to sheet L-1.0 Landscape and Lighting Plan.

9. The applicant shall provide elevation views of the proposed building including corner grades and building height information so that building height may be calculated.
RESPONSE: Corner grades and building height information has been added to the Building Elevations as requested.

B. Preliminary Subdivision Plan Comments – Section 14-496 (Matthew Grooms)

1. The applicant shall indicate the width of any right-of-way shown on the preliminary subdivision plan.
RESPONSE: The Preliminary Subdivision Plan has been modified to include the right of way width of Stevens Avenue and Hartley Streets.

2. The applicant shall provide the location, width and purpose of any easements that have or are to be recorded.
RESPONSE: Proposed utility, access, and drainage easements have been added to the Subdivision Plan.

3. The applicant shall provide the approximate or known location of all existing and proposed public and private infrastructure, including sanitary sewer, water, gas and electric. This shall include new points of connection for the proposed development.
RESPONSE: This information has been added to the Preliminary Subdivision Plan as requested.

4. The applicant calls out an 8" V.I.T on the preliminary subdivision plan. Could this item be added to the legend?
RESPONSE: This item will be added to the legend as requested.

A. **C. Design Review (Caitlin Cameron)**
RESPONSE: See specific responses from Applicant regarding Staff Design Review under separate cover.

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

MEMORANDUM

TO: Matt Grooms

FROM: Thomas S. Greer, P.E.

DATE: February 7, 2017

RE: 502 Deering Center

FILE: 16193

I. Environmental Quality Standards

A. Stormwater/Engineering Comments (Lauren Swett)

2. *The City of Portland requires that all Level III site plan applications submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards (Technical Manual, Section 5. II. Applicability in Portland. C. a. and City of Portland Code of Ordinances Sec. 14-526. Site plan standards. (b). 3. b.). The Applicant has indicated that they are modifying their stormwater management system, and will be providing updated plans. We have not reviewed stormwater system in detail at this time, and will when the material is available.*

   We have completed test pits indicating that the site has well drained sands over bedrock. The bedrock is generally at elevation 113. The bottom of the infiltration system is at 116 providing 3 feet of unsaturated soils. This system more or less matches the existing conditions on site.

3. *It is noted that the stormwater system proposed on the site crosses property boundaries, and includes components on both properties utilizing the shared driveway. The responsibility for maintenance of this system should be clearly defined.*

   There will be a cross easement for the access driveway and joint facilities between the two property owners.

4. *An area of pervious pavers is provided within the driveway and at the southern building entrance as shown on the Site Plan. The detail for the pervious pavers indicates that the system includes underdrain that connects to the footing drains. The Grading and Stormwater Plan does not include this system. Additional coordination between plans is required.*

   The detail has been revised.

5. *Additional grading detail (i.e. spot grades) should be provided for the shared driveway. As currently shown, the grading appears to drain from the new building towards the existing single family home to the east. It is assumed that the intent is for stormwater to drain to a site stormwater system, but further detail is required.*

   Spot grades have been added.

6. *The grading at the western end of the shared driveway, on the adjacent property should be evaluated. It appears that there is an existing 119 contour that crosses through the stormwater detention area. The grading should be adjusted to account for this contour.*

   The 119 contour has been modified.

7. *The utility plan appears to still show the existing overhead utility electrical and telephone lines. Based on the demolition plan, it appears that these lines should be removed.*

   The power will remain overhead across Stevens Avenue. It will be underground from there.

Lachman Architects & Planners
Architecture | Community Planning | Preservation
Building Communities - with community buildings

March 14, 2017

To: Matt Grooms, City of Portland Planning Department & Members of the Planning Board

RE: 502 Deering Center – Final Plan for Planning Board Review & Staff Review Comments & Update

From: Denis Lachman and Kiya Smith, Applicants

Thank you for the positive reception to 502 Deering Center from Staff and at the Planning Board Workshop on February 14. In anticipation of the Hearing on March 28, we continue to work with Staff to refine the project and address remaining issues. This memo responds to staff comments, provides an update and addresses the following topics:

1. **Design**
2. **Basement Eliminated Reduces Overall Floor Area**
3. **Additional Dwelling Units Added and Associated Offsite Parking**
4. **Collaborative Site Planning & Map Change for 510 Stevens Ave.**
5. **Transportation Standards** (see attached Memo from Carroll Associates, 3/14/17)
6. **Environmental Quality Standards** (see attached Memos from Pinkham & Greer, 3/14/17)
7. **Tree & Landscape Comments** (see attached Memo from Carroll Associates, 3/14/17)

1. Design

On February 23 we met with Caitlin, Matt and Barbara. We discussed Stormwater issues, Crosswalk relocation/CMP pole relocation issues, Units/Parking and Design. Design topics and our agreement about them are described below:

Facade Composition: We agreed with staff's pre-workshop comment that to better balance the projecting bay at the left (south) side, some treatment at the right (north) side would improve the facade's composition. We agreed that a corner feature that was visually related yet less prominent is appropriate. This feature is a trim/panel assembly that incorporates (2) windows at the front facade and (1) at the side elevation at each floor, with the same family of materials as the front projecting bay and other architectural features. Please see A2.1 Front East Elevation, A2.2 Side South Elevation, A2.3 Side North Elevation and A2.4 Rear West Elevation, all uploaded.

Eased Corners: We discussed that the roles of eased corners are to:

- invite pedestrians into the shared-use walkway at the north and the pocket park at the south,
- provide exceptional visibility in and out of the commercial space,
- provide for a practical commercial reconfiguration opportunity in 5 or 50 years by making it possible to insert a corner door, without restructuring the load-bearing corners. These corners are purposefully dimensioned for 2 tiles (24" x 2 = 48"), which also allows for a standard 36" door to be inserted in lieu of glass. We agreed that their width is appropriate, neither too narrow or too wide.
- provide downlight opportunities at triangular soffits above eased corners. These provide gentle pools of light that highlight building corners while also making pathways and pauses inviting and safe, especially at the sheltered bus stop.

Commercial Cladding: We discussed the requirements for commercial cladding (durability, damage, moisture deterioration) and how porcelain tile meets these design criteria. We discussed and agreed that the preferred modulation is larger (24" x 24") rather than smaller. We also discussed that because grout joints are very narrow (1/16"), the overall visual appearance will be a simple homogeneous plane, rather than busy multiple components. We further discussed and agreed that the color of this cladding is best subtle to be timeless rather than trendy.

Horizontal Lap Siding Clarification: As previously described, the building will be clad in Horizontal Lap Siding to create the classic and timeless pattern of thin shadow lines so familiar and common to the neighborhood context. Horizontal beveled clapboards that create this pattern are manufactured from a variety of materials, including wood clapboards, fiber cement clapboards, formed sheet metal clapboards, everlast composite clapboards, or vinyl clapboards. The siding will be one of these materials, and the selection will depend on thoughtful evaluation of many factors, such as demonstrated previous performance in a similar climate under similar conditions, visual aesthetics and detailing, product warranty and manufacturer's reputation and support, installation efficiency, product availability, and budget. All horizontal siding will be detailed to resolve into trim at windows and corner boards at corners. Please see following examples of Horizontal Lap Siding.

2. Basement Eliminated Reduces Overall Floor Area

Previously we had hoped to have a basement, and its floor area was included in the initial application (10,200 sf). Subsequently test pits uncovered bedrock at about 5' to 8', which precluded a basement and reduced overall floor area. The amended total floor area is 7,767sf. The Application Form has been amended to reflect this and uploaded. The Geotech Report is uploaded to eplan.

3. (4) 1BR Units in Lieu of (2) 3BR Units and Associated Remote Parking

Previously we had (4) 3BR units – (2) in the front and (2) in the rear. At the rear of the building only, at both the 2nd and 3rd floors, 3BR units have changed to (2) 1BR units. At the front there is no change to the 3BR units on both 2nd and 3rd floors. The total number of units increases from 4 to 6, which creates more new housing plus a greater diversity of housings options. The Application Form has been amended to reflect this and uploaded.

1BR units are typical inhabited by single individuals. Consequently we believe (1) space or (1.5) spaces/1BR, rather than the required (2) spaces/1BR is a more reasonable and practical parking requirement for Neighborhood Business and other similar zones that matches market demand. If the parking requirement for 1BR units were 1.5/1BR, all parking would be met onsite, and remote parking would not be required or necessary. See example below:

(2) 3BR x 2 spaces/DU		= 4 spaces
(4) 1BR x 1.5 spaces/DU		= 6 spaces
(6) units	Total provided onsite	10 spaces

However, to meet the required (2) spaces/1BR, (2) remote spaces are leased.

Remote Parking - Under Sec. 14-334 ….. *the Planning Board when applicable, may permit off-street parking located further than one hundred (100) feet from the principal building* (remote) *or use upon finding that such off-street parking meets the following standards:*

(a)…Location. *located no more than 1500 ft….* Please see the attached Letter of Intent to Lease (2) Offsite Parking Spaces for (1) 1BR Unit as documentation the subject property is 888 feet. Please also see the attached areal picture and sketch of the remote property.

(b) Control by Lease - *The* (remote) *premises to be used for parking shall be ….. by lease with a term of not less than five (5) years with an option to renew. Evidence of such control, shall be required by showing for review and approval by City Corporation Counsel, at a minimum, a signed letter of intent, …..or option for …. lease at the time of approval, and an executed … lease prior to issuance of any certificate of occupancy.* Please see the attached signed Letter of Intent to Lease (2) Offsite Parking Spaces for (1) 1BR Unit for Planning Board approval, followed later by an executed lease prior to certificate of occupancy.

The new forward-looking Comprehensive Plan 2030 places high priority on small-scale neighborhood infill as a practical approach for Portland to grow incrementally without losing its much-valued character. As this vision is translated into zoning text and requirements, we hope parking is revised and reduced to no longer be an obstacle for off-peninsula small-scale neighborhood development and redevelopment.

4. Collaborative Site Planning & Map Change for 510 Stevens Ave.

This project's overall concept is founded on collaborative site planning to jointly use a driveway/walkway with the abutting neighbor at 510 Stevens Ave. This collaborative master plan, which shares access and infrastructure, allows both properties to redevelop into new 3-floor mixed-use buildings, with commercial at the ground floor and residential above. However, 510 Stevens Ave is currently zoned R5 (curiously at the end of a row of B1-b properties) which does not permit the appropriate and desired mixed-use. Therefore, 510 Stevens Ave is currently applying for a map change to extend the existing B1-b one parcel further to include 510 within the contiguous B1-b zone along Stevens Ave. We hope you will favorably view this application for a map change to allow both project s to move forward together as a greater whole.

We believe 502 Deering Center and it companion at 510 Stevens Avenue are excellent projects that purposefully demonstrates how key goals for the region, the City, the neighborhood and for our

contemporary times - such as village mixed-use, good urban design, mixed transportation use, middle income housing, neighbor-to-neighbor collaborative planning, public access and pedestrian circulation, and context-based design - might be met by small projects on small infill lots to strengthen our neighborhood nodes.
We look forward to the Hearing on March 28 and the anticipated final approval. Please do not hesitate to contact us if you have any questions at all. We standby to assist your process, and look forward to a continued smooth and efficient review.

Sincerely,
Denis Lachman and Kiya Smith

Attachments:

- Letter of Intent to Lease (2) Offsite Parking Spaces for (1) 1BR Unit, with accompanying map and sketch.
- Project Memo, Carroll Associates, 3/14/17 - Final Plan for Planning Board Review: Staff Review Comments
- Project Memo, Pinkham & Greer, 3/14/17
- Waiver Request for Parking Prohibition Within 20' of a Crosswalk & Setback to Boundary Line for Infiltration System
- Examples of Horizontal Lap Siding

DocuSign Envelope ID: E43ADD61-24E9-43AA-81FD-136A73F3BA2C

March 7, 2017

Letter of Intent to Lease (2) Offsite Parking Spaces for (1) 1BR Unit

Purpose of This Letter

Deering Center LLC, a new mixed-use project, seeks (2) offsite parking spaces to meet the parking requirement for a single 1BR dwelling unit. Under Sec. 14-334 ..... *the Planning Board when applicable, may permit off-street parking located further than one hundred (100) feet from the principal building or use upon finding that such off-street parking meets the following standards: (b) Control by ownership or lease: The premises to be used for parking shall be ….. or by lease with a term of not less than five (5) years with an option to renew. Evidence of such control, shall be required by showing for review and approval by City Corporation Counsel, at a minimum, a signed letter of intent, …..or option for …. lease at the time of approval, and an executed … lease prior to issuance of any certificate of occupancy.* The purpose of this signed letter of intent is to demonstrate compliance with Sec. 14-334.

Donor & Receiver Properties

Kathy Dyer, owner of 229/231 Pleasant Ave, Portland, ME 04103 (133-H-6, offering property), intends to lease (2) parking spaces to Denis Lachman and Kiya Smith, principals of Deering Center LLC, located at 502 Stevens Ave, Portland, ME 04103 (135-E-9, receiving property and principal building).

Lease Period

The lease begins prior to issuance of Certificate of Occupancy (approximately December, 2017) and continues for a minimum of 5 years, with an option to renew.

Lease Rate

The lease rate is to be determined, and will be consistent with other similar offsite parking lease rates in the vicinity.

Distance From Principal Building

Under Sec. 14-334 ..... *(a) Distance from principal building or use site: Off-street parking shall be located no more than 1500 ft. from the principal building or use site measured along lines of public access.* The following map demonstrates the distance to 229/231 Pleasant Ave is 888 ft from the principal building measured along lines of public access, in compliance with Sec. 14-334, and the following aerial photo shows the location of parking.

Signed with understanding and intent to execute a lease:

Kathy Dyer, owner of 229 Pleasant Ave, Portland, ME 04103 (offering property)	Denis Lachman and Kiya Smith, principles of Deering Center LLC, located at 502 Stevens Ave, Portland, ME 04103 (receiving property and principal building)
DocuSigned by: Kathryn Dyer 4AC2A4E787D644B...	Denis Lachman
Kathryn Dyer 3/10/2017	3/12/2017
name *date*	*name* *date*

DocuSign Envelope ID: E43ADD61-24E9-43AA-81FD-136A73F3BA2C

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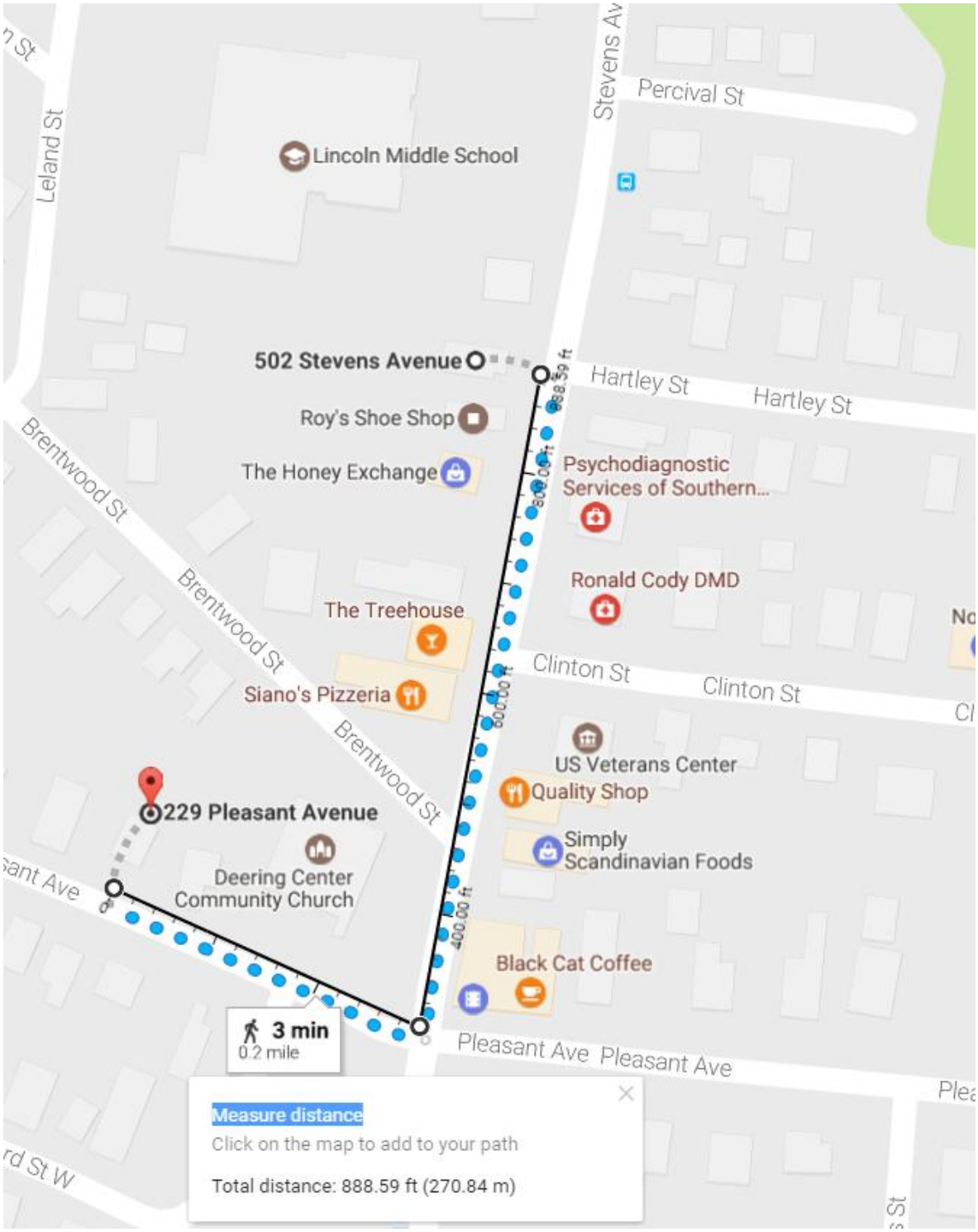
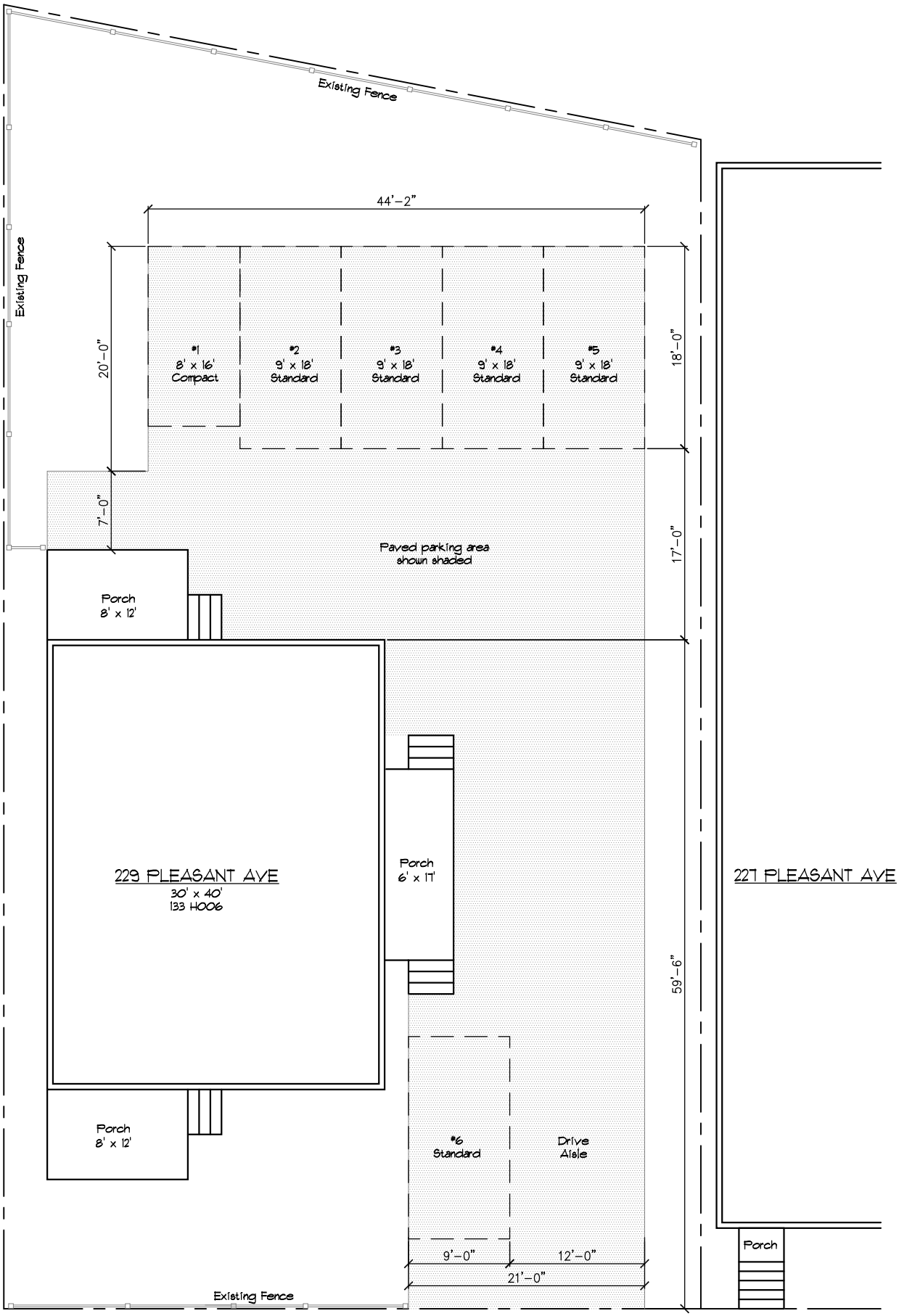




502 DEERING CENTER

REMOTE PARKING SKETCH

at 229 Pleasnat Ave, 04103

For PB Approval. No Scale 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS

Project Memo: **502 Deering Center**
To: **Matt Grooms, City of Portland Planning Department**
Date: **March 14, 2017**

RE: Final Plan for Planning Board Review: Staff Review Comments

After review of the Staff Comments dated March3, 2017, Carroll Associates has prepared the following Responses:

I. Transportation Standards

A. Traffic Engineering Comments (Tom Errico)

1. The applicant should provide additional detail on the construction management plan. Please see the attached example for 23 Ocean Avenue. I do not support a sidewalk detour and would suggest a temporary barrier protected sidewalk along the frontage.

RESPONSE: See revised Construction Management Plan under separate cover.

II. Environmental Quality Standards

A. Stormwater/Engineering Comments (Lauren Swett)

1. The City of Portland requires that all Level II site plan applications submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards (Technical Manual, Section 5. II. Applicability in Portland. C. a. and City of Portland Code of Ordinances Sec. 14-526. Site plan standards. (b). 3. b.). We offer the following comments: a. Basic Standard: Plans, notes, and details should be provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500. The Applicant has provided an erosion control plan that includes locations of measures, details and general housekeeping notes.

RESPONSE: See responses under separate cover.

- b. General Standard: The project will result in an increase in impervious surface, and stormwater treatment in conformance with the General Standard is required. The Applicant is proposing to utilize an underdrained infiltration system and pervious pavers to provide treatment. This method of treatment will be acceptable. We have reviewed the proposed

design as well as the Maine DEP standards for infiltration systems and have the following comments: The Applicant should provide sizing calculations for the stormwater treatment systems, verifying that they provide adequate capacity as required for treatment of the tributary areas.

- Maine DEP requires 25 feet of separation of infiltration systems from property boundaries. The Applicant should consider adjusting the layout to provide adequate separation. Given the nature of the site and the fact that other stormwater systems and the driveway will cross property boundaries, the proximity of the infiltration system and its possible impact on the adjacent project could also be included in the easement.

- The pervious pavers have been modified to no-longer include underdrain; however the HydroCAD model still includes a 4" pipe as an outlet. This should be clarified.

- The underdrained infiltration system is relatively shallow. Based on a check of some of the at-grade elevations versus the system inverts, it appears that there will not be enough depth to construct the standard pavement section as defined in the project details. The Applicant should consider whether insulation may be required.

RESPONSE: See responses under separate cover.

c. Flooding Standard: The project will result in an increase in impervious surface, and compliance with the flooding standard is required. The HydroCAD model indicates that flows will be reduced in the 2-year, 10-year, and 25-year storm events, and adequate flood control has been provided.
RESPONSE: See responses under separate cover.

2. Two of the ponds modeled in the HydroCAD model (2P and 5P) have inverts that appear to be 100 feet higher than the correct grade. The model should be corrected with the correct elevation.
RESPONSE: See responses under separate cover.

3. The stormwater system for the site is shown connecting to the combined sewer via an existing catch basin. This is not in conformance with the City of Portland standard, and approval from the City will be required.
RESPONSE: See responses under separate cover.

4. The underdrained infiltration system is shown with a system vent attached to an existing fence post. The plan appears to show that this fence post is located on the adjacent property. This feature should be included in any easements with the abutter.
RESPONSE: See responses under separate cover.

5. It is noted that the stormwater system proposed on the site crosses property boundaries, and includes components on both properties utilizing the shared driveway. The responsibility for maintenance of this system should be clearly defined. The Applicant has acknowledged this, noting that there will be an easement for the access driveway and joint facilities of the two properties. Details of this easement, and information on maintenance agreements should be provided.
RESPONSE: See responses under separate cover.

6. An Inspection and Maintenance of Stormwater Management Facilities plan has been provided. The plan should be modified to include specific requirements for the stormwater features proposed on this site, including the pervious pavers.
RESPONSE: See responses under separate cover.

B. Tree & Landscape Comments (Jeff Tarling)

1. The redevelopment of the site originally proposed to save the two mature Maple trees, one Norway & one Sugar Maple on the site. After review the likelihood of root damage during construction and the maturity of the trees make 'remove & replace' the best option. Due to site constraints and surrounding land use, no street trees are proposed or recommended for this location. Stevens Avenue street trees are all planted behind the sidewalk due to survivability. The project does add landscape treatment in the form of ornamental grasses and woody shrub planting along the edges.
RESPONSE: None necessary.

2. Pavement edge treatment - Always suggest a minimal or bituminous 'Cape Cod' style curbing to protect landscape along pavement edges. It helps reduce deicing salts entering the landscape and reduced vehicle impact.
RESPONSE: Curbing has been added around the parking lot end island and continued around to the stomrwater area. This will help protect the proposed tree while also directing stormwater.

3. The project contains a small patio area with landscape treatment nearby. Fencing & edge treatment - it appears that the Lincoln School fencing around their playground has been recently updated and in good condition. (This is 8 foot high black vinyl fence) Privacy slats could be added to the degree necessary if the project wanted additional screening. Wood guardrail could be used to reduce snow, vehicle impact and headlight glare.
RESPONSE: We agree with Jeff's comments. We are not proposing to install privacy slats or wood guardrail at this time.

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

STORMWATER MANAGEMENT REPORT
502 DEERING CENTER
PORTLAND, MAINE

December 22, 2016
(Revised February 3, 2017)
(Revised March 14, 2017)

Project Description:

The project is the redevelopment of 502 Stevens Avenue from a single family home to a 6 unit apartment complex and 2,400 square feet of commercial space. The existing home will be removed as well as the existing sidewalk and replaced with a 2,400 square foot building, 4,130 square feet of parking and driveway and 860 square feet of plaza.

Existing Conditions:

The 9,562 square foot lot has an existing home of 1,277 square feet and a driveway of 780 square feet. The site is very flat at elevation 119, plus or minus one foot. There are several large trees that provide canopy over the lot. The soils are Windsor sandy loam, a well-drained soil, based on the county soils mapping. See Soils Report.

Developed Conditions:

The project will have a 2,400 square foot building with a flat roof, parking spaces in the rear with a carport and storage on one side of the lot. It will be redeveloped using a shared driveway with the lot adjacent to this one, #510 Stevens Avenue. This reduces the curb cuts on Stevens Avenue.

There will be defined walkway along the side of the building using pervious pavers. There will be plaza on the side of the building using pervious pavers. This are will provide a small community gathering space.

The roof drains are collected and sent to the rear of the site.

Stormwater Treatment and Control:

The site will have two subsurface stormwater systems. The first will utilize crushed stone bed for stormwater storage and infiltration into the underlying soils for treatment. The second system will treat the plaza area with pervious pavers.

The parking lot run off will be pretreated is a small grass bowl just off the edge. Overflows from the bowl will go to a catch basin with a 3' sump and then to the

infiltration area. Overflow from this system is conveyed to the street storm drain system.

The second system is under the previous paver plaza area. The system treats the roof water from the building next door and the plaza area. It stores the stormwater in the stone bedding and infiltrates it. Overflow for the system goes to the street system.

Peak Flows from the systems will be conveyed around the building to the existing catchbasin in Stevens Avenue.

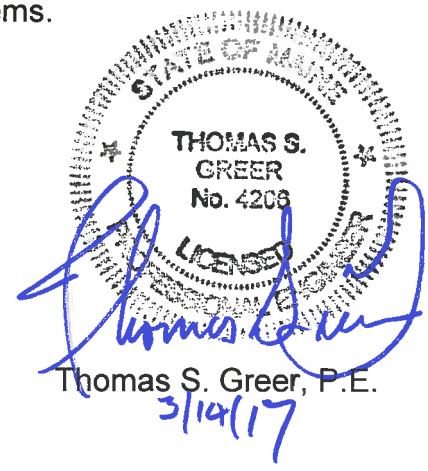
Results:

The Drainage Analysis shows that runoff from a 2 ½" rainstorm (1" of runoff) will infiltrate into the soils except at the driveway area. During a 25 year rainstorm some overflow can be expected. This includes water coming up through the pervious pavers and some water overflowing to the pipe connected to the city's stormdrain. In general the flows are very small. Below is a chart showing peak flows.

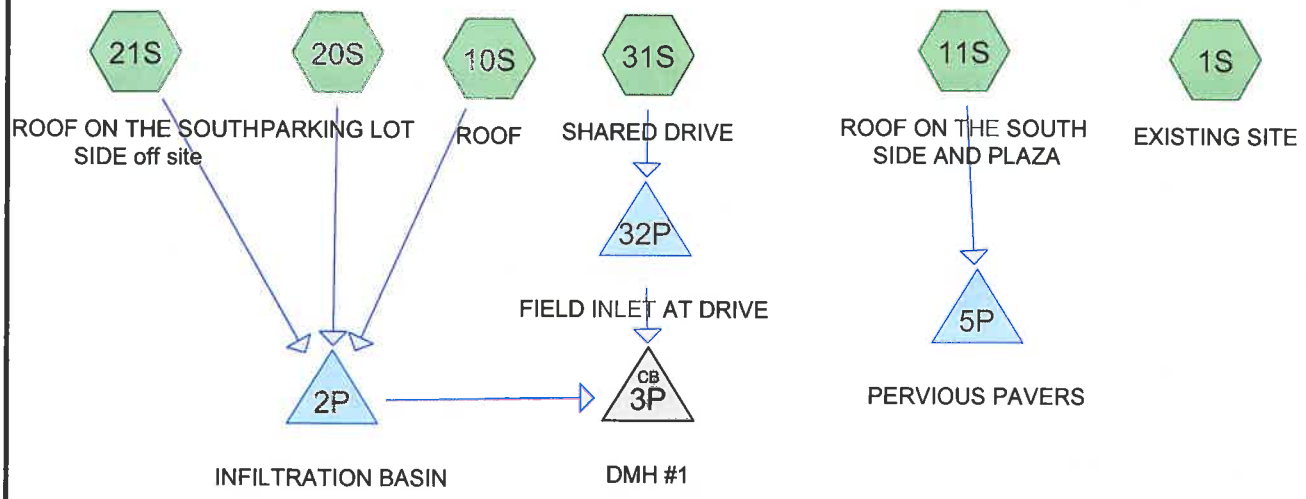
Peak Flows Cuic Feet Per Second (cfs)				
	2 1/2"	2 Year	10 Year	25 Year
Developed	0.15	0.19	0.30	0.39
Existing	0.31	0.46	0.87	1.21

Conclusion:

The use of infiltration systems on this site will reduce the stormwater flows and have minimal impacts on downstream systems.



