1. Legal Ad

    Documents:

        PB LEGAL AD 10-25-16.PDF

2. Agenda

    Documents:

        PB AGENDA 10-18-16.PDF

3. 58 Fore Street

    3.I. Memo And Attachments

        Documents:

            FORE ST. - 58 (MEMO AND ATTACHMENTS).PDF

4. 1190 Brighton Avenue

    4.I. Report And Attachments

        Documents:

            1190 BRIGHTON AVE. (REPORT AND ATTACHMENTS).PDF

    4.II. Applicants Submittal

        Documents:

            1190 BRIGHTON AVE. (APPLICANTS SUBMITTAL).PDF

    4.III. Plans

        Documents:

            1190 BRIGHTON AVE. (PLANS).PDF

5. 23 Orono Road

    5.I. Memo And Attachments

        Documents:

            ORONO ROAD - 23 (MEMO AND ATTACHMENTS).PDF

    5.II. Applicants Submittal

        Documents:

            ORONO ROAD - 23 (APPLICANTS SUBMITTAL).PDF

    5.III. Plans

Documents:

ORONO ROAD - 23 (PLANS).PDF

6. 75 Chestnut Street

6.I. 1st Workshop (9-13-16)

6.I.i. Applicants Submittal (1st Workshop)

Documents:

CHESTNUT ST. - 75 (1ST WKSHOP APPLICANTS SUBMITTAL).PDF

6.I.ii. Plans (1st Workshop)

Documents:

CHESTNUT ST. - 75 (1ST WKSHOP PLANS).PDF

6.II. 2nd Workshop (10-18-16)

6.II.i. Memo And Attachments (2nd Workshop)

Documents:

CHESTNUT ST. - 75 (MEMO AND ATTACHMENTS).PDF

6.II.ii. New Applicants Submittal (2nd Workshop)

Documents:

CHESTNUT ST. - 75 (2ND WKSHOP NEW APPLICANTS SUBMITTAL).PDF

6.II.iii. New Plans (2nd Workshop)

Documents:

CHESTNUT ST. - 75 (2ND WKSHOP NEW PLANS).PDF

LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a meeting on Tuesday, October 25, 2016, Council Chambers, 2nd Floor, City Hall, 389 Congress Street. **PUBLIC COMMENT WILL BE TAKEN FOR EACH ITEM ON THE AGENDA DURING THE ESTIMATED ALLOTTED TIME.**

Workshop - 4:30 p.m.

i. Map Amendment; 2 Island Avenue (Peaks Island); Kevin Carter, Applicant.
(4:30 - 5:30 p.m. estimated time). The Board will hold a workshop on a proposal for a text change to the Island Business Zone to allow multi-family units. The applicant has a purchase agreement for 2 Island Avenue and would like to convert a 3 unit building to 12 or 14 units. The proposed text amendments include, but are not limited to, adding multi-family units as a permitted use, reducing the parking requirement per unit, increasing the maximum height to 35 or 47 feet, and decreasing the front and side/rear yard dimensions to 10 and 5 feet, respectively.

ii. Cumberland Cold Storage, Text Amendments to the WPDZ zone, City of Portland Economic Development Department, Applicant. (5:30 - 6:30 p.m. estimated time). The Planning Board will consider proposed text amendments to the Waterfront Port Development Zone (WPDZ). There are three alternatives for consideration, including but not limited to the following: 1) adding cold storage as a permitted use and increasing maximum building height to 70 feet for the entire WPDZ zone; 2) adding cold storage as a use and setting a maximum height of 45 feet for the entire zone, except 70 feet would be allowed for the cold storage use; and 3) adding cold storage as a use and allowing a maximum building height of 70 feet in the area between Casco Bay Bridge and the center line of School Street.

Public Hearing - 7:00 p.m.

Old Business

i. **Tabled on 10/12/16 to 10/25/16**. Level III Site Plan; 7 Unit Residential Building; 30 Merrill Street; Banner Properties, LLC., Applicant. (7:00 – 8:00 p.m. estimated time). The Board will hold a public hearing on a proposal for a new seven-unit residential building. The existing two family building will be replaced with a four story 6,580 sq. ft. building with 7 condominiums. Parking for 6 vehicles is proposed behind the building. The site is in the R-6 zone.

New Business

i. IS-FBC (India Street Form-Based Code) Map Amendment; 10 Washington Avenue; Hay Runner, LLC., Applicant. (8:00 p.m. – 8:45pm. estimated time). The Board will hold a public hearing to consider a map amendment to extend the India Street form-based Code (IS-FBC) zone to include the parcel at 10 Washington Avenue. Currently the parcel is zoned B-2b and is adjacent to and in common ownership with two parcels zoned IS-FBC. The applicant is requesting the map amendment in order to have consistent zoning across the entire property, on which a new building will be proposed.

ii. Level III Subdivision; Mixed Use Project; 23 Ocean Avenue; 23 Ocean Avenue Assoc., LLC., Applicant. (8:45 p.m. estimated time). The Board will hold a public on a proposal for a mixed use project at 23 Ocean Avenue (corner of Hersey Street). The existing structure on the site, which is currently offices, will remain. A new building is proposed with office uses on the basement and first floors and with four 2-bedroom residential units on the upper two floors. The proposed building has a total floor area of 8,520 sq. ft. The proposed plan includes 10 on-site parking spaces and 15 leased off-site spaces. The site is in the Business b-1 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

The Portland Planning Board will hold a meeting on **Tuesday, October 18, 2016**, Council Chambers, 2nd Floor, City Hall, 389 Congress Street. **PUBLIC COMMENT WILL BE TAKEN FOR EACH ITEM ON THE AGENDA DURING THE ESTIMATED ALLOTED TIME.**

WORKSHOP - 4:30 p.m. (SITE WALK)

i. Site Walk, Master Development Plan; 58 Fore Street; CPBS, LLC., Applicant. (4:30 p.m.- 6:30 p.m. – estimated time). The Planning Board will hold a site walk on the proposed Master Development Plan for the redevelopment of the former Portland Company complex at 58 Fore Street. The site walk will convene at the entrance to the site. The proposed redevelopment of the site includes 958,670 sq. ft. of floor area and an additional 435,200 sq. ft. of floor area is proposed for structured parking, resulting in a total area of 1,393,879 sq. ft. A portion of the site is within a historic district. The Board will return to the City Council Chambers to take public comment.

PUBLIC HEARING – 7:00 p.m.

1. ROLL CALL AND DECLARATION OF QUORUM
2. COMMUNICATIONS AND REPORTS
3. REPORT OF ATTENDANCE AT THE FOLLOWING MEETING HELD ON OCTOBER 12, 2016:

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

4. REPORT OF DECISIONS AT THE MEETING HELD ON OCTOBER 12, 2016:

i. Level III Site Plan; 7 Unit Residential Building; 30 Merrill Street; Banner Properties, LLC., Applicant. Dundon moved and Morrissette seconded a motion to table this item to the October 25, 2016 Planning Board meeting at 7:00 p.m. Vote: 6-0 (Nichols absent)

ii. Level III Site Plan: Phased mixed use development; 230 Commercial Street; Proprietors of Union Wharf, Applicant. Dundon moved and Morrissette seconded a motion to waive parking aisle and space dimensions to allow for variations as shown in Plans P5-P7 to facilitate enhanced pedestrian accommodations and address building structure constraints. Vote: 6-0 (Nichols absent); Dundon moved and Morrissette seconded a motion to waive site lighting to facilitate the development of lighting plans for the new external lighting (including building

mounted, pedestrian walkway and in the parking area under the Phase 1 office building) and existing site lighting, that meets the objectives of the standards as well as ensuring security and safe conditions. Vote 6-0 (Nichols absent); Dundon moved and Morrissette seconded a motion that the plan is in conformance with the site plan standards of the land use code, subject to conditions; Vote 6-0 (Nicholas absent).

5. NEW BUSINESS

i. Subdivision Review – Dirigo Plaza; 1190 Brighton Avenue (58 and 80 Main Street, Westbrook), Jones and Beach Engineers, Inc. on behalf of J & J Gove Development, LLC, Applicant. (7:00 p.m. – 8:00 pm. estimated time). The Board will hold a public hearing on a 495,915 sq. ft. regional retail shopping center. The applicant has a Purchase and Sale with Pike Industries. Tax Map: 42B Lots: 9, 10, 11, & 14. Zone: Gateway Commercial. The subdivision crosses municipal boundaries; however, no development is proposed within Portland. The site is in the B-4 and I-L zone.

6. EVENING WORKSHOP (Immediately following the Public Hearing)

i. Level III Site Plan; 23 Orono Road; City of Portland, Applicant. (8:00-9:00 p.m. – estimated time) The Board will hold a workshop on a proposal by the City of Portland to construct a new elementary school (Hall School) at 23 Orono Road. The proposed two (2) 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. Vehicle access to the site will be from Lomond Street (via Riggs Street) with a parking area for 98 vehicles and a designated parent drop off location. A separate bus loop is proposed off Orono Road.

ii. Level III Site Plan and Subdivision; 54 Housing Units and Commercial Space; 75 Chestnut Street; Lou Woods representing A & M Partners, Inc., Applicant. (9:00 p.m. estimated time) The Planning Board will hold a second workshop on this proposal to construct a 7 story building with 54 housing units and 2,328 sq. ft. of commercial space. One (1) parking space per unit will be provided in the existing parking structure. The bedroom mix includes 2 efficiency, 14 one-bedroom and 38 two-bedroom units. The proposal will also be reviewed under the Conditional Use Application to meet Ensure Workforce Housing requirements and is in the B-7 zone.

Memorandum
Planning and Urban Development Department
Planning Division

To:	Elizabeth Boepple, Chair and Members of the Portland Planning Board
From:	Christine Grimando, Senior Planner
Date:	October14, 2016
Re:	58 Fore Street, Master Development Plan Site Walk
Project #:	2016-224 CBL: 018 A001, 018 A002, 018 A003
Meeting Date:	October 18, 2016

I. INTRODUCTION

On October 18th, at 4:30 PM, there'll be a Planning Board site walk to 58 Fore Street, related to review of the current Master Development Plan application. The site walk will commence at 4:30pm at the Fore Street entrance. There's an hour for the walk itself, which will be followed by a return to Council Chambers for discussion and public comment.

Attached is a visual the site that includes a guide to the location foo the attached renderings (Attachment 1), as well as a copy of the proposed overall site masterplan (Attachment 2). An email from Danielle West-Chuta, Corporation Counsel, containing guidance for protocol on Planning Board site walks is included in Attachment 3.

II. NEXT STEPS

- November 9th Planning Board Workshop #2 (primary focus on traffic and engineering review)
- November 16th Historic Preservation Board Workshop
- November 22nd Planning Board Workshop (primary focus on design including architecture, landscaping and open space)
- December 7th Historic Preservation Board Public Hearing and recommendation
- December 13th Planning Board Public Hearing

ATTACHMENTS

1. Site Walk Materials – meeting location, renderings
2. Overall Site Masterplan
3. Email re: Site Walk protocol

Att. 1

Rendering 11
Rendering 10
Rendering 9
Rendering 8
Rendering 5
Please meet here at
4:30pm on Tuesday
October 18th
Renderings 1, 2 & 3
Rendering 6
Rendering 7
Rendering 4
58 Fore Street | Rendering View Key

58 Fore Street | Rendering 1

Att. 2

58 Fore Street | Rendering 2

58 Fore Street | Rendering 3

58 Fore Street | Rendering 4

58 Fore Street | Rendering 5

58 Fore Street | Rendering 6

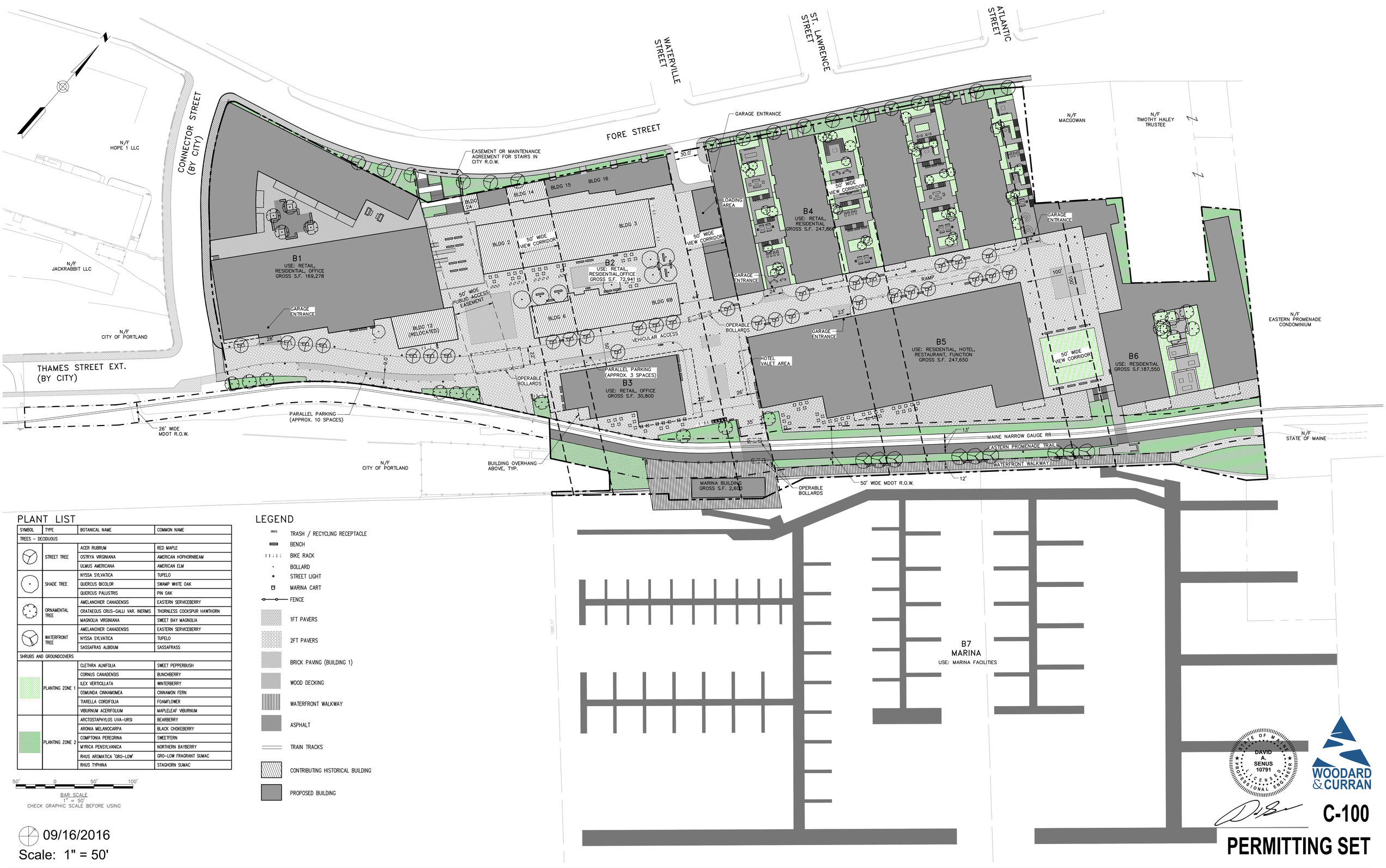
58 Fore Street | Rendering 7

58 Fore Street | Rendering 8

58 Fore Street | Rendering 9

58 Fore Street | Rendering 10

58 Fore Street | Rendering 11



PLANT LIST

SYMBOL	TYPE	BOTANICAL NAME	COMMON NAME
TREES – DECIDUOUS			
	STREET TREE	ACER RUBRUM	RED MAPLE
		OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM
		ULMUS AMERICANA	AMERICAN ELM
	SHADE TREE	NYSSA SYLVATICA	TUPELO
		QUERCUS BICOLOR	SWAMP WHITE OAK
		QUERCUS PALUSTRIS	PIN OAK
	ORNAMENTAL TREE	AMELANCHIER CANADENSIS	EASTERN SERVICEBERRY
		CRATAEGUS CRUS–GALLI VAR. INERMIS	THORNLESS COCKSPUR HAWTHORN
		MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA
	WATERFRONT TREE	AMELANCHIER CANADENSIS	EASTERN SERVICEBERRY
		NYSSA SYLVATICA	TUPELO
		SASSAFRAS ALBIDUM	SASSAFRASS
SHRUBS AND GROUNDCOVERS			
	PLANTING ZONE 1	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH
		CORNUS CANADENSIS	BUNCHBERRY
		ILEX VERTICILLATA	WINTERBERRY
		OSMUNDA CINNAMOMEA	CINNAMON FERN
		TIARELLA CORDIFOLIA	FOAMFLOWER
		VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM
	PLANTING ZONE 2	ARCTOSTAPHYLOS UVA–URSI	BEARBERRY
		ARONIA MELANOCARPA	BLACK CHOKEBERRY
		COMPTONIA PEREGRINA	SWEETFERN
		MYRICA PENSYLVANICA	NORTHERN BAYBERRY
		RHUS AROMATICA 'GRO–LOW'	GRO–LOW FRAGRANT SUMAC
		RHUS TYPHINA	STAGHORN SUMAC

50' 0 50' 100'

BAR SCALE
1" = 50'
CHECK GRAPHIC SCALE BEFORE USING

LEGEND

- TRASH / RECYCLING RECEPTACLE
- BENCH
- BIKE RACK
- BOLLARD
- STREET LIGHT
- MARINA CART
- FENCE
- 1FT PAVERS
- 2FT PAVERS
- BRICK PAVING (BUILDING 1)
- WOOD DECKING
- WATERFRONT WALKWAY
- ASPHALT
- TRAIN TRACKS
- CONTRIBUTING HISTORICAL BUILDING
- PROPOSED BUILDING

09/16/2016
Scale: 1" = 50'

STATE OF MAINE
DAVID
A.
SENUS
10791
LICENSED
PROFESSIONAL ENGINEER

WOODARD & CURRAN

C-100

PERMITTING SET

CPB2 LLC
EASTERN WATERFRONT DEVELOPMENT PORTLAND, MAINE

OVERALL SITE MASTER PLAN
58 FORE STREET MASTER PLAN

SCOTT SIMONS ARCHITECTS | MICHAEL BOUCHER LANDSCAPE ARCHITECTURE | WOODARD & CURRAN | THORNTON TOMASETTI | THE BOULOS COMPANY | MASON ARCHITECTS | APPLIED TECHNOLOGY MANAGEMENT | PERKINS+WILL

From: Danielle West –Chuhta
To: Barhydt, Barbara
Date: Friday, October 02, 2009 2:57:39 PM
Subject: Site Walks

Barbara:

Here is the summary from the MMA Planning Board manual re: site walks:

Site Visits. If a majority of the board is going to visit the site of a proposed project, the board should be aware that such on-site meetings are meetings which must be preceded by public notice and at which the public has a right to be present under the Freedom of
Access Act ("Right to Know Law"). Site visits conducted by individual board members or by a subcommittee comprised of less than a majority of the full board arguably would not be subject to the public notice requirements of the law. However, site visits by individual members or by subcommittees of less than a majority of the full board can
raise due process problems which the board may wish to avoid, especially where the site visit occurs after the board has closed its record to additional public comment and has begun to make its decision. Compare, City of Biddeford v. Adams, 1999 ME 49, 727 A.2d
346 (Me. 1999), and Fitanides v. Lambert, CV-92-662 (Me. Super. Ct., York Cty., July 30, 1992), with Armstrong v. Town of Cape Elizabeth, AP-00-023 (Me. Super. Ct., Cum. Cty., Dec. 21, 2000). Many private municipal attorneys advise the municipal boards that they represent that site visits conducted by less than a majority of the board should never occur and insist that the board only conduct site visits as a public meeting of a majority of the board.