Thomas S. Greer, P.E.
3/14/17



Subcat Reach Pond Link

Routing Diagram for 502 STEVENS AVE TSG 12-2016
Prepared by Hewlett-Packard Company, Printed 3/13/2017
HydroCAD® 10.00-16 s/n 01454 © 2015 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EXISTING SITE Runoff Area=11,815 sf 33.56% Impervious Runoff Depth>0.92"
Tc=5.0 min CN=82 Runoff=0.31 cfs 0.021 af

Subcatchment 10S: ROOF Runoff Area=2,665 sf 100.00% Impervious Runoff Depth>2.13"
Tc=4.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment 11S: ROOF ON THE SOUTH Runoff Area=1,105 sf 100.00% Impervious Runoff Depth>2.13"
Tc=4.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment 20S: PARKING LOT Runoff Area=4,536 sf 79.59% Impervious Runoff Depth>1.68"
Flow Length=75' Slope=0.0050 '/' Tc=1.7 min CN=93 Runoff=0.23 cfs 0.015 af

Subcatchment 21S: ROOF ON THE SOUTH Runoff Area=328 sf 100.00% Impervious Runoff Depth>2.13"
Tc=2.0 min CN=98 Runoff=0.02 cfs 0.001 af

Subcatchment 31S: SHARED DRIVE Runoff Area=2,985 sf 80.50% Impervious Runoff Depth>1.68"
Tc=4.0 min CN=93 Runoff=0.15 cfs 0.010 af

Pond 2P: INFILTRATION BASIN Peak Elev=116.18' Storage=267 cf Inflow=0.40 cfs 0.027 af
Discarded=0.10 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.027 af

Pond 3P: DMH #1 Peak Elev=115.99' Inflow=0.15 cfs 0.010 af
8.0" Round Culvert n=0.010 L=90.0' S=0.0052 '/' Outflow=0.15 cfs 0.010 af

Pond 5P: PERVIOUS PAVERS Peak Elev=117.03' Storage=18 cf Inflow=0.06 cfs 0.005 af
Discarded=0.04 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.005 af

Pond 32P: FIELD INLET AT DRIVE Peak Elev=116.08' Storage=1 cf Inflow=0.15 cfs 0.010 af
8.0" Round Culvert n=0.010 L=8.0' S=0.0100 '/' Outflow=0.15 cfs 0.010 af

Total Runoff Area = 0.538 ac Runoff Volume = 0.062 af Average Runoff Depth = 1.37"
39.93% Pervious = 0.215 ac 60.07% Impervious = 0.323 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EXISTING SITE Runoff Area=11,815 sf 33.56% Impervious Runoff Depth>1.35"
Tc=5.0 min CN=82 Runoff=0.46 cfs 0.031 af

Subcatchment 10S: ROOF Runoff Area=2,665 sf 100.00% Impervious Runoff Depth>2.68"
Tc=4.0 min CN=98 Runoff=0.19 cfs 0.014 af

Subcatchment 11S: ROOF ON THE SOUTH Runoff Area=1,105 sf 100.00% Impervious Runoff Depth>2.68"
Tc=4.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment 20S: PARKING LOT Runoff Area=4,536 sf 79.59% Impervious Runoff Depth>2.22"
Flow Length=75' Slope=0.0050 '/' Tc=1.7 min CN=93 Runoff=0.30 cfs 0.019 af

Subcatchment 21S: ROOF ON THE SOUTH Runoff Area=328 sf 100.00% Impervious Runoff Depth>2.68"
Tc=2.0 min CN=98 Runoff=0.02 cfs 0.002 af

Subcatchment 31S: SHARED DRIVE Runoff Area=2,985 sf 80.50% Impervious Runoff Depth>2.22"
Tc=4.0 min CN=93 Runoff=0.19 cfs 0.013 af

Pond 2P: INFILTRATION BASIN Peak Elev=116.28' Storage=404 cf Inflow=0.51 cfs 0.035 af
Discarded=0.10 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.035 af

Pond 3P: DMH #1 Peak Elev=116.03' Inflow=0.19 cfs 0.013 af
8.0" Round Culvert n=0.010 L=90.0' S=0.0052 '/' Outflow=0.19 cfs 0.013 af

Pond 5P: PERVIOUS PAVERS Peak Elev=117.05' Storage=28 cf Inflow=0.08 cfs 0.006 af
Discarded=0.04 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.006 af

Pond 32P: FIELD INLET AT DRIVE Peak Elev=116.11' Storage=1 cf Inflow=0.19 cfs 0.013 af
8.0" Round Culvert n=0.010 L=8.0' S=0.0100 '/' Outflow=0.19 cfs 0.013 af

Total Runoff Area = 0.538 ac Runoff Volume = 0.084 af Average Runoff Depth = 1.86"
39.93% Pervious = 0.215 ac 60.07% Impervious = 0.323 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EXISTING SITE Runoff Area=11,815 sf 33.56% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=82 Runoff=0.87 cfs 0.058 af

Subcatchment 10S: ROOF Runoff Area=2,665 sf 100.00% Impervious Runoff Depth>4.05"
Tc=4.0 min CN=98 Runoff=0.29 cfs 0.021 af

Subcatchment 11S: ROOF ON THE SOUTH Runoff Area=1,105 sf 100.00% Impervious Runoff Depth>4.05"
Tc=4.0 min CN=98 Runoff=0.12 cfs 0.009 af

Subcatchment 20S: PARKING LOT Runoff Area=4,536 sf 79.59% Impervious Runoff Depth>3.60"
Flow Length=75' Slope=0.0050 '/' Tc=1.7 min CN=93 Runoff=0.48 cfs 0.031 af

Subcatchment 21S: ROOF ON THE SOUTH Runoff Area=328 sf 100.00% Impervious Runoff Depth>4.05"
Tc=2.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment 31S: SHARED DRIVE Runoff Area=2,985 sf 80.50% Impervious Runoff Depth>3.60"
Tc=4.0 min CN=93 Runoff=0.30 cfs 0.021 af

Pond 2P: INFILTRATION BASIN Peak Elev=116.59' Storage=768 cf Inflow=0.79 cfs 0.054 af
Discarded=0.11 cfs 0.054 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.054 af

Pond 3P: DMH #1 Peak Elev=116.10' Inflow=0.30 cfs 0.021 af
8.0" Round Culvert n=0.010 L=90.0' S=0.0052 '/' Outflow=0.30 cfs 0.021 af

Pond 5P: PERVIOUS PAVERS Peak Elev=117.21' Storage=62 cf Inflow=0.12 cfs 0.009 af
Discarded=0.04 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.009 af

Pond 32P: FIELD INLET AT DRIVE Peak Elev=116.20' Storage=1 cf Inflow=0.30 cfs 0.021 af
8.0" Round Culvert n=0.010 L=8.0' S=0.0100 '/' Outflow=0.30 cfs 0.021 af

Total Runoff Area = 0.538 ac Runoff Volume = 0.141 af Average Runoff Depth = 3.15"
39.93% Pervious = 0.215 ac 60.07% Impervious = 0.323 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EXISTING SITE Runoff Area=11,815 sf 33.56% Impervious Runoff Depth>3.57"
Tc=5.0 min CN=82 Runoff=1.21 cfs 0.081 af

Subcatchment 10S: ROOF Runoff Area=2,665 sf 100.00% Impervious Runoff Depth>5.15"
Tc=4.0 min CN=98 Runoff=0.36 cfs 0.026 af

Subcatchment 11S: ROOF ON THE SOUTH Runoff Area=1,105 sf 100.00% Impervious Runoff Depth>5.15"
Tc=4.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment 20S: PARKING LOT Runoff Area=4,536 sf 79.59% Impervious Runoff Depth>4.71"
Flow Length=75' Slope=0.0050 '/' Tc=1.7 min CN=93 Runoff=0.61 cfs 0.041 af

Subcatchment 21S: ROOF ON THE SOUTH Runoff Area=328 sf 100.00% Impervious Runoff Depth>5.15"
Tc=2.0 min CN=98 Runoff=0.05 cfs 0.003 af

Subcatchment 31S: SHARED DRIVE Runoff Area=2,985 sf 80.50% Impervious Runoff Depth>4.70"
Tc=4.0 min CN=93 Runoff=0.39 cfs 0.027 af

Pond 2P: INFILTRATION BASIN Peak Elev=116.94' Storage=1,070 cf Inflow=1.01 cfs 0.070 af
Discarded=0.12 cfs 0.070 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.070 af

Pond 3P: DMH #1 Peak Elev=116.15' Inflow=0.39 cfs 0.027 af
8.0" Round Culvert n=0.010 L=90.0' S=0.0052 '/' Outflow=0.39 cfs 0.027 af

Pond 5P: PERVIOUS PAVERS Peak Elev=117.39' Storage=96 cf Inflow=0.15 cfs 0.011 af
Discarded=0.04 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.011 af

Pond 32P: FIELD INLET AT DRIVE Peak Elev=116.25' Storage=2 cf Inflow=0.39 cfs 0.027 af
8.0" Round Culvert n=0.010 L=8.0' S=0.0100 '/' Outflow=0.39 cfs 0.027 af

Total Runoff Area = 0.538 ac Runoff Volume = 0.189 af Average Runoff Depth = 4.21"
39.93% Pervious = 0.215 ac 60.07% Impervious = 0.323 ac

Summary for Subcatchment 1S: EXISTING SITE

Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.031 af, Depth> 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	2,474	98	BUILDING AND DECKS
*	1,491	98	WALKS AND DRIVE
*	7,850	74	LANDSCAPED
	11,815	82	Weighted Average
	7,850		66.44% Pervious Area
	3,965		33.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Summary for Subcatchment 10S: ROOF

Runoff = 0.19 cfs @ 12.06 hrs, Volume= 0.014 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	2,665	98	ROOF
	2,665		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry, DIRECT**

Summary for Subcatchment 11S: ROOF ON THE SOUTH SIDE AND PLAZA

Runoff = 0.08 cfs @ 12.06 hrs, Volume= 0.006 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	480	98	ROOF
*	625	98	PLAZA
	1,105	98	Weighted Average
	1,105		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry, DIRECT**

Summary for Subcatchment 20S: PARKING LOT

Runoff = 0.30 cfs @ 12.03 hrs, Volume= 0.019 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	3,610	98	PAVED
*	926	75	LANDSCAPED
	4,536	93	Weighted Average
	926		20.41% Pervious Area
	3,610		79.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	75	0.0050	0.73		**Sheet Flow, SHEET** Smooth surfaces n= 0.011 P2= 3.10"

Summary for Subcatchment 21S: ROOF ON THE SOUTH SIDE off site

Runoff = 0.02 cfs @ 12.03 hrs, Volume= 0.002 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	328	98	ROOF
	328		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, DIRECT**

Summary for Subcatchment 31S: SHARED DRIVE

Runoff = 0.19 cfs @ 12.06 hrs, Volume= 0.013 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	2,403	98	PAVED
*	582	74	LANDSCAPED
	2,985	93	Weighted Average
	582		19.50% Pervious Area
	2,403		80.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry, DIRECT**

Summary for Pond 2P: INFILTRATION BASIN

Inflow Area = 0.173 ac, 87.70% Impervious, Inflow Depth > 2.40" for 2 YEAR event
Inflow = 0.51 cfs @ 12.04 hrs, Volume= 0.035 af
Outflow = 0.10 cfs @ 12.45 hrs, Volume= 0.035 af, Atten= 80%, Lag= 24.5 min
Discarded = 0.10 cfs @ 12.45 hrs, Volume= 0.035 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 116.28' @ 12.45 hrs Surf.Area= 1,326 sf Storage= 404 cf

Plug-Flow detention time= 25.7 min calculated for 0.034 af (100% of inflow)
Center-of-Mass det. time= 24.9 min (774.7 - 749.8)

Volume	Invert	Avail.Storage	Storage Description
#1	116.00'	1,481 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
116.00	1,590	0	0
117.00	636	1,113	1,113
118.00	100	368	1,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.00'	**2.540 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 113.00'
#2	Primary	117.00'	**4.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 117.00' / 116.10' S= 0.0900 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

Discarded OutFlow Max=0.10 cfs @ 12.45 hrs HW=116.28' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=116.00' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Summary for Pond 3P: DMH #1

Inflow Area = 0.241 ac, 85.66% Impervious, Inflow Depth > 0.63" for 2 YEAR event
Inflow = 0.19 cfs @ 12.06 hrs, Volume= 0.013 af
Outflow = 0.19 cfs @ 12.06 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.19 cfs @ 12.06 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 116.03' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	115.77'	**8.0" Round Culvert** L= 90.0' Ke= 0.500 Inlet / Outlet Invert= 115.77' / 115.30' S= 0.0052 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.19 cfs @ 12.06 hrs HW=116.02' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.19 cfs @ 2.29 fps)

Summary for Pond 5P: PERVIOUS PAVERS

Inflow Area = 0.025 ac,100.00% Impervious, Inflow Depth > 2.68" for 2 YEAR event
Inflow = 0.08 cfs @ 12.06 hrs, Volume= 0.006 af
Outflow = 0.04 cfs @ 12.20 hrs, Volume= 0.006 af, Atten= 53%, Lag= 8.6 min
Discarded = 0.04 cfs @ 12.20 hrs, Volume= 0.006 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 117.05' @ 12.20 hrs Surf.Area= 384 sf Storage= 28 cf

Plug-Flow detention time= 5.8 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 5.2 min (742.6 - 737.4)

Volume	Invert	Avail.Storage	Storage Description
#1	117.00'	273 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
117.00	625	0	0
117.10	187	41	41
118.00	187	168	209
118.50	70	64	273

Device	Routing	Invert	Outlet Devices
#1	Discarded	117.00'	**2.540 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 113.00'
#2	Primary	118.00'	**10.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=0.04 cfs @ 12.20 hrs HW=117.05' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=117.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 32P: FIELD INLET AT DRIVE

Inflow Area = 0.069 ac, 80.50% Impervious, Inflow Depth > 2.22" for 2 YEAR event
Inflow = 0.19 cfs @ 12.06 hrs, Volume= 0.013 af
Outflow = 0.19 cfs @ 12.06 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.1 min
Primary = 0.19 cfs @ 12.06 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 116.11' @ 12.06 hrs Surf.Area= 4 sf Storage= 1 cf

Plug-Flow detention time= 0.3 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (761.9 - 761.7)

Volume	Invert	Avail.Storage	Storage Description
#1	115.85'	222 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.85	4	0	0
116.85	4	4	4
117.00	103	8	12
118.00	316	210	222

Device	Routing	Invert	Outlet Devices
#1	Primary	115.85'	**8.0" Round Culvert** L= 8.0' Ke= 0.500 Inlet / Outlet Invert= 115.85' / 115.77' S= 0.0100 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf

Primary OutFlow Max=0.19 cfs @ 12.06 hrs HW=116.11' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.19 cfs @ 2.20 fps)

502 Deering Center
Portland, MAINE

February 3, 2017
(Revised March 13, 2017)

INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

The owner will be responsible for the inspection and maintenance of all stormwater management facilities, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book as described herein. At a minimum, the appropriate and relevant activities for each of the stormwater management facilities should be performed on the prescribed schedule. Periodic inspection and maintenance of these site features and devices is necessary to prevent erosion and remove pollutants from stormwater runoff.

POST CONSTRUCTION MONITORING:

32-38. Post-construction stormwater management plan compliance.

Any person owning, operating, or otherwise having control over a BMP required by a post Construction stormwater management plan shall maintain the BMPs in accordance with the approved plan and shall demonstrate compliance with that plan as follows:

(a) Inspections. The owner or operator of a BMP shall hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs, including but not limited to any parking areas, catch basins, drainage swales, detention basins and ponds, pipes and related structures, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

(b) Maintenance and repair. If the BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator of the BMP shall take corrective action(s) to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective action(s) to the department of public services (“DPS”) in the annual report.

(c) Annual report. The owner or operator of a BMP or a qualified post-construction stormwater inspector hired by that person, shall, on or by June 30 of each year, provide a completed and signed certification to DPS in a form provided by DPS, certifying that the person has inspected the BMP(s) and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they require maintenance or repair, including the record of the deficiency and corrective

action(s) taken.

(d) Filing fee. Any persons required to file and annual certification under this section shall include with the annual certification a filing fee established by DPS to pay the administrative and technical costs of review of the annual certification.

(e) Right of entry. In order to determine compliance with this article and with the post-construction stormwater management plan, DPS may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMPs.

(Ord. No. 35-09/10, 8-17-09)

SWALES, DITCHES AND PAVED SURFACES:

Swales, ditches and paved surfaces are easily inspected during a site walk or even a ride-by. Since visual inspection is easy, their condition should be assessed during and/or after significant rainfall events such as thundershowers and periods of heavy or extended rainfall and during periods of significant snowmelt. Any damage or unusual condition such as sedimentation of a ditch, erosion, damaged pavement or dying vegetation should be recorded, dated and initialed by the inspector when observed. Even if there is no damage, the inspector should make record of these inspections at least twice annually.

Paved surfaces should be visually inspected monthly during the winter. The inspector should pay particular attention to the build up of ice and sand along the edge of the road and remove accumulations that block the free flow of surface runoff to the catch basins. Paved areas should be swept at least once annually. The date and initials of the inspector should be recorded on the forms provided as well as a notation of any cleanup effort that was made.

CATCH BASINS, FIELD INLETS AND DRAIN MANHOLES:

Catch Basins and field inlets are precast concrete structures with sumps and cast iron grates used to collect stormwater and trap heavy sediments. Drain Manholes are similar structures constructed with a channel instead of a sump and a solid cast iron cover instead of a grate. Drain Manholes exist at changes in direction and/or size of storm drain pipe. Catch Basins, field inlets and drain manholes provide access to the closed storm drain system for inspection and maintenance.

Throughout the winter / spring sanding period, inspect catch basins and field inlets monthly and after every significant rainfall event or period of heavy snowmelt. Clean catch basin and field inlet sumps when sediment level is within 3 inches of the outlet pipe invert. Record dates of inspections, observations and maintenance measures implemented (if any) on the forms provided and initial the entry.

Confined space entry safety procedures should be practiced when entering these structures.

DRAIN PIPES:

Drain pipes connect catch basins and field inlets. Inspect drain pipes when inspecting other stormwater maintenance facilities. At least annually make a visual inspection of the pipe. During the daylight you should be able to see light through most pipes as they have been laid to a straight line and grade. In some cases (e.g. pipe runs to a catch basin, or is blocked) you will need a light to inspect pipes.

Clean pipes as necessary. Record inspections on the forms provided noting condition of pipe and any maintenance procedures implemented.

INFILTRATION BASINS:

Infiltration systems are impoundments designed to temporarily store runoff and release it at a controlled rate. The system for 502 Deering Avenue is designed to infiltrate stormwater and attenuate peak flow from the project. This system is providing subsurface treatment of stormwater runoff. The system is designed to capture and treat rain that falls on the developed portion of the site from storms with frequencies of 2, 10 and 25 years.

The system should be inspected semi-annually for efficiency, signs of structural failure, and loss of storage volume due to sediment accumulation. Corrective action should be taken immediately upon identification of problems.

Inspection and maintenance of the system is critical to the long-term performance of the infiltration basin. In addition to the inspections and maintenance measures described above the depth of water in the system should be monitored closely to verify the performance characteristics of the system. This is done by measuring how quickly the pond/basin de-waters following storms and how quickly sediments build up. Sediment buildup is monitored visually. Observations and volume of sediment removed should be recorded in the inspection/maintenance log. The rate at which the system de-waters is determined by periodically measuring and recording the water level following significant rainfall events and the time of the measurements. This can be done in the catch basin.

Inspections should be documented on forms similar to those provided. The date and initials of the inspector should be recorded as well as a description of conditions and any repair effort. Following significant rainfall events the water depth and times of the measurements should also be recorded.

PERVIOUS PAVERS:

See attached recommendations from ICPI.

Interlocking Concrete Pavement Institute®

Inspector's Guide for PICP Installation & Maintenance

The following is a PICP inspector's guide for project construction and maintenance written to a municipal inspector. The checklist is developed from the ICPI PICP manual and the PICP certificate course. Please keep in mind that ICPI recommends that PICP construction specifications include a method statement. Among many things, the method statement requires a pre-construction conference to where the project inspector(s) needs to be present.

ICPI recommends that the inspector of construction of PICP be certified as Certified Compliance Inspector of Stormwater (CCIS) or Certified Erosion, Sediment, and Stormwater Inspector (CESSWI) and have familiarity with Stormwater Pollution Prevention Plans (SWPPP).

Construction Inspection Checklist

Pre-construction meeting

- ❑ Walk through site with builder/contractor/subcontractor to review erosion and sediment control plan/stormwater pollution prevention plan or SWPPP)
- ❑ Determine when PICP is built in project construction sequence; before or after building construction, and measures for PICP protection and surface cleaning
- ❑ Aggregate material locations identified (hard surface or on geotextile)

Sediment management

- ❑ Access routes for delivery and construction vehicles identified
- ❑ Vehicle tire/track washing station (if specified in E&S plan/SWPPP) location/ maintenance

Excavation

- ❑ Utilities located and marked by local service
- ❑ Excavated area marked with paint and/or stakes
- ❑ Excavation size and location conforms to plan

Sediment management

- ❑ Excavation hole as sediment trap: cleaned immediately before subbase stone placement and runoff sources with sediment diverted away from the PICP, or
- ❑ All runoff diverted away from excavated area
- ❑ Temporary soil stockpiles should be protected from run-on, run-off from adjacent areas and from erosion by wind.
- ❑ Insure linear sediment barriers (if used) are properly installed, free of accumulated litter, and built up sediment less than 1/3 the height of the barrier.
- ❑ No runoff enters PICP until soils stabilized in area draining to PICP

Foundation walls

- ❑ At least 10 ft (3 m) from foundation walls with no waterproofing or drainage
- ❑ At least 100 ft (30 m) from water supply wells
- ❑ Soil subgrade: rocks and roots removed, voids refilled with permeable soil
- ❑ Soil compacted to specifications (if required) and field tested with density measurements per specifications
- ❑ No groundwater seepage or standing water. If so dewatering or dewatering permit may be required.

Geotextile (if specified)

- ❑ Meets specifications (nonwoven recommended)
- ❑ Placement and down slope overlap (min. 2 ft or 0.6 m) conform to specifications and drawings
- ❑ Sides of excavation covered with geotextile prior to placing aggregate base/subbase
- ❑ No tears or holes
- ❑ No wrinkles, pulled taught and staked

Impermeable Liner (if specified)

- ❑ Meets specifications (woven recommended)
- ❑ Placement, field welding, and seals at pipe penetrations done per specifications

Drain pipes/observations wells

- ❑ Size, perforations, locations, slope, and outfalls meet specifications and drawings
- ❑ Verify elevation of overflow pipes

Subbase, base, bedding and jointing aggregates

- ❑ Sieve analysis from quarry conforms to specifications
- ❑ Spread (not dumped) with a front-end loader to avoid aggregate segregation
- ❑ Storage on hard surface or geotextile to keep sediment-free
- ❑ Thickness, placement, compaction and surface tolerances meet specifications and drawings

Edge restraints

- ❑ Elevation, placement, and materials meet specifications and drawings

Permeable interlocking concrete pavers

- ❑ Meet ASTM/CSA standards (as applicable) per manufacturer's test results
- ❑ Elevations, slope, laying pattern, joint widths, and placement/compaction meet drawings and specifications
- ❑ No cut paver subject to tire traffic is less than 1/3 of a whole paver
- ❑ All pavers within 6 ft (2 m) of the laying face fully compacted at the completion of each day
- ❑ Surface tolerance of compacted pavers deviate no more than ±3/8 (±10 mm) under a 10 ft (3 m) long straightedge

Final inspection

- ❑ Surface swept clean
- ❑ Elevations and slope(s) conform to drawings
- ❑ Transitions to impervious paved areas separated with edge restraints
- ❑ Surface elevation of pavers 1/8 to 3/8 in. (3 to 10 mm) above adjacent drainage inlets, concrete collars or channels (for non-ADA accessible paths of travel); to ¼ in. or 6 mm (for ADA accessible paths of travel)
- ❑ Lippage: no greater than 1/8 in. (3 mm) difference in height between adjacent pavers
- ❑ Bond lines for paver courses: ±½ in. (±15 mm) over a 50 ft (15 m) string line
- ❑ Stabilization of soil in area draining into permeable pavement (min. 20 ft (6 m) wide vegetative strip recommended)
- ❑ Drainage swales or storm sewer inlets for emergency overflow. If storm sewer inlets used, insure properly protected.

- ❑ Runoff from non-vegetated soil diverted from PICP surface
- ❑ Test surface for infiltration rate per specifications using ASTM C1701 Minimum 100 in./hr recommended

PICP In-service Inspection Checklist

- ❑ 1 to 2 times annually (typically spring/fall): vacuum surface, adjust vacuuming schedule per sediment loading and/or any sand deposits from winter
- ❑ Winter: Remove snow with standard plow/snow blowing equipment; monitor ice on surface for reduced salt use than typically used on impervious pavements
- ❑ Water ponding on surface immediately after a storm (paver joints or openings severely loaded with sediment): test surface infiltration rate using ASTM C1701. Vacuum clean to remove surface sediment and soiled aggregate (typically ½ to 1 in. or 13-25 mm deep), refill joints with clean aggregate, sweep surface clean and test infiltration rate again per C1701 to minimum 50% increase

Annual Inspection

- ❑ Replenish aggregate in joints if more than ½ in. (13 mm) from chamfer bottoms on paver surfaces
- ❑ Inspect vegetation around PICP perimeter for cover & soil stability, repair/replant as needed
- ❑ Inspect and repair all paver surface deformations exceeding 1/2 in. (13 mm)
- ❑ Repair pavers offset by more than 1/4 in. (6 mm) above/below adjacent units or curbs, inlets etc.
- ❑ Replace cracked paver units impairing surface structural integrity
- ❑ Check drains outfalls for free flow of water and outflow from observation well after a major storm

502 DEERING CENTER
PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

SWALES, DITCHES AND PAVED SURFACES

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
2/3/17	ABC	I, C	EXAMPLE: removed sand along the edge of the road. Heavy rain over the weekend.

502 DEERING CENTER
PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

CATCH BASINS, FIELD INLETS, DRAIN MANHOLES AND OUTLET CONTROL STRUCTURE

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
2/3/17	ABC	I, C	EXAMPLE: Remove sand deposits and debris as necessary.

502 DEERING CENTER
PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

DRAIN PIPES

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
2/3/17	DEF	I, C	EXAMPLE: Cleared debris from ends of pipes. Called ACME to clean debris from field inlets.

502 DEERING CENTER PORTLAND, MAINE			
INSPECTION / MAINTENANCE LOG			
INFILTRATION BASIN			
I: INSPECTED - C: CLEANED - R: REPAIRED			
DATE	**INITIALS**	**ACTION**	**COMMENT**
2/3/17	GHI	I, C	EXAMPLE: Units cleaned by ACME, 2 truckloads to Pike.

502 DEERING CENTER
PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

PERVIOUS PAVERS

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
2/3/17	GHI	I, C	EXAMPLE: Swept.

STORMWATER MANAGEMENT SYSTEM
MAINTENANCE PROGRAM
SUMMARY CHECKLIST

Item	Commentary	Frequency			
		Month	Semi-Annual	Annual	Long-Term
Open Swale, Ditches & Inlet Structures	Inspect for debris accumulation, erosion and excessive vegetation. Mow monthly, remove debris, repair and revegetate any area of erosion	**X Mow**		**X**	
Pavement	Review for damage and buildup of debris and sand.	**X**	**X Sweep**		
Catchbasin and Drain Manholes	Inspect grates to assure optimum water flows into the structures. Inspect sump and casco traps for blockage and sediment accumulation. Clean out sumps.	**X Inspect**		**X Sediment removal**	
Pipelines	Inspect for sediment build-up in pipe. Flush and remove as required.			**X**	
Infiltration Basin	Inspect catch basin to make sure it is draining.		**X**		

HOUSEKEEPNG REPORT

502 Deering Center
PORTLAND, MAINE
February 3, 2017

Housekeeping:

This project is located in a pond watershed. Protection of the groundwater quality is ensured by having good housekeeping practices and maintenance of the stormwater systems. Spill prevention must be incorporated into the plan. The business should follow the following steps:

1. Identify any products that if spilled will create contamination of the groundwater.

The maintenance of the landscaping and parking lots should include the sweeping of the parking lots and removal of the materials that may cause dust.

During construction follow the erosion control measures outlined on the plans.

During construction, develop a waste handling program that identified potential contaminates that could be introduced to the aquifer. Follow hazardous waste rules if any items used are considered a hazardous waste. It is critical to the site that uncontrolled releases be prevented.

This site will require dewatering of trenches. During construction, monitor stormwater runoff from the equipment and ground areas to minimize contamination of groundwater.

HardiePlank®
Lap Siding

Sleek and strong, HardiePlank lap siding is not just our best-selling product – it's the most popular brand of siding in America.

With a full spectrum of colors and textures, homeowners can enjoy protection from the elements and the versatility to make their dream home a reality. From Victorians to Colonials, HardiePlank lap siding sets the standard in exterior cladding.

Typical Fiber Cement Clapboard Siding

SELECT CEDARMILL®

Khaki Brown

Thickness	5/16 in.			
Length	12 ft. planks			
Width	5.25 in.	6.25 in.	7.25 in.	8.25 in.
Exposure	4 in.	5 in.	6 in.	7 in.
ColorPlus Pcs./Pallet	324	280	252	210
Prime Pcs./Pallet	360	308	252	230
Pcs./Sq.	25.0	20.0	16.7	14.3

SMOOTH

Countrylane Red

Thickness	5/16 in.			
Length	12 ft. planks			
Width	5.25 in.	6.25 in.	7.25 in.	8.25 in.
Exposure	4 in.	5 in.	6 in.	7 in.
ColorPlus Pcs./Pallet	324	280	252	210
Prime Pcs./Pallet	360	308	252	230
Pcs./Sq.	25.0	20.0	16.7	14.3

BEADED CEDARMILL®*

Light Mist

Thickness	5/16 in.
Length	12 ft. planks
Width	8.25 in.
Exposure	7 in.
ColorPlus Pcs./Pallet	210
Prime Pcs./Pallet	240
Pcs./Sq.	14.3

BEADED SMOOTH*

Heathered Moss

Thickness	5/16 in.
Length	12 ft. planks
Width	8.25 in.
Exposure	7 in.
ColorPlus Pcs./Pallet	210
Prime Pcs./Pallet	240
Pcs./Sq.	14.3

*Beaded Cedarmill® and Beaded Smooth not available primed in Pittsburgh, Philadelphia and New England.

Products are available primed or with ColorPlus Technology finishes. For more details, visit **jameshardie.com**

(http://www.alside.com/)

Typical Formed Metal Clapboard Siding

Satinwood® Steel Siding

A Classic Expression Of Style That Stands The Test Of Time

About

Alside's Satinwood® steel siding is manufactured in three unique profiles - clapboard, dutch lap, and board & batten - all of which have been expertly designed and finished to reflect the natural grain of traditional wood siding. This universal siding is suitable for nearly every style of home, and is a consistent performer in even the most severe climate.

Satinwood's heavy-duty construction hides wall imperfections, and its corrosion-resistant and non-combustible properties add to your home's protection and your peace of mind.

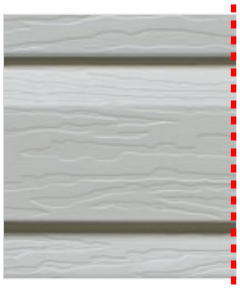
Features and Benefits

- Independently tested to withstand hurricane-force winds, with wind force exceedi
- Constructed of roll-formed 29 gauge G-90 galvanized steel for exceptional strengtl
- Heavy-duty construction hides wall imperfections
- Non-combustible product that meets even the most stringent building codes
- Lifetime Transferable Warranty*
  *See printed warranty for complete details

Photos

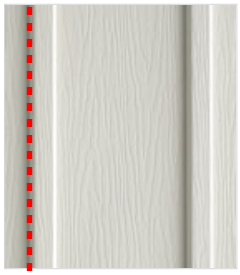
Double 4" clapboard

Double 5" clapboard



Double 5" dutch lap

Single 8" clapboard



Single 12" vertical

Typical Everlast Clapboard Siding

It's called Everlast for a reason.

Everlast yields the highest performance and longest lasting good looks of any siding product. It also requires the lowest maintenance, minimizing its environmental impact.

Profile & Color Shown: 6-7/8," Misty Taupe

Environment

- Longest lasting and fully recyclable materials that never requires painting or caulking
- No wood fibers to absorb or retain moisture that can lead to warping, swelling, or delamination
- When cut, no harmful silica dust is created as with some fiber cement siding products
- Contains no organic material that can rot or be attacked by insects

Performance

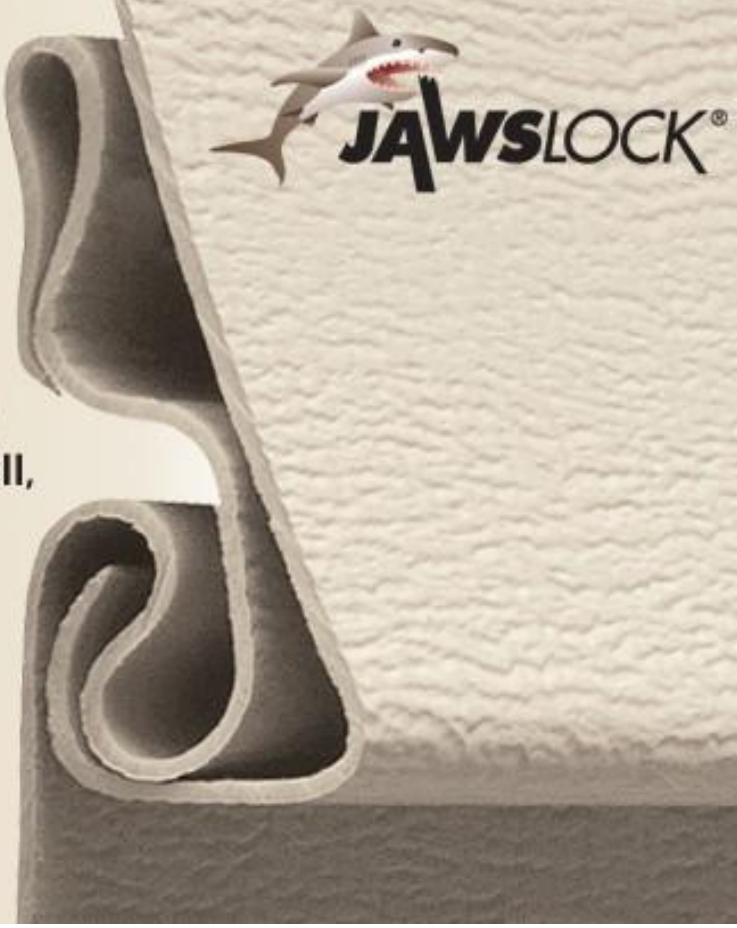
- Backed by an industry-best Limited Lifetime Warranty*
- Will not support combustion
- Superior wind, hail, and impact resistance
- Low-maintenance – occasional cleaning with a garden hose helps maintain its original luster

* See warranty for details.

Typical Vinyl Clapboard Siding

XLOK™ TECHNOLOGY

XLok® Technology combines JawsLock,® a Superior Full Reversed Rolled-Over Nail Hem that doubles the thickness of the panel where it's nailed to the wall, and the NailRIGHT® Siding Installation System, for an installation that's secure and accurate. It also protects against panel blow off in adverse weather conditions.



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January 16, 2017

To: The Planning Board

RE: 502 Stevens Avenue Level 3 Site Plan & Subdivision

Let it me known that I oppose this Site Plan and Subdivision because of multiple reasons:

Traveling North from Woodfords Street up Stevens Avenue to Hartley Street:

Left Side of Street: Schools & Businesses ***Depicts Rental Unit(s) above

Deering High School
Longfellow Elementary School
Pleasant Avenue Church
Siano's Restaurant & Pizzeria
Pat's Meat Market - 2nd floor - Tree House Restaurant
House - Multiple Family ***(2-3 rents)
Honey Exchange
Roy's Shoe Shop - ***Living Quarters upstairs
Lincoln Middle School

Right Side of Street:

Burbank Branch Library
Photography Studio & One other business ***
Jet Video/ Postal Store/Ice Cream Shop ***
Hair Salon***
Tailor/Sewing Shop ***
Black Cat Coffee Shop***
Hair Salon
Scandinavian Shop
Quality Shop/Grocery/Sandwich Shop ***
Veterans Building - Offices above
Dr. Ron Cody, DDS ***
Grey Home - 4-5 Therapists Offices
White Building - Offices ?

That is a total of 22 active use buildings in the vicinity not counting any single homes in the area or apartment houses.

My home is the second home on the left behind Dr. Cody's office and all of my neighbors, including myself, just complained in September about forcing the two hour parking limit. We, as a community, petitioned against enforcing the two hour limit because we do not have a problem with parking or safety at this time.

The property that is in question, will add more traffic to an all ready busy area and be a detriment to all persons on foot, driving, parking and crossing the street. The property has a shared, blind driveway with Roy's Shoe Shop now and adding 10 extra cars pulling in and out will be dangerous for anyone on foot. It is dangerous now.

Years ago Portland tried to alter Stevens Avenue by constructing the length of the street by Evergreen Cemetery, making an "S" shape along the route to make drivers slow down. It was a complete mess that ruined the esthetics of the whole quaint neighborhood.

Knowing that the area is heavily traveled with the businesses and schools, the City of Portland keeps adding to the populated area. For example, building a Pharmacy School without enough parking for the students and if that wasn't bad enough, allowing for a Dental School. The students are forced to park in the street filling the whole length of Steven's Avenue from Morrill's Corner to Hartley Street. I feel really bad for these students for they have to walk a long way to their cars on a dimly lit street! Someone is going to get killed!

The area just can not handle any more traffic!

In addition. the Mother House is being sold and construction to take place with 200 or more units, I believe the City of Portland should take control to protect the citizens of Deering Center; it's children and most of all, all pedestrians.

I suggest that a member of the Planning Board come to the area for a week at different times; park their car; walk around; and observe how as a community we make it work and look out for each other. Most importantly, observe during school letting out; the school buses; the parents picking their kids up; and during 5-6pm when people are running into the different shops on their way home from work to grab something for dinner.

Thank you for your time and consideration.
Nancy Polito
177 Clinton Street
Portland, Maine 04103

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Deering center

1 message

Barbara Barhydt <bab@portlandmaine.gov> Mon, Jan 23, 2017 at 8:15 AM
To: "Munson, Jennifer" <jmy@portlandmaine.gov>, Matthew Grooms <mgrooms@portlandmaine.gov>

Public comment for 502 Stevens Avenue.

Barbara Barhydt
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101
(207) 874-8699
Fax: (207) 756-8256
bab@portlandmaine.gov

---------- Forwarded message ----------
From: **Margot Fine** <margotfine@yahoo.com>
Date: Sat, Jan 21, 2017 at 8:05 PM
Subject: Deering center
To: bab@portlandmaine.gov

Very excited about new 502 Deering Center. Would like to see more change over like this one on Stevens Ave strip/Main Street of Deering Center. The vision is well intentioned and will add a lot of value to Deering Center.

I hope this venture could support even more seating and benches and pocket areas and bike racks and covered bus stops to support more of a community feel and town center down the strip as opposed to just changing the space in front of 502. How could we encourage other businesses to do the same? Perhaps more city trees could add to this feel.

Would also hope that this new development supports more current businesses becoming more aware of current neighborhood interests and desires and bring more community life & current business taste into the Deering center strip. I feel much of the stores on our strip are out dated and not well used.

Also, would be great to consider branding Deering center with some signage for stores to have the main strip look like a town center.

With more economic revival to the town center off the peninsula, it will bring added value to the neighborhood and support the vibrant town center it could be, instead of losing Portland people to surrounding towns once the peninsula is no longer affordable and people are looking off peninsula for a place to invest their time and energy and raise families.

Thanks!
Margot
33 Brentwood St.

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: 502 Stevens Ave. Project

Barbara Barhydt <bab@portlandmaine.gov> Sat, Feb 4, 2017 at 1:36 PM
To: Matthew Grooms <mgrooms@portlandmaine.gov>, "Munson, Jennifer" <jmy@portlandmaine.gov>

Public comment.
Barbara Barhydt
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101
(207) 874-8699
Fax: (207) 756-8256
bab@portlandmaine.gov

---------- Forwarded message ----------
From: **Eve Sawyer** <my3zle@gmail.com>
Date: Fri, Feb 3, 2017 at 11:05 PM
Subject: 502 Stevens Ave. Project
To: bab@portlandmaine.gov

Hi,. I'm a resident of Deering

Center, and am thrilled with the prospect of such a well thought-out, tasteful, environmentally positive building being created in this neighborhood. Dennis Lachman has come up with a plan that will undoubtedly enhance the spirit and heart of this little village.

Sincerely,
Eve Sawyer

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: 502 Deering Center, New Mixed-use Project

1 message

Barbara Barhydt <bab@portlandmaine.gov> Wed, Feb 1, 2017 at 2:58 PM
To: "Munson, Jennifer" <jmy@portlandmaine.gov>, Matthew Grooms <mgrooms@portlandmaine.gov>

public comment

Barbara Barhydt
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101
(207) 874-8699
Fax: (207) 756-8256
bab@portlandmaine.gov

---------- Forwarded message ----------
From: **Barbara Hager** <bohbhagr@maine.rr.com>
Date: Wed, Feb 1, 2017 at 2:11 PM
Subject: Re: 502 Deering Center, New Mixed-use Project
To: bab@portlandmaine.gov

Hello,
I am familiar with this project for Stevens Avenue and support it enthusiastically. Commercial Stevens Avenue decidedly needs rejuvenation and this project could be the beginning. Its subtle use of the shape of the original theater that burned and the sensitive inclusion of a vest pocket park are positive nods to the neighborhood's architectural history and the abundant surrounding greenery of Deering Center. Soon our neighborhood will be more densely populated and a mixed use project such as this will help fill the need for affordable housing and efficient commercial space. I applaud the owner/developers for offering this wonderful project, and I hope the application is approved.

Best,

Barbara Hager,
83 Jeanne Street
Portland

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: 502 Stevens Avenue

1 message

Barbara Barhydt <bab@portlandmaine.gov> Fri, Feb 10, 2017 at 8:30 AM
To: "Munson, Jennifer" <jmy@portlandmaine.gov>, Matthew Grooms <mgrooms@portlandmaine.gov>

Barbara Barhydt
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101
(207) 874-8699
Fax: (207) 756-8256
bab@portlandmaine.gov

---------- Forwarded message ----------
From: **Preserve Deering Neighborhood 1** <preservedeering@gmail.com>
Date: Thu, Feb 9, 2017 at 2:57 PM
Subject: 502 Stevens Avenue
To: bab@portlandmaine.gov
Cc: Kiya Lachsmith <kiyalachsmith@gmail.com>, Denis Lachman <denis@lachmanarchitects.com>

Hello Barbara,

As residents of Deering Center, we write to share our support of Kiya Smith's and Denis Lachman's proposed project at 502 Stevens Avenue.

Its scale and planned commercial units on the first floor with residential units on the upper floors are consistent with this area of the neighborhood. Many of the existing businesses along this little strip follow this model. It's a great little infill project. Kiya and Denis have thoughtfully considered the neighborhood and we feel it will be a welcome asset to Deering Center.

Bobbi Cope
172 Concord Street

John Thibodeau
114 Clinton Street

Preserve Deering Neighborhood
https://www.facebook.com/Preserve-Deering-Neighborhood-848389568560983/

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: 502 Deering center project

1 message

Barbara Barhydt <bab@portlandmaine.gov> Fri, Feb 10, 2017 at 8:35 AM
To: "Munson, Jennifer" <jmy@portlandmaine.gov>, Matthew Grooms <mgrooms@portlandmaine.gov>

Barbara Barhydt
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101
(207) 874-8699
Fax: (207) 756-8256
bab@portlandmaine.gov

---------- Forwarded message ----------
From: **Jennifer Frick** <jfrick47@gmail.com>
Date: Fri, Feb 3, 2017 at 11:14 AM
Subject: 502 Deering center project
To: bab@portlandmaine.gov

To Whom it May Concern:
I recently attended a gathering to learn about this project and was very impressed with it. It was clear that Denis Lachman and Kiya Smith have put much thought, planning and a great deal of vision into this project already. The multi-use aspect, especially the “pocket park” has much appeal to me. As a community-builder, I think the project will enhance the feel of our “village” nicely.
As well, it will provide housing which is greatly needed and help re-vitalize the neighborhood all of us Deering Center folks hold so dear.

Respectfully submitted,
Jennifer Frick
120 Pleasant Ave.

PC9

Public Comment Received as of 2/14/17

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

502 Deering Center - 2/14/17 Planning Board workshop item

Ethan & Sarah Croce <ethan-sarah@juno.com> Sun, Feb 12, 2017 at 7:40 PM
To: jmy@portlandmaine.gov, mgrooms@portlandmaine.gov

Dear members of the Portland Planning Board,

I am writing to express my enthusiastic support for applicant Denis Lachman's proposed mixed use building at 502 Stevens Avenue. I am a resident of the neighborhood and believe this project will serve as a model for infill development in Deering Center. I believe the scale of this project is respectful of the Stevens Avenue streetscape and that the project is a sensitive design that will further the goals of increasing the vibrancy and density of the neighborhood.

I am very appreciative of the applicant's willingness to collaborate with the abutting property owner to coordinate shared vehicular access to the site. This shared access should greatly improve pedestrian safety for the area's many school children by reducing a curb cut and a vehicle/pedestrian conflict point. The shared access drive also allows space on the site to be re-devoted to a higher and better use in the form of the proposed public/private pocket park.

I am also supportive of the building's architecture and believe that the projecting bay is an important design component that should be retained as it will provide several benefits to the site. As a public transit user, I am appreciative of the projecting bay's ability to provide an attractive sheltered bus waiting area. The bay will also enhance the safety of the pocket park by ensuring that there will be "eyes on the street" through enhanced sight lines between users of the park and residents of the new building. Finally, I believe the projecting bay will help to frame the pocket park and provide a visual clue to the pocket park's entrance for pedestrians. The pocket park's location, approximately halfway between Brentwood Street and Crosby Street on a superblock, will serve to break up the length of this superblock by creating a new four-way public intersection of sorts directly opposite Hartley Street and the new proposed crosswalk across Stevens Avenue. In this way, the projecting bay helps to anchor and define this new "corner intersection".

Thank you for the opportunity to comment on this project.

Ethan Croce
136 Brentwood Street
Portland, ME 04103

Google Groups

502 Deering Center

Brian Daly <lbdaly26@gmail.com> Feb 10, 2017 3:55 PM
Posted in group: **Planning Board**

Dear Folks in the Planning and Urban Development Department,

I went to the meeting about 502 Deering Center the other night and was impressed by the thought that has gone into this project. I'm no expert, but I live in the neighborhood, and I think this mixed-use project will add to the vitality of Deering Center and bring people together. Every time I go to the Burbank Branch Library, I run into people I know, and I walk home happy to be living here. I think 502 Deering Center will make me feel the same way.

Sincerely,
Brian Daly
165 Brentwood Street

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: in support of the 502 Stevens Ave. project

Barbara Barhydt <bab@portlandmaine.gov> Tue, Feb 14, 2017 at 3:44 PM
To: "Munson, Jennifer" <jmy@portlandmaine.gov>, Matthew Grooms <mgrooms@portlandmaine.gov>

Barbara Barhydt
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101
(207) 874-8699
Fax: (207) 756-8256
bab@portlandmaine.gov

---------- Forwarded message ----------
From: **Jennifer Frick** <jfrick47@gmail.com>
Date: Tue, Feb 14, 2017 at 3:41 PM
Subject: in support of the 502 Stevens Ave. project
To: bab@portlandmaine.gov

To Whom it May Concern:

Over ten years ago I moved to Portland to be with my husband. I reluctantly left the rural setting that I loved, but fortunately was able to move to a very neighborly neighborhood three blocks from the corner of Pleasant and Stevens Avenues. That corner and the two blocks going north between Longfellow Elementary and Lincoln Middle School are the "hub" of our community. The establishment of a community garden several years ago and the presence of all the little shops catering to our various needs have endeared this area to me over the years.

On February 1, I attended a presentation of the proposed 502 Stevens Ave. project.

I was impressed with the thorough approach used by Denis Lachman and Kiya Smith to this project. The first level commercial space and the "pocket" park seem like a perfect fit for the "hub", and the dwelling spaces provide much needed housing for the area in general. The building and park will also greatly enhance the look of this wonderful Portland neighborhood.

Respectfully submitted,

Jennifer Frick

120 Pleasant Ave. #2

Portland, ME 04013

502
DEERING CENTER

502 STEVENS AVENUE
PORTLAND, ME

TAX MAP
16NE, LOT 135-E009

Consultants:

OWNER / APPLICANT:

502 DEERING CENTER, LLC
55 Hamblet Avenue
Portland, ME 04103

ARCHITECT:

LACHMAN ARCHITECTS & PLANNERS
58 Fore Street, Bldg 30
Portland, ME 04101
(207) 831-8585

LANDSCAPE ARCHITECT:

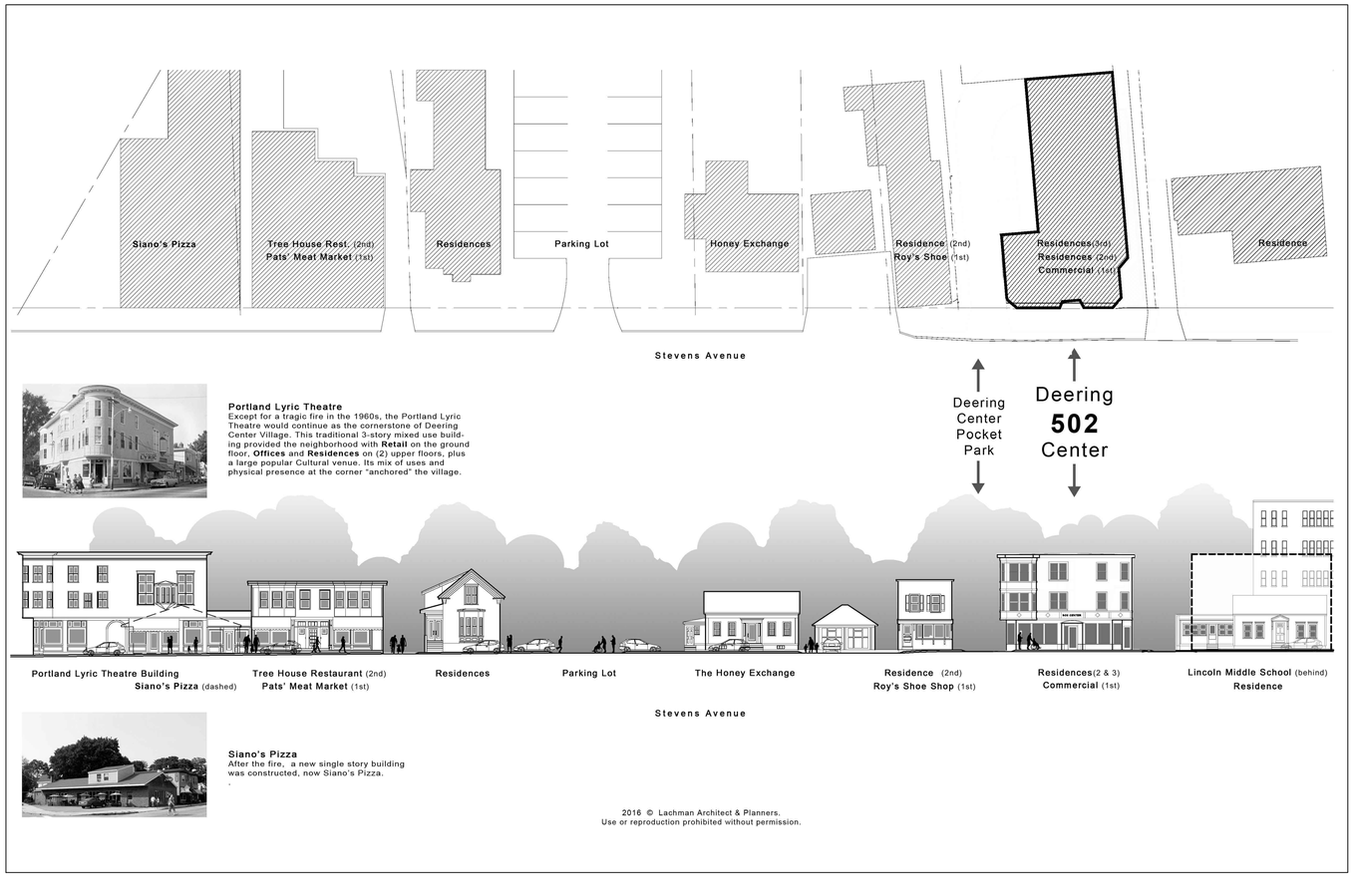
CARROLL ASSOCIATES
217 Commercial Street, Suite 200
Portland, ME 04101
(207) 772-1552

ENGINEER:

PINKHAM & GREER CIVIL ENGINEERS
28 Vannah Avenue
Portland, ME 04103
(207) 781-5242

SURVEYOR:

FOUR POINTS ASSOCIATES, INC.
9 Ralph Avenue
Lewiston, ME 04240
(207) 577-5840



Portland Lyric Theatre
Except for a tragic fire in the 1960s, the Portland Lyric Theatre would continue as the cornerstone of Deering Center Village. This traditional 3-story mixed use building provided the neighborhood with **Retail** on the ground floor, **Offices** and **Residences** on (2) upper floors, plus a large popular Cultural venue. Its mix of uses and physical presence at the corner "anchored" the village.

Siano's Pizza
After the fire, a new single story building was constructed, now Siano's Pizza.
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C 5.0 UTILITIES PLAN
C 6.0 CIVIL DETAILS
C 7.0 CIVIL DETAILS
C 8.0 SITE DETAILS
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A2.5 CARPORT (PH 2) AND BIKE SHELTER (PH 2)
A3 KEYED NOTES, FEATURES & DESCRIPTIONS

ISSUED FOR: SITE PLAN REVIEW - FINAL

ISSUE DATE: DECEMBER 22, 2016

REVISED DATE: 1. FEBRUARY 7, 2017
2. MARCH 13, 2017

502 DEERING CENTER

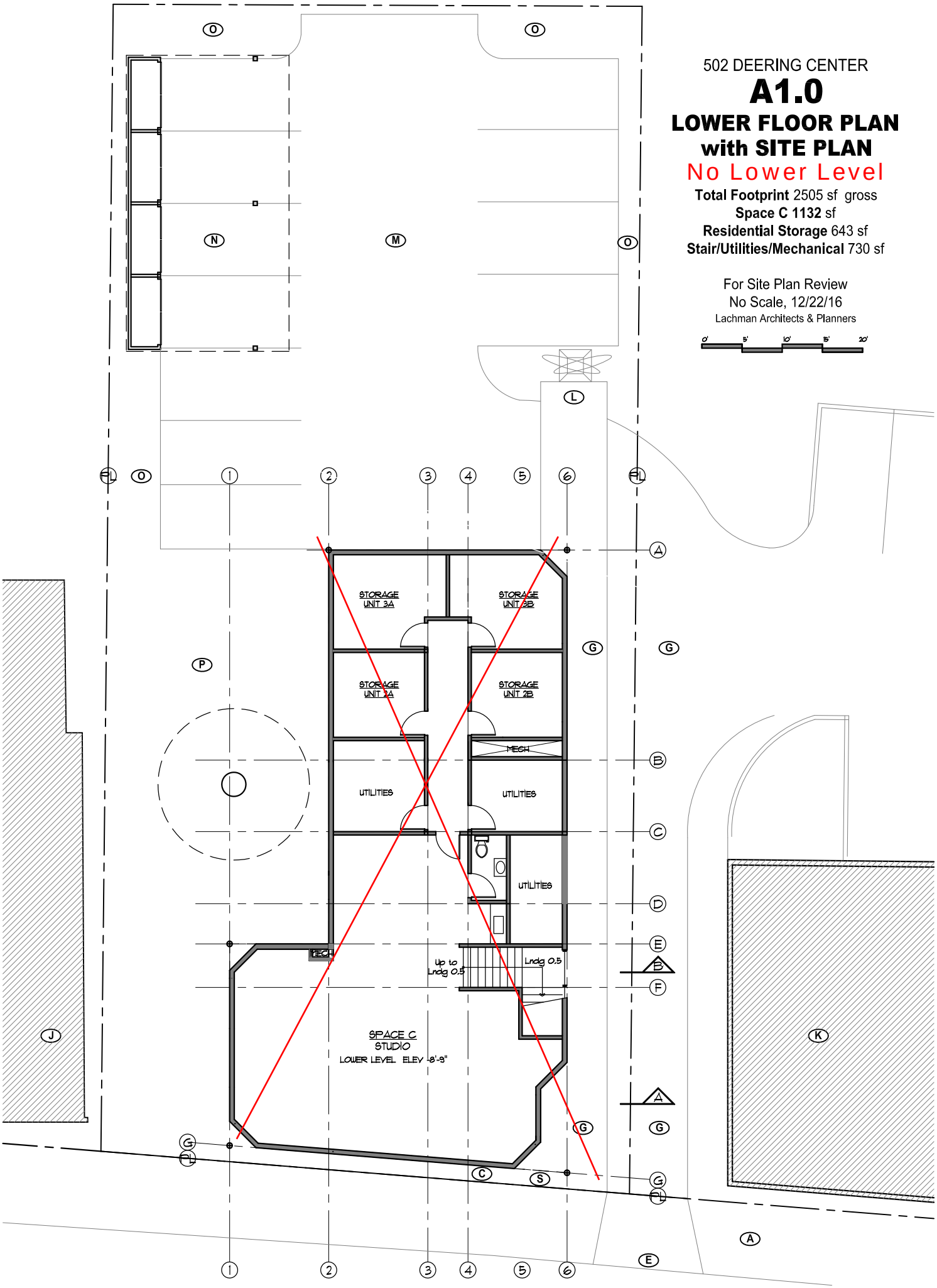
A1.0

LOWER FLOOR PLAN with SITE PLAN

No Lower Level

Total Footprint 2505 sf gross
Space C 1132 sf
Residential Storage 643 sf
Stair/Utilities/Mechanical 730 sf

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners



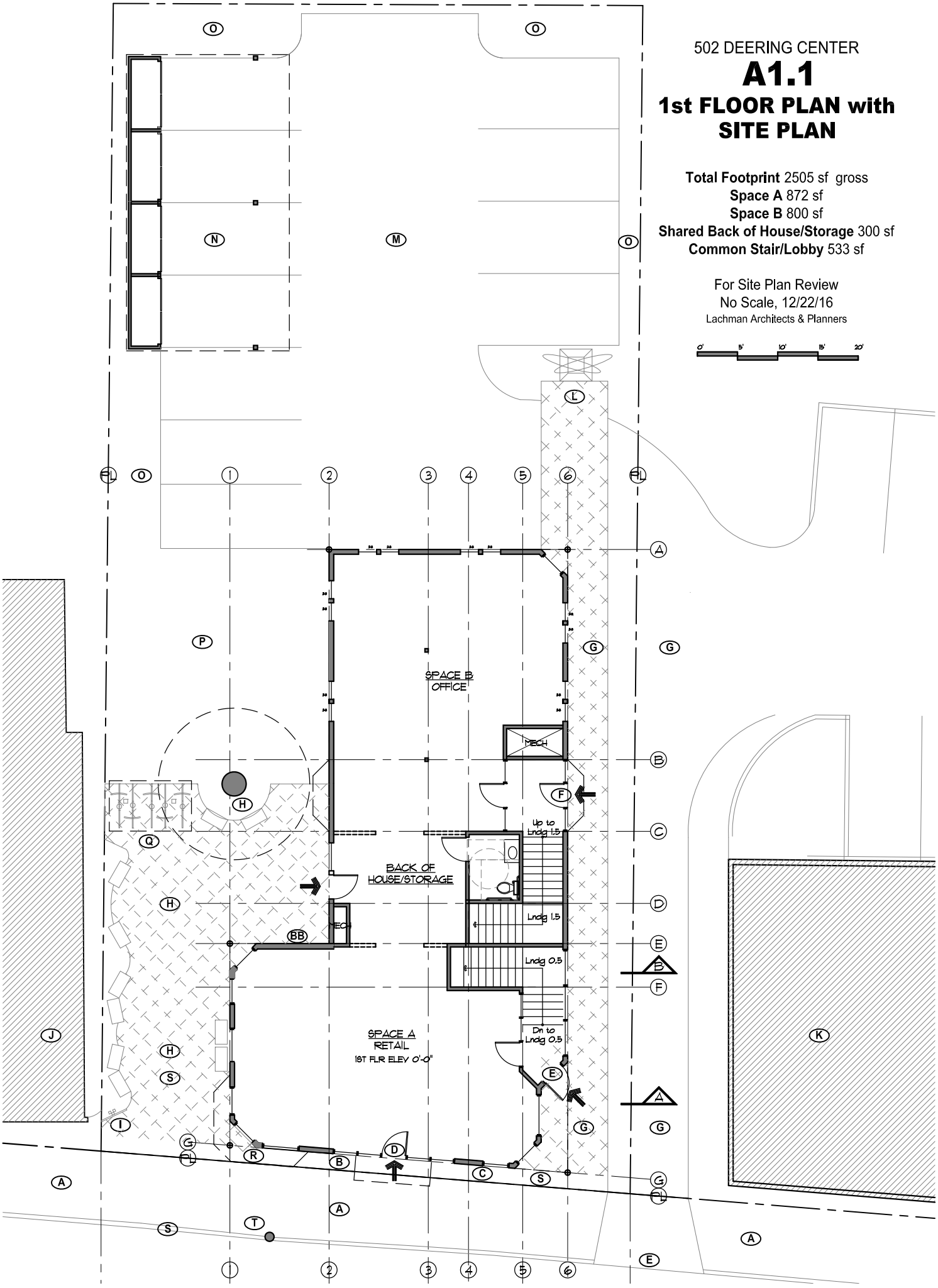
502 DEERING CENTER

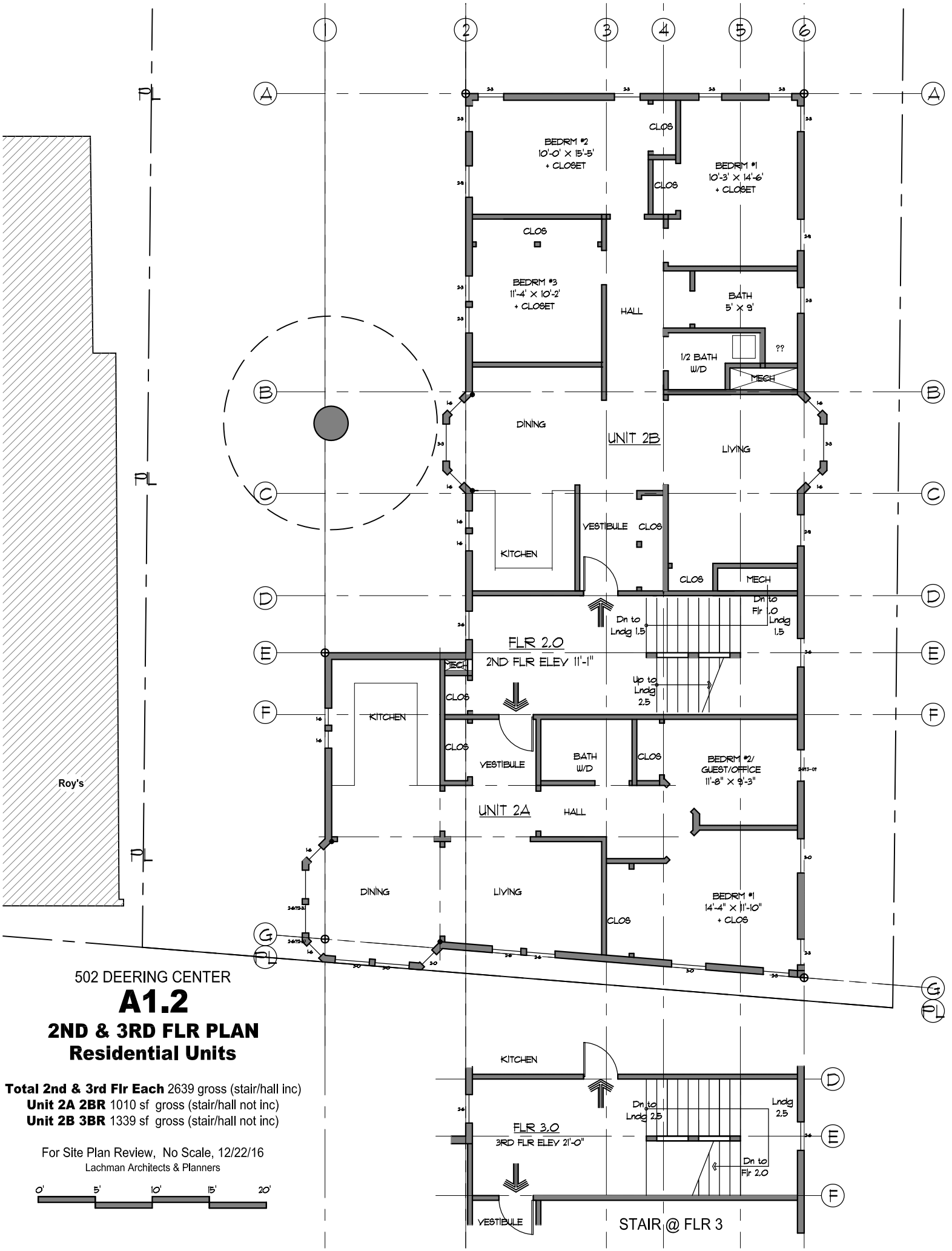
A1.1

1st FLOOR PLAN with SITE PLAN

Total Footprint 2505 sf gross
Space A 872 sf
Space B 800 sf
Shared Back of House/Storage 300 sf
Common Stair/Lobby 533 sf

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners





502 DEERING CENTER

A1.2

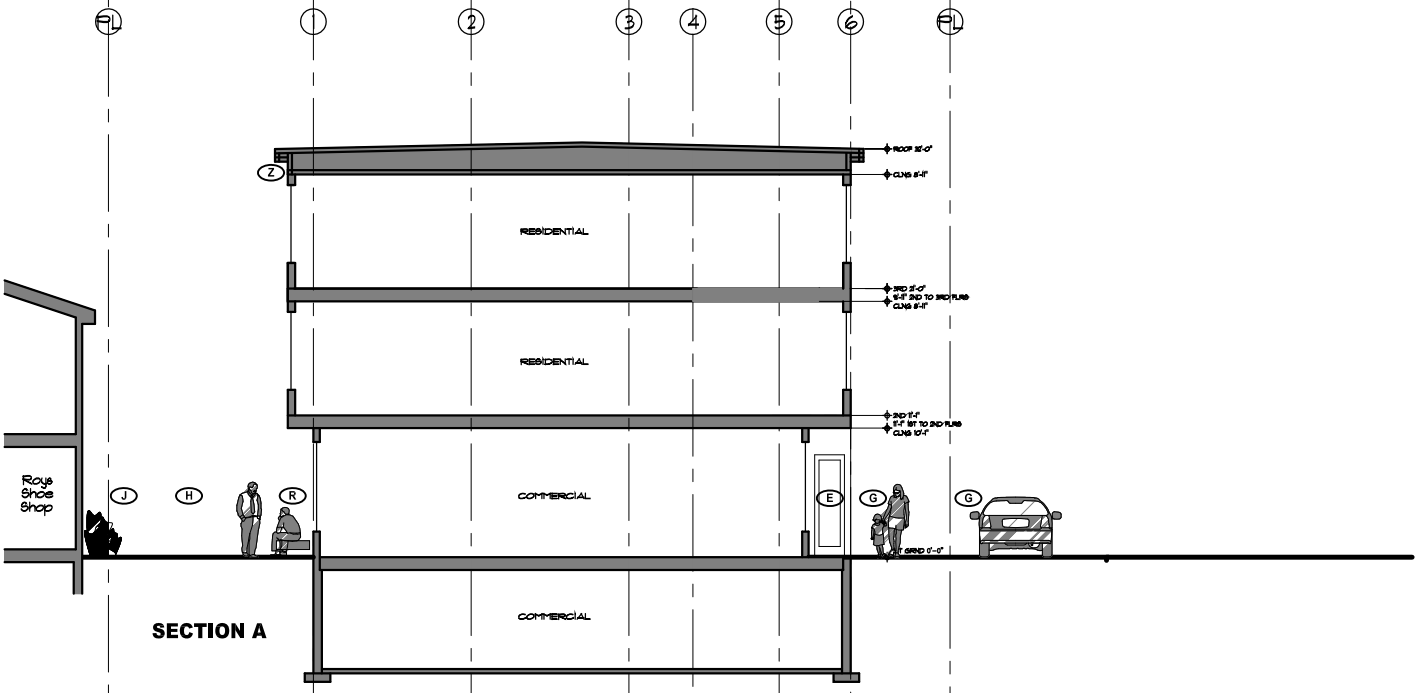
2ND & 3RD FLR PLAN
Residential Units

Total 2nd & 3rd Flr Each 2639 gross (stair/hall inc)
Unit 2A 2BR 1010 sf gross (stair/hall not inc)
Unit 2B 3BR 1339 sf gross (stair/hall not inc)

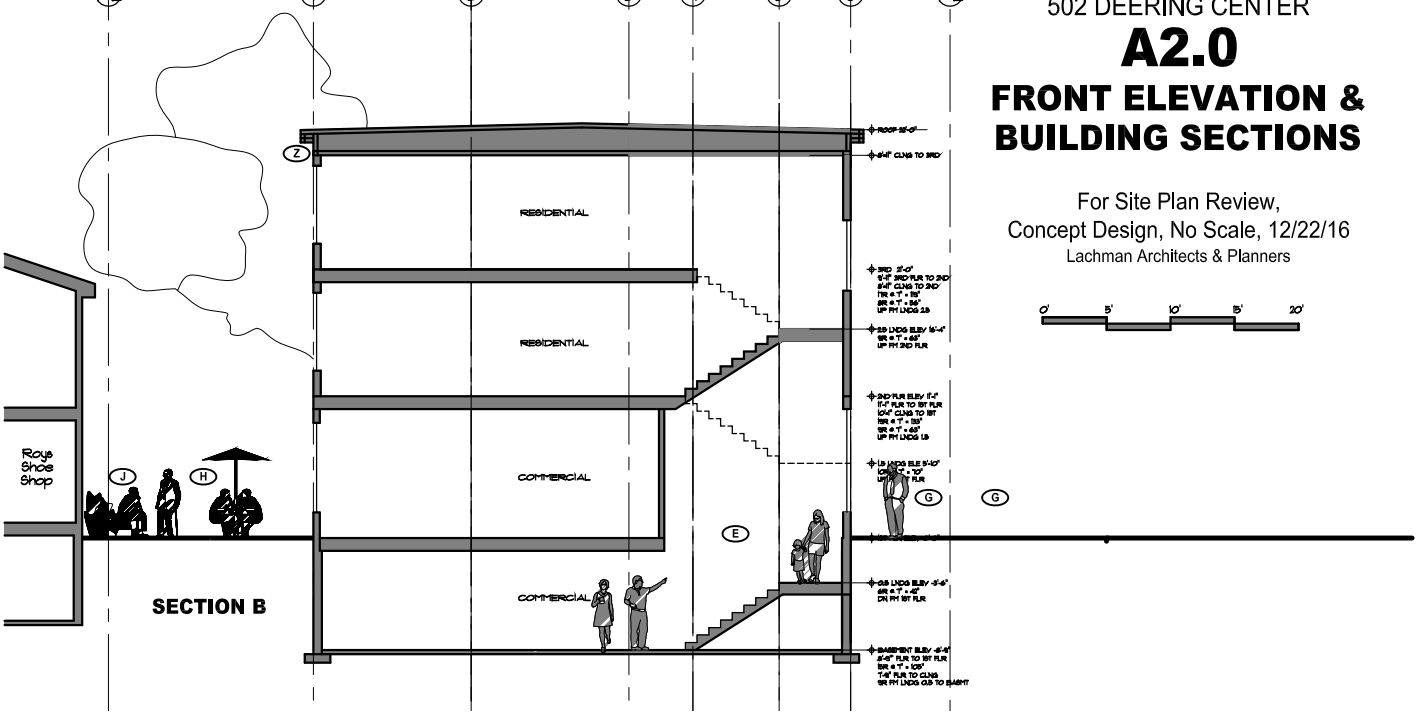
For Site Plan Review, No Scale, 12/22/16
Lachman Architects & Planners

0' 5' 10' 15' 20'

FRONT ELEVATION @ Stevens Ave



SECTION A



SECTION B

502 DEERING CENTER

A2.0

FRONT ELEVATION & BUILDING SECTIONS

For Site Plan Review,
Concept Design, No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'