During a site visit which is not conducted as part of a public meeting recorded in board minutes, the individual board members have an obligation not to discuss substantive issues about the site or the application either with each other or with the applicant. Nor should the applicant or any one else be conducting demonstrations to prove a point which might be in controversy about the application. Such discussions or demonstrations would constitute illegal "ex parte" communications and would cause due process problems for the parties not present. The individual board members also need to be sure to note for the written record at the next board meeting the fact that a
site visit was conducted and what information the visit generated that might affect the visiting board member's vote on the application. It is crucial that a site visit conducted by less than a majority of the full board occur before the board closes the record to further public comment. Adams, supra. It also is crucial that the ultimate findings and
conclusions prepared by the board in making its decision address the evidence from the site visit and that the findings in general are sufficiently detailed to allow a court to determine how the board evaluated all the evidence. In Re Villeneuve, 709 A.2d 1067
(Vt. 1998).

Even if the board members do all of this, an applicant or someone opposing the project still could try to challenge the individual site visits as a violation

of their due process rights if they were not at the site also to observe whether there were any improper “ex parte” communications. To avoid these due process challenges, the board may want to require that all site visits be done as a board with public notice under the Right to Know Law. If a board member is unable to attend a site visit, the board doesn’t need to reschedule it. The board can publicly advise an absent member of what was observed
during the site visit at the next board meeting and provide an opportunity for rebuttal by the applicant or some other interested person who disagrees with the board’s description of the site.
Sometimes a board decides to conduct a site visit and will set a date for the site visit to occur at a later date while it is at a public meeting on the application which will be the subject of the site visit. It arguably is enough for the purpose of giving notice under the FOAA for the board to announce the date, time and place of the site visit without also
providing additional public notice by some other means, if the announcement is made at a meeting which itself complied with FOAA notice requirements. However, to be safe, the board also should provide notice to the public in the manner usually followed, for the
benefit of the people who were not at the meeting where the site visit is announced.

Thanks,

Danielle

Memorandum
Planning and Urban Development Department
Planning Division

To: Elizabeth Boepple, Chair, and Members of the Portland Planning Board
From: Barbara Barhydt, Development Review Services Manager
Date: October 14, 2016
Re: Dirigo Plaza (Main Street Westbrook, 1190 Brighton Avenue, Dirigo Center Developers, LLC, Applicant
Project #: 2016-073 **CBL**: 264-A002
Hearing Date: October 18, 2016

I. INTRODUCTION

Dirigo Center Developers, LLC (previously doing business as J &J Gove Development Group) has submitted revised plans and documents for the development of a retail center in Westbrook. The land holding crosses municipal boundaries in the vicinity of 1190 Brighton Avenue, so subdivision review is required by both Westbrook and Portland Planning Boards. Dirigo Plaza is located on the former Blue Rock (Pike Industries) site, which includes a large quarry that extends into Portland. The proposed buildings and site improvements for the shopping center development do not extend into Portland, so the primary focus of the subdivision review has been on the traffic and stormwater impacts of this proposal in Portland.

The Planning Board held a joint workshop on the proposal with the Westbrook Planning Board on May 17, 2016. On September 27, 2016, the Planning held a workshop on the final plans and the application is now before the Board for a public hearing on the subdivision plan. .

A total of 72 notices were sent to property owners within 500 feet of the site and a legal ad ran in the Portland Press Herald on October 10 and 11, 2016. No public comment has been received to date.

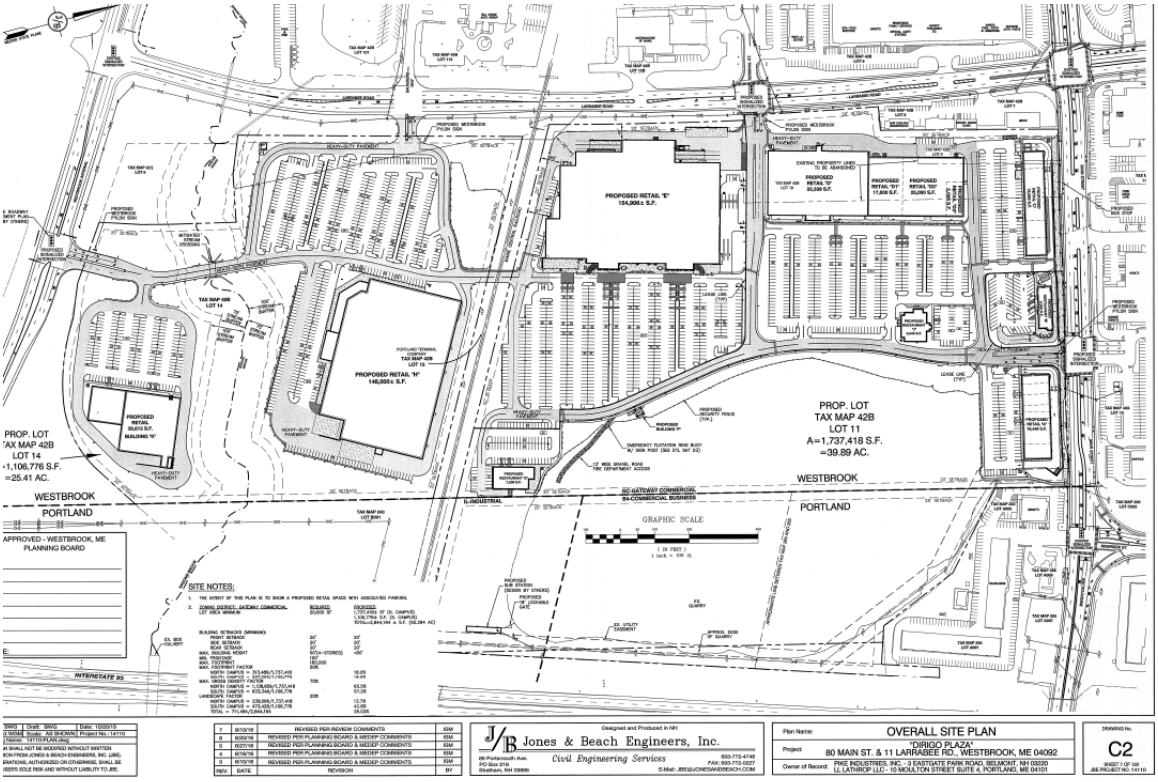
II. REQUIRED REVIEWS

Waiver Requests	***Applicable Standards***
None	

Portland Review	***Applicable Standards***
Subdivision	*Section 14-497*
Site Plan –(no on-site improvements, so no longer applicable)	
Other Required Reviews	
Westbrook Subdivision Review	*Pending*
Maine DOT Traffic Movement Permit	*Pending*

DEP Site Location of Development Act, including Stormwater Management Permit	*Draft DEP permit submitted. Pending final edits.*
Natural Resources Protection Act Permit	*Draft DEP permit submitted. Pending final edits.*
Army Corps of Engineers Permit for Wetland Fill	*Approved*

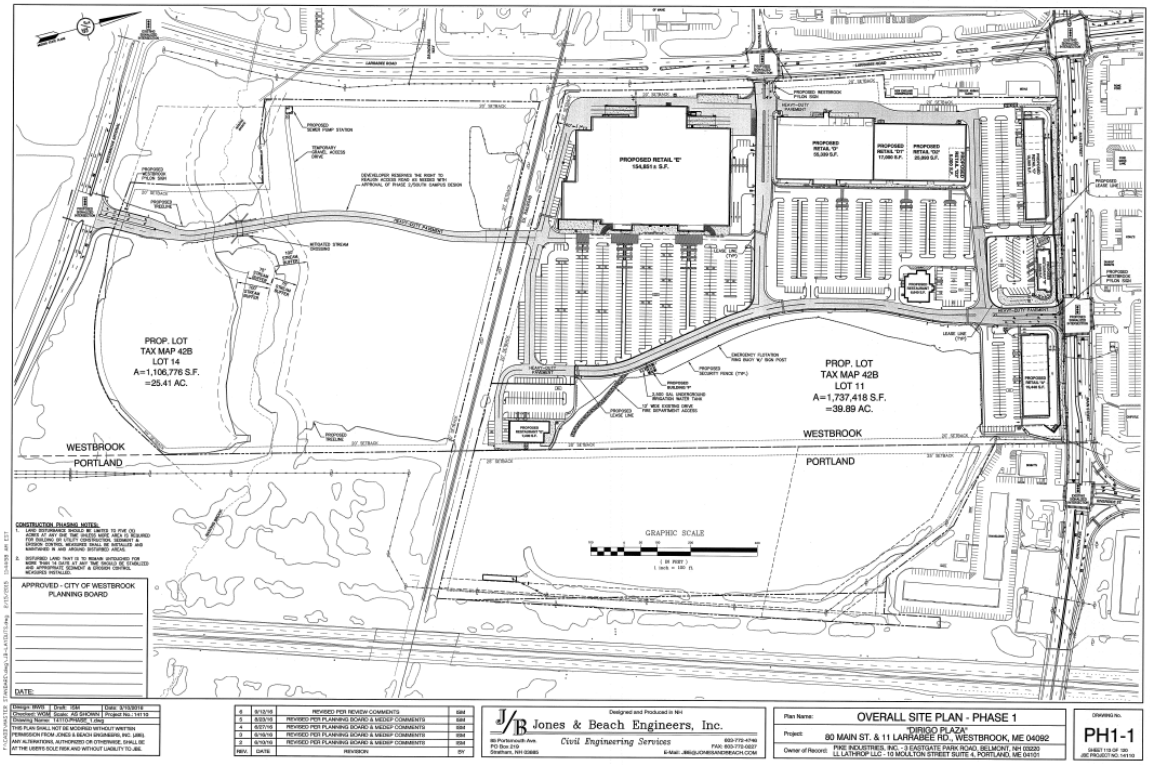
III. PROPOSED PROJECT



Overall Development Site Plan for Dirigo Plaza

Proposed Development

Dirigo Plaza is proposed in Westrook at the former Pike Industries parcel with street frontage along Main Street (becomes Brighton Avenue in Portland), Larabee Road,and the Westbrook Arterial. The holdings cross into Portland where there is frontage along U.S Interstate 95. The development is described as a regional retail shopping center with mixed use retail development with a total floor area of approximately 495,915 SF among about 10 buildings. Walmart has announced that they will be one of the anchor tenants. All of the buildings, parking areas, and site improvements are located entirely within Westbrook. Vehicle access into the site is from Westbrook (Main Street, Larrabee Road and Westbrook Arterial). The total site area is 81.78 acres, of which a significant portion is the former quarry, and 16.48 acres of the applicant's holdings are located in Portland. The project is proposed in phases and the Phase I (also referred to as the north campus) is shown below.



Phase I Site Plan for Dirigo Plaza

The development is subject to subdivision review by both the Cities of Portland and Westbrook. There is a three lot subdivision proposed, which includes two long-term lease lots in Westbrook and one lot in Portland that is noted as the remaining non-leased property. Of the acreage in Portland, approximately 3.82 acres is zoned Industrial I-L and 12.66 acres is zoned Commercial Business B-4.

In the initial application, a trail was proposed around the former quarry pit. Water is no longer being pumped out of the quarry, so the intent is to have groundwater and storm water fill the quarry and become a recreational amenity. The trail was the only site improvement proposed on Lot 3 and it was subject to site plan review under the City's site plan ordinance. The trail was proposed over a CMP utility easement and CMP has not provided permission to install a trail and fencing (Applicant submission 4 b). Jamie Cough of CMP states:

> Due to safety concerns and limited maintenance access, CMP is not in support of the construction of a recreational trail and 4' metallic chain link fence within the CMP easement. Additional, CMP would like the project developer to install a security fence with locakable gate on the southern side of the existing quarry to deter access to the easement and eastern side of the quarry."

The revised proposal no longer shows a trail; therefore, the project no longer requires site plan review under Portland's ordinance.

Revised plans have been submitted are listed in the applicant's submission. Please note that the applicant has submitted a full set of plans, which are part of the record. The sewer plans, road profiles, planting plan details, and utility details for the improvements in Westbrook were not posted on the City's web page, but are part of the public record and available. The consultants have responded to staff's comments and responded to comments raised at the workshop. The most recent plans show concepts for the off-site transportation improvements that are being proposed as part of the Traffic Movement Permit and mitigation measures in Portland, including improvements on Riverside Street, Brighton Avenue, and Exits 47 and 48. Since the Planning Board workshop, there is a a Traffic Movement Permit with edits from Westbrook and VAI (Att. I) and the applicant's response (Att. J.) , which are included as attachments to this report.

IV. RIGHT TITLE AND INTEREST

The applicant has submitted sufficient evidence of right title and interest that is included in the Applicant's submission (Attachment 3a and Attachment 3b) . Please note that the name of the applicant has changed from J &J Gove Development Group to Dirigo Center Developers, LLC.

V. SUBDIVISION REVIEW

Below are the 15 Subdivision Review Criteria from Portland's Subdivision Ordinance with staff comments.

1. *Will not result in undue water or air pollution. In making this determination it shall at least consider the elevation of land above sea level and its relation to the flood plains, the nature of soils and subsoils and their ability to adequately support waste disposal; the slope of the land and its effect on effluents; the availability of streams for disposal of effluents; the conformity to the applicable state and local health and water resources regulations;*

   Staff Comments: The stormwater management improvements for the proposed development are proposed on the two lots within Westbrook. The stormwater flows into the Nason's Brook Watershed, which is one of Portland's Urban Impaired Streams. DEP is reviewing the stormwater compliance under Chapter 500, including the urban impaired stream standards. A letter submitted to DEP and included as Applicant's Submission 6f, which quantifies the measures being taken on the development site to meet the urban impaired standards.

   According to the analysis by Jones and Beach Engineers 43.36 acres (minus the quarry) will be developed. A comparison of the existing conditions and proposed area as follows:

	Existing Conditions	Proposed
Developed Area	43.46 ac. (minus quarry)	55.41 ac.
Total Impervious Area	34.72 ac.	41.63 ac.
Roof Area	0.56 ac.	11.49 ac.
Paved Road/ Parking	3.86 ac.	30.14 ac.

Compacted Gravel	30.30 ac.	
Existing Vegetation in Developed Area	8.74 ac.	13.78 ac.

Under the Chapter 500 regulations, development within an urban impaired stream watershed, the applicant must provide additional mitigation or a pay fee into a Compensation Fee Utilization Fee Plan. On October 13, 2016, the draft permit from DEP was submitted. It is our understanding that there will be some minor edits, but that this permit is essentially what will be finalized. The DEP decision (Att.K) requires urban impaired stormwater compensation fee of $208,875 to be paid to the City and condition #10 of the permit states:

> Prior to the start of any construction, the applicant shall submit a total payment of $208,875 to the City of Portland Stormwater Compensation Fee Utilitzation Plan for Nason Brook.

There is a proposed crossing of the stream on the site. The proposed details for the stream crossing are shown on the applicant's plans (Attachment P53) along with the Grading and Drainage plans (P17-P22) and other stormwater detail plans (P47-52).

Lauren Swett, PE, Woodard and Curran, has found the proposed stormwater plan and the pending DEP permit meet the City's stormwater standards (Attachment A). While we have the draft DEP permits for SLODA, NRPA, and the Stormwater Permit, the staff is suggesting a condition of approval that requires the applicant to submit all final permits.

2. *Has sufficient water available for the reasonably foreseeable needs of the subdivision; and*
3. *Will not cause unreasonable burden on an existing water supply;*

Staff Comment: The water for the project is being provided in Westbrook.

4. *Will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result;*

Staff Comment The recreational trail that was proposed in Portland was being reviewed under the City's site plan standards, but that feature has been removed. CMP would not grant permission for the trail to be located on their easement. There are not site improvements or site disturbance proposed in Portland.

The applicant has submitted grading and drainage plans (P17-23, P47-53) and soil erosion control plans (P54-61) for the development of the site. The DEP has issued their permit for the Site Location of Development Act and the Stormwater Permit, so the proposed grading and erosion control plans meet the standards of Chapter 500; thus this standard has been met.

5. *Will not cause unreasonable highway or public road congestion or unsafe conditions with respect to use of the highway or public roads existing or proposed;*

Following Section on Transportation Written by Bruce Hyman, Transportation Program Manager, and reflects comments of Jeremiah Bartlett, Transportation Systems Engineer

The Planning Board's review of the Dirigo Plaza project can be parsed into two primary sets of criteria: those under the MaineDOT-administered Traffic Movement Permit process provided and those under the city's Subdivision Ordinance (cited above) and.

At the end of this report there is a comprehensive list of the submissions by the applicant which comprise the transportation analysis and proposed mitigation plans.

A. Traffic Movement Permit Process

In response to the applicant's transportation analysis, the MaineDOT State Traffic Engineer issued an initial draft Traffic Movement Permit on August 23, 2016. Subsequent to a meeting and conference call with the applicant (with the MaineDOT and the City of Westbrook also participating) an amended draft TMP was issued September 20, 2016. As of the date of this report, there have been no changes by the MaineDOT to the revised draft TMP dated September 20th. The applicant and the Maine Turnpike Authority have supplied comments on this draft. In combination, the applicant's comments on the TMP (dated October 6, 2016 and included as Att.I to this report) and memo to the Planning Board (dated October 5, 2016 from VAI, Att J) fully satisfy City of Portland staff comments provided to them prior to the Planning Board's workshop on September 27th . These, where applicable to the TMP, have yet to be incorporated by the MaineDOT into either an updated draft TMP for our review or its final TMP.

There are no on-site mitigation actions in Portland. The September 20, 2016, MaineDOT draft off-site mitigation proposed in the draft TMP (Att I) within Portland includes the items listed below. In several locations a *Portland Staff Note*: (updated since the September 27th workshop) is provided.

Proposed MaineDOT Draft TMP-required Off-site Improvements (as of September 20th)

Riverside Street

1. Intersection of Riverside St / Larrabee Rd (Exit 48) (see Conceptual Improvement Plan: Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 1 of 2)

   Construct a second dedicated left-turn lane on the Riverside southbound approach to Exit 48. Restripe the southbound approach to include two dedicated left-turn lanes, a dedicated thru lane and a share thru-right lane. Lane widths shall be a minimum of 11 feet.

Install appropriate overhead lane-usage signs for the Riverside southbound approach both in advance of the intersection and at the intersection. Install appropriate lane-use signs at the intersection for the other intersection approaches.

Construct a second left-turn lane on Larrabee.

Portland Staff Comment: The applicant proposes in its October 6th latest comments on the draft TMP the change: "Subject to the availability of public right-of-way and if so directed by the MaineDOT, construct a second left-turn lane on Larrabee Road." Staff concurs with this language. The applicant's October 5th memo to the Board provides additional context for this. The MaineDOT has not yet responded to the applicant's and the city's comments on this item.

Remove channelizing island for the right-turn movements from the Riverside Street northbound approach and the I-95 exit ramp. Construct a right turn lane with appropriate length and Taper.

Reconstruct the traffic signal system to accommodate the new geometry and interconnect to the toll plaza. Provide overlap phasing when possible.

Design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Main and Larrabee Rd. Portland Staff Comment: The applicant's latest TMP comments incorporate and accept the Maine Turnpike's comments for this location regarding signal equipment.

Note: Work on Maine Turnpike Authority (MTA) property requires an MTA work permit and MTA review.

2. Intersection of Riverside St / Forest Ave (not shown on plans provided)

   Design and implement an optimal traffic signal timing, phasing and coordination plan.

3. Intersection of Riverside St / Warren Ave (see Proposed Off-Site Improvements)

   Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections. *Portland Staff Comment*: The applicant, in its October 6th comments on the latest draft TMP, proposes to: "Provide design plans to the City of Portland for minor geometric and traffic signal improvements that will be constructed by the city." The applicant has agreed to the hardwire interconnect along Riverside Street requested by the city and is reflected in its latest comments on the draft TMP and its memo to the Board.

4. Intersection of Riverside St / Home Depot (see Proposed Off-Site Improvements)

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections. *Portland Staff Comment*: The applicant has agreed to the hardwire interconnect along Riverside Street requested by the city and is reflected in its latest comments on the draft TMP and its memo to the Board.

5. Intersection of Riverside St / Brighton Ave / Main St (see Figure 14 Conceptual Improvement Plan, Sheet 4 of 5)

   Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections. *Portland Staff Comment*: In its memo to the Board and its comments on the draft TMP, the applicant has agreed to updated signal heads with reflective back plates (as proposed on the applicant's Conceptual Improvement Plan, Sheet 4 of 5), and updated thermal (not video) detection to meet the City's standard.

6. Segment between Riverside Court (Berlin City) and Exit 48 (see Conceptual Improvement Plan: Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 1 of 2)

   Restripe to provide a two-way left-turn lane.

   Construct sidewalk along the west side of Riverside, eliminating existing sidewalk gaps.

7. Segment between Exit 48 / Brighton Ave (see Conceptual Improvement Plan: Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheets 1 & 2 of 2)

   Construct sidewalk along the east side of Riverside, eliminating existing sidewalk gaps.

Intersection of Rand Rd / Westbrook Arterial (Exit 47) (see Rand Road at I-95 Exit 47 Ramps Conceptual Improvement Plan)

Widen I-95 ramp to provide a second left-turn lane to the Westbrook Arterial. Widen Rand Road to accept the dual-left turn lanes.

Install raised medians along Rand Road approaching the intersection.

Upgrade traffic signal equipment, design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire or wireless interconnect to the adjacent intersection at the site entrance at Westbrook Arterial. *Portland Staff Comment*: City staff strongly prefers hardwire interconnects where they are feasible to be provided. The applicant in its memo to the Board and its comments on the draft TMP agrees to implement the hardwire interconnect "to

the extent feasible". City staff will work with the MaineDOT to satisfactorily reconcile the language in the memo to the Board with the draft TMP

B. <u>Subdivision Ordinance Compliance/Non-TMP Off-site Improvements</u> (see Proposed Off-Site Improvements)

Several items requested by the City to be investigated and potentially mitigated by the applicant are not included in revised draft TMP (dated September 20, 2016) but have been proposed to be addressed in various forms by the applicant.

These items include:

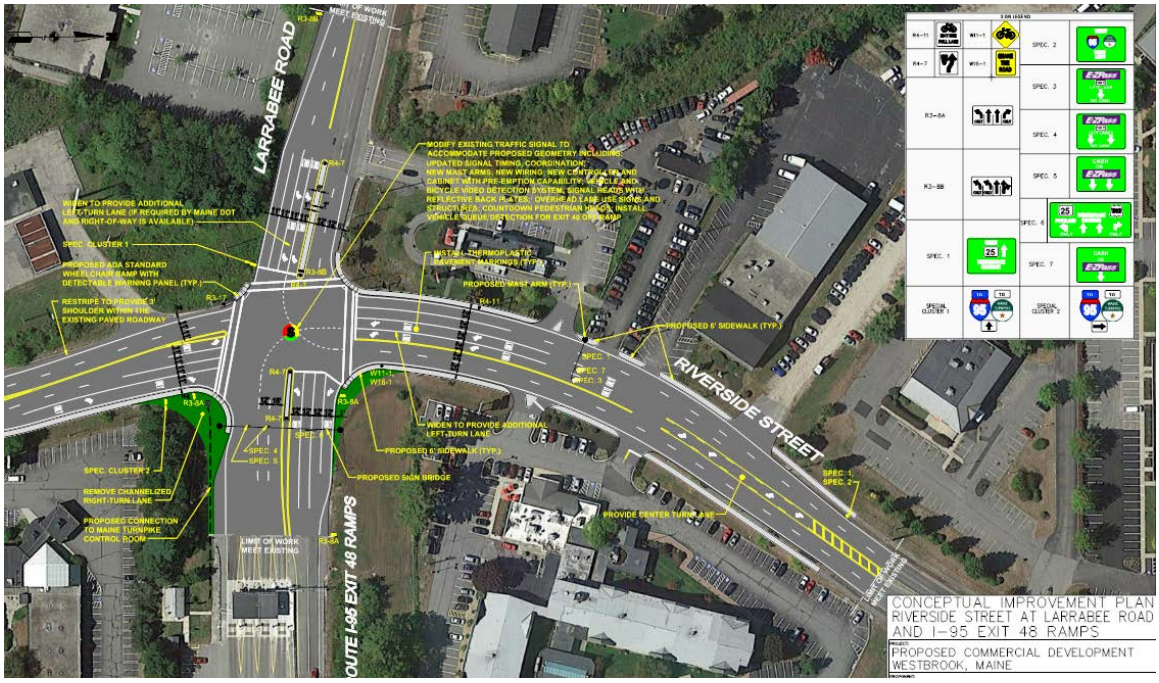
1. Provision of bicycle facility accommodations on Brighton Avenue
2. Provision of sidewalk and curb ramp/accessibility improvements along Brighton Avenue
3. Mitigation of turn movements that degrade below LOS D in the Build 2021 traffic condition.

Prior to the issuance of the initial draft TMP, the City enlisted the services of an engineering firm to assess the existing vehicle, pedestrian and bicycle conditions on Brighton Avenue to supplement the applicant's assessment. For items not included in the TMP, the applicant has preliminarily agreed to an infrastructure account contribution in the amount of $220,000 to mitigate the above items (see letter dated September 7, 2016 to Barbara Barhydt from Jim Katsiaficas). There have been no total construction values yet associated with these items but staff concurs that this is a reasonable amount. Should the city wish to proceed in this fashion, the applicant has further agreed conceptually to partner with the city on the construction of these (to be determined) improvements using their infrastructure contribution as well as other contributions within a defined project area (preliminarily Riverside Street at the Warren Avenue and Home Depot intersections and on Brighton Avenue from Riverside Street to St. John St. [corrected per the applicant's graphic below]). The city, in most instances, would be required to provide construction documents to the applicant's contractor to accomplish the Brighton Avenue improvements. Since the September 27th workshop, there have been no changes to the non-TMP off-site mitigation previously agreed to by The Applicant. Staff remains satisfied the mitigation package meets the standard for Portland's Subdivision Ordinance traffic requirements subject to the following two conditions of approval proposed for the Board's consideration:

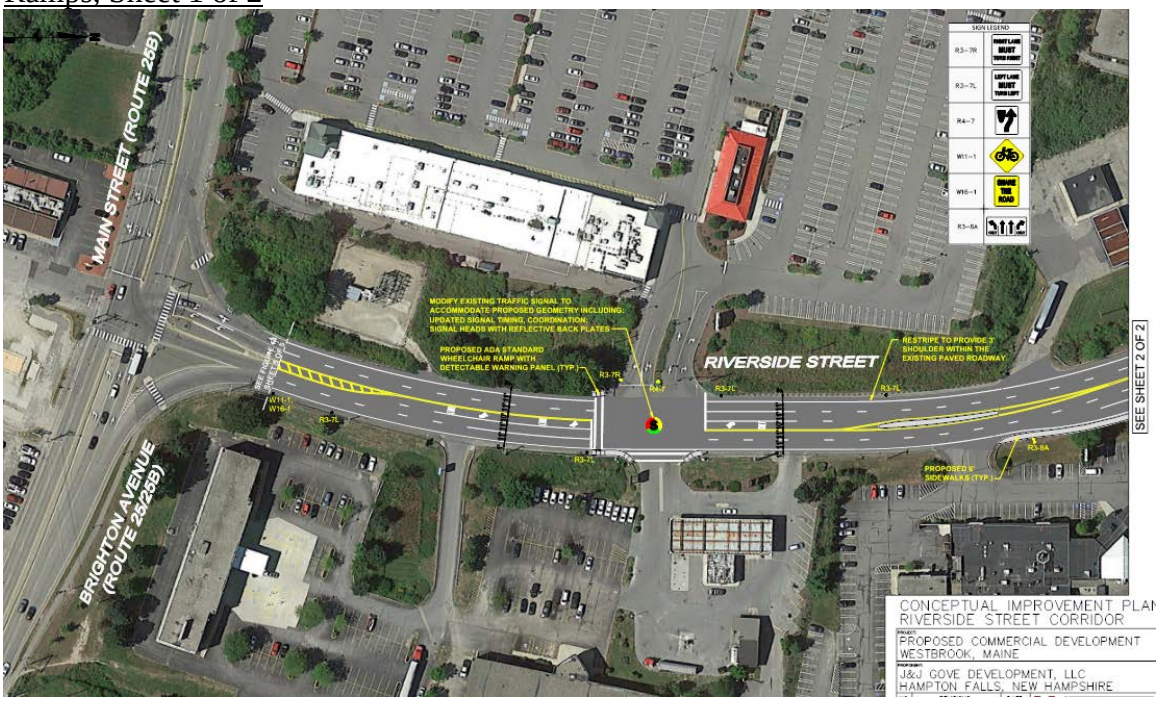
2. The applicant shall provide the monetary compensation of $220,000 for mitigation of traffic impacts along Brighton Avenue for the installation of pedestrian and ADA improvements, prior to the issuance of a street opening permit from Portland's Department of Public Works.

3. If any revisions are proposed to the traffic movement permit or off-site traffic mitigation measures planned in Portland, which differ from the those presented in the application reviewed on October 18, 2016, then the applicant shall submit an

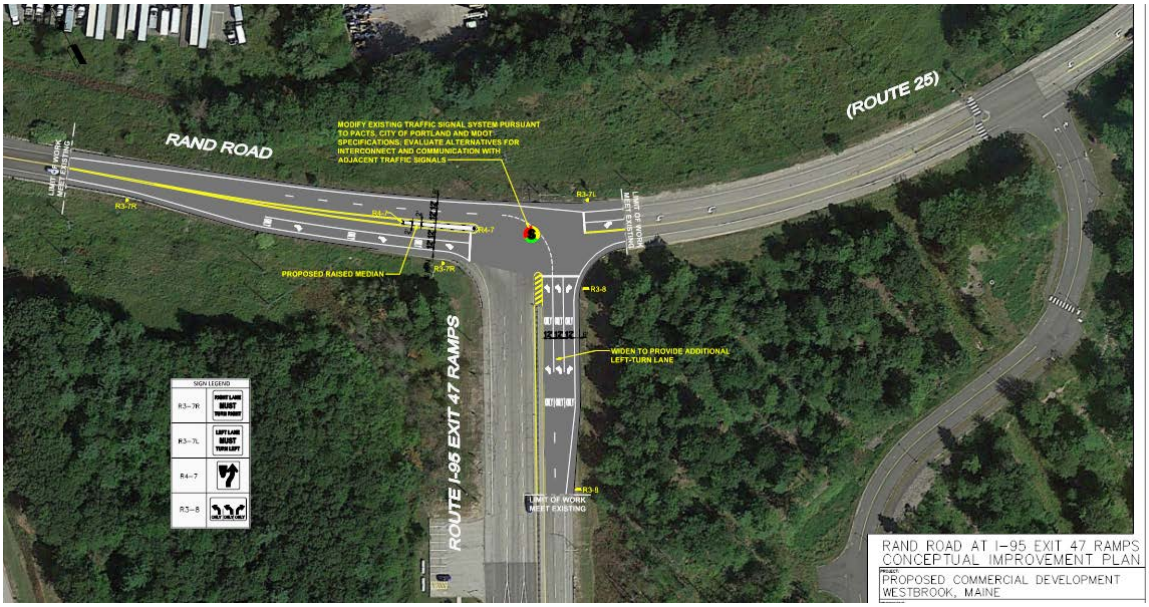
amended subdivision plan for review pursuant to Portland's Subdivision Ordinance.



Conceptual Improvement Plan: Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 1 of 2



Conceptual Improvement Plan: Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 1 of 2



Rand Road at I-95 Exit 47 Ramp Conceptual Improvement Plan

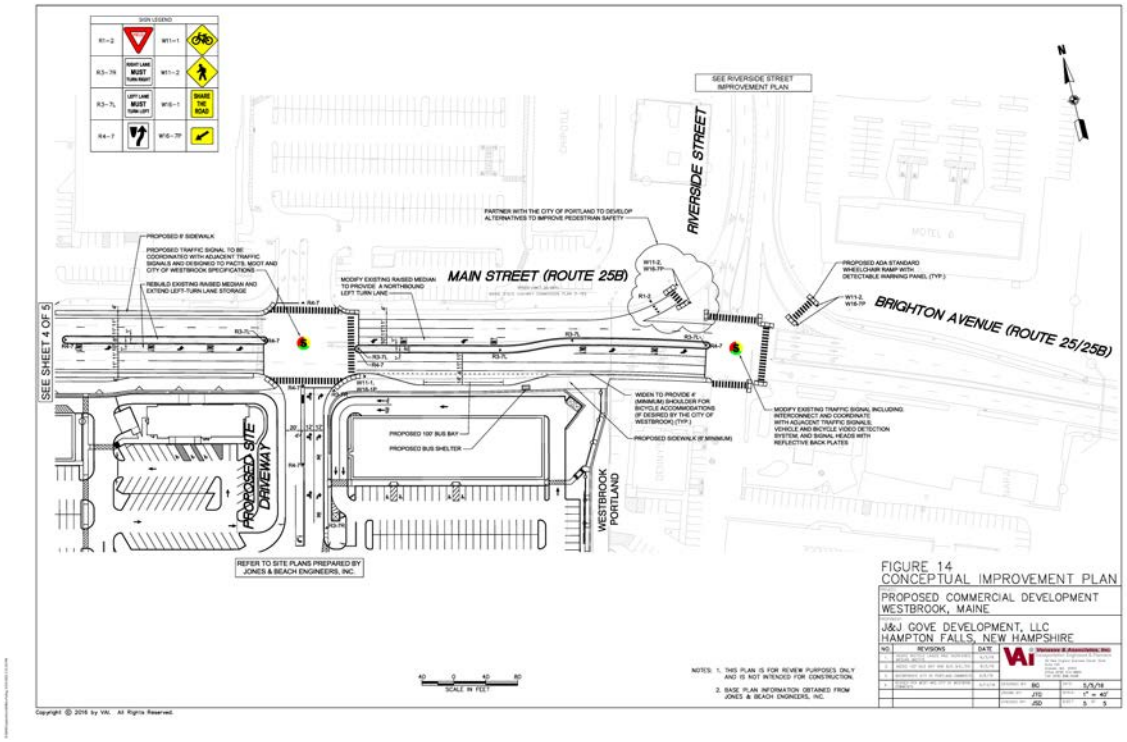
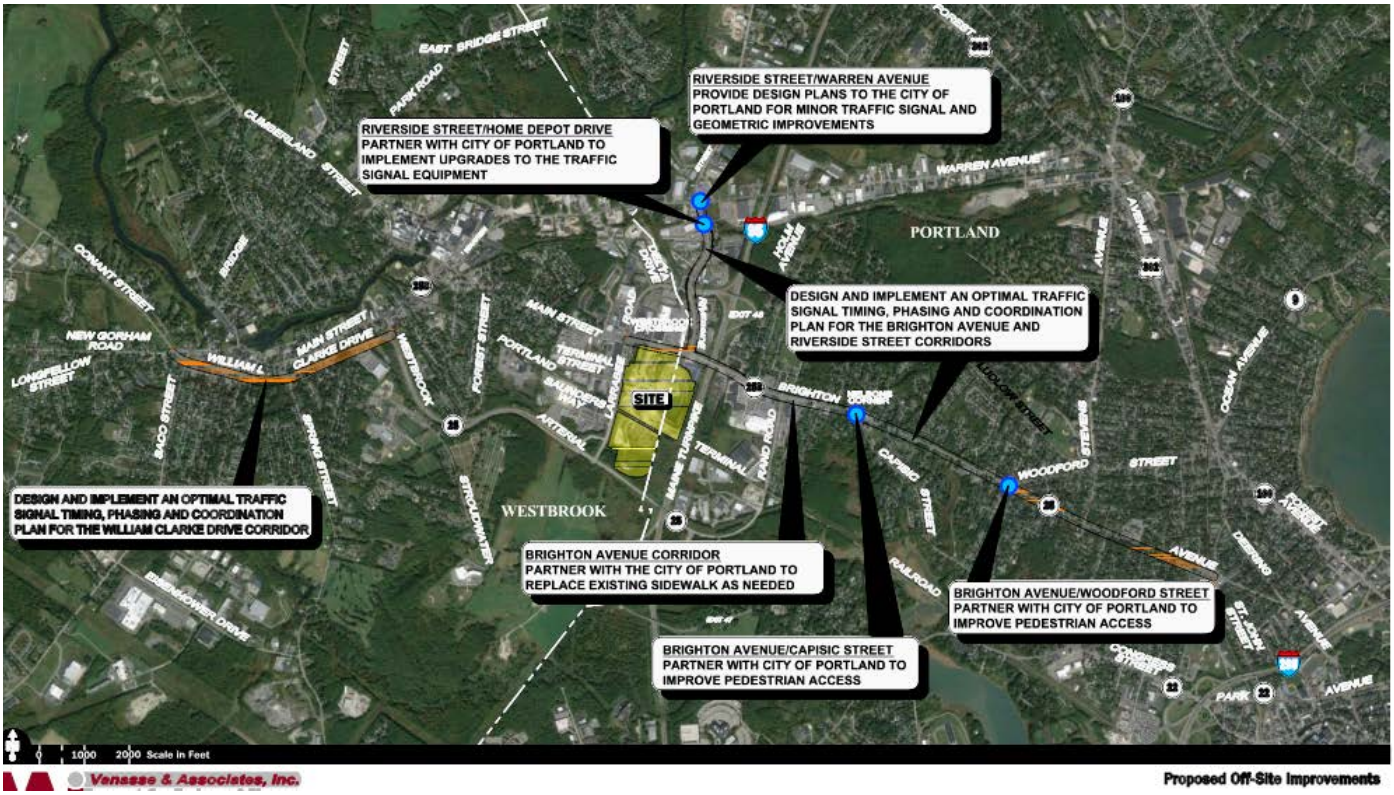


Figure 14 Conceptual Improvement Plan, Brighton-Riverside Intersection, Sheet 4 of 5



6. *Will provide for adequate sanitary waste and storm water disposal and will not cause an unreasonable burden on municipal services if they are utilized;*

   Staff Comment: The sanitary waste is being handled by the City of Westbrook's system.