FRONT ELEVATION @ Stevens Ave

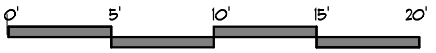
502 DEERING CENTER

A2.1

FRONT ELEVATION

FRONTING STEVENS AVE

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners



502 DEERING CENTER

A2.2

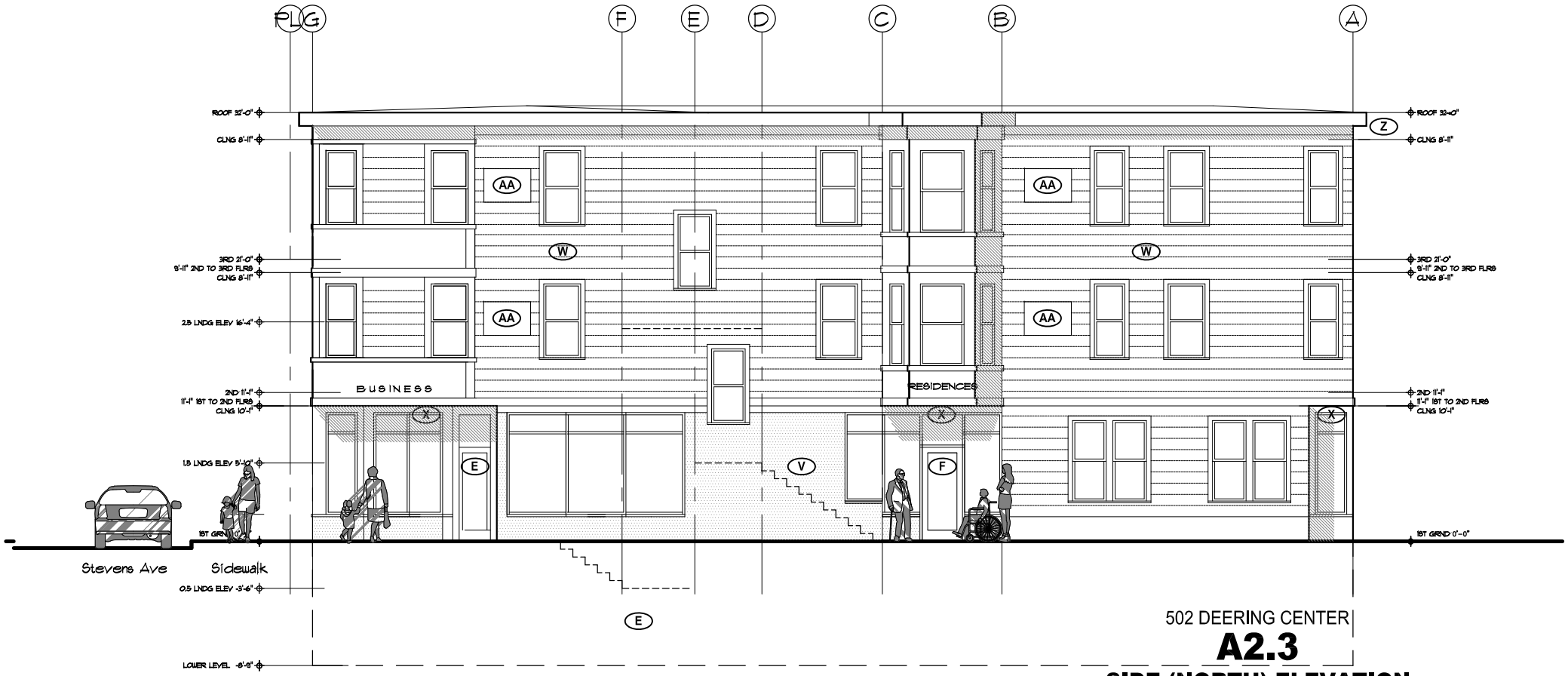
SIDE (SOUTH) ELEVATION

FRONTING POCKET PARK

For Site Poan Review, No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.3

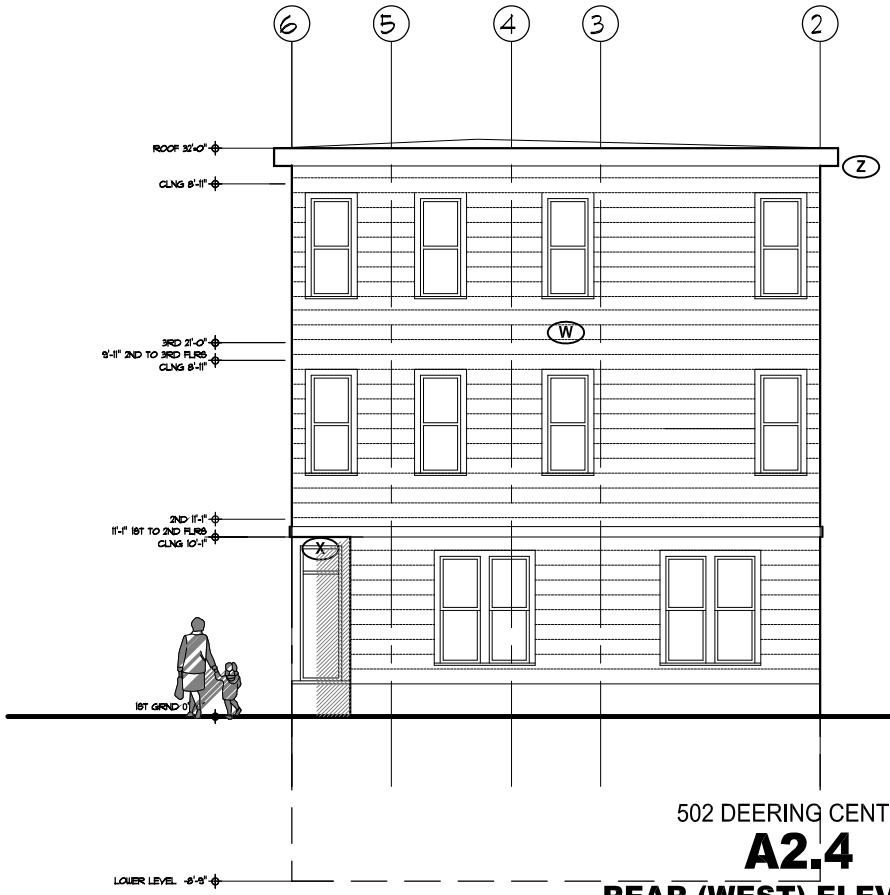
SIDE (NORTH) ELEVATION

FRONTING WALKWAY & SHARED DRIVEWAY

For Site Plan Review. No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.4

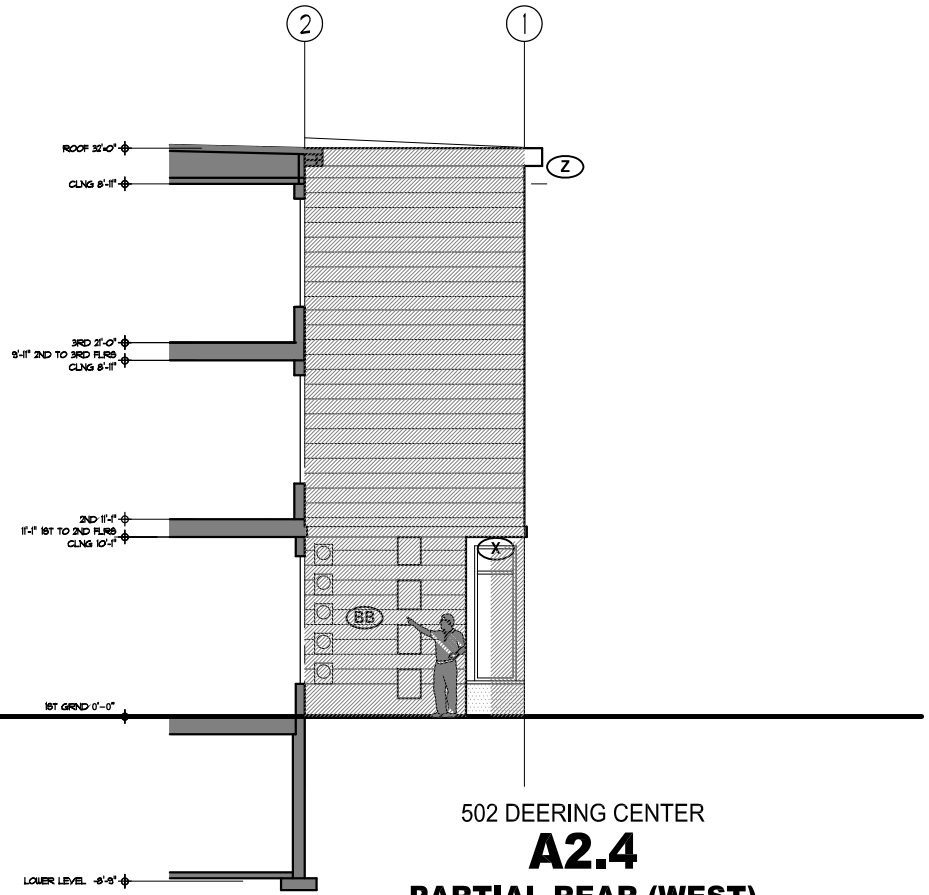
REAR (WEST) ELEVATION

FRONTING PARKING AREA

For Site Plan Review. No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

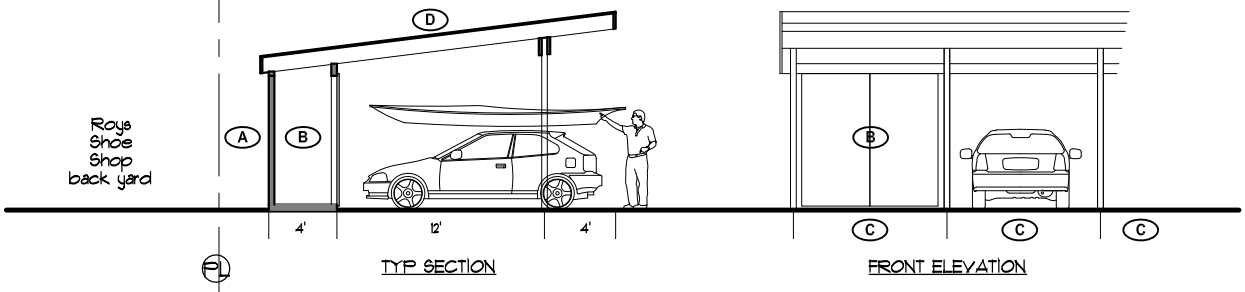
A2.4

PARTIAL REAR (WEST) ELEVATION @ GRID E

For Site Plan Review. No Scale, 12/22/16

Lachman Architects & Planners

0' 5' 10' 15' 20'

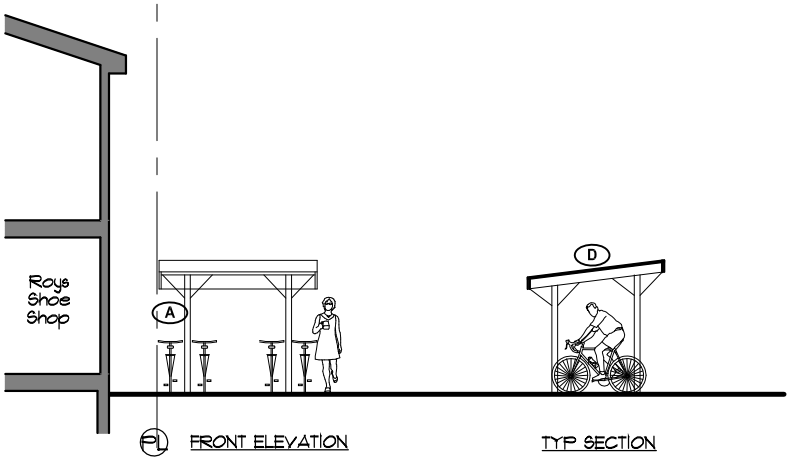


A Setback, Bl-b to Bl-b none required

B Utility Shed for residents, 1 per unit, 4' d x 8'h, each with pair of 4 x 8 sliding barn doors.

C Typ Parking Stall, 9' w x 17.5' d.

D Roof, shallow pitch

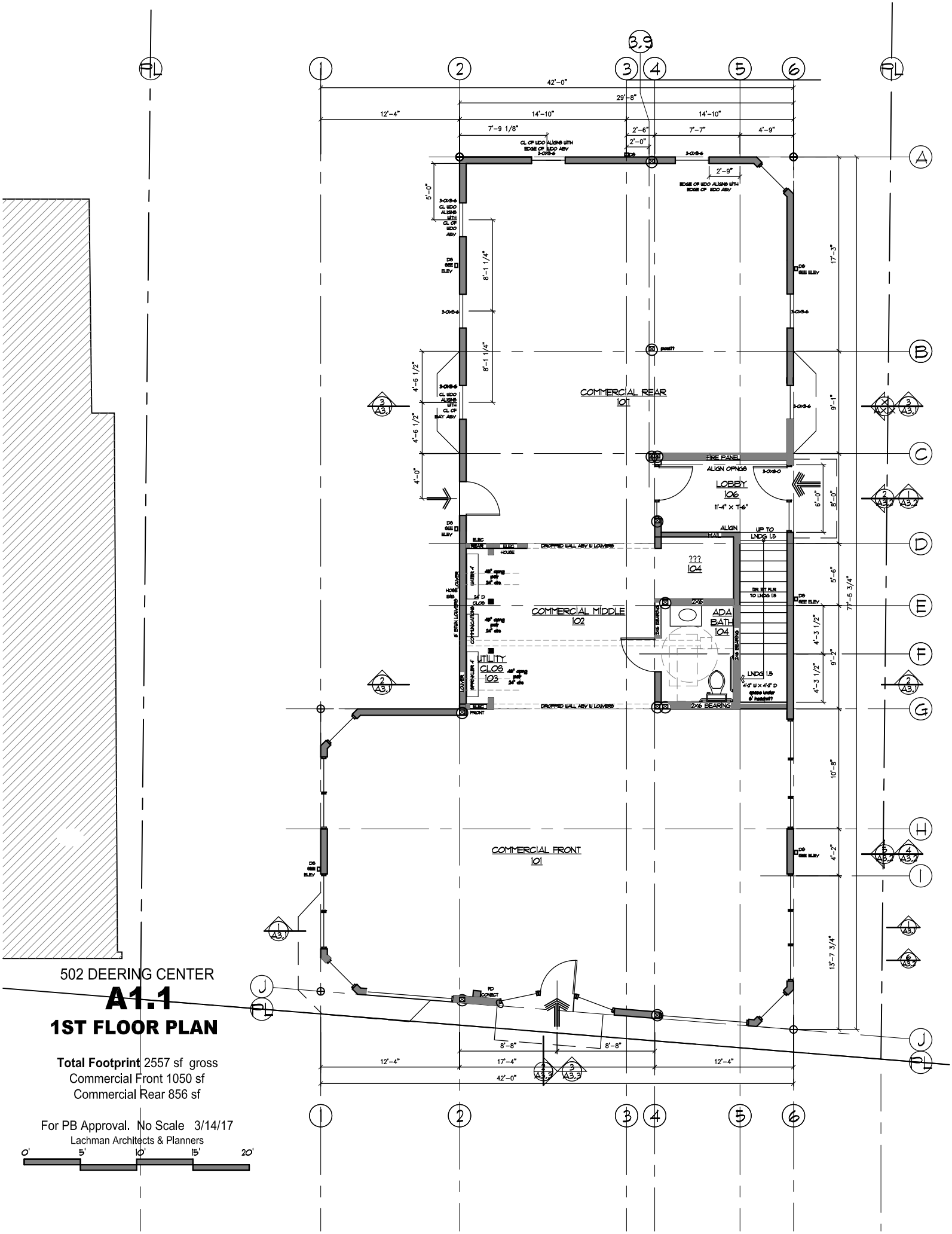


502 DEERING CENTER

A2.5

CARPORT (Phase 2) & BIKE SHELTER (Phase 2)

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners



502 DEERING CENTER

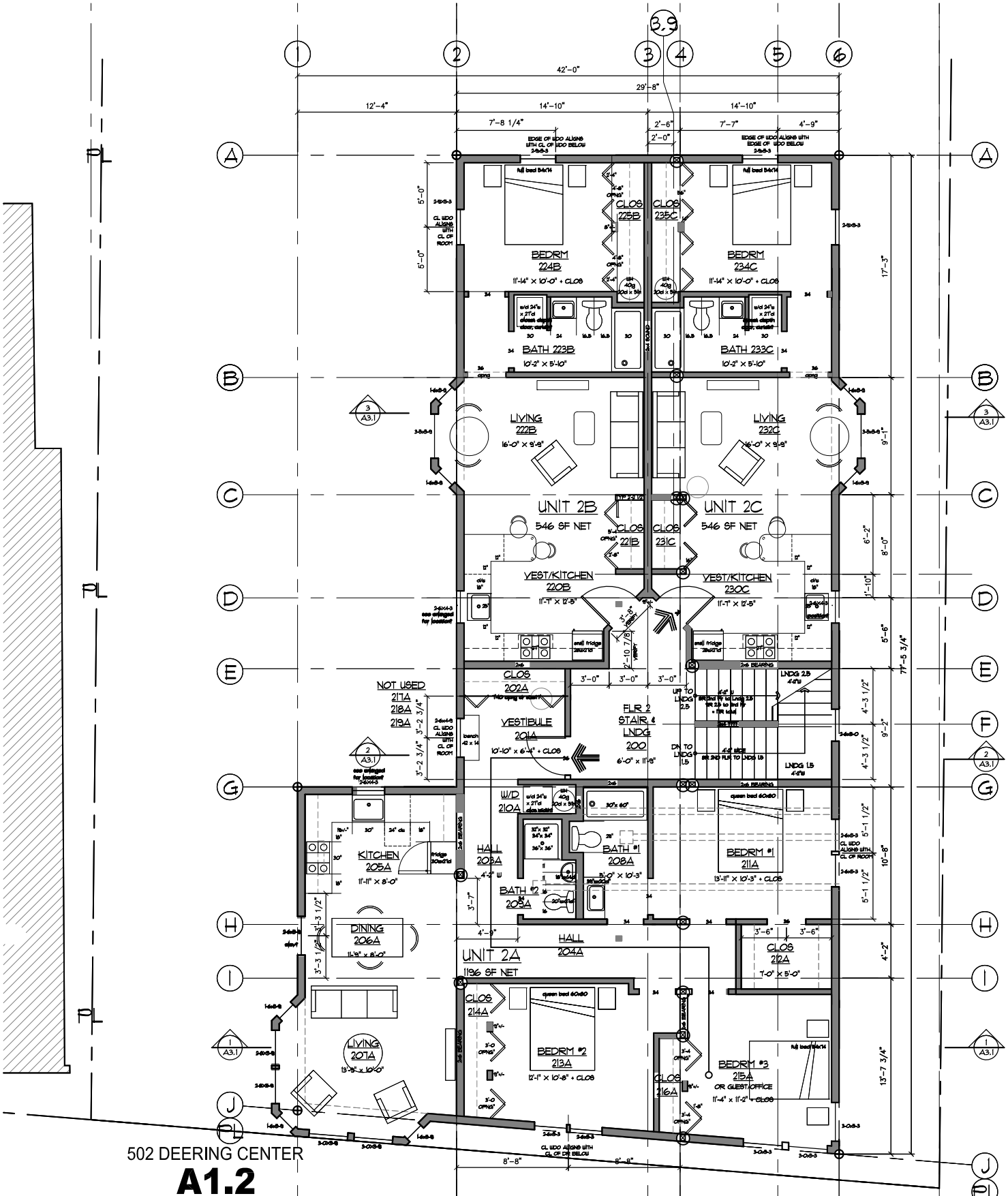
A1.1

1ST FLOOR PLAN

Total Footprint 2557 sf gross
Commercial Front 1050 sf
Commercial Rear 856 sf

For PB Approval. No Scale 3/14/17
Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A1.2

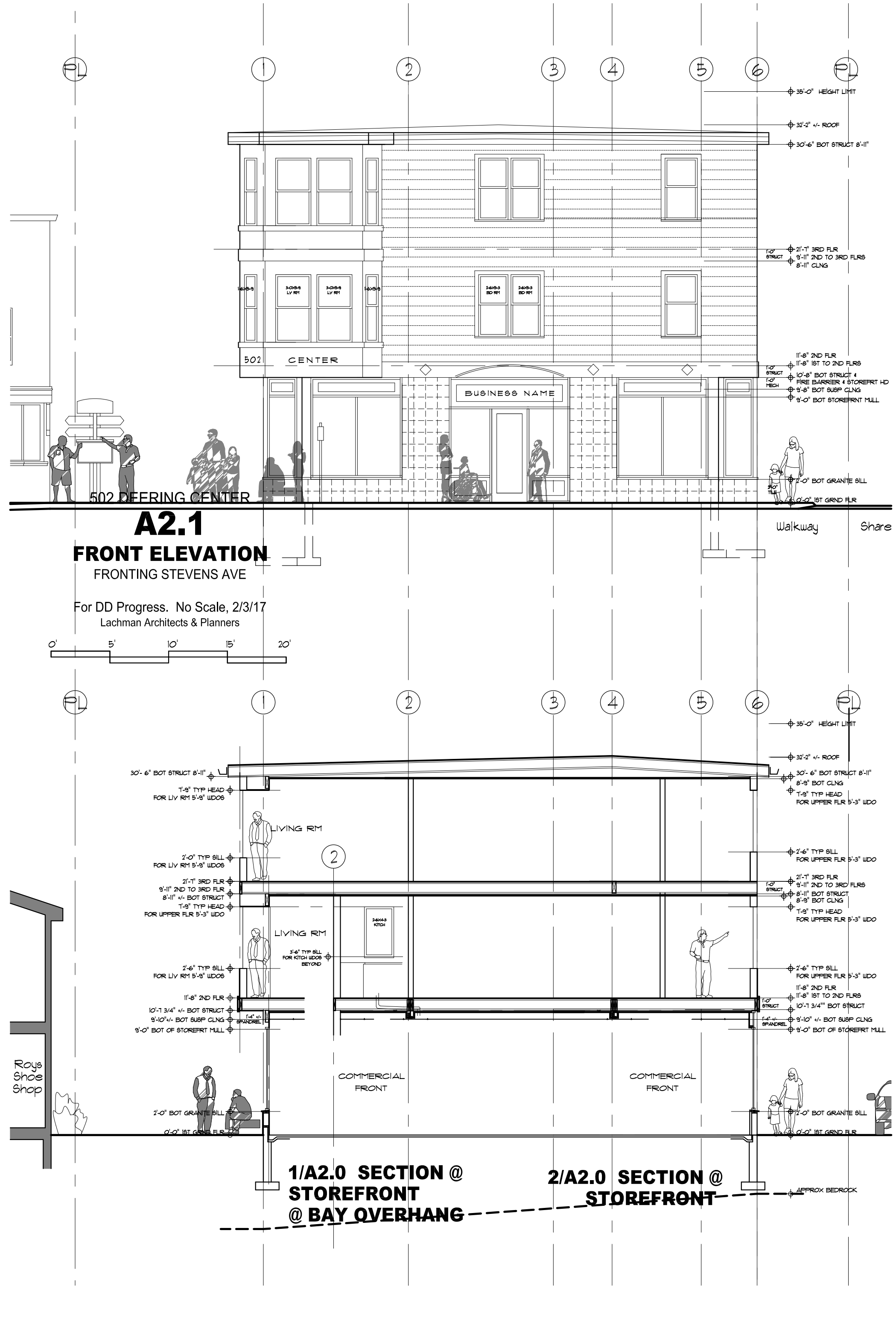
2ND & 3RD FLR PLAN
Residential Units

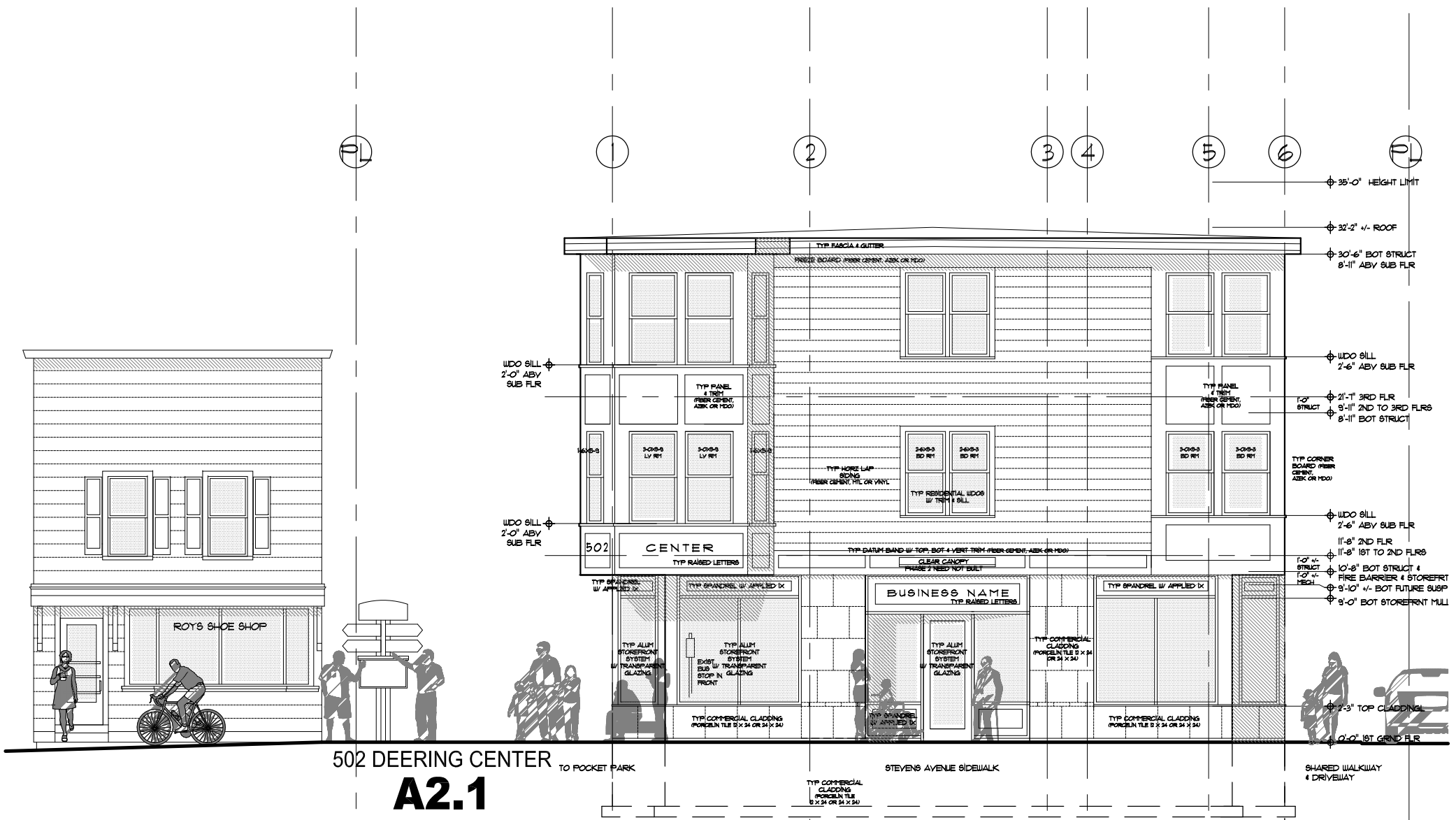
Total 2nd & 3rd Flr Each 2631 sf gross (stair/hall inc)
Front Unit 2A 3BR/2B 1196 sf net (stair/hall not inc)
Rear Unit 2B & 2C 1BR/1B 546 sf each net (stair/hall not inc)

For PB Approval. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'


PL
1
2
3
4
5
6
PL
35'-0" HEIGHT LIMIT
32'-2" +/- ROOF
30'-6" BOT STRUCT 8'-11"
21'-7" 3RD FLR
1'-0" STRUCT
9'-11" 2ND TO 3RD FLRS
8'-11" CLNG
1.6X5.9
3-0X5.9 LV RM
3-0X5.9 LV RM
1.6X5.9
2.6X5.3 BD RM
2.6X5.3 BD RM
502
CENTER
BUSINESS NAME
11'-8" 2ND FLR
11'-8" 1ST TO 2ND FLRS
1'-0" STRUCT
10'-8" BOT STRUCT & FIRE BARRIER & STOREFRT HD
1'-0" MECH
9'-8" BOT SUSP CLNG
9'-0" BOT STOREFRNT MULL
2'-0" BOT GRANITE SILL
1'-0" TILE
0'-0" 1ST GRND FLR
Walkway
Share
502 DEERING CENTER
A2.1
FRONT ELEVATION
FRONTING STEVENS AVE
For DD Progress. No Scale, 2/3/17
Lachman Architects & Planners
0'
5'
10'
15'
20'
PL
1
2
3
4
5
6
PL
35'-0" HEIGHT LIMIT
32'-2" +/- ROOF
30'- 6" BOT STRUCT 8'-11"
30'- 6" BOT STRUCT 8'-11"
8'-9" BOT CLNG
7'-9" TYP HEAD FOR LIV RM 5'-9" WDOS
7'-9" TYP HEAD FOR UPPER FLR 5'-3" WDO
LIVING RM
2
2'-0" TYP SILL FOR LIV RM 5'-9" WDOS
2'-6" TYP SILL FOR UPPER FLR 5'-3" WDO
21'-7" 3RD FLR
9'-11" 2ND TO 3RD FLR
8'-11" +/- BOT STRUCT
7'-9" TYP HEAD FOR UPPER FLR 5'-3" WDO
1'-0" STRUCT
21'-7" 3RD FLR
9'-11" 2ND TO 3RD FLRS
8'-11" BOT STRUCT
8'-9" BOT CLNG
7'-9" TYP HEAD FOR UPPER FLR 5'-3" WDO
2.6X4.3 KITCH
LIVING RM
3'-6" TYP SILL FOR KITCH WDOS BEYOND
2'-6" TYP SILL FOR LIV RM 5'-9" WDOS
2'-6" TYP SILL FOR UPPER FLR 5'-3" WDO
11'-8" 2ND FLR
10'-7 3/4" +/- BOT STRUCT
9'-10"+/- BOT SUSP CLNG
1'-4" +/- SPANDREL
9'-0" BOT OF STOREFRT MULL
11'-8" 2ND FLR
11'-8" 1ST TO 2ND FLRS
1'-0" STRUCT
10'-7 3/4"" BOT STRUCT
1'-4" +/- SPANDREL
9'-10" +/- BOT SUSP CLNG
9'-0" BOT OF STOREFRT MULL
Roys Shoe Shop
COMMERCIAL FRONT
COMMERCIAL FRONT
2'-0" BOT GRANITE SILL
0'-0" 1ST GRND FLR
2'-0" BOT GRANITE SILL
0'-0" 1ST GRND FLR
APPROX BEDROCK
1/A2.0 SECTION @ STOREFRONT @ BAY OVERHANG
2/A2.0 SECTION @ STOREFRONT



502 DEERING CENTER

A2.1

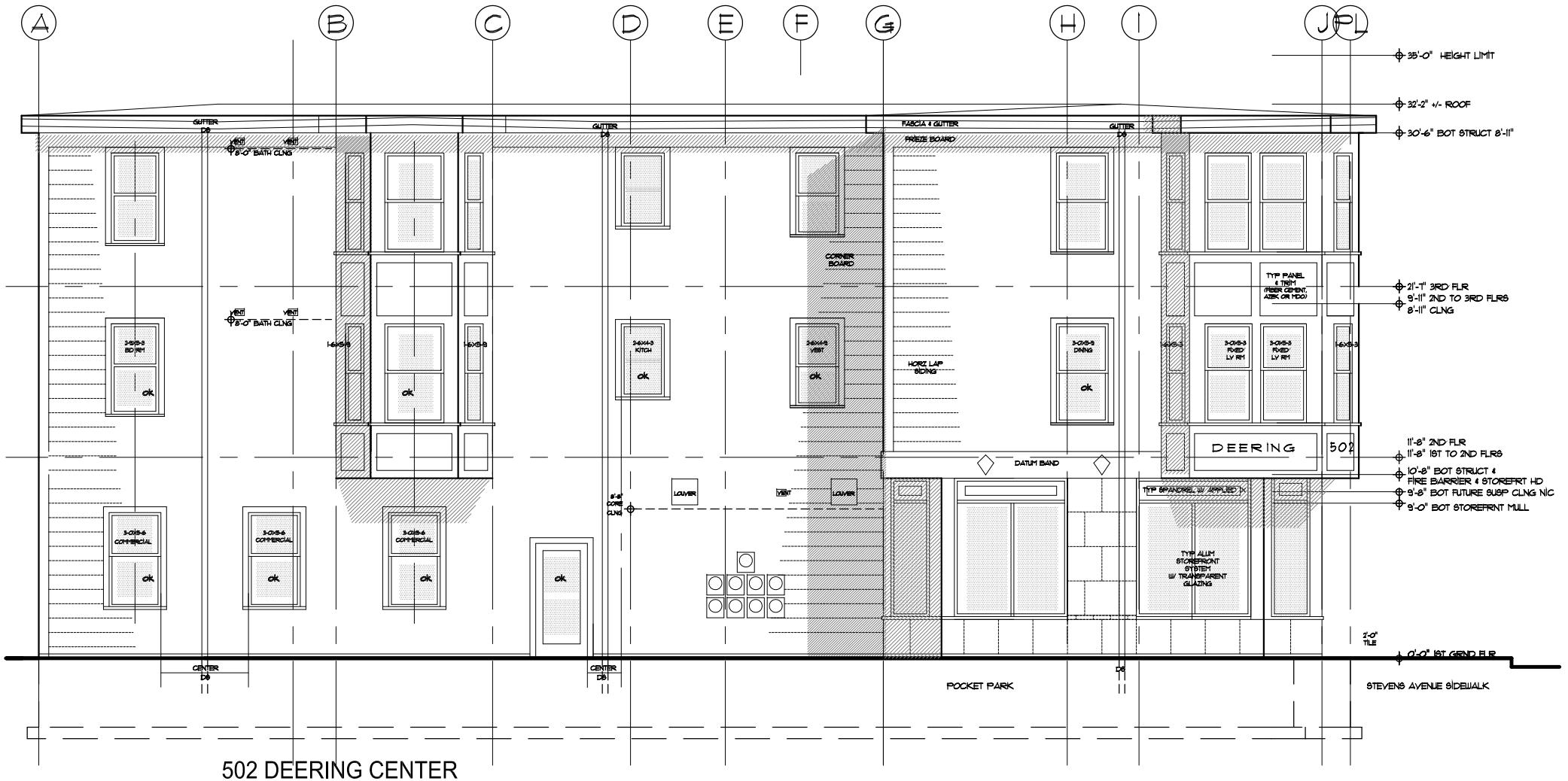
FRONT ELEVATION

FRONTING STEVENS AVE

For PB Approval. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.2

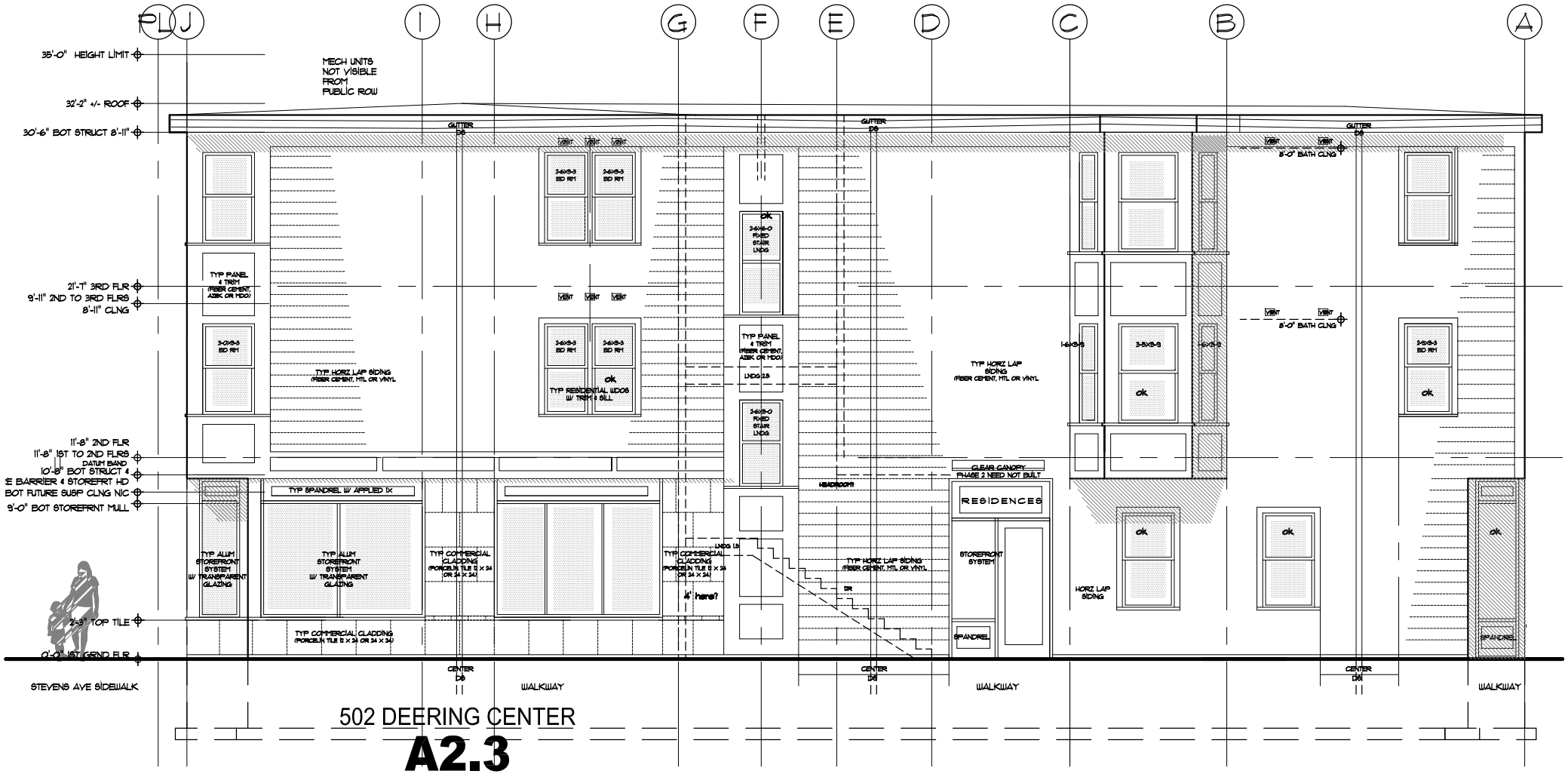
SIDE (SOUTH) ELEVATION

FRONTING POCKET PARK

For PB Approval. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.3

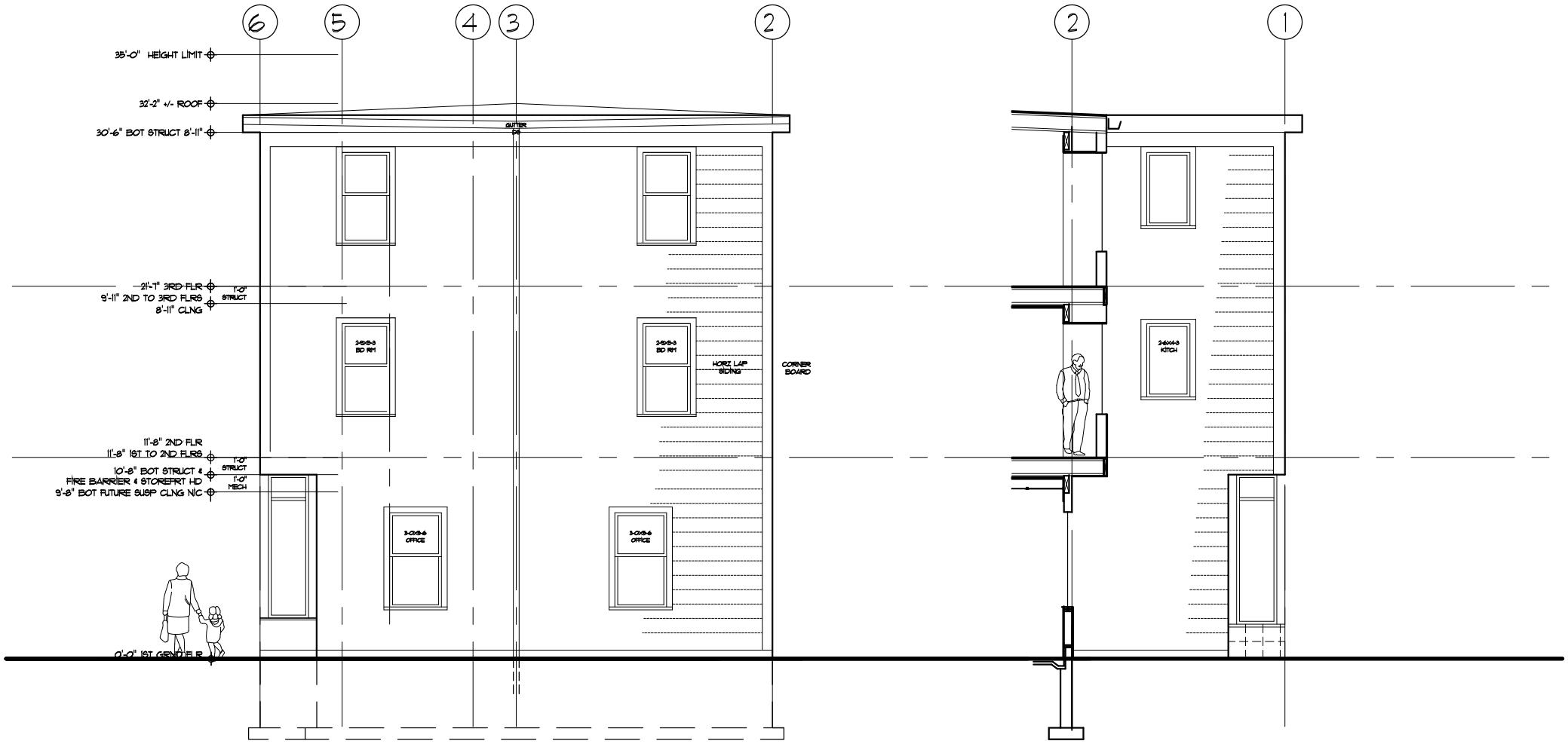
SIDE (NORTH) ELEVATION

FRONTING WALKWAY & SHARED DRIVEWAY

For PB Approval. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'



502 DEERING CENTER

A2.4

REAR (WEST) ELEVATION

FRONTING PARKING AREA

For DD Progress. No Scale, 3/14/17

Lachman Architects & Planners

0' 5' 10' 15' 20'

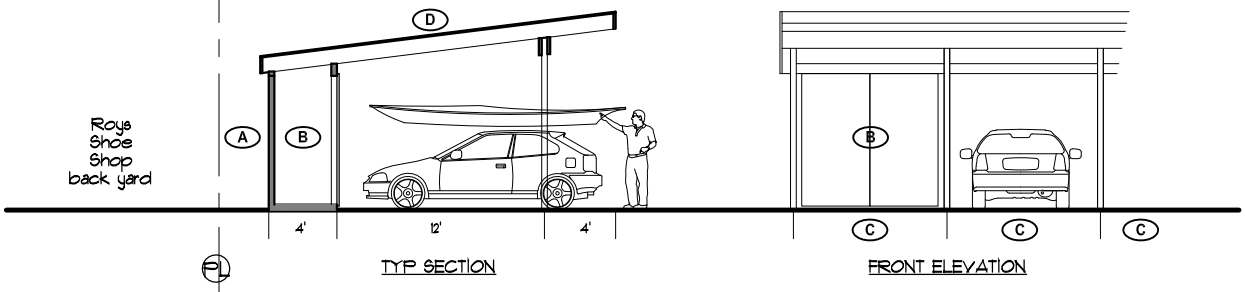
502 DEERING CENTER

A2.4

PARTIAL REAR (WEST) ELEVATION @ GRID G & SECTION BETWEEN GRIDS B&C

For PB Approval, No Scale, 3/14/17

Lachman Architects & Planners

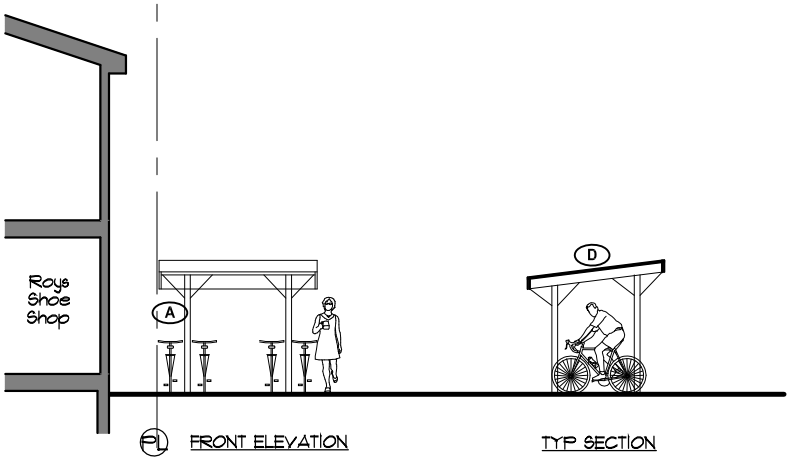


A Setback, Bl-b to Bl-b none required

B Utility Shed for residents, 1 per unit, 4' d x 8'h, each with pair of 4 x 8 sliding barn doors.

C Typ Parking Stall, 9' w x 17.5' d.

D Roof, shallow pitch



502 DEERING CENTER

A2.5

CARPORT (Phase 2) & BIKE SHELTER (Phase 2)

For Site Plan Review
No Scale, 12/22/16
Lachman Architects & Planners

A3 Keyed Notes, Features & Descriptions for Architectural Drawings

A. **Stevens Avenue Public Sidewalk** – Generous for comfortable public use, approx 9' wide.

B. **ROW Setback** – 2- setback so upper floor bay does not extend into the ROW

C. **New Urban Street Wall & Mixed Use**

- **Urban Street Wall.** The existing property is currently non-conforming with its B1-b zoning because the existing house is set back from the street, and consequently does not meet the "Urban Street Wall" requirement. New building is purposefully designed to correct the Urban Street Wall, and therefore meeting "*Buildings shall be located near the street so as to create an urban street wall".*
- **Mixed Use.** The proposed building is multi-storied with mixed uses, therefore meeting " *An urban street and business district requires a substantial intensity and variety of uses. **I**t is beneficial to have mixed uses within portions of buildings situated near the street. For example, a retail first floor might have office or residential on the second or third floors. This provides both the scale of building height desired, as well as the economic vitality of the business district."*
- Meets the following Portland Design Manual Standards & Guidelines for B1-b: *Standard a. Urban Street Wall, Guideline 1. Building Location and Form, Guideline 7. Development Relationship to Street, Standard b. Mixed Uses, Guideline 2. Building Function.*

D. **Primary Commercial Entry with Universal Access, Active & Transparent Facade & Character**

- **Entrances**. Highly visible, universally accessible, welcoming entry fronts directly onto wide sidewalk. Downlight creates inviting pool of light to highlight nighttime entry. Generous 3' w x 7' h glazed door is welcoming. Glass canopy above provides weather protection shown dashed.
- **Active & Transparent Façade**. Windows on 3 sides, ceiling are 10" high, providing generous light and visual connection to and from the street, therefore meeting "*Retail uses with store fronts are the most desirable feature for locations adjacent to the public sidewalk; and active, transparent (minimum visible transmittance (VT) of .7 or greater), and interesting windows contribute the maximum value."*
- **Building Character, Detail, Scale, and Graphic Qualities.** Deering Center Village has good Main Street architectural "bones". The overarching design goal is to complement the existing context (emphasis on "we") , rather than make a strong attention-seeking design statement (emphasis on "me"). The design wants to be a graceful neighbor now and a century from now. The facade is village scaled, with traditional storefront proportions and components. Front façade has a traditional tripartite organization, both horizontally (A-B-A) and vertically (base-middle-top), therefore meeting " *Building design will include various architectural and graphic amenities to provide a strong presence along a street and relate a building to its community. Awnings, canopies, and flags may be utilized to highlight entryways and to further identify the activity and identity of a use. Facade lighting may be used to highlight entryways or to provide visual interest along an otherwise blank façade Building scale, roof pitch, architectural detail, and fenestration shall be designed to complement and be compatible with surrounding residential and commercial buildings.*
- **Meets the following Portland Design Manual Standards & Guidelines for B1-b**: *Standard c. Building Entrances, Guideline 3. Orientation of Buildings and their Entrances to the Street, Standard d. Windows, Guideline 4. Windows, Standard e. Facade Character, Guideline 5. Building Character, Detail, Scale, and Graphic Qualities, Guideline 6. Signage and Building Entrances, Standard f. Building Design, Standard g. Building Materials, Standard h. Building Scale.*

E. **Commercial Entry to Lower Level Studio –** Walkway widened for easily identifiable, welcoming, generously glazed entry with lobby. Angled corner at front enhances welcoming transition from sidewalk. Recessed for weather protection and deep shadows. Soffit downlight creates inviting pool of light to highlight nighttime entry. Abundant glazing provides views and light in and out and nighttime glow. Natural light cascades from glazing down the 5' wide stair to the lower level. Lower Level Studio is designed for flexibility, so it can be independently accessed from the sidewalk, or internally accessory from the 1st floor commercial space, or both. Soffit downlight creates inviting pool of light to highlight nighttime entry. Generous 3' w x 7' h glazed door is welcoming. Meets the following Portland Design Manual Standards & Guidelines for B1-b: *Standard c. Building Entrances, Guideline 3. Orientation of Buildings and their Entrances to the Street, Standard d. Windows, Guideline 4. Windows, Standard e. Facade Character, Guideline 5. Building Character, Detail, Scale, and Graphic Qualities, Guideline 6. Signage and Building Entrances, Standard f. Building Design, Standard g. Building Materials, Standard h. Building Scale*.

F. **Residential Entry + Secondary Commercial Entry –** Highly visible, universally accessible, welcoming entry fronts directly onto pedestrian walkway. Abundant glazing provides views and light in and out and nighttime glow. Generous 3' w x 7' h glazed door is welcoming. Positioned directly under upper floor projecting residential bay to signify entry, provide weather protection and downlight. Meets the following Portland Design Manual Standards & Guidelines for B1-b: *Standard c. Building Entrances, Guideline 3. Orientation of Buildings and their Entrances to the Street, Standard d. Windows, Guideline 4. Windows, Standard e. Facade Character, Guideline 5. Building Character, Detail, Scale, and Graphic Qualities, Guideline 6. Signage and Building Entrances, Standard f. Building Design, Standard g. Building Materials, Standard h. Building Scale*.

G. **Shared Driveway & Walkways –** Neighboring property 510 Stevens Ave is also developing a new mixed use building. The driveway is shared and straddles the property line, which is an efficient use of land (limited in the village) and resources. Impervious area and associated storm runoff is reduced. Consolidation reduces curb cuts from 2 to 1 and removing the existing curb cut eliminates dangerous back-outs across the sidewalk, especially with so many children in the area. Sharing a driveway allows precious resources and land otherwise devoted to cars, to instead be reallocated to a Village Pocket Park and Mixed Use Transportation opportunities. New building (502) to new building (510) is 20'wide, including 10' driveway + (2) 5' walkways flush with driveway. Angled corner at building rear improves vehicle and pedestrian sightlines for safety. Existing curb cut modified and used. See Shared Driveway for Land & Resource Efficiency for a more complete description.

H. **Village Pocket Park/Patio & Featured Tree -** Public seating, landscaping, pervious pavers, neighborhood kiosk. Angled corner at rear provides enhanced visual connection to and from sidewalk. See Public Space on Private Property: New Village Pocket Park for a more complete description.

I. **Neighborhood Kiosk –** Easily visible and accessible from Stevens Ave sidewalk, enhances pocket park. "Welcome to Deering Center" sign + walking signs + bulletin board.

J. **Abutting Property & Setback -** Roy's Shoe Shop (also B1-B Neighborhood Business). No setback required B1-b to B1-b.

K. **Abutting Property -** Existing single family house to be removed, zone changed from R-5 to B1-b to allow new mixed use development with retail at the ground floor with (3) condos above.

L. **Walkway Safe Spot & New Focal Point**– Widened area at end of walkway provides safe spot for pedestrians to avoid any vehicles in driveway. Sculptural feature or tree creates attractive focal point to driveway and screen views into parking area, filtration area absorbs storm runoff.

M. **Parking** – Aisle 22' wide. Stalls 9' s x 17 ½' d. (1) HC stall. Vehicle backup and turnaround.

N. **Carport (Phase 2, need not be built in Phase 1) –** Location for 4-stall carport for 4 units. Included with each stall is a 4'd x 9'w private secure utility shed. No Side Setback required for principal or accessory structures abutting commercial zone (B1-b to B1-b Roy's). 5 ft. Rear Setback for accessory structures abutting residential zone (LM School in R-5).

O. **Buffer, Snow Storage & Pervious Area –** Screening plants and fencing buffer adjacent properties from parking area. Property corners at rear are used for snow storage and absorbing runoff.

P. **Rain Garden Stormwater Treatment Pervious Area & Private Outdoor Space for Residents**

Q. **Covered Bike Parking –** Convenient, secure and weather protected for residents and neighbors as incentive to bike-park-n-ride (bus). No Side Setback required for principal or accessory structures abutting commercial zone (B1-b to B1-b Roy's).

R. **Existing Bus Stop Enhanced by Sheltered Public Seating –** Angled corner provides weather-sheltered public seating for the existing bus stop, ideally positioned to visually track approaching inbound and outbound buses. Building projection above (shown dashed) provides weather-protection. Public seating encourages walking, bus taking, pausing and greeting. See Features That Encourage Bus Riding for a more complete description.

S. **Existing Curb Cut & Surface Parking Removed –** Conforms with B1-b zoning (no parking at property front), reduces curb cuts from 2 to 1, eliminates dangerous back-out across the sidewalk, especially with so many children in the area and creates the new public pocket park.

T. **Existing Power Pole Removed to Improve Streetscape** – Coordination with abutting property owners and CMP is underway to remove the existing power pole, provide service underground from an existing pole across Stevens Ave to a shared vault, thereby greatly visually improving Stevens Ave streetscape.

U. **Reserved**

V. **Typical Exterior Commercial 1st Floor Materials –** Cladding is durable quality material, such as tile or stone. Openings are storefront system with clear glazing (no reflective).

W. **Typical Exterior Residential Upper Floor Materials –** Typical horizontal siding with standing and running trim. Openings are typical residential windows.

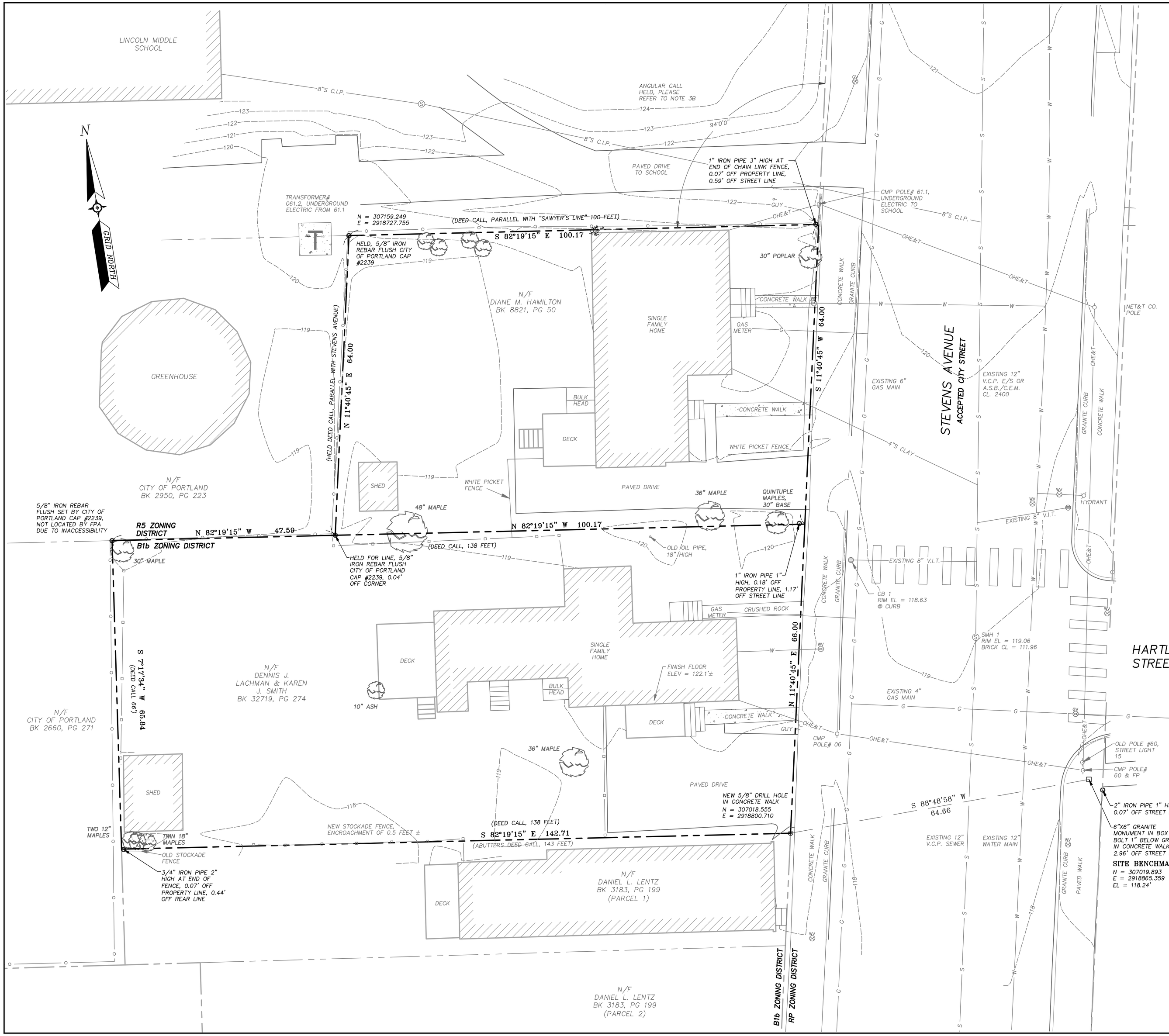
X. **Typical Exterior Lighting –** Lighting is discreetly provided by soffit downlights at each of the 1st floor angled building corners and under projecting upper floor bays.

Y. **Typical Signs –** All signs are part of a sign program, where size, font and type are consistent to achieve a coordinated purposeful look that compliments the building and the village Main Street. All sign are scaled for pedestrians, rather than attracting drive-by attention and none will be back-lit box signs. There will be (3) or (4) signs, depending on the number of tenants, not known at this stage.

Z. **Typical Roof & Downspouts** – Roof is shallow pitched to perimeter gutters and downspouts. Overhangs are nominally 12" with nominally 12" fascia.

AA. **Typical HVAC Units** - The HVAC system is small electric air-source mini split heat pumps, which have no emissions. Suit-case sized units will typically be wall-mounted near its destination to minimize runs and maximize efficiency.

BB. **Utility Meters** - Gas meters on the outside corner need to be 5 feet from the electrical meters, on inside corner. No openings 3 feet horizontally and 7 feet vertically from gas meters.



GENERAL NOTES:

1. RECORD OWNERS OF THE PROPERTIES ARE DIANE M. HAMILTON BY DEED DATED JULY 10, 1989 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 8821, PAGE 50 AND DENNIS J. LACHMAN & KAREN J. SMITH BY DEED DATED NOVEMBER 05, 2015 AND RECORDED IN THE (CCRD) IN BOOK 32719, PAGE 274.

2. THE PROPERTY IS SHOWN ON THE CITY OF PORTLAND MAINE TAX MAP 16NE, AS BEING LOTS 135-E008 AND 135-E009.

3. PLAN REFERENCES:

A) STANDARD BOUNDARY SURVEY OF LINCOLN MIDDLE SCHOOL PROPERTY STEVENS AVENUE PORTLAND, MAINE, BY WILLIAM G. SCOTT OF CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION, DATED DECEMBER 1993, AND RECORDED IN THE (CCRD) IN PLAN BOOK 937, PAGE 5.

B) PLAN OF HIGH SCHOOL LOT, BOUGHT OF GEO. MEAD STEVENS, DATED SEPTEMBER 3, 1897, AND RECORDED IN THE (CCRD) IN PLAN BOOK 9, PAGE 7. DEED REFERENCE IS BOOK 657, PAGE 17.

C) LELAND ST. AND VICINITY, BY CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, DATED FEBRUARY 15, 1978, AND RECORDED IN THE (CCRD) IN PLAN BOOK 396, PAGE 3.

4. BEARINGS AND COORDINATES ARE BASED ON GRID NORTH NAD 1983 MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE.

5. VERTICAL DATUM IS NGVD 1929 AND WAS DETERMINED BY STATIC OBSERVATION USING A DUAL FREQUENCY GPS UNIT. THE DATA WAS PROCESSED BY USING THE OPUS PROGRAM ON THE NGS WEBSITE. SITE BENCHMARK ELEVATION CONFIRMED WITH CITY OF PORTLAND MONUMENT AT INTERSECTION OF HARTLEY STREET & STEVENS AVE.

6. CATCH BASIN & MANHOLE INVERTS ARE TAKEN FROM INFORMATION PROVIDED BY THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT.

7. THIS PLAN IS BASED ON A SURVEY COMPLETED TO THE BEST OF MY KNOWLEDGE IN ACCORDANCE WITH THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS STANDARDS OF PRACTICE, FIELD WORK WAS COMPLETED USING ROBOTICS INSTRUMENTATION. POINTS LOCATED WITHIN A POSITIONAL TOLERANCE OF 0.05 FEET, MORE OR LESS.

8. THIS PLAN IS SUBJECT TO REVISION UPON RECEIPT OF A TITLE OPINION WHICH MAY NOTE OTHER POSSIBLE RESTRICTIONS, EASEMENTS OR CONDITIONS ENCUMBERING OR BENEFITING THE SITE.

9. NO EXCAVATION OF ANY KIND CAN BE PERMITTED WITHOUT THE CONTRACTOR CONTACTING DIG-SAFE FOR LOCATION OF POSSIBLE UNDERGROUND UTILITIES. ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE BASED ON VISIBLE ABOVE GROUND STRUCTURES.

10. PROPERTIES HEREON ARE NOT LOCATED WITHIN A FLOOD HAZARD ZONE AS DEPICTED ON FEMA FIRM FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 230051 007 C, MAP REVISED DECEMBER 8, 1998.

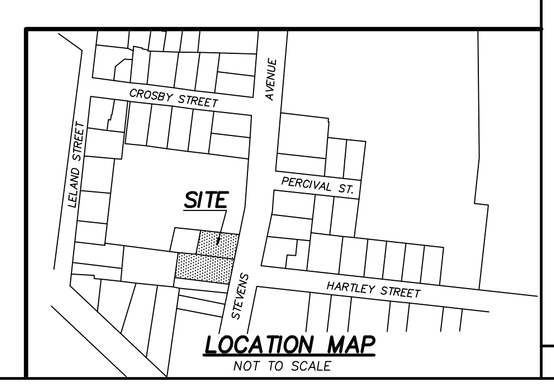
LEGEND

- SITE BOUNDARY
- ABUTTER BOUNDARY
- MONUMENT
- IRON PIPE/ROD
- IRON REBAR TO BE SET
- CHAIN LINK FENCE
- STOCKADE FENCE
- EDGE PAVEMENT
- CURBLINE
- BUILDING
- SIGN
- WATER VALVE
- GAS VALVE
- UTILITY POLE
- GUY WIRE
- HYDRANT
- CATCH BASIN
- SEWER MANHOLE
- 124 CONTOURS
- 6"G GAS
- 8"W WATER
- 8"S SEWER
- OHE&T OVERHEAD ELEC. & TEL.
- DECIDUOUS TREE

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.



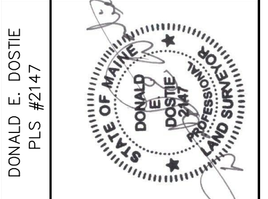
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM FOUR POINTS ASSOCIATES, INC. ANY ALTERATIONS AUTHORIZED BY OTHER PARTIES SHALL BE AT THEIR SOLE RISK AND WITHOUT LIABILITY TO FOUR POINTS ASSOCIATES, INC.

REV:	DATE:	
B	12/22/16	UPDATED FOR SUBMISSION
A	9/01/16	REVISED COORDINATES AND BEARINGS TO STATE PLANE GRID NORTH

STATUS:
DWG NAME: COPE | SCALE: 1"=10' | PLAN BY: DED & SMM
PROJ. NO: 16014

NAME: . .
LIC. # . .

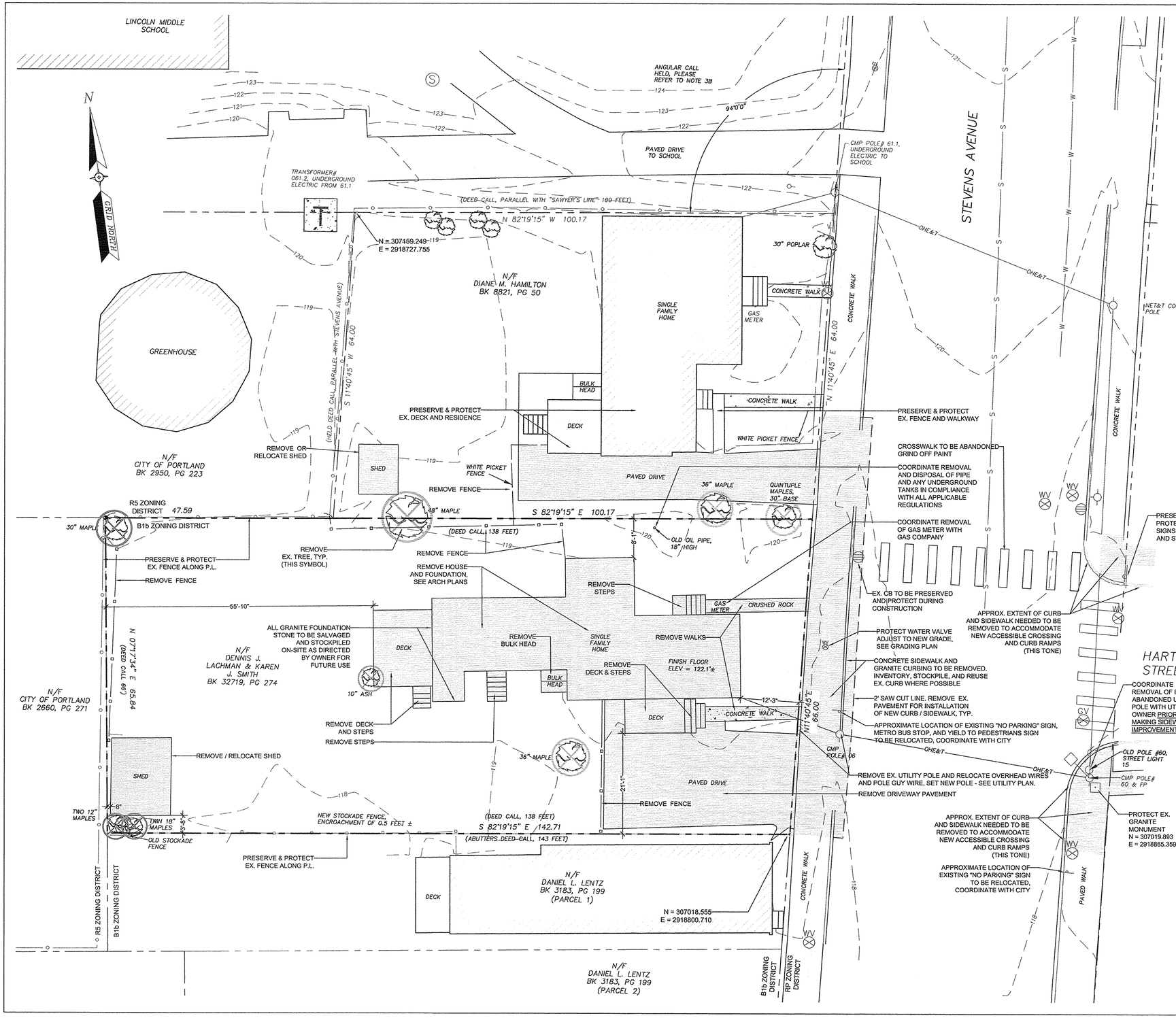
DONALD E. DOSTIE
PLS #2147



EXISTING CONDITIONS
OF:
502-504 & 510 STEVENS AVENUE
PORTLAND, MAINE
FOR:
ADAM COPE
P.O. BOX 1398
PORTLAND, MAINE 04104

Four Points Associates, Inc.
Donald E. Dostie, PLS
9 Ralph Avenue, Lewiston, ME 04240 Tel: 207-577-5840

SHEET C 0.0



GENERAL NOTES:

1. TOTAL SITE AREA: ±0.2195 ACRES (±9,562 SF)
2. ZONING DISTRICT: NEIGHBORHOOD BUSINESS ZONE (B1-b)
3. OWNER / APPLICANT: 502 DEERING CENTER, LLC, 55 HAMBLET AVENUE, PORTLAND, MAINE 04103
4. TAX MAP: MAP 16NE, LOT 135-E009
5. BOOK AND PAGE: CCRD BOOK 32719, PAGE 274
6. PROJECT ADDRESS: 502 STEVENS AVENUE
7. BOUNDARY, TOPOGRAPHY, AND EXISTING CONDITIONS INFORMATION TAKEN FROM A PLAN TITLED: "EXISTING CONDITIONS OF 502-504 & 510 STEVENS AVENUE, PORTLAND, MAINE", MADE FOR ADAM COPE, P.O. BOX 1398, PORTLAND, MAINE 04101. DATED AUGUST 2016 WITH LATEST REVISION DATE OF 9/1/16. PREPARED BY FOUR POINTS ASSOCIATES, INC. 9 RALPH AVENUE, LEWISTON, MAINE 04240, TEL 207.577.5840
8. BEARINGS AND COORDINATES ARE BASED ON GRID NORTH NAD 1983 MAINE STATE PLAN COORDINATE SYSTEM, WEST ZONE.
9. VERTICAL DATUM WAS DETERMINED BY STATIC OBSERVATION USING A DUAL FREQUENCY GPS UNIT. THE DATA WAS PROCESSED BY USING THE GEOID 2003 MODEL.
10. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES IN THE FIELD AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES.
11. ALL DIMENSIONS SHOWN ARE TO FACE OF ALL WALLS, BUILDINGS, CURBS, AND OTHER SITE ELEMENTS UNLESS OTHERWISE NOTED.
12. EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY. CALL DIG-SAFE PRIOR TO BEGINNING WORK (1-800-225-4977).
13. ALL EXISTING VEGETATION TO BE PRESERVED AS SHOWN ON PLANS. PROVIDE A SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING. AREAS NOT REQUIRING GRADING SHALL BE LEFT UNDISTURBED.
14. STORAGE OR PARKING WILL NOT BE ALLOWED OVER THE ROOTS OF VEGETATION WHICH ARE TO BE PRESERVED. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS REQUIRED FOR THE WORK ON THESE PLANS.
15. ALL WORK SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
16. ALL AREAS DISTURBED OR WORK REQUIRED WITHIN TEMPORARY CONSTRUCTION AREAS ON PROPERTY SHALL BE REPAIRED BY RE-PAVING OR LOAM/SEEDING AS REQUIRED TO RETURN THE SITE TO PRE-CONSTRUCTION CONDITIONS.
17. ALL WORK WITHIN THE RIGHT-OF-WAY MUST BE COORDINATED WITH THE DEPARTMENT OF PUBLIC SERVICES.