   The proposed stormwater management system for the developed site is proposed to treat 96.2% of the total impervious area. The majority of the stormwater from the North campus will be collected in a closed system, which includes treatment measures, and then is directed to the existing quarry. The proposed treatment measures include Grassed Underdrained Soil Filters, Underground Sand Filters, and/or Gravel Wetlands. The quarry discharge flows to the existing wetlands on the South Campus. North Campus stormwater that is not directed to the quarry will be treated with Grassed Underdrained Soil Filters and/or Underground Sand Filters and discharged into systems within Westbrook's Main Street or Larabee Road. These systems discharge into the existing stream on the South Campus, which is part of the Nason's Brook system. Drainage from the South campus will also be treated and directed to the existing wetland. Critieria number one addresses the treatment and mitigation for Nason's Brook, which is an Urban Impaired Stream.

Lauren Swett, P.E with Woodard and Curran, and Portland's consulting civil engineer, has reviewed the plan and her comments are included as Attachment A of this report. She has found the proposed plan to meet the standards of the subdivision ordinance with the pending final DEP permit.

In addition, there is a note on the overall plan site plan that there is a proposed sub - station to be proposed by others. It is noted here that the specifics for that substation must be submitted for review

7. *Will not cause an unreasonable burden on the ability of the city to dispose of solid waste and sewage if municipal services are to be utilized;*

   Staff Comment: Municipal services for Dirigo Plaza will be managed by the City of Westbrook.

8. *Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the department of inland fisheries and wildlife or by the city, or rare and irreplaceable natural areas or any public rights for physical or visual access to the shoreline. For subdivisions within historic districts designated pursuant to article IX of this chapter, the Planning Board shall apply the standards of section 14-651(c) of article IX. The Planning Board may request that the historic preservation committee prepare an evaluation of the proposed subdivision based upon the standards of section 14-651(c);*

   Staff Comment: The former use of the site was a quarry. The proposed lot within Portland is not being developed, so there is no disturbance of any scenic or natural beauty of the area. A letter dated June 1, 2015 from the Department of Agriculture, Conservation & Forestry (Applicant's Submission Att. 7) indicates that there are no rare botanical features documented for the project site. The site is not a designated historic site nor within an historic district. Attachment 12 of the applicant's submittal is the Corps of Engineers permit for the permanent filling of 1.47 acres of wetland. The proposal does not impede physical or visual access to a shoreline. The quarry is being filled with ground water and stormwater water with the intent that it will become a significant natural water resource for the plaza. Thus, this standard is met for the lot within Portland.

9. *Is in conformance with the land development plan or its successor;*

   Staff Comment: Portland's Comprehensive Plan identifies the area along Brighton Avenue as a growth area. The land is split between two zones, B-4 and I-L, so these zones permit a range of commercial development and light industrial uses. Again, no development is proposed within Portland, so there are no uses to consider at this time. The proposed lot in Portland conforms with the City's Comprehensive Plan and meets this standard.

10. *The subdivider has adequate financial and technical capacity to meet the standards of this section;*

Staff Comment: The applicant has submitted Attachment 5 of their written documents that addresses the financial and technical capacity of the developer and consulting team to meet this standard.

11. *Whenever situated, in whole or in part, within the watershed of any pond or lake or within two hundred fifty (250) feet of any wetland, great pond or river as defined in Title 38, chapter 3, subchapter I, article 2-B, will not adversely affect the quality of such body of water or unreasonably affect the shoreline of such body of water;*

    Staff Comment: The site is not located within the watershed of any pond or lake or within 250 feet of any wetland, great pond or river as defined in the State's Mandatory Shoreland Zoning.

12. *Will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater;*

    Staff comment: The proposed project is relying on Westbrook municipal services for water and sewer and they are not proposing any wells or subsurface systems. No adverse affects on the quality or quantity of groundwater are expected thus meeting this standard.

13. *Is or is not in a flood-prone area, based on the Federal Emergency Management Agency's Flood Boundary and Floodway Maps and Flood Insurance Rate Maps, and information presented by the applicant. If the subdivision, or any part of it, is in such an area, the subdivider shall determine the 100-year flood elevation and flood hazard boundaries within the subdivision. The proposed subdivision plan must include a condition of plan approval requiring that principal structures in the subdivision will be constructed with their lowest floor, including the basement, at least one (1) foot above the 100-year flood elevation;*

    Staff comment: The Portland lot is not within a flood zone and meets this standard.

14. *All potential wetlands within the proposed subdivision shall be identified on any maps submitted as part of the application, regardless of the size of those wetlands. Any mapping of wetlands may be done with the help of the local soil and water conservation district; and*

    Staff comment: Wetlands are shown on the Subdivision Lot Consolidation Plan and the majority of the wetlands are in Westbrook in the area proposed for the South Campus. There is a portion of one wetland that crosses into Portland on the southerly side of the railroad line and is associated with a stream. No wetland disturbance is proposed within Portland, so this standard is met for the lot in Portland.

15. *Any river, stream or brook within or abutting the proposed subdivision shall be identified on any maps submitted as part of the application. For purposes of this*

section, "river, stream or brook" has the same meaning as in Title 38 M.R.S.A. Section 480-B, subsection 9.

Staff comment: Nason's Brook is shown on the plan. The brook, starting at the confluence of two streams, is included in the City's Stream Protection Zone per the requirements of the State's Mandatory Shoreland Zoning is shown on the plan and meets the standard.

VI. RECORDING PLAT

The applicant is seeking the Board's approval and signature of the plat on October 18th. The Planning Staff in consultation with DPW and Victoria Morales, Associate Corporation Counsel, have suggested three conditions of approval for the Board's consideration, which are as follows:

1. The applicant shall provide evidence of all required State and local approvals, including but not limited to Maine DOT Traffic Movement Permit, DEP Site Location of Development Act, Stormwater Permit, Natural Resources Protection Act Permit, and Westbrook Subdivision review, prior to the issuance of a street opening permit from Portland's Department of Public Works;

2. The applicant shall provide the monetary compensation of $220,000 for mitigation of traffic impacts along Brighton Avenue for the installation of pedestrian and ADA improvements, prior to the issuance of a street opening permit from Portland's Department of Public Works.

3. If any revisions are proposed to the traffic movement permit or off-site traffic mitigation measures planned in Portland, which differ from the those presented in the application reviewed on October 18, 2016, then the applicant shall submit an amended subdivision plan for review pursuant to Portland's Subdivision Ordinance.

The applicant is revising the plat and is creating a recording plat with 2 pages. One page will include all of the notes, details and conditions. The Planning Staff has suggested that this page be renamed and include a signature block, so that it is clear that both pages are part of the recording plat and signed by the Boards. The staff will review the final revised plat prior to the public hearing. The plat that is part of the current submission was reviewed by William Clark, DPW Surveyor and he found the plat to meet city standards and has asked for the following edits:

1. Provide the Subdivision Plat in AutoCAD format on State Plane Coordinates on a DVD for the DPW Archives. This will allow us to update the GIS Parcel mapping as well as input of any infrastructure which may affect the City of Portland. The coordinates are not for property conveyances. This can be done separately from submission at the Planning Board meeting.

2. Provide coordinates for two points:

(1.) Coordinates for the "IR FND" (Iron Rod Found) on the City line at the southerly end of the 864.32 foot boundary line.

(2.) Coordinates for the City Boundary Monument found at Brighton Avenue as shown on Detail A on the drawing titled "Existing Conditions and Details & Notes A3". This can be done separately from submission at the Planning Board meeting.

*3. We would appreciate a mylar for the DPW Engineering Archives. (**Planning note**: the subdivision ordinance requires a mylar copy of the recording plat with all of the signatures and the book and page of the recording submitted to the city for the DPW archives and the applicant has agreed in an e-mail to provide the mylar copy as requested.)*

4. Having a signature block on both plans to be recorded is an excellent idea.

5. Final plans to have Surveyor's seal.

The revised plat is included as Attachment L and M, with the mylar copy expected to be submitted on Monday. The staff will review the plat to assure consistency with all comments prior to the Planning Board hearing, so the plat could be signed if the Board is ready. If the Board seeks to revise the conditions, then the plat could be modified and ready for the Board's signature on October 25th.

VII. PROPOSED MOTIONS

On the basis of the application, plans, reports and other information submitted by Dirigo Center Developers, LLC, the applicant; findings and recommendations contained in the planning board report for the public hearing on October 18, 2016 for application #2016-073 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:

1. The applicant shall provide evidence of all required State and local approvals, including but not limited to Maine DOT Traffic Movement Permit, DEP Site Location of Development Act, Stormwater Permit, Natural Resources Protection Act Permit, and Westbrook Subdivision review, prior to the issuance of a street opening permit from Portland's Department of Public Works;

2. The applicant shall provide the monetary compensation of $220,000 for mitigation of traffic impacts along Brighton Avenue for the installation of pedestrian and ADA improvements, prior to the issuance of a street opening permit from Portland's Department of Public Works.

3. If any revisions are proposed to the traffic movement permit or off-site traffic mitigation measures planned in Portland, which differ from the those presented in the application reviewed on October 18, 2016, then the applicant shall submit an amended subdivision plan for review pursuant to Portland's Subdivision Ordinance.

Report Attachments

A. Lauren Swett, P.E. (Development Review Engineer) dated September 22, 2016
B. September 7, 2016 letter from Jim Katisficas to Barbara Barhydt
C. Draft Traffic Movement Permit – MDOT Sept 20, 2016
D. Proposed Off-Site Improvements
E. Revised Exit 47 Plan (1)
F. Revised Exit 48 Plan (1)
G. Revised Project Site Acess Improvement Plans (1)
H. Revised Riverside Street Plan (1)
I. Draft TMP with edits from Westbrook & VAI -draft
J. Response Letter – from Jeffery Dirk, Vanasse & Associates, Inc., dated October 5, 2016
K. DEP Permit – cover letter from Robert Green, dated October, 2016
L. Draft Subdivision – Lot Consolidation Plat
M. Draft Lot Consolidation Plat Notes & Conditions

Applicants Submittal

1. Application
2. Project Description
3 a Title, Right and Interest
3.b Letter from J. Katisficas regarding Title, Right and Interest
4 a Easements, Covenants, Public or Private Right-of-Way
4 b CMP Comments on Easement Request
5. Financial Capacity
6 a Stormwater & Drainage Summary
6 b PreDevelopment Summary
6 c Post Development- Summary
6 d Response Letter to DEP – Site Location
6 e Response Letter to DEP Land & Water
6 f Urban Impaired Stream Letter
6 g Response letter to Portland after Workshop
6 h Response Letter to Woodard and Curran Comment
6 i O& M Manual
7 Construction Management and Natural Features (8 &9)
10 Abutters
11 a Traffic Movement Permit- Draft Mitigation
11 b Amended TIS Executive Summary
11 c Response to MDOT Comments
12 Army Corps of Engineers Permit

Plans - (Please note that the sewer plans, road profiles, planting plan details, and utility details for work in Westbrook were submitted as part of the submission; however those plans are not posted on the web site. The plans are available at the Planning Office

P1 CS Cover Sheet
P2 A1 Existing Conditions Plan

P3 Existing Conditions Notes
P4 A3 Subdivision – Lot Consolidation Plat
P5 C2 Overall Site Plan
P6 C2 Overall Site – Phase I
P7 C2-1-Overall Site Plan – North Campus
P8 C2-1-1 Overall Site Plan – North Campus
P9 C2-1-2 Overall Site Plan – North Campus
P10 C2-1-3 Overall Site Plan – North Campus
P11 C2-1- 4 Overall Site Plan – North Campus
P12 C2-2 Overall Site Plan – South Campus
P13 C2-2-1 Overall Site Plan – South Campus
P14 C2-2-2 Overall Site Plan – South Campus
P15 Demolition Plan – North Campus
P16 Demolition Plan – South Campus
P17 C3-1_Grading & Drainage Plan- North Campus
P18 C3-1-1_Grading & Drainage Plan
P19 C3-1-2_Grading & Drainage Plan
P20 C3-1-3_Grading & Drainage Plan
P21 C3-1-4_Grading & Drainage Plan
P22 C3-2_Grading & Drainage Plan- South Campus
P23 C3-2-1_Grading & Drainage Plan
P24 C4_Overall Utility Plan
P25 C4-1 Overall Utility Plan- North Campus
P26 C4-1-1_Utility Plan- North Campus
P27 C4-1-2_Utility Plan- North Campus
P28 C4-1-4_Utility Plan
P29 C4-2_Overall Utility Plan- South Campus
P30 C4-2-1_Utility Plan- South Campus
P31 L-5.3_Planting Plan- North Campus
P32 L-5.4_Planting Plan- North Campus
P32 L-2.0_Landscape Overall Plan
P33 L-3.0_Hardscape Plan
P34 L-3.1_Hardscape Plan
P34 L-5.5_Planting Plan- North Campus
P35 L-3.2_Hardscape Plan
P35 L5.7_Planting Plan- North Campus
P36 L-4.0_Hardscape Details
P36 L-5.8_Planting Plan- North Campus
P37 L-4.1_Hardscape Details
P37 LP1-1_Lighting Plan- North Campus
P38 L-5.0_Planting Plan- North Campus
P38 LP1-2_Lighting Plan- North Campus
P39 L-5.1_Planting Plan- North Campus
P39 LP1-3_Lighting Plan- North Campus
P40 L-5.2_Planting Plan- North Campus
P40 LP1-4_Lighting Plan- North Campus
P41 LP1-5_Lighting Plan- South Campus
P42 LP1-7_Lighting Details
P43 D2_Site Plan Detail Sheet
P44 D3_Site Plan Detail Sheet
P45 D4_Site Plan Detail Sheet
P46 D6_Building B Detail Sheet
P47 D8_Drainage Detail Sheet
P48 D9_Drainage Detail Sheet
P49 D10_Drainage Detail Sheet
P50 D11_Drainage Detail Sheet
P51 D12_Drainage Detail Sheet

P52 D13_Drainage Detail Sheet
P53 D14_Stream Crossing Detail Sheet
P54 E1_Erosion and Sediment Control Details
P55 E2_Erosion and Sediment Control Details
P56 EC-1_Erosion Control- North Campus- Phase 1
P57 EC-2_Erosion Control- North Campus- Phase 1
P58 EC-3_Erosion Control- South Campus- Phase 1
P59 EC-4_Erosion Control- North Campus- Phase 1
P60 EC-5_Erosion Control- South Campus- Phase 1
P61 EC-6_Erosion Control- South Campus Phase 2
P62 Proposed Exterior Elevations Building A
P63 Proposed Exterior Elevations-Building C
P64 Proposed Exterior Elevations-Building D
P65 Proposed Front Elevation and Hardscape Plan- Building E
P66 Front Perspective-Building E
P67 Vestibule Perspective-Building E
P68 Proposed Exterior Elevations and Signage Chart-Building E
P68 Proposed Exterior Elevations- Building G
P69 Proposed Exterior Elevations- Building F
P69 Proposed North Elevations- Building J

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MEMORANDUM

TO: Barbara Barhydt
FROM: Lauren Swett, PE
DATE: September 22, 2016
RE: Dirigo Plaza Subdivision Application

Woodard & Curran has reviewed the Subdivision Application submitted for the Dirigo Plaza project located at 58 and 80 Main Street in Westbrook, Maine. A three lot subdivision, including retail buildings, parking and site features is proposed in Westbrook. The project crosses the Portland/Westbrook line, and includes a one-lot subdivision in Portland. The work in Portland includes primarily the construction of a paved pathway surrounding the existing quarry pit on the property.

Documents Reviewed by Woodard & Curran

- Response to comments letter and attachments, dated September 12, 2016, prepared by Jones & Beach Engineers, Inc., on behalf of Dirigo Center Developers, LLC.

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

As the project's primary development area is located within the City of Westbrook, it is our understanding that the primary review will be completed by others. Our review focuses on the proposed trail feature, the pond, and the stormwater management system as it has an impact on the City of Portland's Nason's Brook Watershed.

1) It is noted that many of the prior comments were related to the trail proposed surrounding the quarry. This trail will not be allowed by Central Maine Power due to proximity to their right-of-way and infrastructure. The removal of the trail from the project addresses these comments
2) The proposed project is located primarily in the City of Westbrook, but will discharge to an Urban Impaired Stream (Nason's Brook) located in Portland. The project will be in compliance with the Basic, General, Urban Impaired Stream, and Flooding Standards of the MaineDEP Chapter 500 Rules in accordance with Section 5 of the City of Portland Technical Manual. We understand that this Subdivision application is for only a portion of the overall project area, and the entire project is being reviewed for stormwater compliance by the City of Westbrook and the Maine DEP.
    a) Basic Standard: The applicant has provided plans, notes, and details to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices within the development area in Westbrook. With the elimination of the trail, no significant work is proposed within Portland. The proposed erosion and sedimentation control measures proposed will be in compliance with the Maine DEP Basic Standards.
    b) General Standards: The Applicant is required to provide stormwater treatment throughout the entire project area and is proposing an extensive networks of bioretention cells, underdrained filters, and sand filters throughout the development site. The existing quarry pit will be utilized as a wet pond. This wet pond will provide treatment for the entire new impervious area added in the City of Portland.
    c) Urban Impaired Stream Standards: As noted above, the Applicant is providing extensive stormwater treatment on the site. The Applicant has submitted a request to the Maine DEP accounting for their proposed treatment, and noting that based on their calculations, no additional mitigation fee is required. The Applicant's calculation method appears to be valid as a significant amount of treatment is proposed within the Westbrook site, providing for treatment of a greater percentage of impervious area than is required by the General Standard. The Applicant should provide a copy of the Maine DEP's response to their Urban Impaired Stream calculations, and a copy of the final permit approval for the project.
    d) Flooding Standard: The Applicant is required to provide flood control throughout the entire project area. Flood control will be provided by stormwater features throughout the site, primarily through

the use of the existing quarry pit as a wet pond. Runoff from the portion of the project located in the City of Portland will be managed by the wet pond. The overall project will result in a reduction in peak discharge in all storm events based on the submitted model. The Applicant has updated their model to address the previously provided comments.

3) *The Applicant has noted that a Stormwater Pollution Prevention Plan will be completed. A copy should be submitted prior to issuance of a building permit.* Applicant has acknowledged.
4) *The project will be required to comply with the post-construction stormwater management requirements as outlined in Chapter 32 of the City of Portland Code of Ordinances for all stormwater features located in the City of Portland.* Applicant has acknowledged.

All other previous comments have been addressed at this time.

PERKINS | THOMPSON
ATTORNEYS & COUNSELORS AT LAW

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September 7, 2016

Barbara Barhydt,
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101

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JOSEPH C. SIVISKI
JOHN W. MASLAND

Re: Site Plan and Subdivision Application, Dirigo Plaza; Dirigo Center Developers, LLC; Applicant's Narrative Response to the City of Portland's Off-Site Traffic Mitigation Comments

Dear Barbara:

I am writing to provide Applicant Dirigo Center Developers, LLC's ("Applicant") response regarding the City of Portland's Off-Site Traffic Mitigation Comments for the Dirigo Plaza project ("Project") provided to us by Jeremiah Bartlett on Friday, September 2, 2016. We appreciate the efforts by the City of Portland, the Maine Department of Transportation, the City of Westbrook, and the Maine Turnpike Authority to meet with us on September 1 to review MDOT's draft Traffic Movement Permit ("draft TMP") and other traffic and development concerns, and to prepare comments on the same so promptly. We understand that the City of Portland seeks the following items for incorporation into the finalized Traffic Movement Permit to be issued by MDOT, and our response follows each item listed below. Schematic plans prepared by Vanasse & Associates, Inc. ("VAI") to illustrate the Applicant's proposed work are enclosed.

1. Riverside Street from Berlin City to Exit 48

- *Provide consistent roadway width to allow for a center left turn lane to reduce crash frequency*

We understand from our meeting on September 1 that there is sufficient roadway width to permit us to restripe this area, and so the **Applicant agrees** to restripe this area, as requested by the City of Portland (see VAI Conceptual Improvement Plan, Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 2 of 2).

- *Eliminate sidewalk gap on west side of street north of Burger King (i.e. result in sidewalks on both sides of Riverside between Exit 48 and Berlin City)*

The **Applicant agrees** to construct the sidewalk to eliminate sidewalk gap on west side of street north of Burger King, as requested by the City of Portland (see VAI Conceptual Improvement Plan, Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 2 of 2).

2. Riverside Street at Larrabee Road and Exit 48

More specific recommendations for this location, as related to the mitigation plan, include:

- *Updated signal timing, coordination, and new signal structures (the City's position is that this intersection is too large for span wire)*
- *Updated wiring*
- *Controller cabinet*
- *Video detection that detects and accommodates bicyclists*
- *Signal heads with reflective back plates*
- *Overhead lane use signage as per MTA comments*
- *Countdown pedestrian heads*
- *Placement of ADA compliant ramps*
- *Use of durable pavement markings to supplement overhead provisions*
- *Establish queue detection for Exit 48 off-ramp to provide pre-emption capability as per MTA comments*

The Larrabee Road approach, proposed to be widened to provide a dual left turn lane, results in a wider intersection and is a costly improvement. The City would urge the Applicant to explore the need for two left turn lanes, or utilizing an existing through lane as a left turn lane to reduce costs and intersection size.

The **Applicant agrees** to construct the Exit 48 improvements as stated in the draft TMP and with the above detail, as requested by the City of Portland, and also **agrees** to review the Larrabee Road approach to provide lanes consistent with MDOT's findings and directions, all with the understanding that this work will be coordinated with scheduled MDOT and City of Portland projects for this intersection and that the City funding for this intersection will remain in place as proposed in the City's FY2017-FY2021 Capital Improvement Plan (CIP). (See VAI Conceptual Improvement Plan, Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 2 of 2.)

3. Riverside Street at Westbrook Crossing

- *Updated signal timing, coordination*
- *Provision of detectable warning panels at pedestrian ramps*
- *Signal heads with reflective back plates*

The **Applicant agrees** to provide these improvements, as requested by the City of Portland. (See VAI Conceptual Improvement Plan, Riverside Street Corridor, Sheet 2 of 2.)

4. Riverside Street from Brighton Avenue to Exit 48

- *Explore potential for provision of bicycle lanes or the width within the project limits of Exit 48 work to allow for such lanes in the future.*

Actual construction of bicycle lanes along Riverside Street is not financially viable for the Applicant, but the Applicant understands that is not what the City is seeking here; the **Applicant agrees** to provide the City of Portland with the existing conditions data that will be prepared as part of the off-site mitigation, for the City's use in the conceptual design for bicycle improvements. The Applicant does not believe that the Exit 48 improvements it is undertaking will preclude the City from later establishing bicycle lanes. Bicycles can use the full travel lane similar to the bicycle use of Main Street in Westbrook and signage can be installed to promote this full lane use.

- *Provision of continuous sidewalk along east side of Riverside Street from Brighton Avenue to Exit 48 , including filling the gap at the Foreside Inn frontage (much of this sidewalk currently exists)*

The **Applicant agrees** to construct the portion of the sidewalk along the **Fireside** Inn frontage from the driveway north to the existing guardrail, as requested by the City of Portland. (See VAI Conceptual Improvement Plan, Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 2 of 2.)

5. *Riverside Street at Brighton Avenue*

- *Examination of need for right turn slip lanes, primarily slip lane from Riverside to Brighton. City may be willing to partner financially on this aspect.*

The **Applicant does not agree** to make this a part of its mitigation plan, but would make a donation to the City for this and other Brighton Avenue improvements (see responses to Items 6 and 9 below).

- *Video detection that detects and accommodates bicyclists*
- *Signal heads with reflective back plates*
- *Up-to-date ADA provisions and corrections to immediately adjacent deficient sidewalk segments*

The **Applicant agrees** to these improvements as part of its mitigation plan, some elements of which are included in the Ransom Brighton Avenue improvements plan; the sidewalk location can be adjusted within the limits of the right of way. (See VAI Figure 14, Conceptual Improvement Plan, Sheet 5 of 5).

6. *Brighton Avenue at Capisic Street*

The City seeks mitigation at this location, as the TIS identifies a substandard LOS. Provision of updated ramps and pedestrian equipment may be a satisfactory outcome.

The **Applicant does not agree** to make this a part of its mitigation plan, but would make a donation to the City for this and other Brighton Avenue improvements (see responses to Item 5 above and Item 9 below).

7. Brighton Avenue at Woodford Street

The City seeks mitigation at this location, as the TIS identifies a substandard LOS. One option here would be modifications that would allow for a concurrent pedestrian crossing with a lead ped interval, which could be accomplished with ADA and signal equipment improvements. This would increase operational efficiency above and beyond the current exclusive pedestrian phase configuration. Potential implementation of Lead Pedestrian Interval walk lights to improve vehicular and pedestrian Level of Service.

The **Applicant does not agree** to make this part of its mitigation plan; this is not financially viable for this Project as the requested improvements would be located so far from the Project that they are not reasonably related to pedestrian concerns generated by the Project. This intersection was not identified in the MDOT draft TMP as traffic mitigation for the proposed Dirigo Plaza project.

8. Rand Road at Exit 47

The City understands that mitigation is likely required at this location. However, if alternative mitigation strategies can be determined, the City will be open, in consultation with Westbrook and the Turnpike Authority, to alternatives.

The **Applicant agrees**, as an alternative to the improvements at this intersection in the draft TMP, to either: 1) in conjunction with MDOT and MTA, and as a condition of the final TMP, monitor traffic conditions at this intersection following construction of the Project's North Campus and to undertake any improvements to Exit 47 deemed necessary by MDOT at the time of permitting of the South Campus of the Project; or 2) to forego constructing improvements to this intersection with the funds it would otherwise be required to expend on Exit 47 to be used for other mitigation measures as agreed upon by the City of Portland and the Applicant. (See VAI Rand Road at I-95 Exit 47 Ramps Conceptual Improvement Plan, Sheet 1 of 1 for MDOT draft TMP plan).

9. Sidewalks on Brighton Avenue

The City seeks improvements to the sidewalks on Brighton Avenue in order to encourage non-vehicular trips to and from the site. Specifically, the City requests that, where documented existing conditions are fair or poor, replacement concrete sidewalks on the west side of Brighton Avenue be provided from the site entrance south to Albion Street.

Because of the schedule for the Project and the need to complete offsite mitigation improvements before a certificate of occupancy can issue for the Project, the **Applicant agrees** to donate to the City of Portland an amount equal to the amount remaining from Lowe's payment for the Brighton Street streetscape improvements -- $220,000 -- to fund this and the improvements described at Items 5 and 6 above as well as other improvements identified by Ransom that the City may wish to make.

10. Riverside Street at Warren Avenue (lower priority)

- *Reconfigure westbound Warren Avenue to consist of two left turn lanes and a shared through/right turn lane. This will consist primarily of restriping.*
- *Adjust phasing and timing to eliminate the split phasing structure for the Warren Avenue approaches*

The **Applicant agrees** to provide the existing conditions data that will be prepared as part of the off-site mitigation, for conceptual design of the intersection to be prepared by the City of Portland. Actual design and construction of the requested improvement is not financially viable for the Project and was not part of the MDOT draft TMP.

11. Riverside Street at Home Depot Drive (lower priority)

Signal heads with reflective back plates
- *Overhead lane use signage*
- *Countdown pedestrian heads*

The **Applicant does not agree** to the requested improvement; this was not identified by MDOT in the draft TMP and is not financially viable for the Project.

We acknowledge that the City of Portland has authority to seek off-site traffic mitigation measures through the subdivision and site plan ordinance processes to ensure that the Project will not cause unreasonable highway or public road congestion or unsafe conditions with regard to use of the public roads. Since these ordinance standards mirror the State traffic movement standards at 23 M.R.S. §704-A and Chapter 305, the improvements required by the draft TMP, which is intended to be regional ibn scope and which covers a two-mile radius, should form the basis for required traffic improvements for the Project. As explained during the September 1, 2016 meeting, we estimate that the total cost of traffic improvements required by the draft TMP is $6.8 million, with $3.365 attributable to "front door" access improvements and $3.425 million attributable to regional off-site mitigation improvements ($2.270 million in Portland and $1.155 million in Westbrook).

However, in addition to carrying out the off-site mitigation tasks required by the draft TMP, we are, as noted in our responses above, agreeing to take on additional off-site traffic mitigation responsibilities as requested by the City of Portland by: 1) clarifying and amplifying the draft TMP requirements, and 2) offering to provide the additional installation, equipment, striping and

sidewalk work as stated above, to ensure that the intersections listed in the draft TMP **and** the street segments between them in the immediate Project area are improved appropriately. Also, as we have mentioned above, we agree to contribute the amount of $220,000 to the City to match the amount of mitigation funding remaining from the Lowe's project so that the City can apply these funds towards Brighton Avenue streetscape improvements, as discussed in our responses to Items 5, 6 and 9 above.

We believe that City staff will find that these responses, and the significant contribution to the Project area's transportation infrastructure that they represent, address the reasonable off-site traffic mitigation needs generated by the Project as measured under State law and under Portland's land use ordinances.

Sincerely,

James N. Katsiaficas

cc: Jeremiah Bartlett, Transportation Systems Engineer, City of Portland
Jeff Levine, Planning & Urban Development Director, City of Portland
Jennie Franceschi, Director of Planning and Code Enforcement, City of Westbrook
Stephen Landry, Maine Department of Transportation, Traffic Engineering Division Engineer, Maintenance and Operations Bureau, Maine Department of Transportation
Timothy Soucie, Region 1 Traffic Engineer, Maine Department of Transportation
Jeffrey Gove, Dirigo Center Developers, LLC
Wayne Morrill, Vice President, Jones & Beach Engineers, Inc.
David J. Tracy, Esq., Hinckley Allen
Philip Saucier, Esq., Bernstein Shur
Katherine Joyce, Esq., Bernstein Shur

[*Staff Note: Revised and re-issued by MaineDOT on September 20, 2016*]

Applicant:	Dirigo Center Developments, LLC 7 Swain Drive Hampton Falls, NH 03844
Project Location:	Main Street / Larrabee Road / Westbrook Arterial, Westbrook, ME Westbrook Tax Map #32 Lot(s) #46-47
Project:	Commercial Shopping Center
Identification #:	Reg. 01-00185-A-N
Permit Category:	200 Plus PCE
Traffic Engineer:	Vanasse & Associates, Inc. Attn: Jeffery S. Dirk, PE 35 New England Business Center Drive, Suite 140 Andover, MA 01810-1071

Pursuant to the provision of 23 M.R.S.A. § 704-A and Chapter 305 of the MaineDOT's Regulations, the Maine Department of Transportation has considered the application of J & J Gove Development, LLC with supportive data, agency review and other related materials on file.

PROJECT DESCRIPTION

The project consists of 550,000 SF of mixed-use retail development. Access to the site is via four full movement entrances, one signalized entrance on Main Street, one signalized entrance on Larrabee Road, one stop-controlled entrance on Larrabee Road and one signalized entrance on the Westbrook Arterial. The project is estimated to generate 1,853 trip ends during a typical Saturday peak hour and 1,217 trips during a typical weekday PM peak hour.

Findings

Based on a review of the files and related information, MaineDOT approves the Traffic Movement Permit Application of J & J Gove Development, LLC subject to the following conditions:

MITIGATION

The mitigation is intended to describe that conceptually shown on the following plans provided by Vanasse & Associates, Inc. and Jones & Beach Engineers, Inc.:

1. "Conceptual Improvement Plan Riverside Street Corridor" Last Rev 6-10-16 [*Rev 9-15-16 – Staff Note*]
2. "Conceptual Improvement Plan Riverside Street At Larrabee Road and I-95 Exit 48 Ramps" Last Rev 6-10-16 [*Rev 9-15-16 – Staff Note*]
3. "Rand Road At I-95 Exit 47 Ramps Conceptual Improvement Plan" Last Rev 6-10-16
4. "Figure 14 Conceptual Improvement Plan" Sheets 1 thru 5, Last Rev 9-6-16
5. "Stroudwater Street At Forest Street Conceptual Improvement Plan" Last Rev 6-3-16
6. "Cumberland Street At Bridge Street Conceptual Improvement Plan" Last Rev 6-3-16

If the descriptions contained herein conflict with the plans, these descriptions shall take precedence over the plans. Not all of the mitigation discussed herein maybe shown on those or any plan. The following mitigation shall be constructed or implemented to MaineDOT's satisfaction prior to the opening of the facility, unless otherwise approved by MaineDOT.

All proposed traffic signals and traffic signal upgrades shall be designed and specified to be in compliance with the PACTS, City of Westbrook, City of Portland and MaineDOT traffic signal specifications. All traffic signals will be fully-functional, integrated and have full communications with the PACTS existing Streetwise ATMS.

On-Site Mitigation

Site Entrance / Main Street (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings. All markings shall be supplied, installed/painted and maintained yearly.

Modify raised median to accommodate dedicated left-turn pocket on Main Street to the site entrance with appropriate storage lengths and tapers.

Reconstruct sidewalks to meet ADA requirements.

Install new fully actuated traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Main and Larrabee Rd. and the signal at Main St. and Riverside St.

Site Entrance / Larrabee @ Terminal Street (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

Construct a dedicated left-turn pocket into site entrance with appropriate storage lengths and tapers.

Widen Larrabee Road to provide five-foot bicycle lanes for both directions of travel.

Provide six-foot sidewalks along both sides of Larrabee Road.

Install new fully actuated traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. The traffic signal shall be set to flash until MUTCD traffic signal warrants are met. Install a hardwire interconnect to the signal at Main and Larrabee Rd. and the signal at Larrabee Rd. and Westbrook Arterial.

Site Entrance / Larrabee @ Saunders Way (Unsignalized)
The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have a STOP bar and all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

Site Entrance / Westbrook Arterial (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

Construct a dedicated left-turn pocket into site entrance with appropriate storage lengths and tapers. Construct a dedicated right-turn pocket into the site entrance with appropriate storage lengths and tapers.

Install new traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Westbrook Arterial and Larrabee Rd. and to the signal at Westbrook Arterial (Rand Rd.) and Exit 47 ramps.

General Requirements For All Entrances

A. The entrances shall provide overhead illumination, if not existing, to illuminate the intersections per MaineDOT standards at a minimum. Overhead lighting shall have an average of 0.6 to 1.0 foot candles, with the maximum to minimum lighting ratio of not more than 10:1 and an average to minimum light level of not more than 4:1.

Off-Site Mitigation

Optimize traffic signal timings in the coordinated system on Riverside St / Main St / Brighton Ave.

Riverside Street

Intersection of Riverside St / Larrabee Rd (Exit 48)

Construct a second dedicated left-turn lane on the Riverside southbound approach to Exit 48. Restripe the southbound approach to include two dedicated left-turn lanes, a dedicated thru lane and a share thru-right lane. Lane widths shall be a minimum of 11 feet.

Install appropriate overhead lane-usage signs for the Riverside southbound approach both in advance of the intersection and at the intersection. Install appropriate lane-use signs at the intersection for the other intersection approaches.

Construct a second left-turn lane on Larrabee. [*MaineDOT staff note: Do we need this? General consensus is to remove this item. How does this impact LOS?]*

Remove channelizing island for the right-turn movements from the Riverside Street northbound approach and the I-95 exit ramp. Construct a right turn lane with appropriate length and Taper

Reconstruct the traffic signal system to accommodate the new geometry and interconnect to the toll plaza. Provide overlap phasing when possible.

Design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Main and Larrabee Rd.

Note: Work on Maine Turnpike Authority (MTA) property requires an MTA work permit and MTA review.

Intersection of Riverside St / Forest Ave

Design and implement an optimal traffic signal timing, phasing and coordination plan.

Intersection of Riverside St / Warren Ave

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Intersection of Riverside St / Home Depot

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Intersection of Riverside St / Home Depot

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Intersection of Riverside St / Brighton Ave / Main St

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Segment between Riverside Court (Berlin City) and Exit 48

Restripe to provide a two-way left-turn lane.

Construct sidewalk along the west side of Riverside, eliminating existing sidewalk gaps.

Segment between Exit 48 / Brighton Ave

Construct sidewalk along the east side of Riverside, eliminating existing sidewalk gaps.

Main Street

Intersection of Main St / Larrabee Rd

Remove existing raised triangular islands from Larrabee approaches to Main Street. Construct dedicated right-turn pockets on the Larrabee approaches to Main Street with appropriate storage lengths and tapers.

Provide ADA improvements to the sidewalks and signal equipment. Provide a hardwire interconnect between adjacent intersections.

Upgrade traffic signal equipment, design and implement an optimal traffic signal timing, phasing and coordination plan.

Westbrook Arterial

Intersection of Rand Rd / Westbrook Arterial (Exit 47)

Widen I-95 ramp to provide a second left-turn lane to the Westbrook Arterial. Widen Rand Road to accept the dual-left turn lanes.

Install raised medians along Rand Road approaching the intersection.

Upgrade traffic signal equipment, design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire or wireless interconnect to the adjacent intersection at the site entrance at Westbrook Arterial.