LEGEND

EXISTING	PROPOSED
SITE BOUNDARY	
ABUTTER BOUNDARY	
MONUMENT	
IRON PIPE/ROD	
IRON REBAR TO BE SET	
CHAIN LINK FENCE	
STOCKADE FENCE	
EDGE PAVEMENT	
CURBLINE	
BUILDING	
SIGN	
WATER VALVE	
GAS VALVE	
UTILITY POLE	
GUY WIRE	
HYDRANT	
CATCH BASIN	
SEWER MANHOLE	
124 CONTOURS	
6"G GAS	
8"W WATER	
8"S SEWER	
OHE&T OVERHEAD ELEC. & TEL.	
DECIDUOUS TREE	
TREE TO BE REMOVED	

Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hamblet Avenue
Portland, Maine 04103

Consultants:

Architect
Lachman Architects & Planners
58 Fore Street, Bldg 30
Portland, Maine 04101
207.831.8585
Contact: Denis Lachman

Landscape Architects
Carroll Associates
217 Commercial St.
Portland, Maine 04101
207.772.1552
Contact: Patrick Carroll

Civil Engineer
Pinkham & Greer Civil Engineers
28 Vannah Ave.
Portland, ME 04103
207.781.5242
Contact: Thomas Greer

Surveyor
Four Points Associates, Inc.
9 Ralph Avenue
Lewiston, Maine 04240
207.577.5840
Contact: Donald Dostie

Drawing Set:

No.	Date	Revision
1	12-22-16	SITE PLAN REVIEW-FINAL
2	2-7-17	REVS PER CITY COMMENTS
3	3-14-17	REVS PER CITY COMMENTS

Drawing Set:

PERMITTING

Drawn: MAP
Checked: MAP
Approved: PC

STATE OF MAINE — THOMAS S. GREER No. 4205 — LICENSED PROFESSIONAL ENGINEER — 3/13/17

Drawing Title:

DEMOLITION AND SITE PREP PLAN

Job Number:

File:

Date: 12-22-2016 | Scale: AS SHOWN

Drawing Number:

C-1.0

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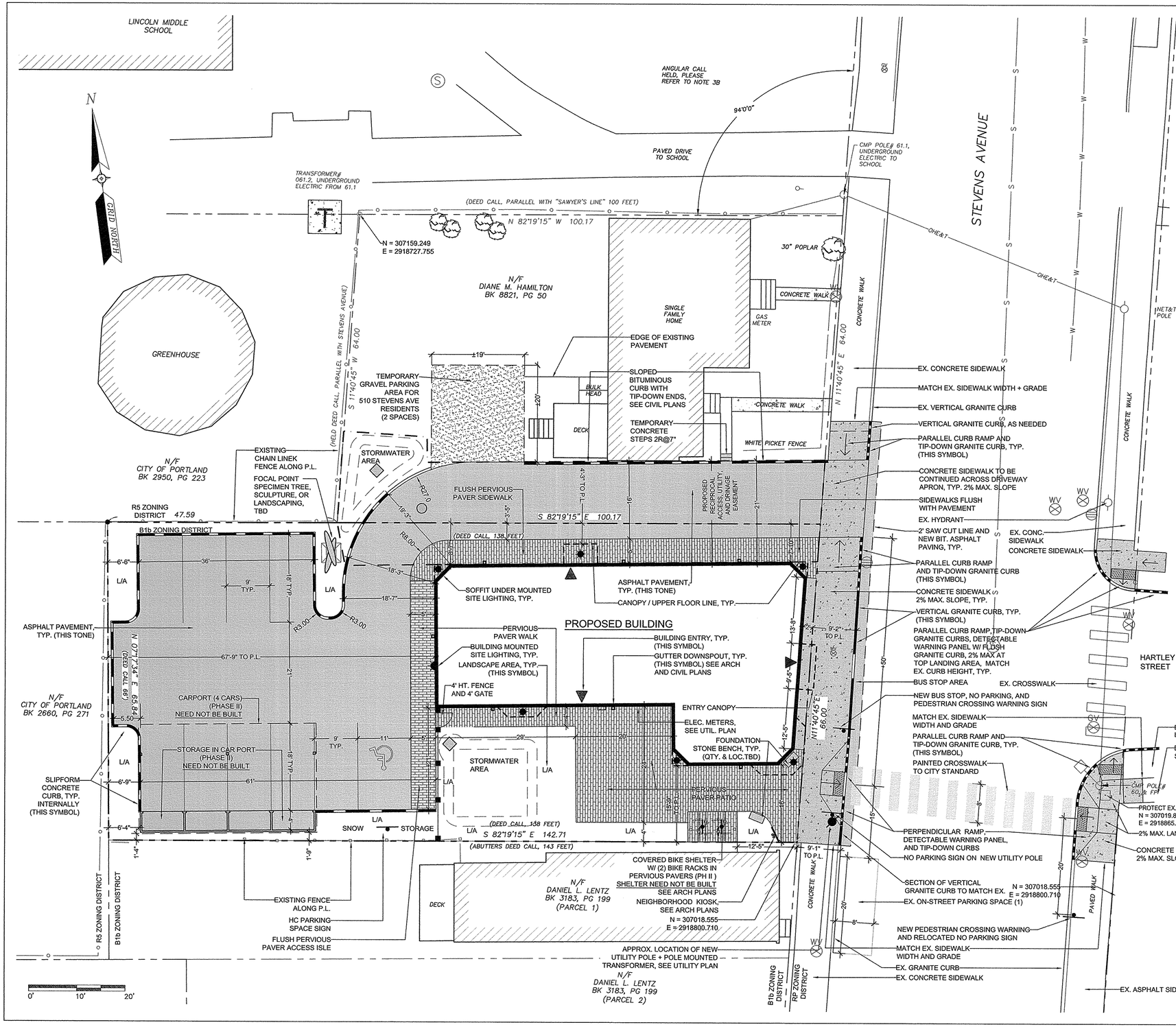

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5. BOOK AND PAGE: CCRD BOOK 32719, PAGE 274
6. PROJECT ADDRESS: 502 STEVENS AVENUE
7. SPACE AND BULK: RESIDENTIAL (4 UNITS) + RETAIL (2,000 SF)

	B1-b	PROPOSED
MIN. LOT SIZE	NONE	±0.2195 AC
MIN. LOT AREA / D.U.	1,000 SF/DU (MULTI-FAMILY)	4 D.U. (2,390 SF/DU)
MIN. STREET FRONTAGE	20 FT.	66 FT.
MIN. LOT WIDTH	NONE	65.84 FT.
MIN. FRONT YARD	NONE	0 FT.
MAX. FRONT YARD	10 FT	0 FT.
MIN. REAR YARD	10 FT. (PRINCIPAL)	67.8 FT.
	5 FT. (ACCESSORY)	6.59 FT.
MIN. SIDE YARD	5 FT. (PRINCIPAL)	6.31 FT.
	NONE (ACCESSORY)	0.1 FT.
MAX. BLDG HEIGHT	35 FT.	32 FT.
MAX. 1ST FLOOR AREA	NONRESIDENTIAL: 10,000 SF	2,505 SF
	RETAIL: 5,000 SF	1,000 SF
OFF-STREET PARKING	RESIDENTIAL (6 UNITS): 2 PS / D.U.	12 PS
	RETAIL (2,000 SF): 1 PS / 200 SF >2,000	0 PS
	TOTAL	12 PS REQ'D
		10 PS PROPOSED
		2 PS OFF SITE
MAX. IMPERVIOUS SURFACE	90%	±83%

8. BOUNDARY, TOPOGRAPHY, AND EXISTING CONDITIONS INFORMATION TAKEN FROM A PLAN TITLED: "EXISTING CONDITIONS OF 502-504 & 510 STEVENS AVENUE, PORTLAND, MAINE", MADE FOR ADAM COPE, P.O. BOX 1398, PORTLAND, MAINE 04101. DATED AUGUST 2016 WITH LATEST REVISION DATE OF 9/1/16. PREPARED BY FOUR POINTS ASSOCIATES, INC. 9 RALPH AVENUE, LEWISTON, MAINE 04240, TEL 207.577.5840
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18. ALL WORK WITHIN THE RIGHT-OF-WAY MUST BE COORDINATED WITH THE DEPARTMENT OF PUBLIC SERVICES.
19. ALL EXTERIOR MECHANICAL EQUIPMENT WILL BE SCREENED FROM PUBLIC STREETS AND ADJACENT SITES BY STRUCTURE WALLS, EVERGREEN LANDSCAPING, FENCING, MASONRY WALLS OR A COMBINATION THEREOF.
20. SNOW MAY BE STORED WITHIN THE TEMPORARY SNOW STORAGE AREAS ONLY. ANY SNOW THAT CANNOT BE STORED ON-SITE SHALL BE PHYSICALLY REMOVED AND TRANSPORTED OFF-SITE WITHIN 24-48 HOURS FOLLOWING A STORM. SNOW TRANSPORTED OFF-SITE SHALL BE BROUGHT TO A MAINE DEP APPROVED 'SNOW DUMP' OR MEET THE EXEMPTION REQUIREMENT SPECIFIED WITHIN CHAPTER 573 WHEN THE ABOVE REQUIREMENTS CANNOT BE MET DUE TO AN ABUNDANCE OF SNOW. THE SNOW CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO VEGETATION, LANDSCAPING, CURBING, LIGHTING, FENCING, ETC. RESULTING FROM THEIR ACTIVITIES. THE SNOW CONTRACTOR SHALL USE SALT OR CHLORIDE SUBSTITUTE TO DEICE THE PARKING LOT. THE BUILDING OWNER / ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL BEING UNDERTAKEN IN A TIMELY FASHION.

LEGEND

EXISTING	PROPOSED
SITE BOUNDARY	
ABUTTER BOUNDARY	
MONUMENT	
IRON PIPE/ROD	
IRON REBAR TO BE SET	
CHAIN LINK FENCE	
STOCKADE FENCE	
EDGE PAVEMENT	
CURBLINE	VERT. GRANITE, VERT. CONC., TIPDOWN GRANITE
BUILDING	
SIGN	
WATER VALVE	
GAS VALVE	
UTILITY POLE	
GUY WIRE	
HYDRANT	
CATCH BASIN CB/FI	DMH
SEWER MANHOLE	
DECIDUOUS TREE	
DOWNSPOUT	
BUILDING ACCESS PT.	

Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hamblet Avenue
Portland, Maine 04103

Consultants:

Architect
Lachman Architects & Planners
58 Fore Street, Bldg 30
Portland, Maine 04101
207.831.8585
Contact: Denis Lachman

Landscape Architects
Carroll Associates
217 Commercial St.
Portland, Maine 04101
207.772.1552
Contact: Patrick Carroll

Civil Engineer
Pinkham & Greer Civil Engineers
28 Vannah Ave.
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207.781.5242
Contact: Thomas Greer

Surveyor
Four Points Associates, Inc.
9 Ralph Avenue
Lewiston, Maine 04240
207.577.5840
Contact: Donald Dostie

Drawing Set:

No.	Date	Revision
1	12–22–16	SITE PLAN REVIEW–FINAL
2	2–7–17	REVS PER CITY COMMENTS
3	3–14–17	REVS PER CITY COMMENTS

Drawing Set: PERMITTING

Drawn: MAP
Checked: MAP
Approved: PC

STATE OF MAINE — THOMAS S. GREER No. 4205 — LICENSED PROFESSIONAL ENGINEER — 3/13/17

Drawing Title: SITE PLAN

Job Number:
File:
Date: 12–22–2016 | Scale: AS SHOWN

Drawing Number: C-2.0

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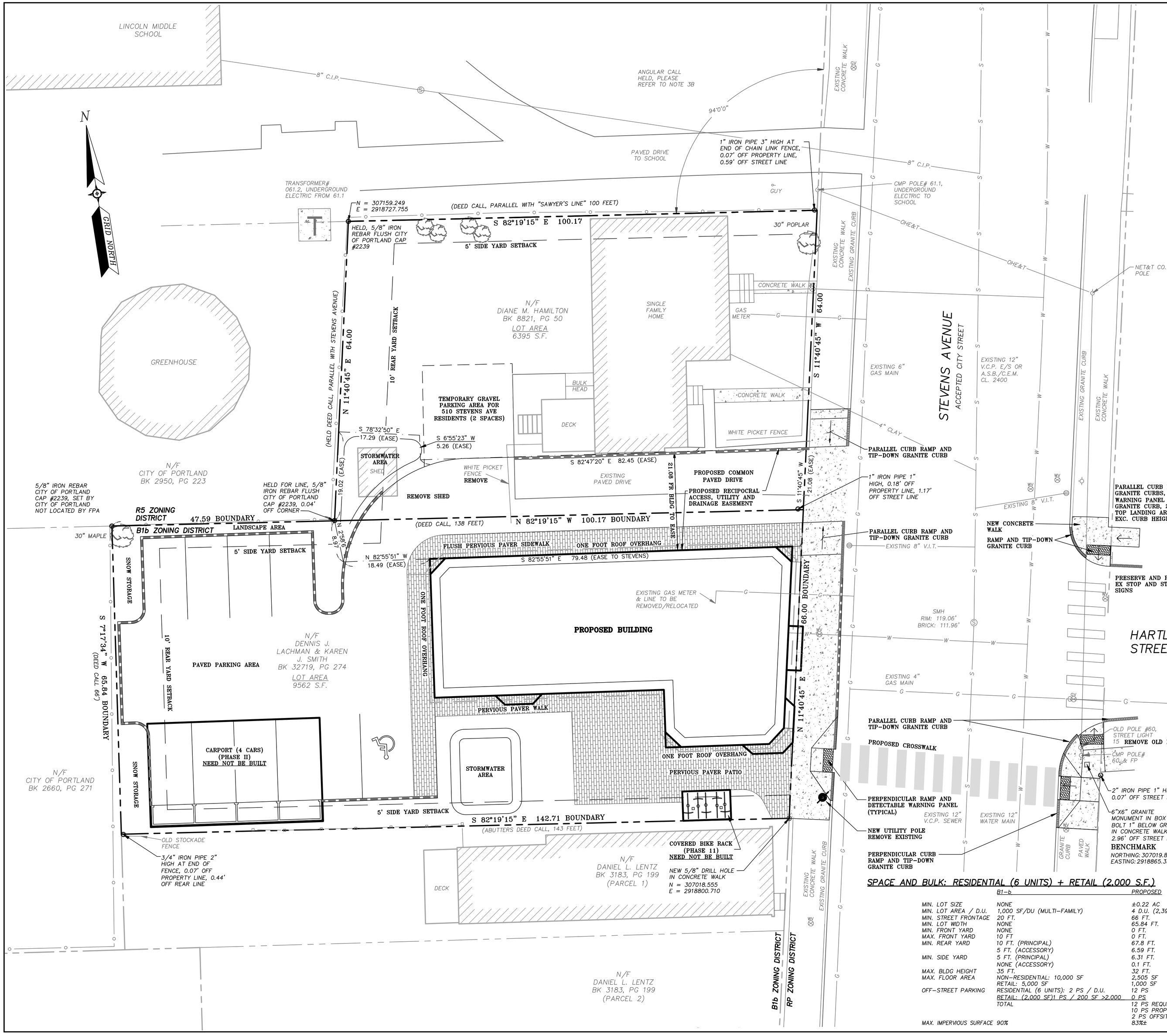


GENERAL NOTES:

1. RECORD OWNERS – DENNIS J. LACHMAN & KAREN J. SMITH BY DEED DATED NOVEMBER 05, 2015 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 32719, PAGE 274.

   APPLICANT – 502 DEERING CENTER, LLC
   55 HAMBLET AVENUE
   PORTLAND, ME 04103

2. THE PROPERTY IS SHOWN ON THE CITY OF PORTLAND MAINE TAX MAP I8NE, AS BEING LOT 135–E009 AND IS LOCATED IN THE NEIGHBORHOOD BUSINESS ZONE (B1–b).

3. PLAN REFERENCES:

   A) STANDARD BOUNDARY SURVEY OF LINCOLN MIDDLE SCHOOL PROPERTY STEVENS AVENUE PORTLAND, MAINE, BY WILLIAM G. SCOTT OF CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION, DATED DECEMBER 1993, AND RECORDED IN THE (CCRD) IN PLAN BOOK 937, PAGE 5.

   B) PLAN OF HIGH SCHOOL LOT, BOUGHT OF GEO. MEAD STEVENS, DATED SEPTEMBER 3, 1897, AND RECORDED IN THE (CCRD) IN PLAN BOOK 9, PAGE 7. DEED REFERENCE IS BOOK 657, PAGE 17.

   C) LELAND ST. AND VICINITY, BY CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, DATED FEBRUARY 15, 1978, AND RECORDED IN THE (CCRD) IN PLAN BOOK 396, PAGE 3.

4. BEARINGS AND COORDINATES ARE BASED ON GRID NORTH NAD 1983 MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE.

5. VERTICAL DATUM IS NGVD 1929 AND WAS DETERMINED BY STATIC OBSERVATION USING A DUAL FREQUENCY GPS UNIT ON TWO CONTROL POINTS. THE DATA WAS PROCESSED BY USING THE OPUS PROGRAM ON THE NGS WEBSITE. SITE BENCHMARK ELEVATION CONFIRMED WITH CITY OF PORTLAND MONUMENT AT INTERSECTION OF HARTLEY STREET & STEVENS AVE.

6. CATCH BASIN & MANHOLE INVERTS PROVIDED BY THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT AND NEED CONFIRMATION PRIOR TO ANY NEW CONNECTIONS DURING CONSTRUCTION. SEE EXISTING CONDITIONS SURVEY FOR RIM AND INVERT ELEVATIONS.

7. THIS PLAN IS BASED ON A SURVEY COMPLETED TO THE BEST OF MY KNOWLEDGE IN ACCORDANCE WITH THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS STANDARDS OF PRACTICE. FIELD WORK WAS COMPLETED USING ROBOTICS INSTRUMENTATION OFF A BASELINE AND SPUR STATIONS. POINTS LOCATED WITHIN A POSITIONAL TOLERANCE OF 0.05 FEET, MORE OR LESS.

8. THIS PLAN IS SUBJECT TO REVISION UPON RECEIPT OF A TITLE OPINION WHICH MAY NOTE OTHER POSSIBLE RESTRICTIONS, EASEMENTS OR CONDITIONS ENCUMBERING OR BENEFITING THE SITE.

9. NO EXCAVATION OF ANY KIND CAN BE PERMITTED WITHOUT THE CONTRACTOR CONTACTING DIG–SAFE FOR LOCATION OF POSSIBLE UNDERGROUND UTILITIES. ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE BASED ON VISIBLE ABOVE GROUND STRUCTURES.

10. PROPERTY IS NOT LOCATED WITHIN A FLOOD HAZARD ZONE AS DEPICTED ON FEMA FIRM FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 230051 007 C, MAP REVISED DECEMBER 8, 1998.

11. REFERENCE IS MADE TO THE SITE PLAN, SHEET C–2.0 FOR ALL PROPOSED IMPROVEMENTS, UTILITY CONNECTIONS AND NOTES PERTAINING TO CONSTRUCTION.

LEGEND

EXISTING CONDITIONS

- SITE BOUNDARY
- ABUTTER BOUNDARY
- SETBACK
- MONUMENT
- IRON PIPE/ROD
- DRILLHOLE
- CHAIN LINK FENCE
- STOCKADE FENCE
- EDGE PAVEMENT
- CURBLINE
- BUILDING
- SIGN
- WATER VALVE
- GAS VALVE
- UTILITY POLE
- GUY WIRE
- HYDRANT
- CATCH BASIN
- SEWER MANHOLE
- CONTOURS
- 6"G GAS
- 8"W WATER
- 8"S SEWER
- OHE&T OVERHEAD ELEC. & TEL.
- DECIDUOUS TREE

PROPOSED IMPROVEMENTS

- BUILDING
- EDGE PAVEMENT
- CURBING
- ZONE BOUNDARY

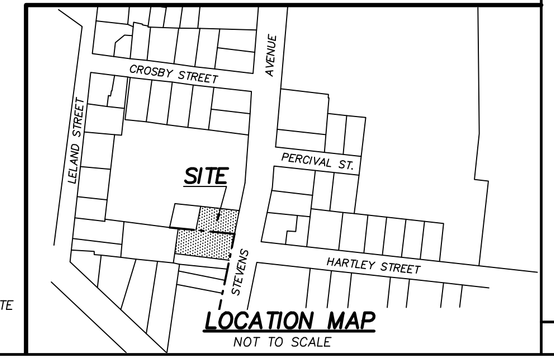
GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

SPACE AND BULK: RESIDENTIAL (6 UNITS) + RETAIL (2,000 S.F.)

	B1–b	PROPOSED
MIN. LOT SIZE	NONE	±0.22 AC
MIN. LOT AREA / D.U.	1,000 SF/DU (MULTI–FAMILY)	4 D.U. (2,390 SF/DU)
MIN. STREET FRONTAGE	20 FT.	66 FT.
MIN. LOT WIDTH	NONE	65.84 FT.
MIN. FRONT YARD	NONE	0 FT.
MAX. FRONT YARD	10 FT	0 FT.
MIN. REAR YARD	10 FT. (PRINCIPAL)	67.8 FT.
	5 FT. (ACCESSORY)	6.59 FT.
MIN. SIDE YARD	5 FT. (PRINCIPAL)	6.31 FT.
	NONE (ACCESSORY)	0.1 FT.
MAX. BLDG HEIGHT	35 FT.	32 FT.
MAX. FLOOR AREA	NON–RESIDENTIAL: 10,000 SF	2,505 SF
	RETAIL: 5,000 SF	1,000 SF
OFF–STREET PARKING	RESIDENTIAL (6 UNITS): 2 PS / D.U.	12 PS
	RETAIL: (2,000 SF)1 PS / 200 SF >2,000	0 PS
	TOTAL	12 PS REQUIRED 10 PS PROPOSED ONSITE 2 PS OFFSITE
MAX. IMPERVIOUS SURFACE	90%	83%±



LOCATION MAP
NOT TO SCALE

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM FOUR POINTS ASSOCIATES, INC. ANY ALTERATIONS AUTHORIZED BY OTHERS SHALL BE AT THEIR SOLE RISK AND WITHOUT LIABILITY TO FOUR POINTS ASSOCIATES, INC.

REV:	DATE:	
C	03/14/2017	REVISED CROSSWALK, ADD CURBING, ADD/REV RAMPS, ADD 2 UNITS
B	02/07/2017	PRELIMINARY SUBMISSION TO THE CITY FOR REVIEW
A	12/22/16	SUBMITTED FOR REVIEW

PROJ. NO: 16014
DWG NAME: 16014 SB | SCALE: 1"=10' | PLAN BY: DED & SMM
STATUS:

NAME: . .
LIC. #

DONALD E. DOSTIE
PLS #2147

STATE OF MAINE · DONALD E. DOSTIE · 2147 · REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY SUBDIVISION PLAN
OF:
510 STEVENS AVENUE
PORTLAND, MAINE
FOR APPLICANT:
502 DEERING CENTER LLC
RECORD OWNER: DENNIS LACHMAN
55 HAMBLET AVE., PORTLAND, MAINE 04104

Four Points Associates, Inc.
Donald E. Dostie, PLS
9 Ralph Avenue, Lewiston, ME. 04240 Tel. 207-577-5840

SHEET C 3.0

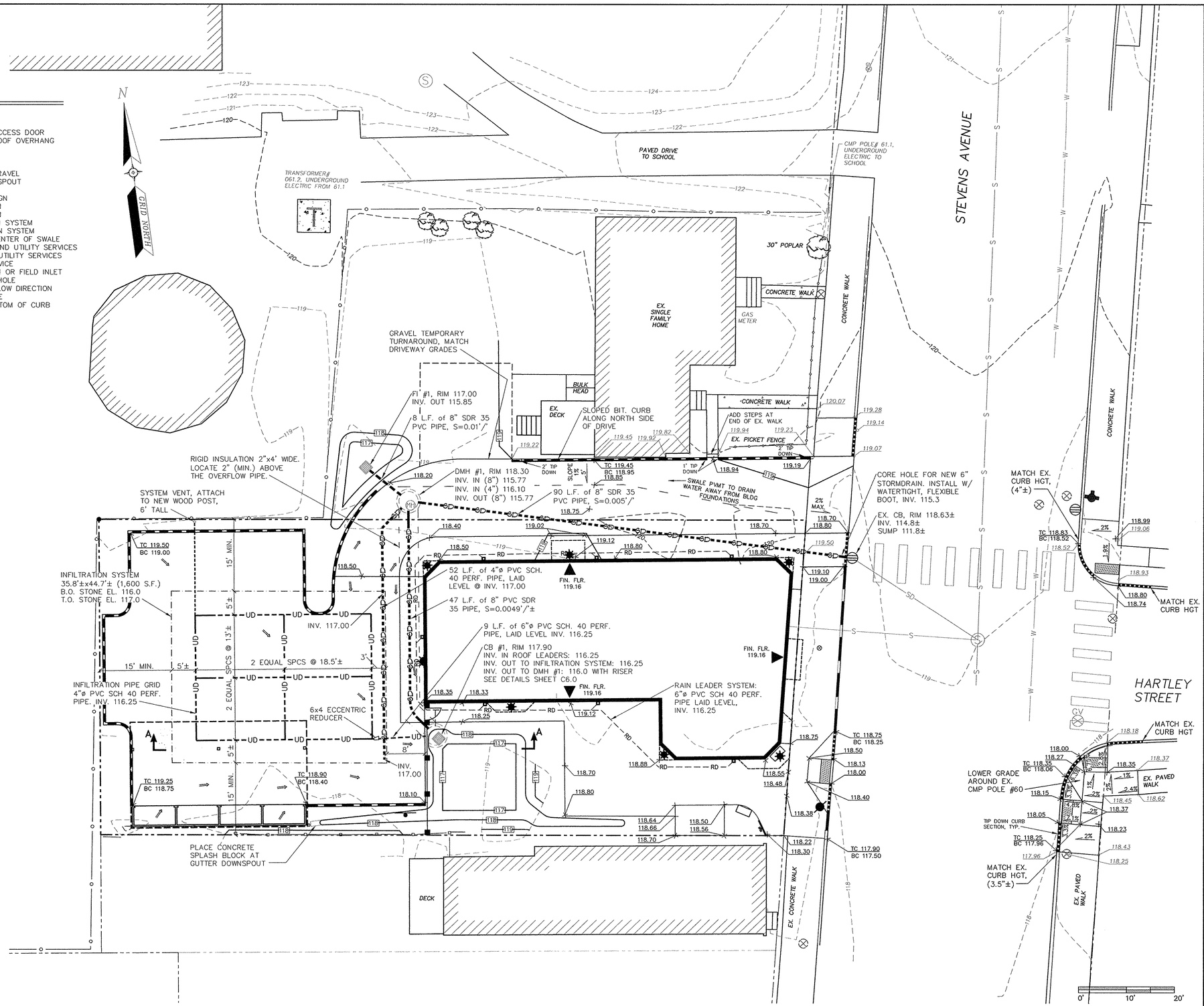
STORMWATER & UTILITY LEGEND

EXISTING

- PROPERTY LINE
- ABUTTER'S PROPERTY LINE
- BUILDING
- FENCE
- 118 CONTOURS
- OHE&T OVERHEAD UTILITY LINES
- S GRAVITY SEWER
- SD STORMDRAIN
- W WATERMAIN
- CATCH BASIN
- SEWER MANHOLE
- UTILITY POLE
- HYDRANT
- 119.22 SPOT GRADE

PROPOSED

- BUILDING
- BUILDING ACCESS DOOR
- BUILDING ROOF OVERHANG
- FENCE
- 117 CONTOURS
- CURB
- EDGE OF GRAVEL
- RAIN DOWNSPOUT
- LIGHT
- PARKING SIGN
- UD UNDERDRAIN
- SD STORMDRAIN
- RD ROOF DRAIN SYSTEM
- INFILTRATION SYSTEM
- APPROX. CENTER OF SWALE
- UGU UNDERGROUND UTILITY SERVICES
- OHU OVERHEAD UTILITY SERVICES
- W WATER SERVICE
- CATCHBASIN OR FIELD INLET
- DRAIN MANHOLE
- SURFACE FLOW DIRECTION
- 118.25 SPOT GRADE
- TC 119.45 / BC 118.95 TOP & BOTTOM OF CURB



Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hambler Avenue
Portland, Maine 04103

Consultants:

Architect
Lachman Architects & Planners
58 Fore Street, Bldg 30
Portland, Maine 04101
207.831.8585
Contact: Denis Lachman

Landscape Architects
Carroll Associates
217 Commercial St.
Portland, Maine 04101
207.772.1552
Contact: Patrick Carroll

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Drawing Set:

PERMITTING

Drawn: JDC

Checked: TSG

Approved:

STATE OF MAINE
THOMAS S. GREER No. 4206
LICENSED PROFESSIONAL ENGINEER
3/13/17

Drawing Title:

GRADING AND STORMWATER MANAGEMENT PLAN

Job Number: PG: 16193

File:

Date: 12-22-2016 Scale: AS SHOWN

Drawing Number:

C 4.0

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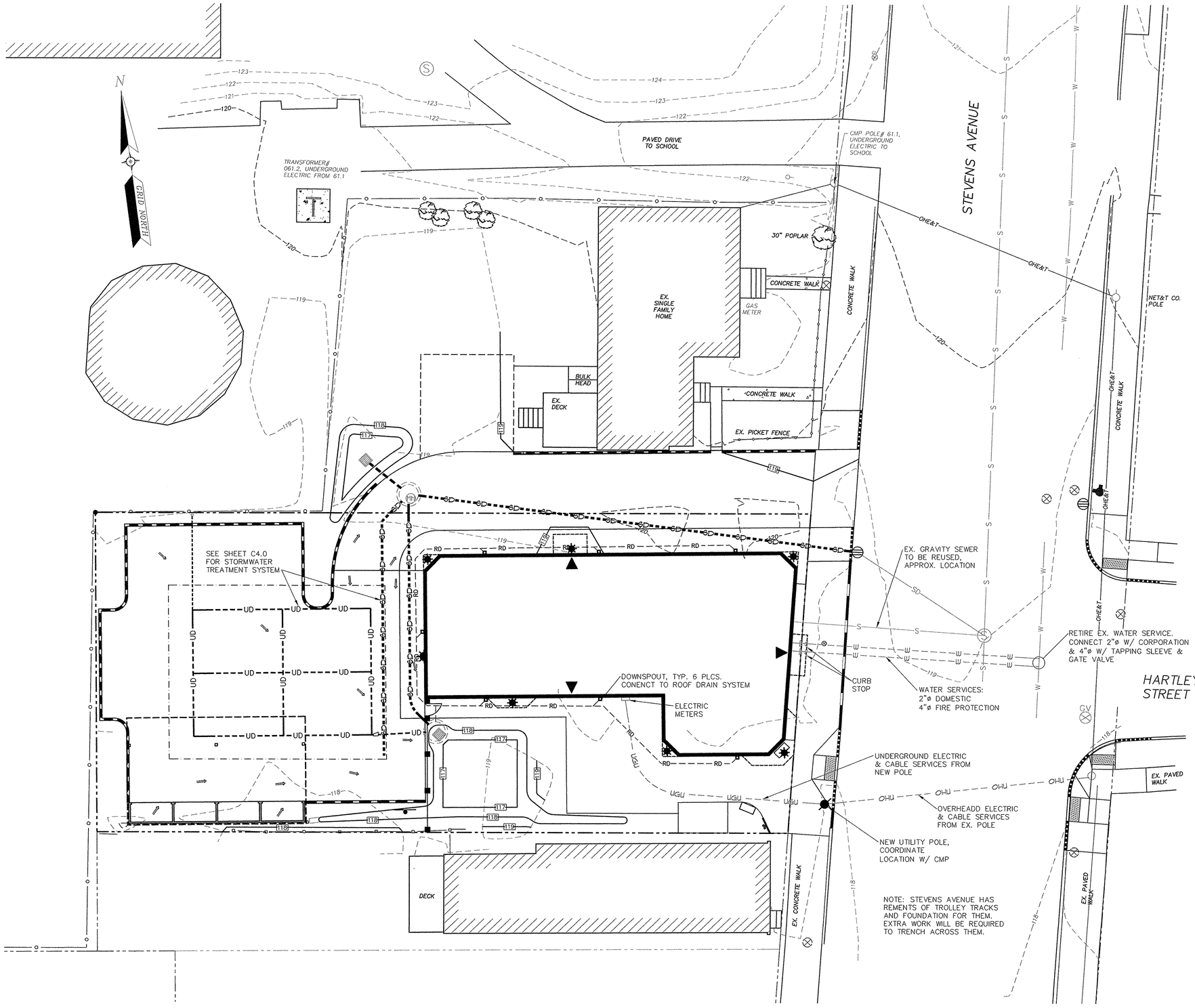

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502 Deering Center

Portland, Maine

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55 Hamblet Avenue
Portland, Maine 04103

Consultants:

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PERMITTING

Drawn: JDC

Checked: TSG

Approved:

STATE OF MAINE
THOMAS S. GREER No. 4206
LICENSED PROFESSIONAL ENGINEER
3/13/17

Drawing Title:

UTILITIES PLAN

Job Number: PG: 16193

File:

Date: 12-22-2016 Scale: AS SHOWN

Drawing Number:

C 5.0

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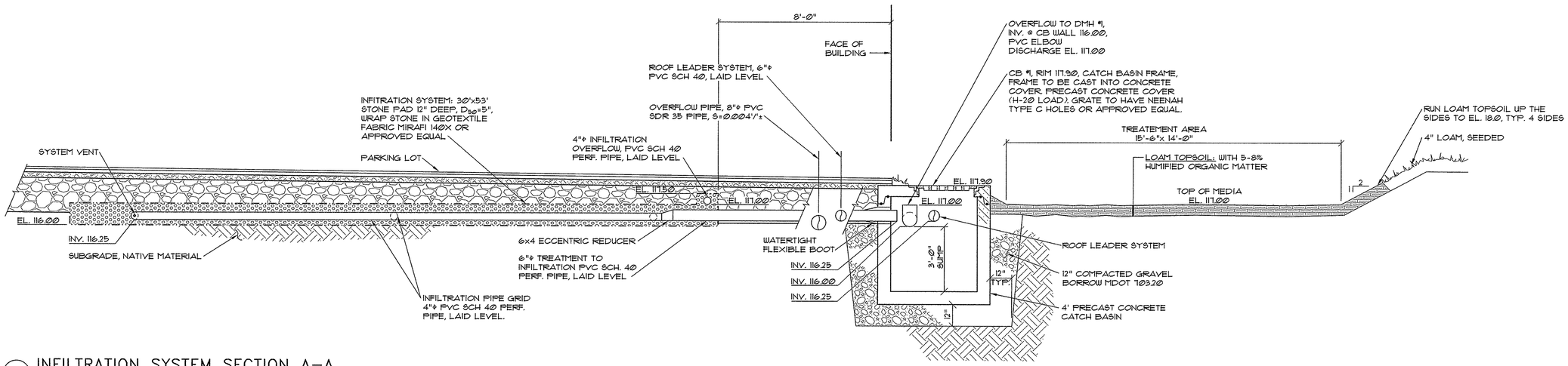
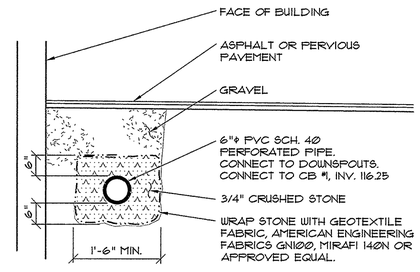


1 INFILTRATION SYSTEM SECTION A–A

NOT TO SCALE



2 RAIN LEADER SYSTEM SECTION

NOT TO SCALE

Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hambler Avenue
Portland, Maine 04103

Consultants:

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Checked: TSG

Approved:

STATE OF MAINE
THOMAS S. GREER No. 4206
REGISTERED PROFESSIONAL ENGINEER
3/13/17

Drawing Title: CIVIL DETAILS

Job Number: PG: 16193

File:

Date: 12–22–2016 Scale: AS SHOWN

Drawing Number: C 6.0

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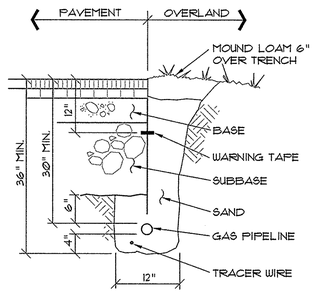
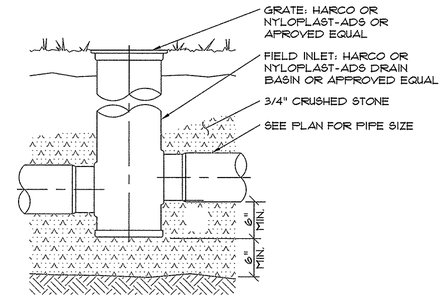


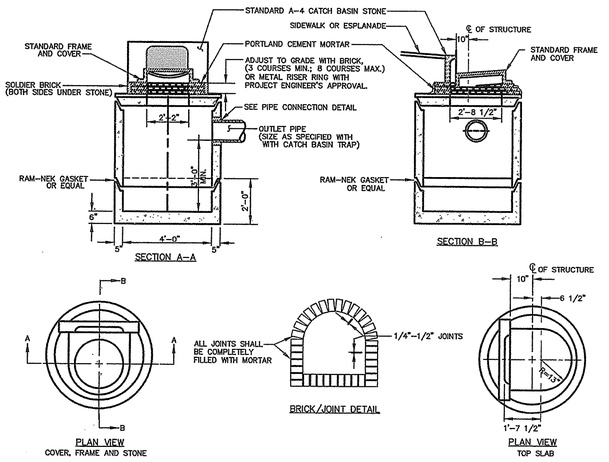
6 GAS PIPING TRENCH SECTION

NOT TO SCALE



5 FIELD INLET DETAIL

NOT TO SCALE



4 CATCHBASIN #1 SECTION (II-2)

NOT TO SCALE

UNDERGROUND UTILITIES WARNING TAPE

IDENTIFICATION TAPE TO BE INSTALLED ABOVE ALL NEW UNDERGROUND UTILITIES AND ABOVE ANY EXISTING UTILITIES THAT MAY BE EXPOSED BY THIS CONSTRUCTION.