Note: Work on Maine Turnpike Authority (MTA) property requires an MTA work permit and MTA review.

William Clarke Drive

The applicant should design and implement an optimal traffic signal timing, phasing and coordination plan for the weekday and weekend post construction

Overall Requirements

A. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to MaineDOT and/or National standards.

B. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall meet MRSA Title 23, Chapter 21, Section 1914: "On-Premise Signs".

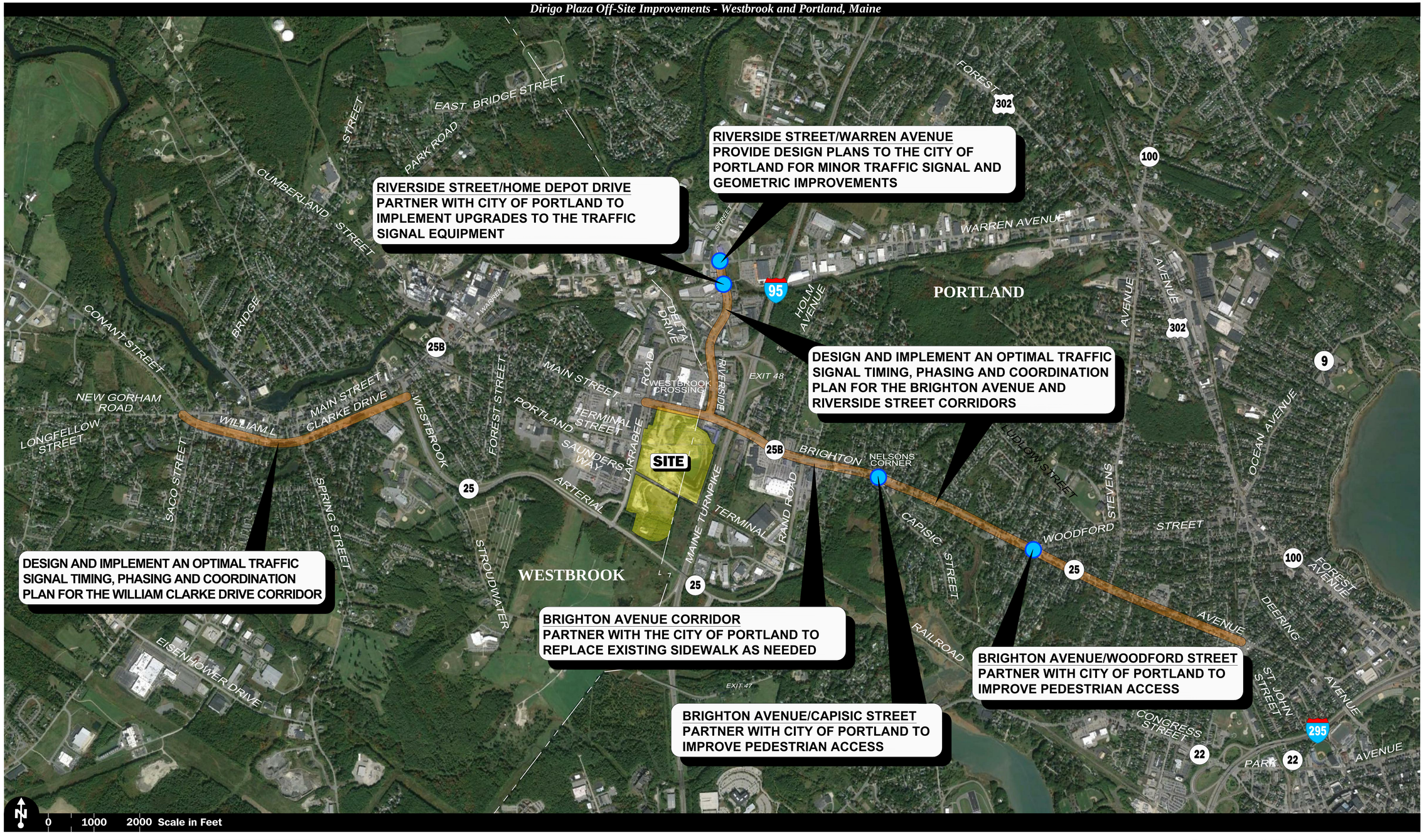
C. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from MaineDOT a decision of what impacts those changes will have on the permit. The applicant will then be required to submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.

By:

_____
Stephen Landry, P.E.
State Traffic Engineer

Date: _____

Dirigo Plaza Off-Site Improvements - Westbrook and Portland, Maine



Vanasse & Associates, Inc.
Transportation Engineers & Planners

Proposed Off-Site Improvements

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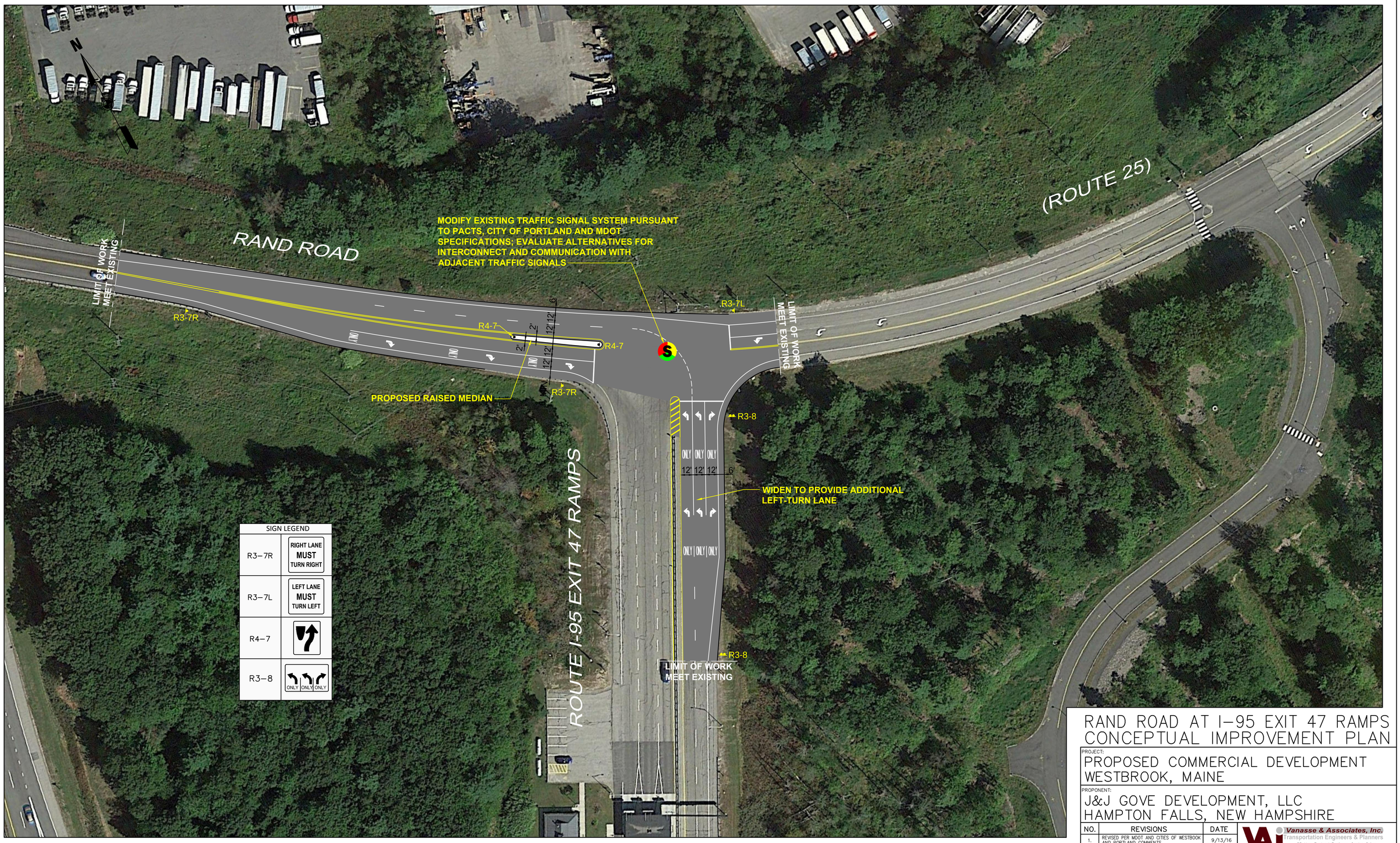

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SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM GOOGLE EARTH.

RAND ROAD AT I-95 EXIT 47 RAMPS CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	REVISED PER MDOT AND CITIES OF WESTBROOK AND PORTLAND COMMENTS	9/13/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY:	BG	DATE:	6/10/16
DRAWN BY:	JTG	SCALE:	1" = 40'
CHECKED BY:	JSD	SHEET	1 OF 1

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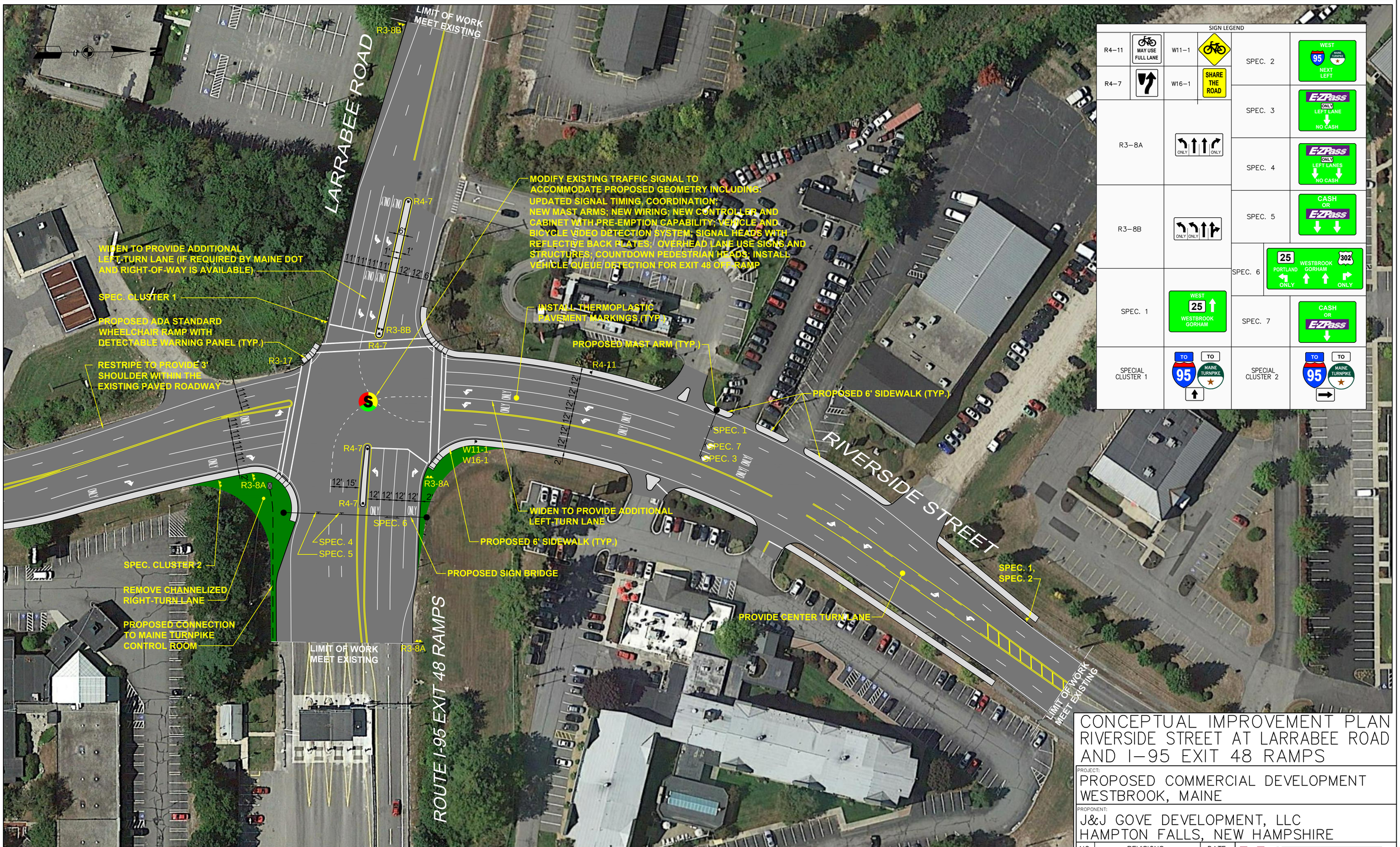

SIGN LEGEND

R4-11	MAY USE FULL LANE	W11-1		SPEC. 2	WEST 95 MAINE TURNPIKE NEXT LEFT
R4-7		W16-1	SHARE THE ROAD	SPEC. 3	E-ZPass ONLY LEFT LANE NO CASH
R3-8A	ONLY ONLY			SPEC. 4	E-ZPass ONLY LEFT LANES NO CASH
R3-8B	ONLY ONLY			SPEC. 5	CASH OR E-ZPass
				SPEC. 6	25 PORTLAND ONLY, WESTBROOK GORHAM, 302 ONLY
SPEC. 1	WEST 25 WESTBROOK GORHAM			SPEC. 7	CASH OR E-ZPass
SPECIAL CLUSTER 1	TO 95 MAINE TURNPIKE			SPECIAL CLUSTER 2	TO 95 MAINE TURNPIKE

SEE SHEET 1 OF 2

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SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM GOOGLE EARTH.

CONCEPTUAL IMPROVEMENT PLAN RIVERSIDE STREET AT LARRABEE ROAD AND I-95 EXIT 48 RAMPS

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	INCORPORATE CITY OF PORTLAND COMMENTS.	9/6/16
2.	INCORPORATE MDOT CITY OF PORTLAND COMMENTS.	9/15/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY:	BG	DATE:	6/10/16
DRAWN BY:	JTG	SCALE:	1" = 40'
CHECKED BY:	JSD	SHEET	2 OF 2

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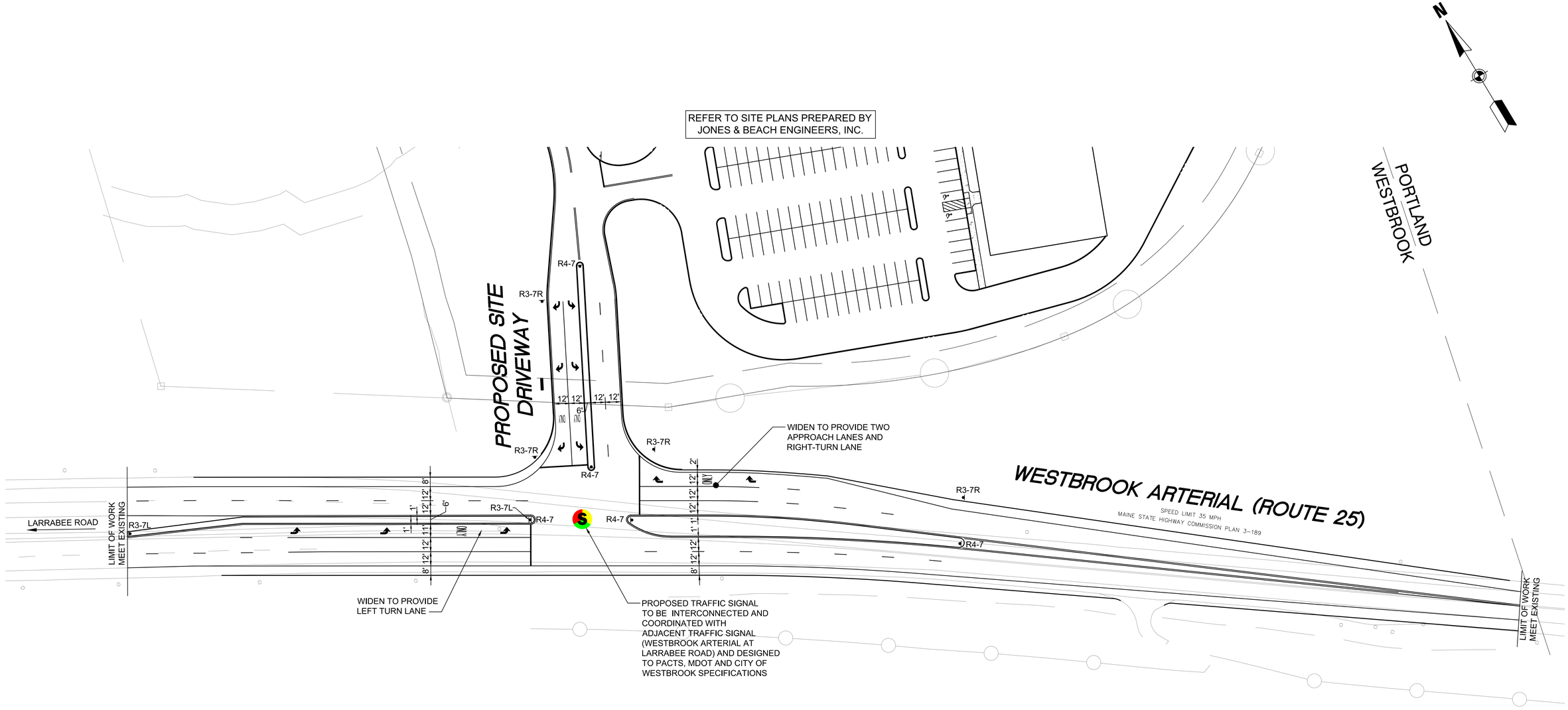

SIGN LEGEND	
R3-7R	RIGHT LANE MUST TURN RIGHT
R3-7L	LEFT LANE MUST TURN LEFT
R4-7	

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SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM JONES & BEACH ENGINEERS, INC.

FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	ADDED SITE PLAN REFERENCE	6/3/16
2.	REVISED PER MDOT AND CITY OF WESTBROOK COMMENTS	9/13/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY: BG	DATE: 5/5/16
DRAWN BY: JTG	SCALE: 1" = 40'
CHECKED BY: JSD	SHEET 1 OF 5

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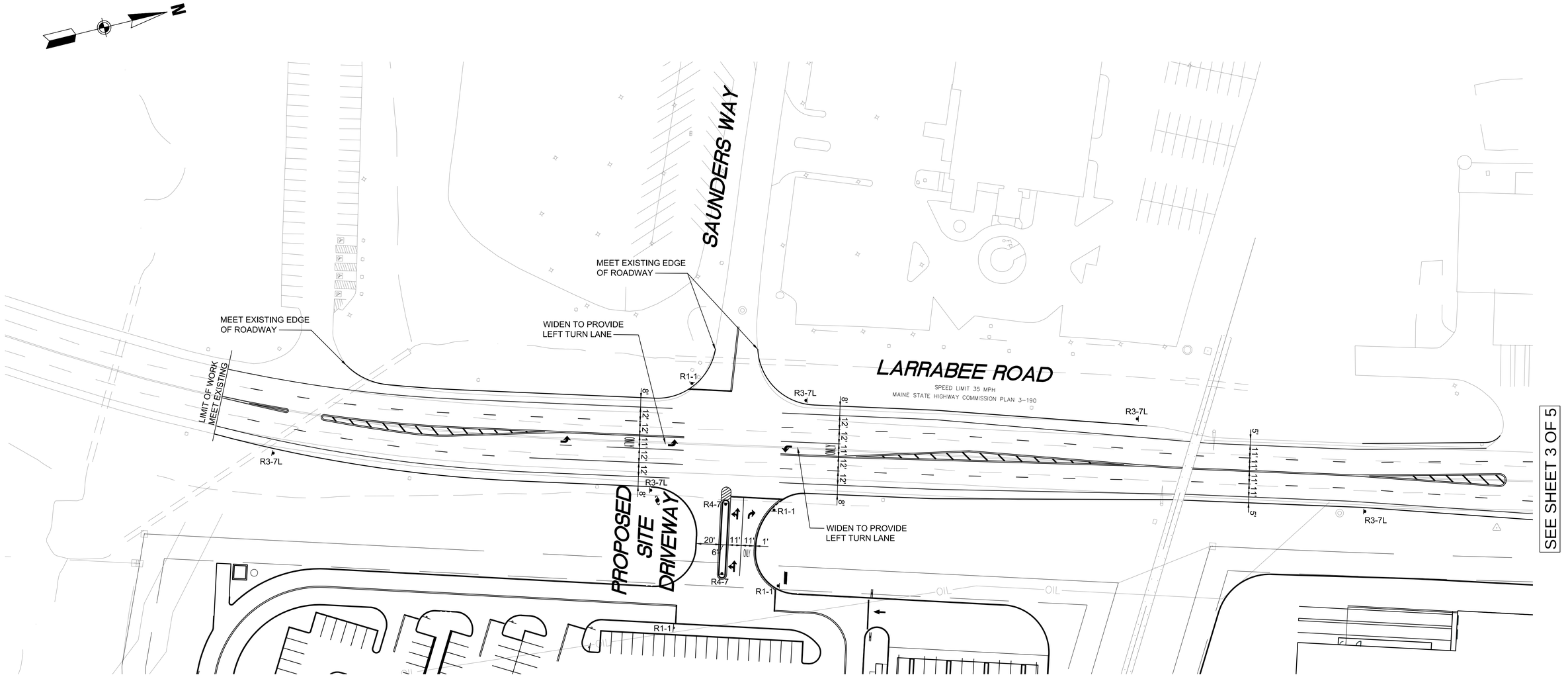

REFER TO SITE PLANS PREPARED BY JONES & BEACH ENGINEERS, INC.

SIGN LEGEND	
R1–1	STOP
R4–7	

40 0 40 80
SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM JONES & BEACH ENGINEERS, INC.

FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	INCREASED SHOULDER WIDTH TO 5' MINIMUM.	6/3/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY: BG	DATE: 5/5/16
DRAWN BY: JTG	SCALE: 1" = 40'
CHECKED BY: JSD	SHEET 2 OF 5

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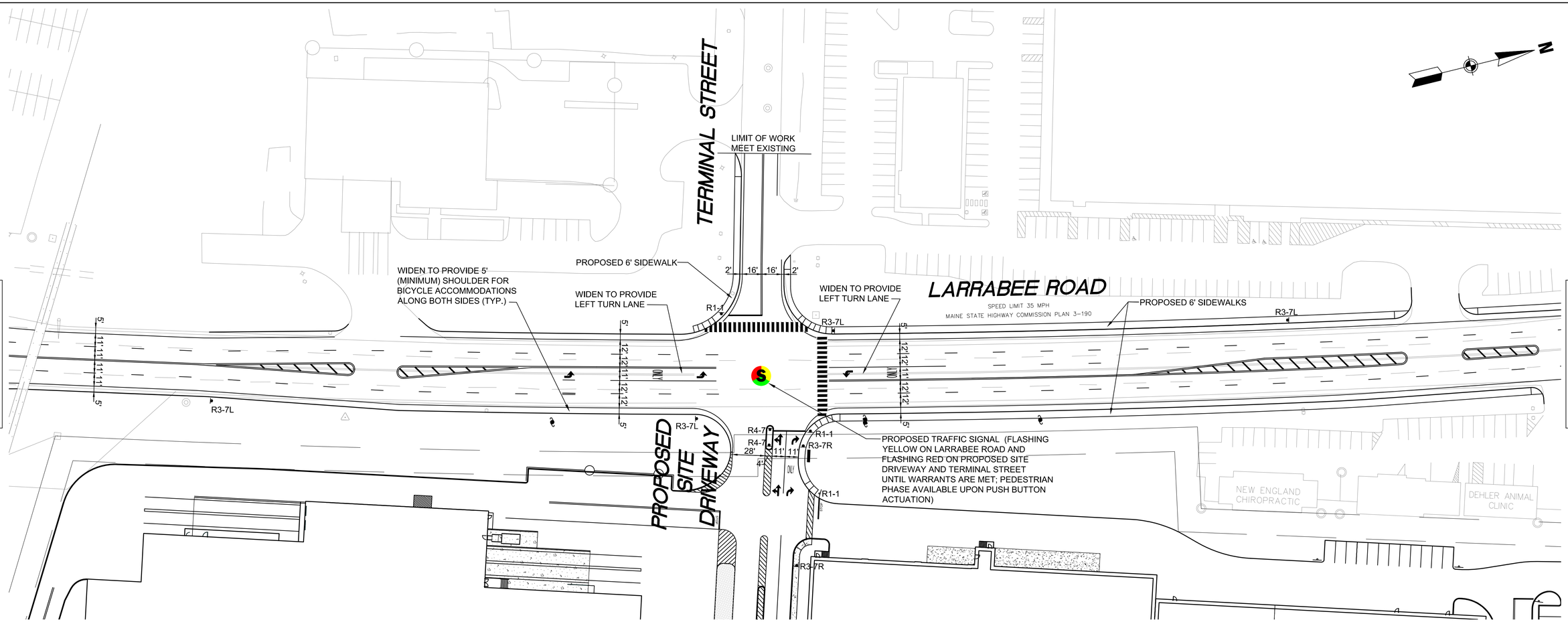

REFER TO SITE PLANS PREPARED BY JONES & BEACH ENGINEERS, INC.

SIGN LEGEND	
R1-1	STOP
R4-7	
R3-7R	RIGHT LANE MUST TURN RIGHT
R3-7L	LEFT LANE MUST TURN LEFT

40 0 40 80
SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM JONES & BEACH ENGINEERS, INC.

FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	ADDED SIDEWALKS AND INCREASED SHOULDER WIDTHS TO 5' MINIMUM.	6/3/16
2.	REVISED PER MDOT AND CITY OF WESTBROOK COMMENTS	9/13/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY: BG	DATE: 5/5/16
DRAWN BY: JTG	SCALE: 1" = 40'
CHECKED BY: JSD	SHEET 3 OF 5

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N

LIMIT OF WORK
MEET EXISTING

LARRABEE ROAD (ROUTE 25)
SPEED LIMIT 35 MPH
MAINE STATE HIGHWAY COMMISSION PLAN 3-190

R3-7R

R4-7

PROPOSED 6' SIDEWALK

MODIFY EXISTING RIGHT TURN LANE AND REMOVE EXISTING RAISED ISLAND

REPLACE EXISTING TRAFFIC SIGNAL SYSTEM PURSUANT TO PACTS, MDOT AND CITY OF WESTBROOK SPECIFICATIONS TO ACCOMMODATE PROPOSED GEOMETRY AND INCORPORATE PEDESTRIAN EQUIPMENT; INTERCONNECT AND COORDINATE WITH ADJACENT TRAFFIC SIGNALS

WIDEN TO PROVIDE 4' (MINIMUM) SHOULDER FOR BICYCLE ACCOMMODATIONS (TYP.)

PROPOSED ADA STANDARD WHEELCHAIR RAMP WITH DETECTABLE WARNING PANEL (TYP.)

WIDEN TO PROVIDE 4' (MINIMUM) SHOULDER FOR BICYCLE ACCOMMODATIONS ALONG BOTH SIDES (TYP.)

REBUILD AND WIDEN EXISTING RAISED MEDIAN TO ACCOMMODATE LANDSCAPING (TYP.)

MODIFY EXISTING RIGHT TURN LANE AND REMOVE EXISTING RAISED ISLAND

PROPOSED 6' SIDEWALKS

WIDEN TO PROVIDE 5' (MINIMUM) SHOULDER FOR BICYCLE ACCOMMODATIONS ALONG BOTH SIDES (TYP.)

W11-1, W16-1P

R3-7L

R4-11

ROWE FORD

MIDAS

MAIN STREET (ROUTE 25B)
SPEED LIMIT 35 MPH
MAINE STATE HIGHWAY COMMISSION PLAN 3-165

LIMIT OF WORK
MEET EXISTING

MAIN STREET (ROUTE 25B)
SPEED LIMIT 35 MPH
MAINE STATE HIGHWAY COMMISSION PLAN 3-165

PROPOSED SIDEWALK (6' MINIMUM)

LOADING

SEE SHEET 5 OF 5

SEE SHEET 3 OF 5

SIGN LEGEND			
R3-7R	RIGHT LANE MUST TURN RIGHT	R4-11	MAY USE FULL LANE
R3-7L	LEFT LANE MUST TURN LEFT	W11-1	
R4-7		W16-1	SHARE THE ROAD

40 0 40 80
SCALE IN FEET

REFER TO SITE PLANS PREPARED BY JONES & BEACH ENGINEERS, INC.

NOTES: 1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.

2. BASE PLAN INFORMATION OBTAINED FROM JONES & BEACH ENGINEERS, INC.

FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	ADDED BICYCLE LANES AND INCREASED MEDIAN WIDTHS	6/3/16
2.	REVISED PER MDOT AND CITY OF WESTBOOK COMMENTS	9/13/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY:	BG
DRAWN BY:	JTG
CHECKED BY:	JSD
DATE:	5/5/16
SCALE:	1" = 40'
SHEET	4 OF 5

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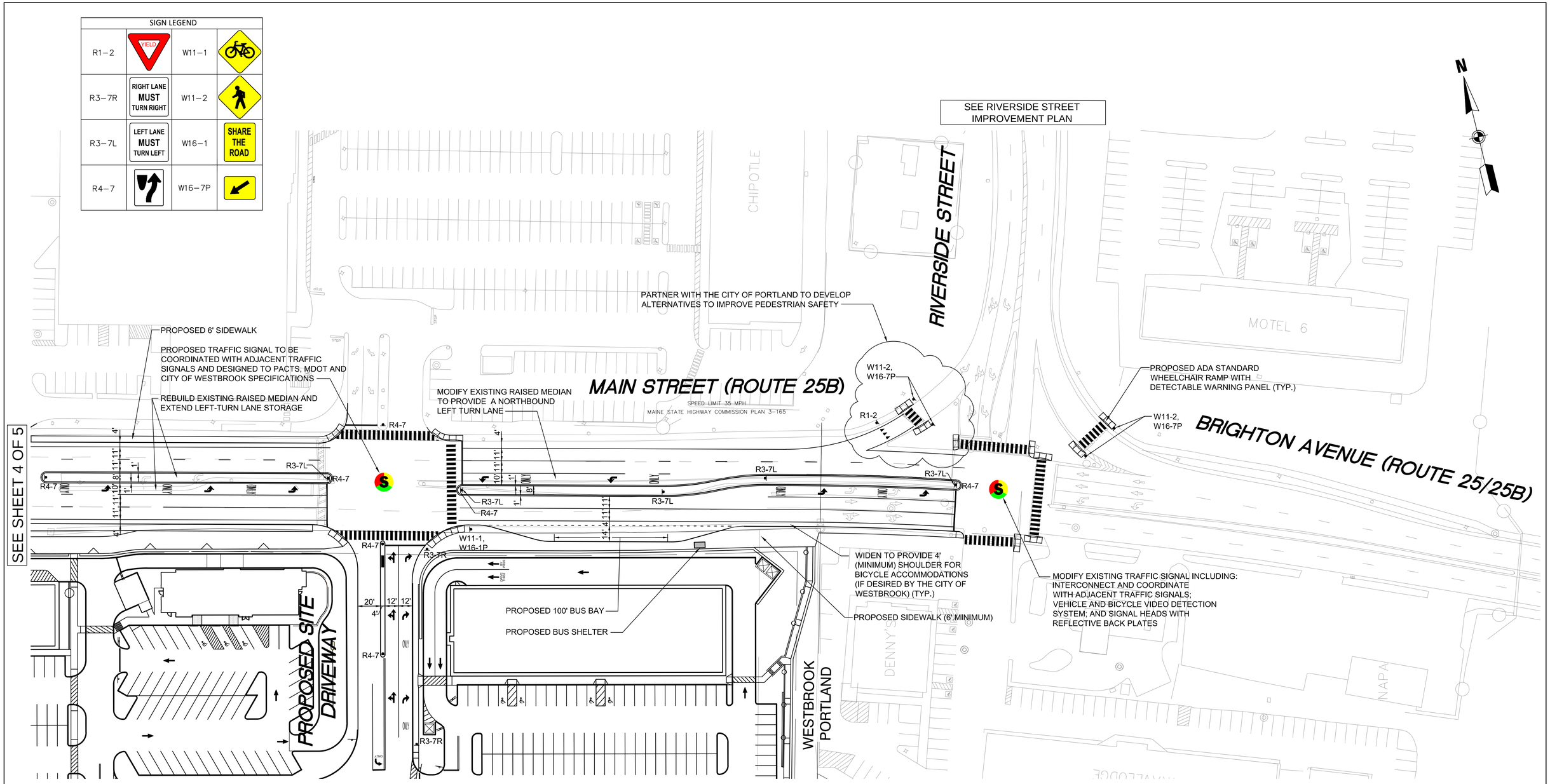
SIGN LEGEND			
R1–2	YIELD	W11–1	
R3–7R	RIGHT LANE MUST TURN RIGHT	W11–2	
R3–7L	LEFT LANE MUST TURN LEFT	W16–1	SHARE THE ROAD
R4–7		W16–7P	



REFER TO SITE PLANS PREPARED BY JONES & BEACH ENGINEERS, INC.

40 0 40 80
SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM JONES & BEACH ENGINEERS, INC.

FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	ADDED BICYCLE LANES AND INCREASED MEDIAN WIDTHS	6/3/16
2.	ADDED 100' BUS BAY AND BUS SHELTER	8/3/16
3.	INCORPORATE CITY OF PORTLAND COMMENTS	9/6/16
4.	REVISED PER MDOT AND CITY OF WESTBROOK COMMENTS	9/13/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY:	BG	DATE:	5/5/16
DRAWN BY:	JTG	SCALE:	1" = 40'
CHECKED BY:	JSD	SHEET	5 OF 5

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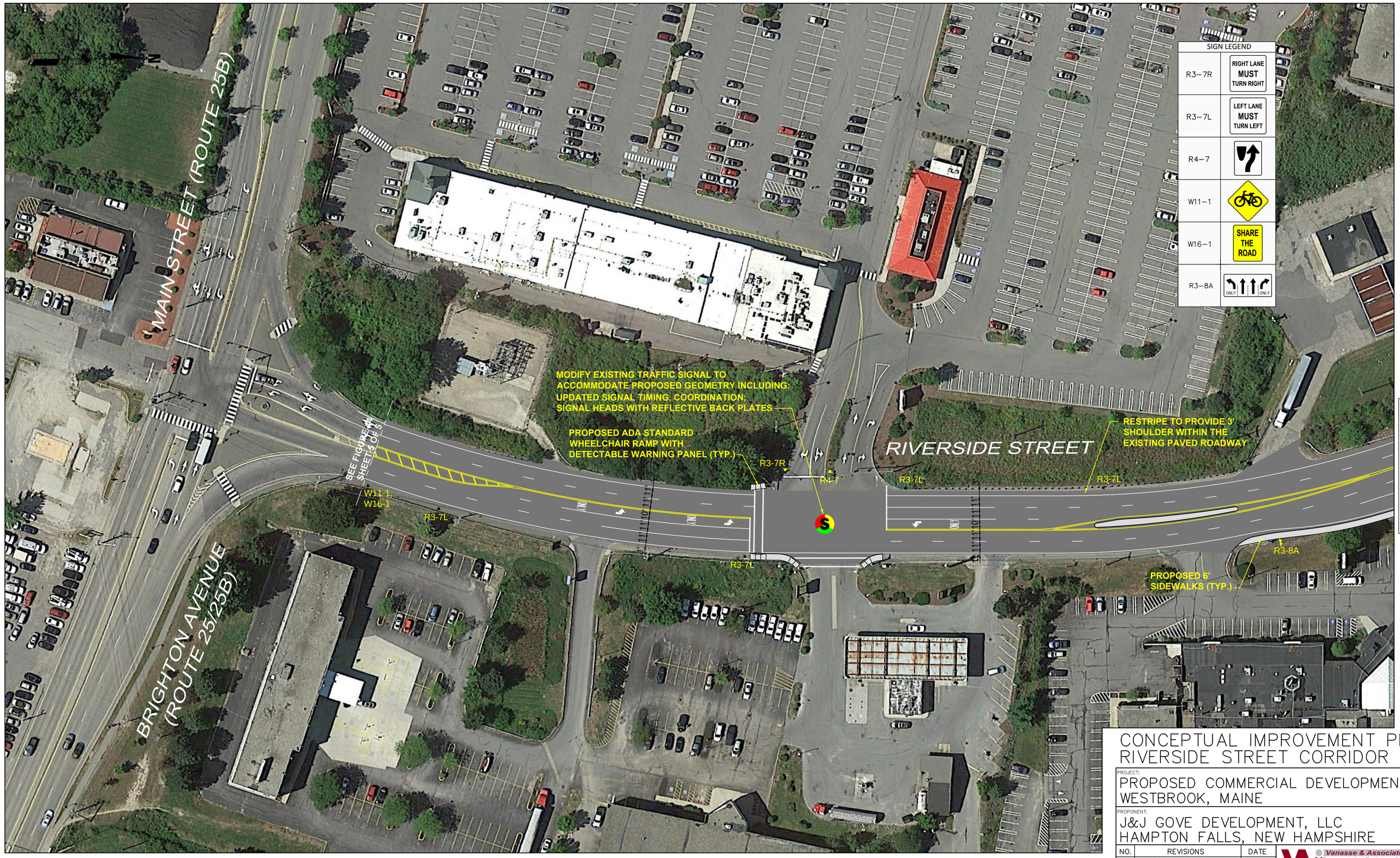

SEE SHEET 2 OF 2

40 0 40 80
SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM GOOGLE EARTH.

CONCEPTUAL IMPROVEMENT PLAN RIVERSIDE STREET CORRIDOR

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	INCORPORATE CITY OF PORTLAND COMMENTS.	9/6/16
2.	INCORPORATE MDOT CITY OF PORTLAND COMMENTS.	9/15/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY:	BG	DATE:	6/10/16
DRAWN BY:	JTG	SCALE:	1" = 40'
CHECKED BY:	JSD	SHEET	2 OF 2

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[*Staff Note*: These are The Applicant's updated comments (dated 10/6/16) on the MaineDOT draft Traffic Movement Permit (dated 9/20/16).]