DETECTABLE UNDERGROUND MARKING TAPE TO BE PERMANENT, BRIGHT-COLORED, CONTINUOUS-PRINTED PLASTICIZED ALUMINUM TAPE, INTENDED FOR DIRECT-BURIAL SERVICE NOT LESS THAN 3" WIDE x 5 MILS THICK. PROVIDE TAPE WITH BLACK PRINTING IDENTIFYING THE UTILITY. DETECTABLE WARNING TAPE REQUIRED OVER ALL WATER, SEWER, DRAINAGE, OR GAS UTILITIES. TAPE TO BE TERRA TAPE BY REEF INDUSTRIES, INC., www.reefindustries.com, OR EQUAL.

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES OR CONDUIT
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

GENERAL NOTES FOR MANHOLES AND CATCH BASINS

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVED EQUAL.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
9. CATCH BASIN FRAMES FOR TYPE A4 CATCH BASIN CURB INLETS SHALL BE ETHERIDGE DR5A OR APPROVED EQUAL.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP. SEE FIGURE II-09.

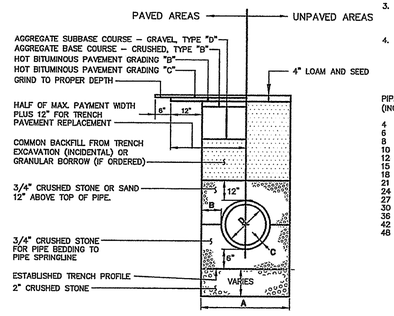
GENERAL NOTES FOR MANHOLES AND CATCH BASINS (II-4)

1

NOT TO SCALE

NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.

ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES..



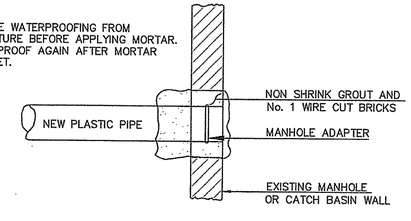
NOTES

1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
3. DIMENSION **B** SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION **B** SHALL BE AT LEAST 9".
4. DIMENSION **A** IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION **A** SHALL BE BASED ON PIPE DIAMETER **D**, AS SET FORTH IN THE FOLLOWING TABLE.

PIPE DIAMETER, D (INCHES)	MAX. TRENCH WIDTH, A (FEET)
4 - - - -	4.0
6	4.0
8	4.0
10	4.0
12	5.0
15	5.0
18 - - - -	5.0
21	5.0
24	6.0
27	6.0
30	6.0
36 - - - -	6.0
42	7.0
48	7.0

2 TYPICAL PIPE TRENCH INSTALLATION (11-12)

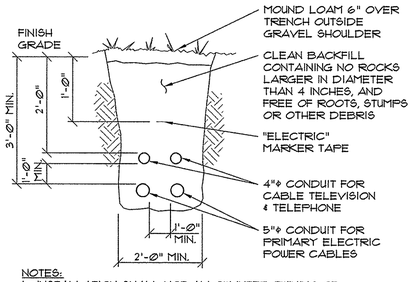
NOT TO SCALE



METHOD 3 - NEW PIPE INTO EXISTING STRUCTURE

3 PLASTIC PIPE CONNECTION METHODS (II-14)

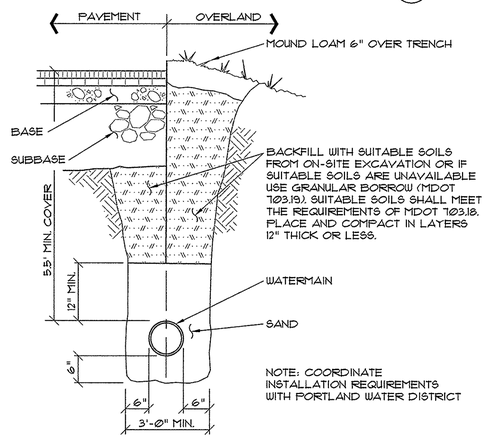
NOT TO SCALE



NOTES:
1. INSTALLATION SHALL NOT ALLOW INTER-TWINING OF CABLES.
2. DIRECT BURY ELECTRICAL CABLES MAY BE USED IF ALLOWED BY CENTRAL MAINE POWER.
3. CONFIRM CONDUIT SIZES WITH INDIVIDUAL UTILITY COMPANIES PRIOR TO INTALLATION.
4. COORDINATE FINAL LAYOUT WITH INDIVIDUAL UTILITY COMPANIES.

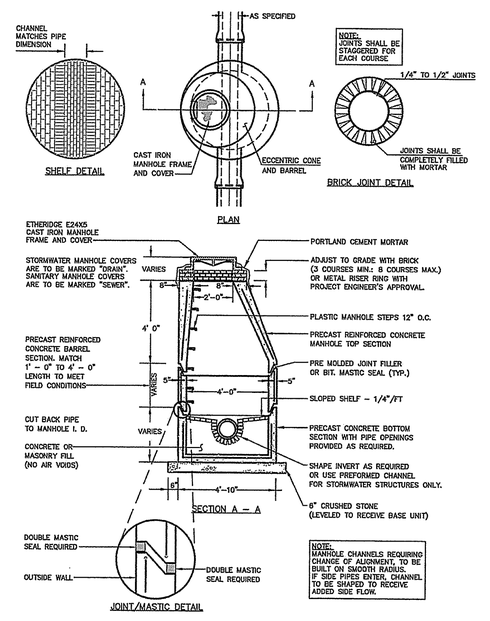
9 CABLE TRENCH SECTION

NOT TO SCALE



8 TYPICAL WATER MAIN SECTION

NOT TO SCALE



7 PRECAST CONCRETE MANHOLE (II-1)

NOT TO SCALE

Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hamblet Avenue
Portland, Maine 04103

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STATE OF MAINE
THOMAS S. GREER No. 4205
LICENSED PROFESSIONAL ENGINEER
3/13/17

Drawing Title:
CIVIL DETAILS

Job Number: PG: 16193
File:
Date: 12-22-2016 Scale: AS SHOWN

Drawing Number:
C 7.0

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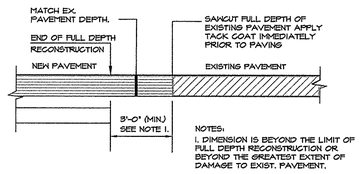
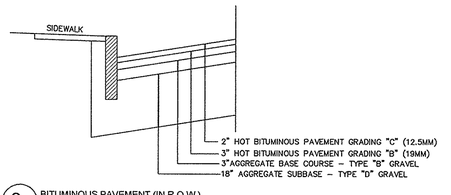


1 PAVEMENT CUTTING/MATCHING
NOT TO SCALE



2 BITUMINOUS PAVEMENT (IN R.O.W.)
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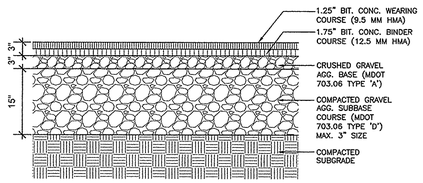

3 BITUMINOUS PAVEMENT (ON-SITE)
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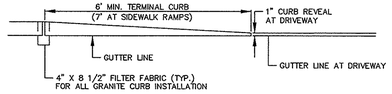
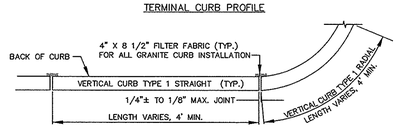
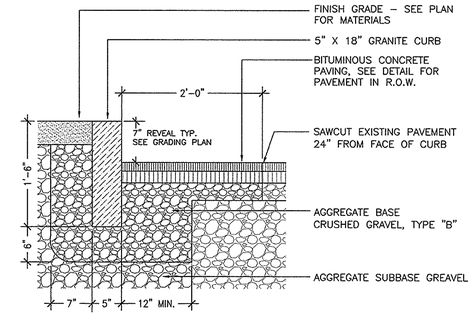


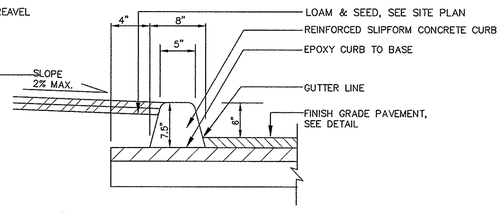
TERMINAL CURB PROFILE



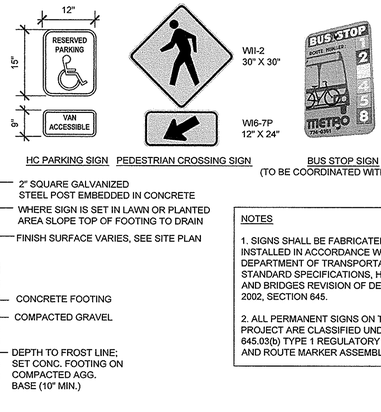
VERTICAL GRANITE CURB PLAN VIEW



6 GRANITE CURB
NOT TO SCALE



7 CONCRETE CURB
NOT TO SCALE



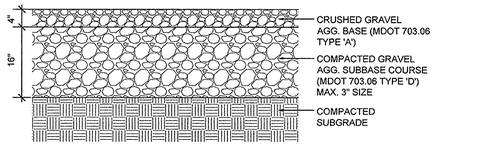
HC PARKING SIGN PEDESTRIAN CROSSING SIGN BUS STOP SIGN
(TO BE COORDINATED WITH METRO)

10 SITE SIGNAGE
NOT TO SCALE

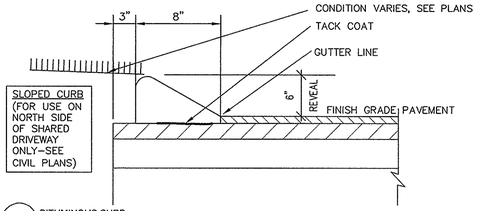
NOTES

1. SIGNS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, HIGHWAYS AND BRIDGES REVISION OF DECEMBER 2002, SECTION 645.

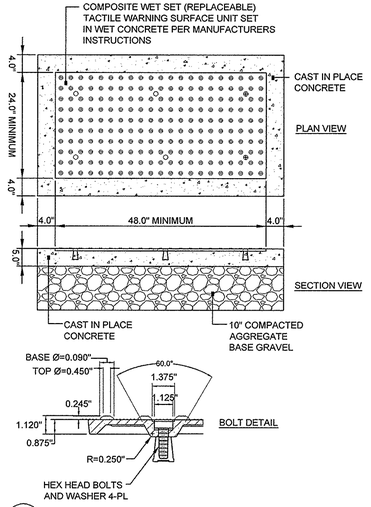
2. ALL PERMANENT SIGNS ON THIS PROJECT ARE CLASSIFIED UNDER SECTION 645.03(b) TYPE 1 REGULATORY WARNING AND ROUTE MARKER ASSEMBLY SIGNS.



11 GRAVEL PAVEMENT
NOT TO SCALE



12 BITUMINOUS CURB
NOT TO SCALE



13 SIDEWALK RAMP DETECTABLE WARNING TILE
NOT TO SCALE

NOTES:

1. COMPOSITE WET SET (REPLACEABLE) TACTILE WARNING SURFACE UNITS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. (WWW.ADATILE.COM), OR APPROVED EQUAL.

2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A GROOVED EDGE BETWEEN THE TILE AND CONCRETE, ALONG WITH A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.

3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.

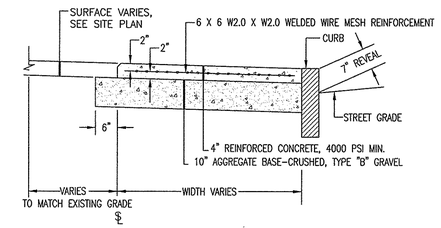
4. FOR ALL SIDEWALK RAMPS MADE OF CONCRETE OR ASPHALT, FEDERAL YELLOW COLORED (#33538) TILES SHALL BE USED. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.

5. FOR ALL SIDEWALK RAMPS MADE OF BRICK, SEATTLE YELLOW (#23594) COATED COLORED TILES SHALL BE USED.

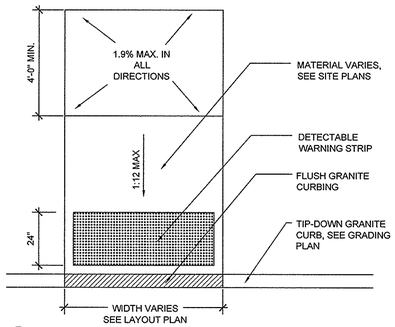
6. SIZE: THE DETECTABLE WARNING PANEL(S) SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.

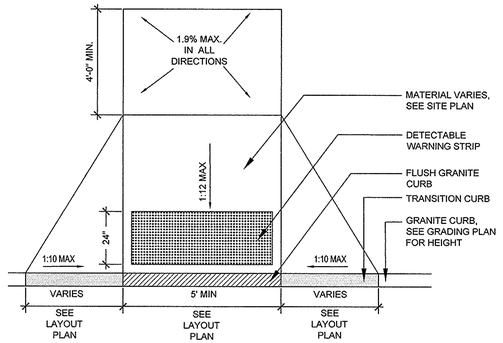
7. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTATED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.

NOTE: REFER TO CONTRACT FOR DETAILED MATERIALS SPECIFICATIONS.



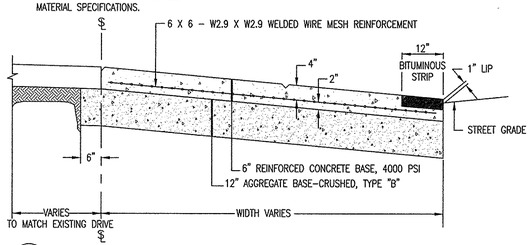
4 REINFORCED CONCRETE SIDEWALK
NOT TO SCALE



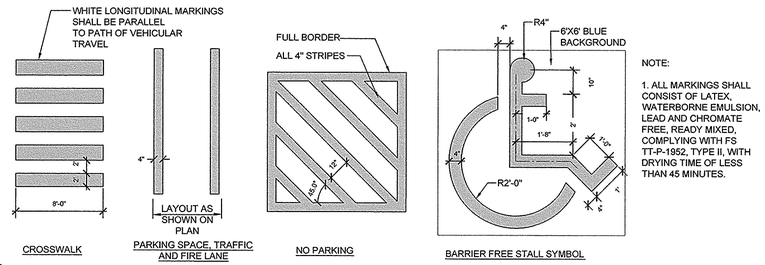


8 SIDEWALK RAMPS
NOT TO SCALE

NOTE: REFER TO CONTRACT FOR DETAILED MATERIAL SPECIFICATIONS.



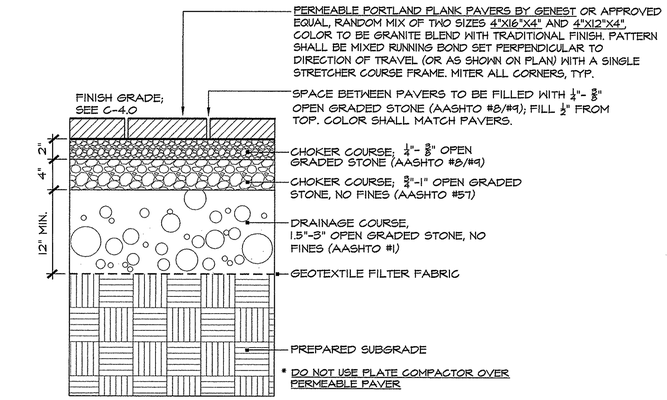
5 REINFORCED CONCRETE DRIVEWAY APRON
NOT TO SCALE



NOTE:

1. ALL MARKINGS SHALL CONSIST OF LATEX, WATERBORNE EMULSION, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH FS TT-P-1952, TYPE II, WITH DRYING TIME OF LESS THAN 45 MINUTES.

9 PAINT STRIPING
NOT TO SCALE



14 PERVIOUS PAVERS
NOT TO SCALE

Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hamblet Avenue
Portland, Maine 04103

Consultants:

Architect
Lachman Architects & Planners
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Portland, Maine 04101
207.831.8585
Contact: Denis Lachman

Landscape Architects
Carroll Associates
217 Commercial St.
Portland, Maine 04101
207.772.1552
Contact: Patrick Carroll

Civil Engineer
Pinkham & Greer Civil Engineers
28 Vannah Ave.
Portland, ME 04103
207.781.5242
Contact: Thomas Greer

Surveyor
Four Points Associates, Inc.
9 Ralph Avenue
Lewiston, Maine 04240
207.577.5840
Contact: Donald Dostie

Drawing Set:

No.	Date	Revision
1	12–22–16	SITE PLAN REVIEW–FINAL
2	2–7–17	REVS PER CITY COMMENTS
3	3–14–17	REVS PER CITY COMMENTS

Drawing Set:
PERMITTING

Drawn: MAP
Checked: MAP
Approved: PC

STATE OF MAINE — THOMAS S. GREER No. 4208 — LICENSED PROFESSIONAL ENGINEER — 3/13/17

Drawing Title:
SITE DETAILS

Job Number:
File:
Date: 12–22–2016 Scale: AS SHOWN

Drawing Number:
C-8.0

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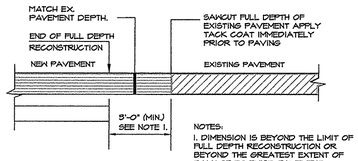
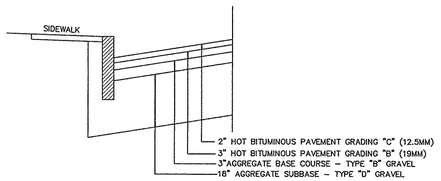
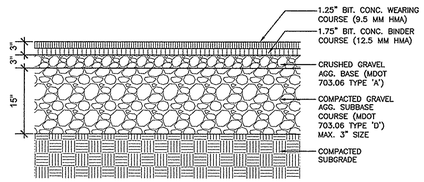


1 PAVEMENT CUTTING/MATCHING
NOT TO SCALE

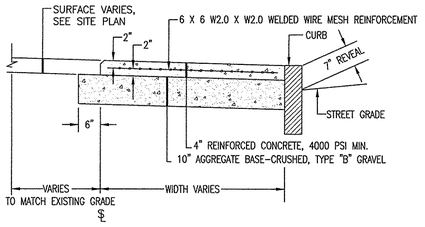


2 BITUMINOUS PAVEMENT (IN R.O.W.)
NOT TO SCALE



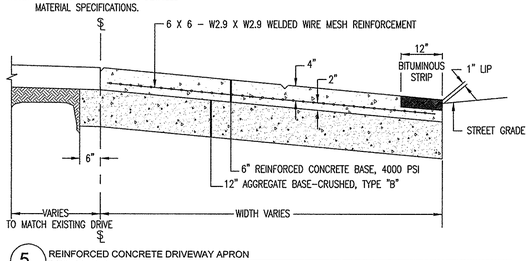
3 BITUMINOUS PAVEMENT (ON-SITE)
NOT TO SCALE

NOTE: REFER TO CONTRACT FOR DETAILED MATERIALS SPECIFICATIONS.

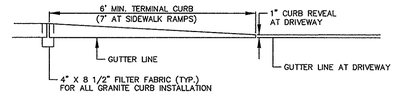


4 REINFORCED CONCRETE SIDEWALK
NOT TO SCALE

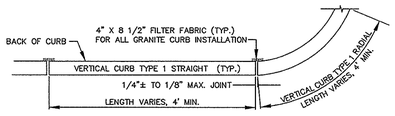
NOTE: REFER TO CONTRACT FOR DETAILED MATERIAL SPECIFICATIONS.



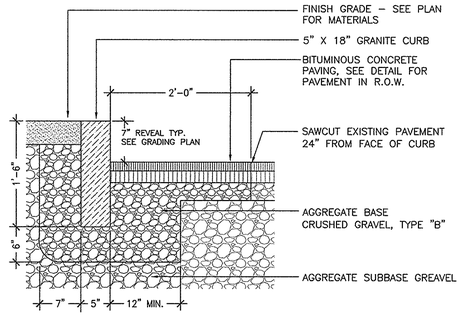
5 REINFORCED CONCRETE DRIVEWAY APRON
NOT TO SCALE



TERMINAL CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



6 GRANITE CURB
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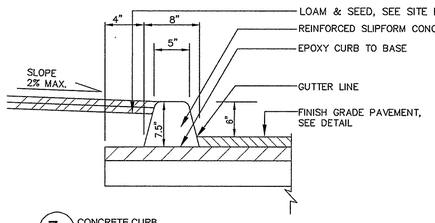

7 CONCRETE CURB
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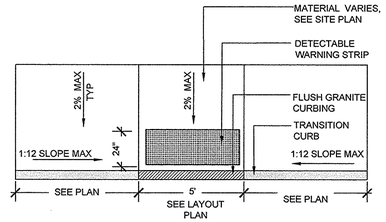
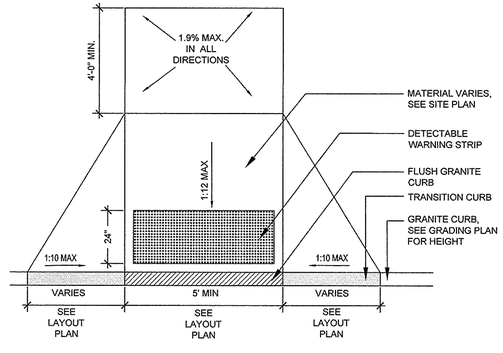
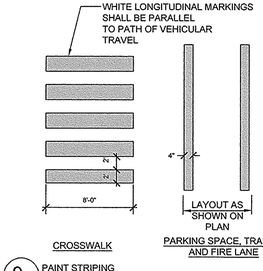
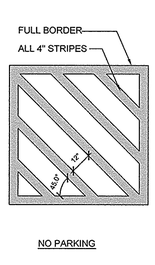




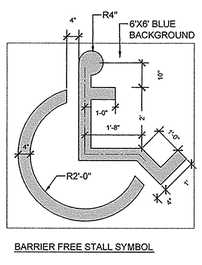
8 SIDEWALK RAMPS
NOT TO SCALE



CROSSWALK — PARKING SPACE, TRAFFIC AND FIRE LANE



NO PARKING



BARRIER FREE STALL SYMBOL

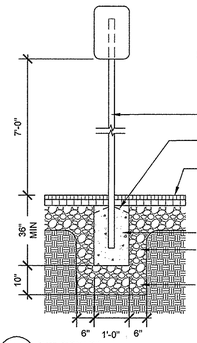
NOTE:
1. ALL MARKINGS SHALL CONSIST OF LATEX, WATERBORNE EMULSION, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH FS TT-P-1952, TYPE II, WITH DRYING TIME OF LESS THAN 45 MINUTES.

9 PAINT STRIPING
NOT TO SCALE

HC PARKING SIGN

PEDESTRIAN CROSSING SIGN

BUS STOP SIGN (TO BE COORDINATED WITH METRO)



10 SITE SIGNAGE
NOT TO SCALE

NOTES

1. SIGNS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, HIGHWAYS AND BRIDGES REVISION OF DECEMBER 2002, SECTION 645.

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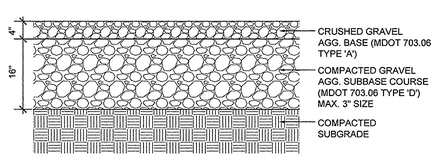
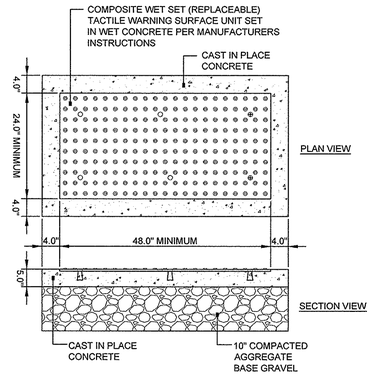
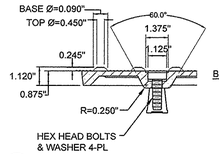


11 GRAVEL PAVEMENT
NOT TO SCALE





BOLT DETAIL

12 SIDEWALK RAMP DETECTABLE WARNING TILE
NOT TO SCALE

NOTES:

1. COMPOSITE WET SET (REPLACEABLE) TACTILE WARNING SURFACE UNITS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. (WWW.ADATILE.COM), OR APPROVED EQUAL.

2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A GROOVED EDGE BETWEEN THE TILE AND CONCRETE, ALONG WITH A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.

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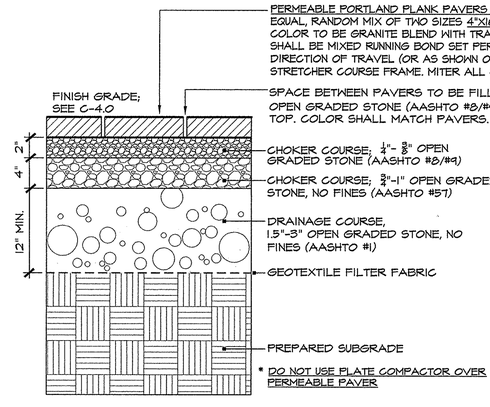
5. FOR ALL SIDEWALK RAMPS MADE OF BRICK, SEATTLE YELLOW (#23594) COATED COLORED TILES SHALL BE USED.

6. SIZE: THE DETECTABLE WARNING PANEL(S) SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.

7. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTATED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



13 PERVIOUS PAVERS
NOT TO SCALE

Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hamblet Avenue
Portland, Maine 04103

Consultants:

Architect
Lachman Architects & Planners
58 Fore Street, Bldg 30
Portland, Maine 04101
207.831.8585
Contact: Denis Lachman

Landscape Architects
Carroll Associates
217 Commercial St.
Portland, Maine 04101
207.772.1552
Contact: Patrick Carroll

Civil Engineer
Pinkham & Greer Civil Engineers
28 Vannah Ave.
Portland, ME 04103
207.781.5242
Contact: Thomas Greer

Surveyor
Four Points Associates, Inc.
9 Ralph Avenue
Lewiston, Maine 04240
207.577.5840
Contact: Donald Dostic

Drawing Set:

No.	Date	Revision
1	12–22–16	SITE PLAN REVIEW–FINAL
2	2–7–17	REVS PER CITY COMMENTS

Drawing Set:
PERMITTING

Drawn: MAP
Checked: MAP
Approved: PC

STATE OF MAINE — THOMAS S. GREER No. 4263 — LICENSED PROFESSIONAL ENGINEER

Drawing Title: 2/7/17

SITE DETAILS

Job Number:
File:
Date: 12–22–2016 | Scale: AS SHOWN

Drawing Number:
C-8.0

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EROSION CONTROL NOTES

GENERAL:

THE DRAWINGS DEPICT THE REQUIRED SOIL EROSION CONTROL MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION SITE IN SUCH A MANNER THAT:

1. SOIL EROSION IS KEPT TO A MINIMUM.
2. NO SEDIMENT LEAVES THE CONSTRUCTION SITE PROPER.
3. ALL POSSIBLE MEASURES ARE EMPLOYED TO PREVENT SEDIMENT FROM ENTERING DRAINAGE COURSES AND WETLANDS EVEN BEYOND THE DETAILS SHOWN ON THIS PLAN IF NECESSARY.

1. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.

2. THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATERBODIES, OR WETLAND AS A RESULT OF THIS PROJECT.

3. LOAM AND SEED ALL DISTURBED AREAS AS SOON AS POSSIBLE AFTER DISTURBANCE, BUT NO LONGER THAN 7 DAYS. LOAM AND SEED ANY DISTURBED AREA WITHIN 75' OF WETLANDS OR WATERBODEIS WITHIN 48 HOURS OR PRIOR TO AND STORM EVENT. USE WINTER SEED RATES AND SPECIFICATIONS IF APPROPRIATE.

4. INSPECT SOIL EROSION MEASURES WEEKLY AND AFTER SIGNIFICANT STORM EVENTS. MAKE ALL NECESSARY REPAIRS TO FACILITIES AS SOON AS POSSIBLE, BUT NO LONGER THAN 2 DAYS. CLEAN AND RESET SILT FENCES AND STONE CHECK DAMS WHICH ACCUMULATE SEDIMENT AND DEBRIS.

5. PROTECT AND STABILIZE ALL AREAS NOT SCHEDULED FOR EROSION PREVENTION OR STABILIZATION BUT THAT SHOW SIGNS OF EROSION. NOTIFY OWNER OF ANY SIGNIFICANT EROSION PROBLEM.

6. APPLY MULCH TO BARE SOILS WITHIN 7 DAYS OF INITIAL DISTURBANCE OF SOILS, WITHIN 48 HOURS IF WITHIN 75' OF WETLAND OR WATERBODY, PRIOR TO ANY RAIN EVENT, OR PRIOR TO ANY WORK SHUTDOWN LASTING MORE THAN ONE DAY.

7. TEMPORARILY SEED WITHIN 7 DAYS ANY AREA WHICH WILL BE LEFT DISTURBED AND UNWORKED FOR MORE THAN 14 DAYS WITH THE TEMPORARY SEED MIX LISTED BELOW. IF AREA IS WITHIN 75' OF A WETLAND OR WATERBODY, SEED WITHIN 48 HOURS. PERMANENTLY SEED ANY AREA WHICH CAN BE LOAMED AS SOON AS POSSIBLE WITH THE PERMANENT SEED MIX LISTED BELOW. DO NOT USE PERMANENT SEED MIX AFTER SEPTEMBER 15.

8. MULCH ALL AREAS SEEDED SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE. DURING THE GROWING SEASON (APRIL 15 – SEPT. 30) USE EROSION CONTROL MESH (OR MULCH AND NETTING) ON:
   - –THE BASE OF GRASSED WATERWAYS
   - –SLOPES STEEPER THAN 15%
   - –WITHIN 100 ft. OF STREAMS AND WETLANDS

   BETWEEN OCT. 1 AND APRIL 14 USE EROSION CONTROL MESH (OR MULCH AND NETTING) ON:
   - –SIDE SLOPES OF GRASSED WATERWAYS
   - –SLOPES STEEPER THAN 8%

   INSTALL EROSION CONTROL MESH IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. MESH TO BE EQUAL TO NORTH AMERICAN GREEN PRODUCT C125BN.

9. FOLLOW SILT FENCE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS FOR INSTALLATION OF SILT FENCE. SECURE ENTIRE BOTTOM OF FENCE EITHER BY BURYING BOTTOM
10. OF FENCE IN A TRENCH OR BERMING WITH SOIL OR CHIPPED GRUBBINGS. REFER TO SILT FENCE DETAILS.

11. PLACE AND GRADE LOAM IN A REASONABLY UNIFORM MANNER. WORK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM SEED BED IS PREPARED. REMOVE FROM SURFACE ALL STONES LARGER THAN 2" AND ALL OTHER UNSUITABLE MATERIAL. LIME AND FERTILIZER SHOULD BE MIXED INTO SOIL PRIOR TO ROLLING EXCEPT IF INCLUDED IN HYDROSEED MIXTURE. PERMANENT STABILIZATION OF REVEGETATED AREAS IS CONSIDERED AS 90% CATCH.

12. ALL CULVERT OR PIPE OUTFALL PROTECTION MUST BE INSTALLED WITHIN 48 HOURS OF INSTALLING NEW PIPE OR CULVERT.

13. DITCHES AND CHANNELS DESIGNATED TO BE LINED WITH RIPRAP AND/OR EROSION CONTROL MESH MUST BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR CHANNEL.

14. ALL CATCH BASINS, NEW OR EXISTING, THAT MAY RECEIVE RUNOFF FROM DISTURBED AREAS MUST BE PROTECTED BY INSTALLING AND MAINTAINING SILT SACKS DURING CONSTRUCTION.

15. WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE OR EROSION CONTROL MIX LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOODING, ICING, AND SEDIMENT DISCHARGES TO A PROTECTED RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT STRUCTURE BE LOCATED WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE.

TOPSOIL:

1. SUITABLE TOPSOIL SALVAGED FROM SITE OR SCREENED, LOOSE AND FRIABLE SANDY LOAM OR LOAM AS DEFINED BY THE USDA SOIL CONSERVATION SERVICE CLASSIFICATION SYSTEM, FREE FROM ADMIXTURE OF SUBSOIL, REFUSE, LARGE STONES, CLODS, ROOTS, WEEDS, RHIZOMES OR OTHER UNDESIREABLE FOREIGN MATTER AS DETERMINED BY THE INSPECTING AUTHORITY. CONTRACTOR SHALL SUBMIT REPORTS OF LOAM TEST RESULTS PERFORMED BY AN INDEPENDENT TESTING LABORATORY FOR TOPSOIL FROM DIFFERENT SOURCES PRIOR TO PLACING. THE COST OF TESTING SHALL BE INCIDENTAL TO THE COST OF TOPSOIL. TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:

2. MATERIAL

   SAND – 0.08 IN. TO 0.002 IN. DIAMETER (% BY VOLUME) . . . . . 45 – 75
   SILT – 0.002 IN. TO 0.00008 IN. DIAMETER (% BY VOLUME) . . . 20 – 40
   CLAY – LESS THAN 0.00008 IN. DIAMETER (% BY VOLUME) . . . . 5 – 15

   ORGANICS (SHALL MEET THE REQUIREMENTS OF MDOT STANDARD SPECIFICATION 717.09 PEAT HUMUS) (% BY VOLUME) . 10 – 20

   NUTRIENTS:
   CALCIUM (CA) (% SATURATION) . . . . . 60 – 80
   MAGNESIUM (MG) (% SATURATION) . . . . . 10 – 25
   POTASSIUM (K) (% SATURATION) . . . . . 2.1 – 3.0
   PHOSPHORUS (P) (POUNDS/ACRE) . . . . . 10 – 40
   PH . . . . . 6.0 – 6.5

   PERMEABILITY (INCHES PER HOUR) . . . . . 3 – 10

   MAXIMUM STONE SIZE (INCHES) 3/4

SEEDING:

USE PERMANENT SEED MIXES AND RATES BETWEEN 5/15 AND 9/30.
USE TEMPORARY SEED MIXES FOR PERIODS LESS THAN 12 MONTHS. IF USING TEMPORARY SEED MIXES AND RATES BETWEEN 10/1 AND 5/14, RE–SEED WITH PERMANENT SEED MIX AFTER 5/15.

PERMANENT SEED:

MDOT 717.03(a) METHOD NUMBER 3

TEMPORARY SEED:

OATS	80.00 LBS/ACRE	4/01 – 5/14
ANNUAL RYEGRASS	40.00 LBS/ACRE	
SUDANGRASS	40.00 LBS/ACRE	5/15 – 8/14
ANNUAL RYEGRASS	80.00 LBS/ACRE	5/15 – 9/14
WINTER RYE	112.00 LBS/ACRE	9/15 – 9/30
WINTER RYE (W/ MULCH COVER)	112.00 LBS/ACRE	10/01 – 3/31

LIME AND FERTILIZER:

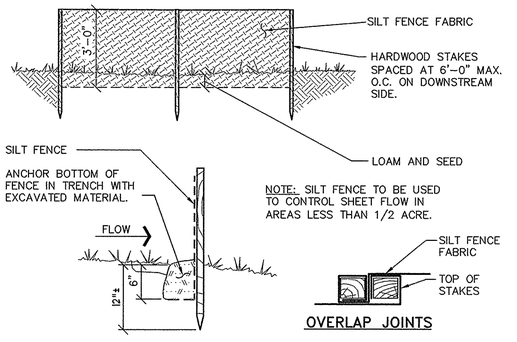
APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 POUNDS PER 1000 SQUARE FEET). APPLY FERTILIZER (10–20–20) AT A RATE OF 800 POUNDS PER ACRE (18.4 POUNDS PER 1000 SQUARE FEET).

MULCH:

STRAW OR HAY (ANCHORED) . . . . . 70 – 90 LBS	PROTECTED AREAS
STRAW OR HAY (ANCHORED) . . . . . 185 – 275 LBS	WINDY AREAS
SHREDDED OR CHOPPED . . . . . 185 – 275 LBS	
JUTE MESH . . . . . AS REQUIRED	MODERATE TO HIGH VELOCITY AREAS & STEEP SLOPES
EXCELSIOR MAT . . . . . AS REQUIRED	

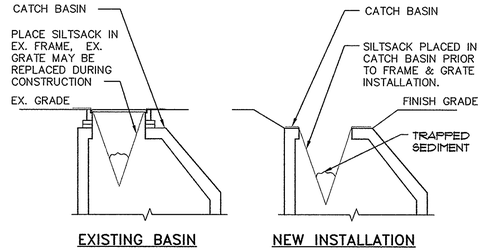
MULCH ANCHORING

PEG AND TWINE	LIQUID ASPHALT
MULCH NETTING	WOOD CELLULOSE FIBER
ASPHALT EMULSION	CHEMICAL TACK



2 SILT FENCE DETAIL

NOT TO SCALE



3 CATCH BASIN PROTECTION

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WINTER CONSTRUCTION:

THE WINTER CONSTRUCTION PERIOD IS FROM NOVEMBER 1 THROUGH APRIL 15. IF THE CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIP RAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER–WINTER STABILIZATION. AN AREA CONSIDERED OPEN IS ANY AREA NOT STABILIZED WITH PAVEMENT; VEGETATION, MULCHING, EROSION CONTROL MATS, RIP RAP OR GRAVEL BASE ON A ROAD. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDER TAKEN DURING THE PROCEEDING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. ALL AREA SHALL BE CONSIDERED TO BE DENUDED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH RATE SHALL BE A MINIMUM OF 150 LBS./1,000 S.F. (3 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. THE CONTRACTOR MUST INSTALL ANY ADDED MEASURES WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS.
CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, IN ORDER TO MINIMIZE AREAS WITHOUT EROSION CONTROL PROTECTION.

1. SOIL STOCKPILES
   STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER–WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR AT 150 LBS/1,000 S.F. (3 TONS/ACRE) OR WITH A FOUR INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND WILL BE REESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

2. SEDIMENT BARRIERS
   DURING FROZEN CONDITIONS, SEDIMENT BARRIERS SHALL CONSIST OF EROSION CONTROL MIX SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES AND SEDIMENT SILT FENCES.

3. MULCHING
   ALL AREA SHALL BE CONSIDERED TO BE DENUDED UNTIL AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LBS./1,000 S.F. OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75 LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW WILL BE REMOVED DOWN TO A ONE INCH DEPTH OR LESS PRIOR TO APPLICATION.
   AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING.
   AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN MULCHED WITH STRAW OR HAY AT A RATE OF 150 LBS./1,000 S.F. (3 TONS/ACRE) AND ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THOUGH THE MULCH.

   BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL TACK, OR WOOD CELLULOSE FIBER. WHEN GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH THEN COVER IS SUFFICIENT.
   AFTER NOVEMBER 1, MULCH AND ANCHORING OF ALL BARE SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORK DAY.

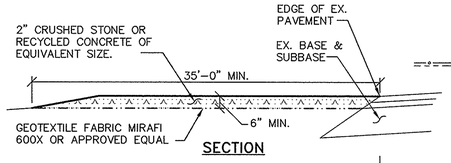
4. MULCHING ON SLOPES AND DITCHES SLOPES SHALL NOT BE LEFT EXPOSED FOR ANY EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY MULCHED AND ANCHORED WITH PEG AND NETTING OR WITH EROSION CONTROL BLANKETS. MULCHING SHALL BE APPLIED AT A RATE OF 230 LBS/1,000 S.F. ON ALL SLOPES GREATER THAN 8%. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAT 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. EROSION CONTROL BLANKETS SHALL BE USED IN LIEU OF MULCH IN ALL DRAINAGE WAYS WITH SLOPE GREATER THAN 8%. EROSION CONTROL MIX CAN BE USED AS A SUBSTITUTE FOR EROSION CONTROL BLANKETS ON ALL SLOPES EXCEPT DITCHES.

5. SEEDING
   BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. AFTER NOVEMBER 1 IF THE EXPOSED AREA HAS BEEN LOAMED AND FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.
   DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH AND FABRIC NETTING ANCHORED WITH STAPLES.
   IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND BE SEEDED AT AN APPLICATION RATE OF 5 LBS/1000 S.F. ALL AREAS SEEDED DURING THE WINTER WILL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75 % CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH.
   IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL AREAS DISTURBED IN THE WINTER SHALL BE VEGETATED IN THE SPRING.

6. TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION
   WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE OR EROSION CONTROL MIX LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOODING, ICING, AND SEDIMENT DISCHARGES TO A PROTECTED RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT STRUCTURE BE LOCATED WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE.

7. INSPECTION AND MONITORING
   MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL, IN THE SPRING, INSPECT AND REPAIR ANY DAMAGED AND/OR UNESTABLISHED SPOTS. ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85 TO 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

NOTES:
1. MAINTAIN ENTRANCE IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAY. IF WASHING IS REQUIRED PREVENT SEDIMENT FROM ENTERING WATERWAYS, DITCHES OR STORM DRAINS.
2. REMOVE STABILIZED CONSTRUCTION ENTRANCE TO FINISH ROAD CONSTRUCTION & PAVEMENT.



STABILIZED CONSTRUCTION ENTRANCE DETAIL

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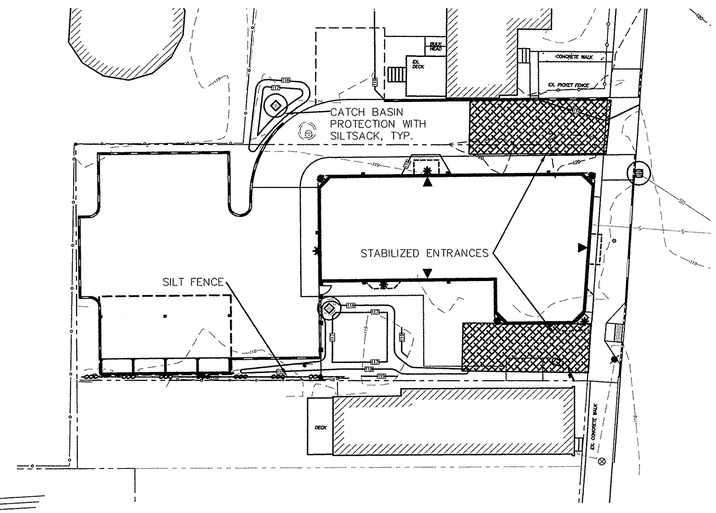

EROSION CONTROL PLAN

SCALE: 1"=20'

Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hamblet Avenue
Portland, Maine 04103

Consultants:

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Contact: Denis Lachman

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Contact: Patrick Carroll

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Surveyor
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207.577.5840
Contact: Donald Dostie

Drawing Set:

No.	Date	Revision
1	12–22–16	SITE PLAN REVIEW–FINAL
2	2–7–17	REV'D PER CITY COMMENTS
3	3–14–17	REV'D PER CITY COMMENTS

Drawing Set:
PERMITTING

Drawn: JDC
Checked: TSG
Approved:

STATE OF MAINE
THOMAS S. GREER No. 4206
LICENSED PROFESSIONAL ENGINEER
3/13/17

Drawing Title:
EROSION CONTROL PLAN AND NOTES

Job Number: PG: 16193
File:
Date: 12–22–2016 Scale: AS SHOWN

Drawing Number:
C 9.0

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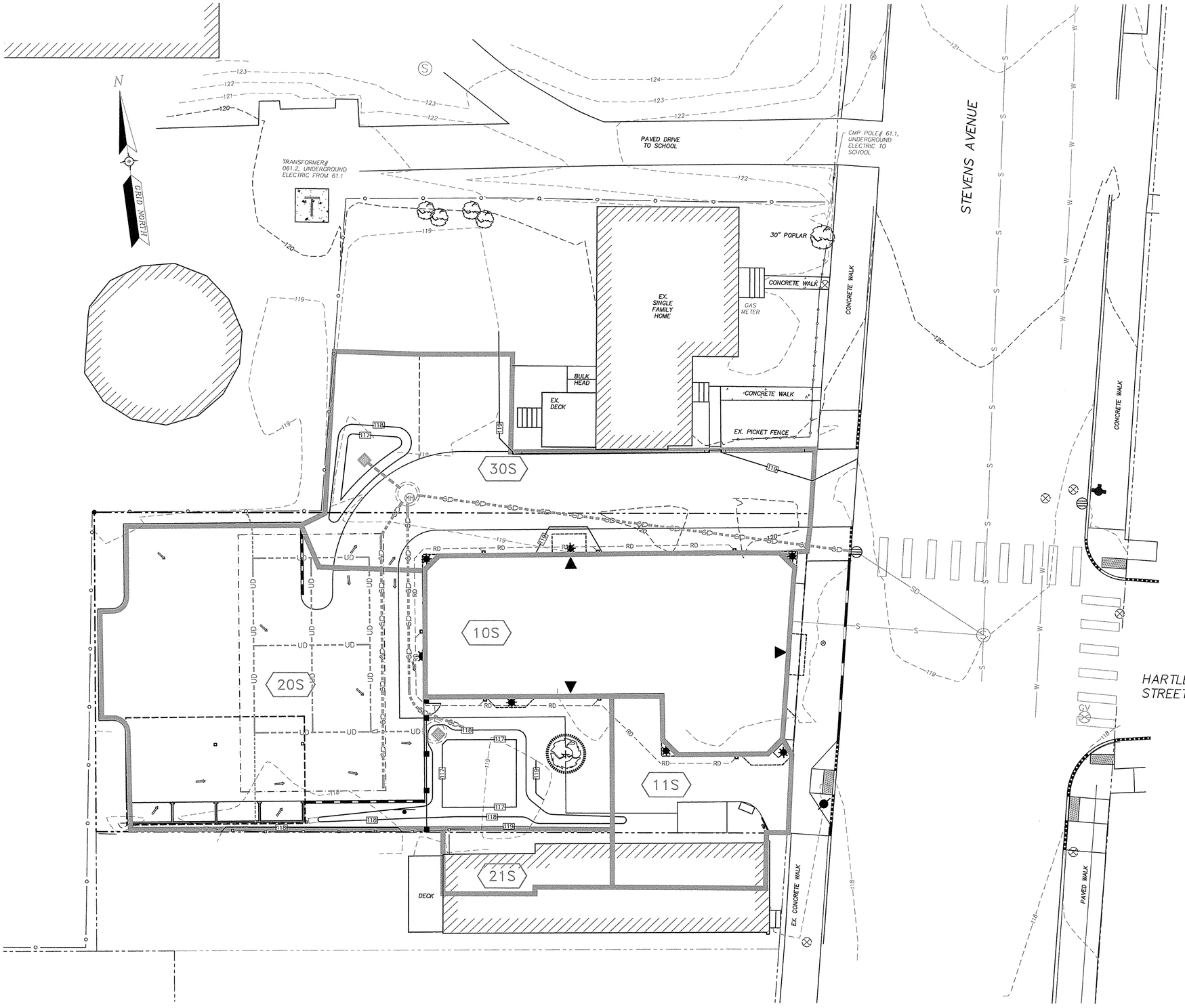

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PERMITTING

Drawn: JDC
Checked: TSG
Approved:

STATE OF MAINE
THOMAS S. GREER No. 4206
LICENSED PROFESSIONAL ENGINEER
2/7/17

Drawing Title:
DRAINAGE ANALYSIS DEVELOPED CONDITIONS

Job Number: PG: 16193
File:
Date: 12-22-2016 Scale: AS SHOWN

Drawing Number:
C 10.0

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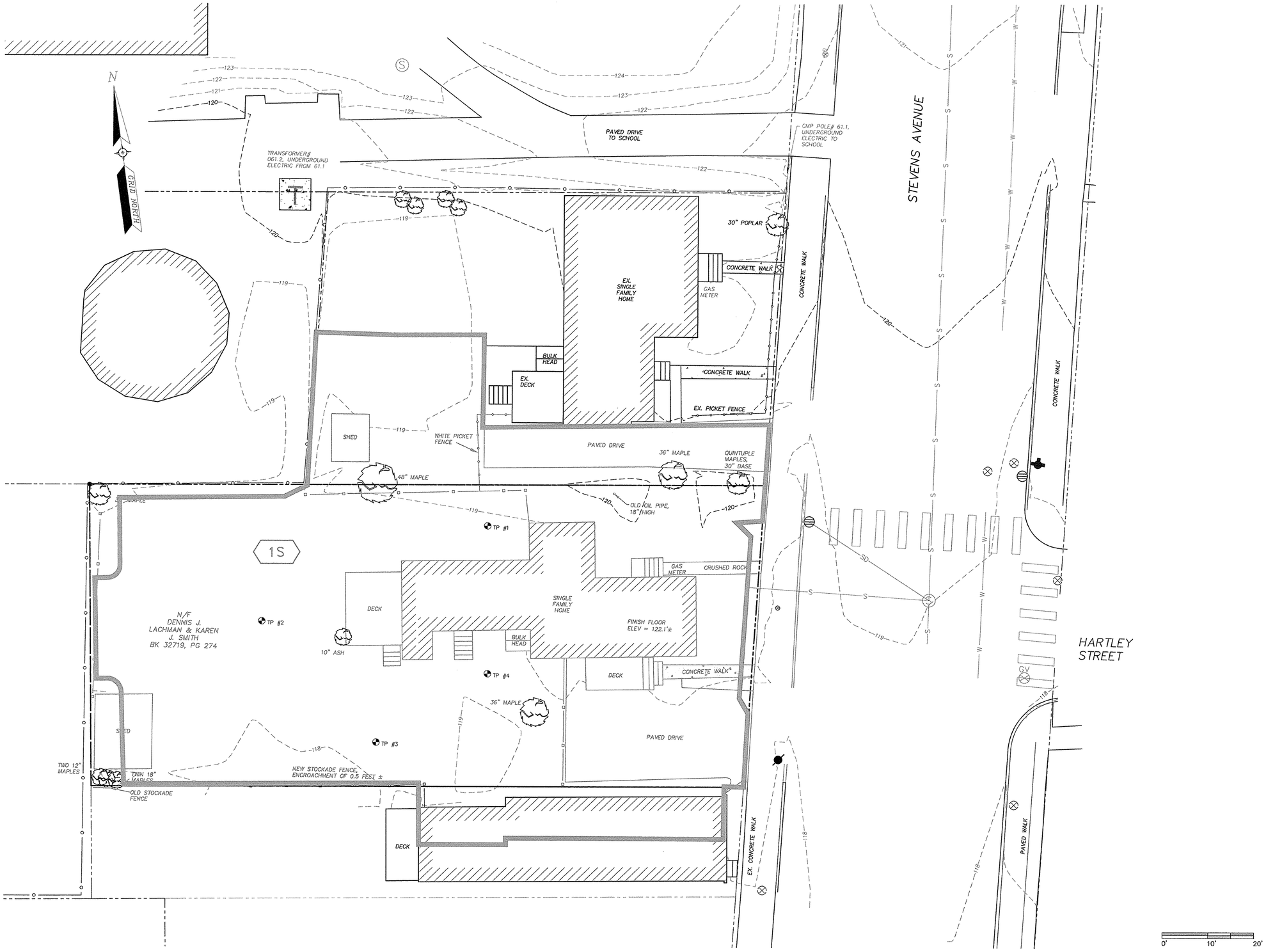

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2	2–7–17	REVS PER CITY COMMENTS

Drawing Set:

PERMITTING

Drawn: JDC

Checked: TSG

Approved:

STATE OF MAINE
THOMAS S. GREER No. 4205
LICENSED PROFESSIONAL ENGINEER

2/7/17

Drawing Title:

DRAINAGE ANALYSIS EXISTING CONDITIONS

Job Number: PG: 16193

File:

Date: 12–22–2016 Scale: AS SHOWN

Drawing Number:

C 10.1

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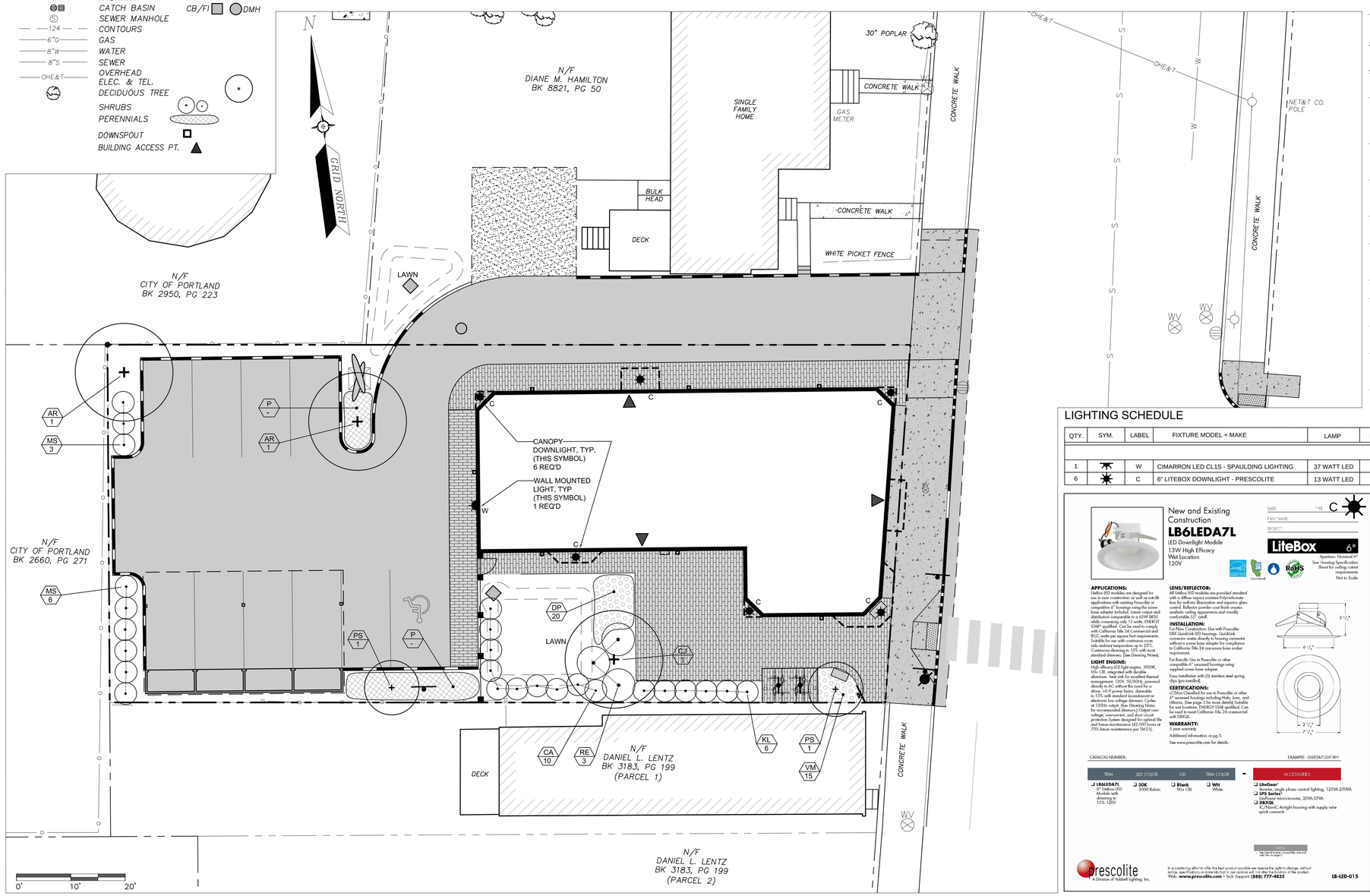
LEGEND

EXISTING	PROPOSED
SITE BOUNDARY	
ABUTTER BOUNDARY	
MONUMENT	
IRON PIPE/ROD	
IRON REBAR TO BE SET	
CHAIN LINK FENCE	
STOCKADE FENCE	
EDGE PAVEMENT	
CURBLINE	VERT. GRANITE / VERT. CONC. / TIPDOWN GRANITE
BUILDING	
SIGN	
WATER VALVE	
GAS VALVE	
UTILITY POLE	
GUY WIRE	
HYDRANT	
CATCH BASIN	CB/FI / DMH
SEWER MANHOLE	
124 CONTOURS	
6"G GAS	
8"W WATER	
8"S SEWER	
OHE&T OVERHEAD ELEC. & TEL.	
DECIDUOUS TREE	
SHRUBS	
PERENNIALS	
DOWNSPOUT	
BUILDING ACCESS PT.	



PLANT SCHEDULE

QTY.	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
		TREES			
2	AR	ACER RUBRUM 'KARPICK'	RED MAPLE	3" CAL.	
1	CJ	CERCIDIPHYLLUM JAPONICUM	KATSURA TREE	3" CAL.	SINGLE STEM
2	PS	PRUNUS SARGENTII 'COLUMNARIS'	SARGENT CHERRY	2.5" CAL.	
		SHRUBS / PERENNIALS			
10	CA	CLETHRA ALNIFOLIA 'RUBY SPICE'	CLETHRA	#7	
20	DP	DENNSTAEDTIA PUNCTILOBA	HAYSCENTED FERN	#2	
6	KL	KALMIA LATIFOLIA 'SNOWDRIFT'	MOUNTAIN LAUREL	3' HT.	B+B, FULL
3	RE	RHODODENDRON 'ENGLISH ROSEUM'	RHODODENDRON	3' HT.	B+B, FULL
15	VM	VINCA MINOR	PERIWINKLE	#2	
		SHRUBS / PERENNIALS			
-	P	PERENNIALS - TBD	MIXED PERENNIALS	#2	
9	MS	MISCANTHUS SIENSIS 'MORNING LIGHT'	MAIDEN GRASS	#5	

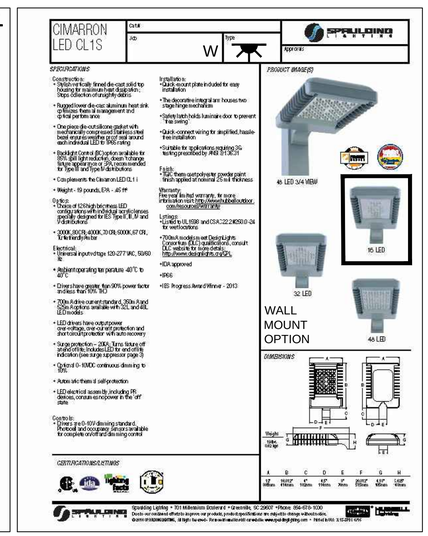
NOTE: ALL SUBSTITUTIONS SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO ORDERING OF PLANTS

PLANTING NOTES

1. CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL FINAL ACCEPTANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF WATERING AND MAINTENANCE.
2. CONTRACTOR SHALL SUPPLY PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE WORK SHOWN ON THE PLAN. ANY DISCREPANCY BETWEEN THE QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED ON THE PLAN SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL RENUMERATION. ANY DISCREPANCIES SHALL BE CLARIFIED WITH THE LANDSCAPE ARCHITECT PRIOR TO ORDERING PLANT MATERIAL.
3. ALL MATERIALS SHALL CONFORM TO SPECIFICATIONS OF THE AMERICAN STANDARDS FOR NURSERY STOCK (LATEST EDITION) AS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS THE ORIGINAL GRADES BEFORE DIGGING.
5. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
6. ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT AT THE NURSERY AND AT THE SITE.
7. ALL PLANT BEDS SHALL MEET MINIMUM TOPSOIL REQUIREMENTS (SEE SPECIFICATIONS).
8. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL GRUBBING, BED PREPARATION, AND FINISH GRADING HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
9. ALL PLANTS BEDS AND TREE WELLS SHALL HAVE A MINIMUM OF 3" OF UNIFORMLY DISTRIBUTED, DARK, SHREDDED BARK MULCH.
10. CONTRACTOR SHALL SUBMIT SOIL SAMPLE AND TEST OF TOPSOIL TO LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. SOIL ADMIXTURE SHALL BE ADDED TO EXISTING SOIL (BY CONTRACTOR) IF DEEMED NECESSARY BY SOIL TEST RESULTS.
11. ROUGH GRADING AND BED PREPARATION SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANT INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT 48 HOURS PRIOR TO REQUIRED SITE VISIT.
12. ALL PLANTS SHALL BE BALLED AND WRAPPED OR CONTAINER GROWN AS SPECIFIED. ALL ROOT WRAPPING AND CONTAINER MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED AT THE TIME OF PLANTING.
13. ALL BROAD LEAF EVERGREEN PLANTS SHALL BE SPRAYED WITH AN ANTI-DESSICANT AT THE BEGINNING OF THEIR FIRST WINTER.
14. ALL PLANTS SHALL BE INSTALLED AS PER DETAILS AND THE CONTRACT SPECIFICATIONS. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
15. CONTRACTOR SHALL STAKE TREES SHALL IF DEEMED NECESSARY.
16. THE LANDSCAPE CONTRACTOR SHALL PROVIDE LOAM FILL AS PER THE CONTRACT SPECIFICATIONS.
17. ALL PLANTS SHALL BE WATERED BY THE CONTRACTOR, AS NECESSARY TO INSURE HEALTH UNTIL FINAL ACCEPTANCE.
18. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE PLANT LIST AND PLANTING SPECIFICATIONS FOR SEASONAL REQUIREMENTS AND OTHER RESTRICTIONS RELATED TO THE TIME AND SEASON OF PLANTING.
19. ALL PROPOSED LIGHT FIXTURES ARE FULL CUTOFF, IN ACCORDANCE WITH SECTION 12.2.6 LUMINAIRE TYPES, OF THE CITY'S TECHNICAL MANUAL.

LIGHTING SCHEDULE

QTY.	SYM.	LABEL	FIXTURE MODEL + MAKE	LAMP	HEIGHT	POLE	NOTES
1		W	CIMARRON LED CL1S - SPAULDING LIGHTING	37 WATT LED	±11'	N/A-WALL MOUNT	CL1S-16LU-4K-4-BC-WB
6		C	6" LITEBOX DOWNLIGHT - PRESCOLITE	13 WATT LED	±10'	N/A-SOFFIT MOUNT	LB6LEDA7L-30K



Project Name:

502 Deering Center

Portland, Maine

Owner / Applicant:

502 Deering Center, LLC
55 Hamblet Avenue
Portland, Maine 04103

Consultants:

Architect
Lachman Architects & Planners
58 Fore Street, Bldg 30
Portland, Maine 04101
207.831.8585
Contact: Denis Lachman

Landscape Architects
Carroll Associates
217 Commercial St.
Portland, Maine 04101
207.772.1552
Contact: Patrick Carroll

Civil Engineer
Pinkham & Greer Civil Engineers
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207.781.5242
Contact: Thomas Greer

Surveyor
Four Points Associates, Inc.
9 Ralph Avenue
Lewiston, Maine 04240
207.577.5840
Contact: Donald Dostie

Drawing Set:

No.	Date	Revision
1	12-22-16	SITE PLAN REVIEW-FINAL
2	2-7-17	REVS PER CITY COMMENTS
3	3-14-17	REVS PER CITY COMMENTS

Drawing Set: PERMITTING

Drawn: MAP

Checked: MAP

Approved: PC

REGISTERED LANDSCAPE ARCHITECT PATRICK J. CARROLL NO. 127 STATE OF MAINE

Drawing Title: LANDSCAPE AND LIGHTING PLAN

Job Number:

File:

Date: 12-22-2016 Scale: AS SHOWN

Drawing Number: L-1.0

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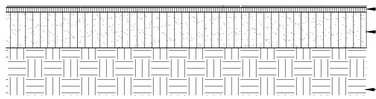
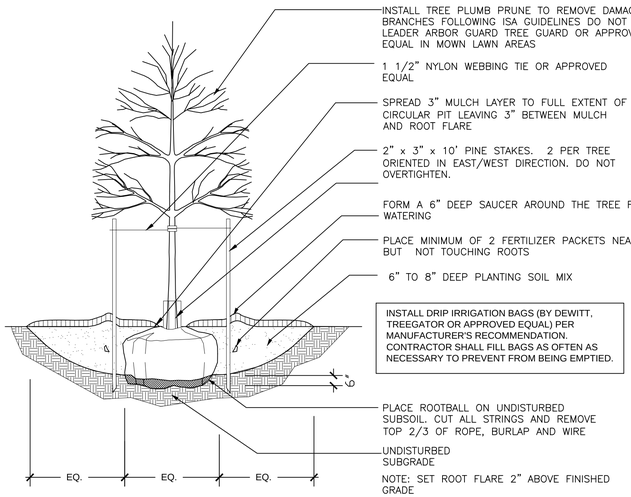
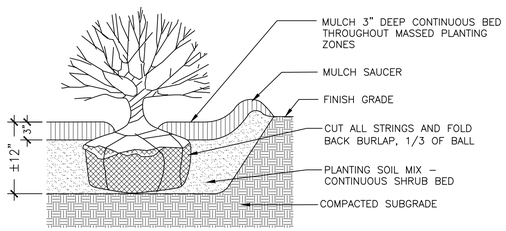


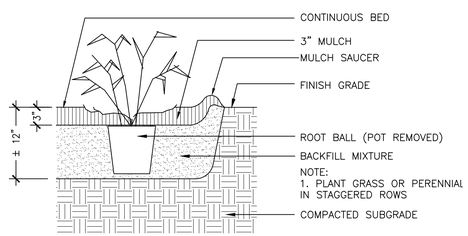
1 SEEDED OR SODDED LAWN
SCALE : NTS



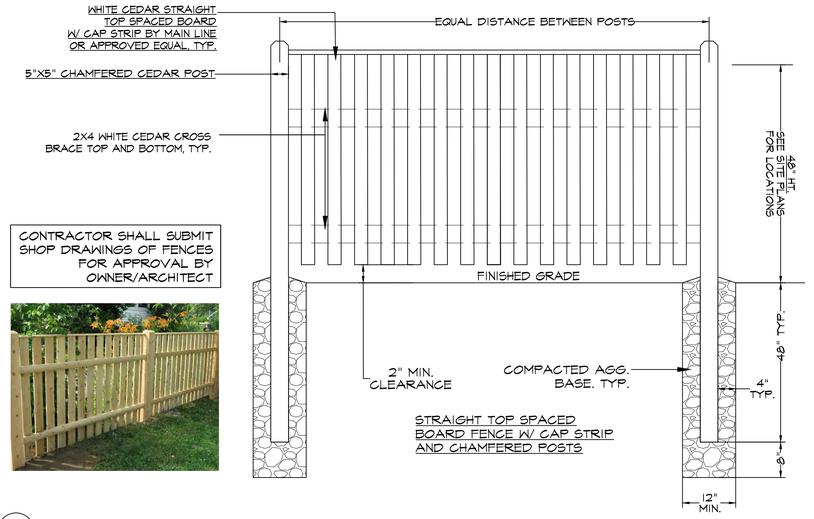
2 TREE IN LAWN OR ESPLANADE
SCALE : NTS



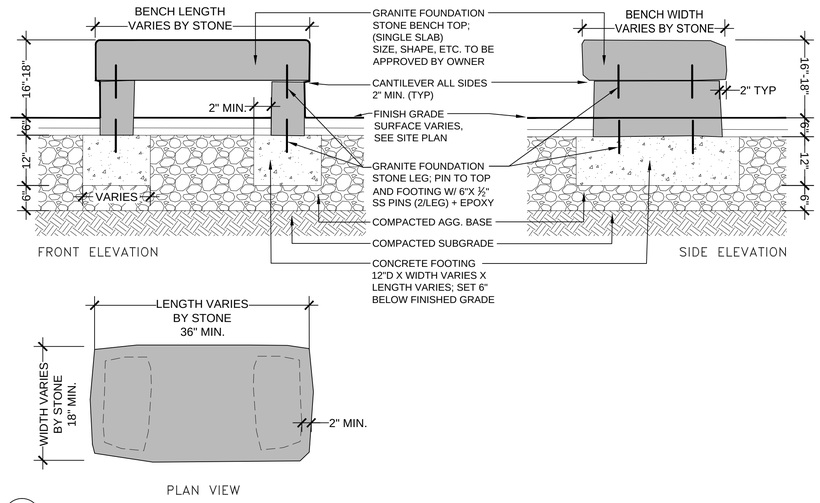
3 SHRUB PLANTING
SCALE : NTS



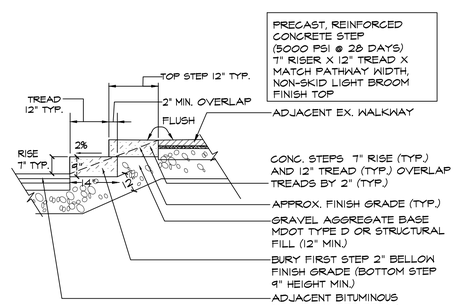
4 ORNAMENTAL GRASS / PERENNIAL PLANTING
SCALE : NTS



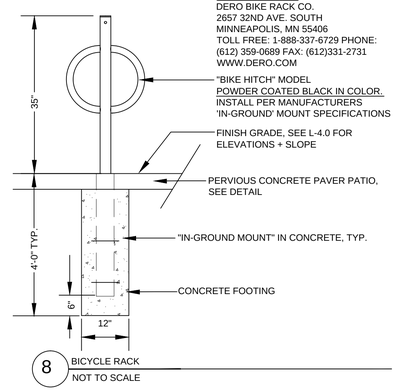
5 PICKET STYLE FENCE DETAIL
NOT TO SCALE



6 GRANITE FOUNDATION STONE BENCH
NOT TO SCALE



7 PRECAST CONCRETE STEPS
NOT TO SCALE



8 BICYCLE RACK
NOT TO SCALE

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LANDSCAPE DETAILS

Job Number:
File:
Date: 12-22-2016 Scale: AS SHOWN

Drawing Number:
L-2.0

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Calculation Summary					
Label	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
back parking	0.48	2.4	0.0	N.A.	N.A.
property line	0.25	2.2	0.0	N.A.	N.A.
site	0.14	3.1	0.0	N.A.	N.A.

Luminaire Schedule (note fixture catalogue numbers are not complete)						
Type	**Symbol**	**Qty**	**Lum. Lumens**	**LLF**	**Lum. Watts**	**Description**
C	○	6	702	0.900	12.6	LB6LEDA7L30K
W	→	1	2101	0.900	113	CL1S-16LU-4K-4-BC

NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
2) CALCULATIONS MAY SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7) CHECK GRAPHIC SCALE. DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY OCCUR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

PLAN VIEW

STEVENS AVE SITE
PORTLAND, ME
ALTERNATE LIGHTING LAYOUT

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

TITLE

GENERATED FOR: CARROLL ASSOC

SCALE NOT TO SCALE

Site 2-3-17 AGI

Date:2/6/2017

Page 1 of 1

SWANEY LIGHTING ASSOCIATES, INC.

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