Applicant:	Dirigo Center Developments, LLC 7 Swain Drive Hampton Falls, NH 03844
Project Location:	Main Street / Larrabee Road / Westbrook Arterial, Westbrook, ME Westbrook Tax Map #32 Lot(s) #46-47
Project:	Commercial Shopping Center
Identification #:	Reg. 01-00185-A-N
Permit Category:	200 Plus PCE
Traffic Engineer:	Vanasse & Associates, Inc. Attn: ~~Jeffery~~ Jeffrey S. Dirk, PE 35 New England Business Center Drive, Suite 140 Andover, MA 01810-1071

Pursuant to the provision of 23 M.R.S.A. § 704-A and Chapter 305 of the MaineDOT's Regulations, the Maine Department of Transportation has considered the application of J & J Gove Development, LLC with supportive data, agency review and other related materials on file.

PROJECT DESCRIPTION

The project consists of ~~550~~500,000 SF of mixed-use retail development. Access to the site is via four full movement entrances, one signalized entrance on Main Street, one signalized entrance on Larrabee Road, one stop-controlled entrance on Larrabee Road and one signalized entrance on the Westbrook Arterial. The project is estimated to generate 1,853 trip ends during a typical Saturday peak hour and 1,217 trips during a typical weekday PM peak hour.

Findings

Based on a review of the files and related information, MaineDOT approves the Traffic Movement Permit Application of J & J Gove Development, LLC subject to the following conditions:

MITIGATION

The mitigation is intended to describe that conceptually shown on the following plans provided by Vanasse & Associates, Inc. and Jones & Beach Engineers, Inc.:

1. "Conceptual Improvement Plan Riverside Street Corridor" Last Rev ~~6-10-16~~9-15-16
2. "Conceptual Improvement Plan Riverside Street At Larrabee Road and I-95 Exit 48 Ramps" Last Rev ~~6-10-16~~9-22-16
3. "Rand Road At I-95 Exit 47 Ramps Conceptual Improvement Plan" Last Rev ~~6-10-16~~9-13-16
4. "Figure 14 Conceptual Improvement Plan" Sheets 1 thru 5, Last Rev 9-~~6~~22-16

5. "Stroudwater Street At Forest Street Conceptual Improvement Plan" Last Rev ~~6-3~~9-13-16
6. "~~Cumberland Street At Bridge Street~~Stroudwater Street at Forest Street Conceptual Improvement Plan" Last Rev ~~6-3-16~~9-13-16

If the descriptions contained herein conflict with the plans, these descriptions shall take precedence over the plans. Not all of the mitigation discussed herein maybe shown on those or any plan. The following mitigation shall be constructed or implemented to MaineDOT's satisfaction prior to the opening of the facility, unless otherwise approved by MaineDOT.

All proposed traffic signals and traffic signal upgrades shall be designed and specified to be in compliance with the PACTS, City of Westbrook, City of Portland and MaineDOT traffic signal specifications. All traffic signals will be fully-functional, integrated and have full communications with the PACTS existing Streetwise ATMS.

On-Site Mitigation

Site Entrance / Main Street (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings. All markings shall be supplied, installed/painted and maintained yearly.

Modify raised median to accommodate dedicated left-turn pocket on Main Street to the site entrance with appropriate storage lengths and tapers.

Reconstruct sidewalks to meet ADA requirements.

Install new fully actuated traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire (fiber optic) interconnect to the signal at Main and Larrabee Rd. and the signal at Main St. and Riverside St.

Site Entrance / Larrabee @ Terminal Street (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

Construct a dedicated left-turn pocket into site entrance and Terminal Street with appropriate storage lengths and tapers.

Widen Larrabee Road to provide five-foot shoulders to accommodate bicycle ~~lanes~~ travel for both directions of travel.

Provide six-foot sidewalks along both sides of Larrabee Road.

Install new fully actuated traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. The traffic signal shall be set to flash until MUTCD traffic signal warrants are met. Install a hardwire interconnect to the signal at Main and Larrabee Rd. and the signal at Larrabee Rd. and Westbrook Arterial.

Site Entrance / Larrabee @ Saunders Way (Unsignalized)
The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have a STOP bar and all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

Construct a dedicated left-turn pocket into site entrance and Saunders Way with appropriate storage lengths and tapers.

Site Entrance / Westbrook Arterial (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

Construct a dedicated left-turn pocket into site entrance with appropriate storage lengths and tapers. Construct a dedicated right-turn pocket into the site entrance with appropriate storage lengths and tapers.

Install new traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Westbrook Arterial and Larrabee Rd. and extending thereafter to the signal at Westbrook Arterial (Rand Rd.) and Exit 47 ramps to the extent that an overhead hardwire interconnect can feasibly be provided. If a hardwire interconnect cannot be provided to Exit 47, a communications link will be provided within the traffic signal controller at Exit 47 to allow remote access to the traffic signal system by PACTS.

General Requirements For All Entrances

A. The entrances shall provide overhead illumination, if not existing, to illuminate the intersections per MaineDOT standards at a minimum. Overhead lighting shall have an average of 0.6 to 1.0 foot candles, with the maximum to minimum lighting ratio of not more than 10:1 and an average to minimum light level of not more than 4:1.

Off-Site Mitigation

Optimize traffic signal timings in the coordinated system on Riverside St / Main St / Brighton Ave.

Riverside Street

Intersection of Riverside St / Larrabee Rd (Exit 48)

Construct a second dedicated left-turn lane on the Riverside southbound approach to Exit 48. Restripe the southbound approach to include two dedicated left-turn lanes, a dedicated thru lane and a share thru-right lane. Lane widths shall be a minimum of 11 feet.

Install appropriate overhead lane-usage signs for the Riverside southbound approach both in advance of the intersection and at the intersection. Install appropriate lane-use signs at the intersection for the other intersection approaches.

Subject to the availability of public right-of-way and if so directed by MaineDOT, ~~C~~construct a second left-turn lane on Larrabee Road.

Remove channelizing island for the right-turn movements from the Riverside Street northbound approach and the I-95 exit ramp. Construct a right turn lane with appropriate length and Taper

Reconstruct the traffic signal system to accommodate the new geometry and ~~interconnect~~ installation of conduit to the toll plaza to facilitate ramp pre-emption. Provide overlap phasing when possible.

Design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Main and Larrabee Rd.

Note: Work on Maine Turnpike Authority (MTA) property requires an MTA work permit and MTA review.

Intersection of Riverside St / Forest Ave

Design and implement an optimal traffic signal timing, phasing and coordination plan.

Intersection of Riverside St / Warren Ave

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Provide design plans to the City of Portland for minor geometric and traffic signal improvements that will be constructed by the City.

Intersection of Riverside St / Home Depot

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Intersection of Riverside St / Home Depot

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Provide design plans to the City of Portland for minor geometric and traffic signal improvements that will be constructed by the City.

Intersection of Riverside St / Brighton Ave / Main St

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections. Update signal heads with reflective back plates and install thermal detection in accordance with City of Portland standards.

Segment between Riverside Court (Berlin City) and Exit 48

Restripe to provide a two-way left-turn lane.

Construct sidewalk along the west side of Riverside, eliminating existing sidewalk gaps.

Segment between Exit 48 / Brighton Ave

Construct sidewalk along the east side of Riverside, eliminating existing sidewalk gaps.

Main Street

Intersection of Main St / Larrabee Rd

Remove existing raised triangular islands from Larrabee approaches to Main Street. Construct a dedicated right-turn pocket~~s~~ on the Larrabee Road southbound approach~~es~~ to Main Street with appropriate storage length~~s~~ and taper~~s~~.

Provide ADA improvements to the sidewalks and signal equipment. Provide a hardwire (fiber optic) interconnect between adjacent intersections.

Upgrade traffic signal equipment, design and implement an optimal traffic signal timing, phasing and coordination plan.

Westbrook Arterial

Intersection of Rand Rd / Westbrook Arterial (Exit 47)

Widen I-95 ramp to provide a second left-turn lane to the Westbrook Arterial. Widen Rand Road to accept the dual-left turn lanes.

Install a raised median~~s~~ along the Rand Road eastbound approach~~ing~~ to the intersection.

Upgrade traffic signal equipment, design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire or wireless interconnect to the adjacent intersection at the site entrance at Westbrook Arterial to the extent that an overhead hardwire interconnect can feasibly be provided. If a hardwire interconnect cannot be provided to Exit 47, a communications link will be provided within the traffic signal controller at Exit 47 to allow remote access to the traffic signal system by PACTS.

Note: Work on Maine Turnpike Authority (MTA) property requires an MTA work permit and MTA review.

William Clarke Drive

The applicant should design and implement an optimal traffic signal timing, phasing and coordination plan for the weekday and weekend post construction

Stroudwater Street

Construct a dedicated left-turn lane on Stroudwater Street to Forest Street and reconstruct the sidewalk and crosswalk for crossing Stroudwater Street at Forest Street as necessary to provide an ADA compliant crossing at the intersection.

Overall Requirements

A. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to MaineDOT and/or National standards.

B. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall meet MRSA Title 23, Chapter 21, Section 1914: "On-Premise Signs".

C. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from MaineDOT a decision of what impacts those changes will have on the permit. The applicant will then be required to submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.

By:

_____
Stephen Landry, P.E.
State Traffic Engineer

Date: _____

Vanasse & Associates, Inc.
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066
Office 978-474-8800
Fax 978-688-6508
Web: www.rdva.com

Ref: 6846

October 5, 2016

Ms. Elizabeth Boepple, Chair
City of Portland Planning Board
389 Congress Street, 4th Floor
Portland, ME 04101

Attn: Ms. Barbara Barhydt, Development Review Services Manager

Re: Response to Staff Comments
Dirigo Plaza - Main Street Westbrook, 1190 Brighton Avenue
Project No. 2016-073; CBL: 264-A002

Dear Chair Boepple and Members of the Portland Planning Board:

Vanasse & Associates, Inc. (VAI) is providing responses to the staff comments that were raised in the September 23, 2016 memorandum from the Planning Division of the Planning and Urban Development Department concerning the Dirigo Plaza mixed-use commercial development to be located on an assemblage of parcels bounded by Main Street (Route 25B), Westbrook Arterial, and Larrabee Road, in Westbrook, Maine (hereafter referred to as the "Project"). Specifically, we are responding to the Staff comments concerning the MaineDOT Traffic Movement Permit and the associated elements of the transportation improvement program. Listed below are each of the Staff comments identified in the subject memorandum followed by our response on behalf of the Applicant.

Traffic Movement Permit Process

Proposed MaineDOT Draft TMP-required Off-site Improvements

Riverside Street

Intersection of Riverside St / Larrabee Rd (Exit 48)

Portland Staff Comment: at the City of Portland's request, the need for this second left turn lane is being evaluated for its necessity and impacts to LOS if not required. Its presence greatly impacts the size of the intersection, degrading pedestrian crossings and impacting traffic signal timing. City staff also urges the consideration of Lead Pedestrian Interval phasing to improve the safety and comfort of pedestrian crossings.

Response: The Applicant concurs with City Staff that provision of the second left-turn lane on the Larrabee Road approach to Riverside Street, while desirable, is not necessary to achieve improved operating conditions and enhanced safety at the intersection. With the elimination of the second left-turn lane, overall intersection operations will be improved to a level-of-service (LOS) of "D" or better (considered "acceptable" operating conditions) with the balance of the planned improvements, noting that the Larrabee Road

approach would operate at LOS D during the weekday evening peak-hour and at LOS E during the Saturday midday peak-hour with predicted vehicle queues of 251 feet and 386 feet respectively. These predicted operating conditions with the elimination of the second Larrabee Road left-turn lane continue to represent a general improvement over current conditions. Accordingly and pending concurrence from MaineDOT, **the Applicant agrees that the second left-turn lane on Larrabee Road should be removed from the planned improvements at the subject intersection given the resulting negative impacts to pedestrian and bicycle accommodations. In addition, the Applicant will include lead pedestrian interval as a part of the planned traffic signal timing plan for the intersection.**

Intersection of Riverside St / Warren Ave

Portland Staff Note: The applicant, in subsequent comments to the MaineDOT, suggests a wireless or hardwire interconnect at this location. City staff urges hardwire interconnect be provided due to the problems/maintenance issues that can be associated with wireless systems. Also, the optimal timing plan should include adjustment of the westbound Warren Avenue approach to consist of two left turn lanes, and a shared through/right turn lane, as well as related signal head adjustments (if needed). This is described more fully in non-TMP-related items further below.

Response: **The Applicant agrees to provide a hardwire interconnect along the Riverside Street corridor** to include the intersection of Riverside Street at Warren Avenue. Based on discussions with City Staff, the interconnect will include a combination of overhead and underground cable, with underground cable to be provided where new traffic signal conduit is to be installed. In addition, **the Applicant will develop an optimal traffic signal timing and coordination plan that will reflect the adjustment of the westbound Warren Avenue approach to consist of two left turn lanes and a shared through/right turn lane, as well as related signal head adjustments.**

Intersection of Riverside St / Home Depot

Portland Staff Note: The applicant, in subsequent comments to the MaineDOT, suggests a wireless or hardwire interconnect at this location. City staff urges hardwire interconnect be provided due to the problems/maintenance issues that can be associated with wireless systems. Also, the TMP should require design plans for minor geometric and traffic signal improvements, which include updates to pedestrian equipment and ADA accommodations. The applicant suggests "partnering" with the City to provide these upgrades.

Response: **The Applicant agrees to provide a hardwire interconnect along the Riverside Street corridor** to include the intersection of Riverside Street at The Home Depot driveway. Based on discussions with City Staff, the interconnect will include a combination of overhead and underground cable, with underground cable to be provided where new traffic signal conduit is to be installed. In addition, **the Applicant will work with the City to prepare design plans for minor geometric and traffic signal improvements at this intersection, which will include updates to pedestrian equipment and ADA accommodations that will be constructed by the City.**

Intersection of Riverside St / Brighton Ave / Main St

Portland Staff Note: The TMP should require updated signal heads with reflective back plates (as proposed on the applicant's Conceptual Improvement Plan, Sheet 4 of 5), and updated thermal (not video) detection to the City's standard.

Response: **The Applicant agrees to include the requested traffic signal equipment upgrades** as a part of the improvements that are to be implemented at the intersection of Riverside Street at Brighton Avenue and Main Street.

Intersection of Rand Rd / Westbrook Arterial (Exit 47)

Portland Staff Note: City staff strongly prefers hardwire interconnects where they are feasible to be provided.

Response: **The Applicant agrees to provide hardwire interconnect along Westbrook Arterial between Larrabee Road and Rand Road/Westbrook Arterial (Exit 47) to the extent feasible.** Should such accommodations be deemed infeasible as a result of excessive cost or other conditions, the Applicant will install a communications link to the traffic signal controller at the Rand Road/Exit 47 intersection to allow remote access to the traffic signal system.

We trust that this information is responsive to the Staff comments that were raised in the September 23, 2016 memorandum concerning the Project. If you should have any questions or would like to discuss our responses in more detail, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.

Jeffrey S. Dirk

Jeffrey S. Dirk, P.E., PTOE, FITE
Principal

JSD/jsd

cc: B. Hyman – Planning & Urban Development Department, Transportation Program Manager (via email)
J. Gove – J&J Gove Development, LLC (via email)
J. Katsiaficas, Esquire – Perkins Thompson (via email)
W. Morrill – Jones & Beach Engineers, Inc. (via email)
BG, File

LICENSE REVIEW ROUTING SHEET

PROJECT MANAGER: Robert L. Green, Jr.
ORDER TYPE:

					DRAFT
X	ORIGINAL ORDER (N)		CONDITION COMPLIANCE (C)	X	3PI
	MINOR REVISION (M)		TRANSFER (T)	X	SEND TO REGISTRY
	AMENDMENT (A)		AFTER-THE-FACT		CORRECTED ORDER

All Site Orders **must** be sent to the registry.

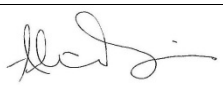
APPLICANT NAME:	Dirigo Center Developers, LLC C/o Jeffrey Gove			
APPLICANT ADDRESS:	7 Swain Drive Hampton Falls, NH 03844	FAX#:		
E-MAIL ADDRESS: (License will be e-mailed to this address when decision is made)		jeffreygove@yahoo.com		
PROJECT LOCATION:	City of Westbrook Cumberland County	PROJECT #		L-02734-23-C-N L-02734-TG-D-N
APPLICATION TYPE:(Use Site/NRPA or NRPA/SW)		Site/NRPA	ATS#:	80316, 80317
ISSUES/COMMENTS:				
ACCEPTANCE DATE:	March 18, 2016			
AGENT NAME:	Wayne Morrill, PE, Jones & Beach Engineers, Inc.			
AGENT ADDRESS:	85 Portsmouth Avenue Stratham, NH 03885	FAX#		
E-MAIL ADDRESS: (License will be e-mailed to this address when decision is made)		wmorrill@jonesandbeach.com		

Final copies of Site orders go automatically to the **Registry**, **Town & IFW.** List others to receive a copy here:

Jennie Franceschi Westbrook city Engineer jfranceschi@westbrook.me.us		

ABSTRACT

- *Dirigo Center Developers, LLC (Westbrook) (approval):* In Department Order #L-02734-23-C-N/L-02734-TG-D-N, the Department approved the development of Dirigo Plaza, commercial and retail center located on an 82-acre parcel. The project will result in the creation of approximately 52.6 acres of new developed area of which approximately 43.3 acres will be impervious area. The project is located between the Westbrook Arterial, Larrabee Road, and Main Street in the City of Westbrook. *(Green)*

REVIEWED BY:	SIGNATURE	OK DATE
ENFORCEMENT STAFF (if enforcement involved):		
REGIONAL SUPER:		**10/7/16**
Ret'd to PROJ. MGR:		
Div. Director:		

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

PAUL MERCER
COMMISSIONER

October 2016

Dirigo Center Developers, LLC
C/o Jeffrey Gove
7 Swain Drive
Hampton Falls, NH 03844

RE: Site Location of Development Act and Natural Resources Protection Act Applications
Westbrook, DEP #L-02734-23-C-N/L-02734-TG-D-N

Dear Mr. Gove:

Please find enclosed a signed copy of your Department of Environmental Protection land use permit. You will note that the permit includes a description of your project, findings of fact that relate to the approval criteria the Department used in evaluating your project, and conditions that are based on those findings and the particulars of your project. Please take several moments to read your permit carefully, paying particular attention to the conditions of the approval. The Department reviews every application thoroughly and strives to formulate reasonable conditions of approval within the context of the Department's environmental laws. You will also find attached some materials that describe the Department's appeal procedures for your information.

If you have any questions about the permit or thoughts on how the Department processed this application please get in touch with me directly. I can be reached at 207- 822-6300 or at robert.green@maine.gov

Sincerely,

Robert L. Green, Jr.

Robert L. Green, Jr., Project Manager
Bureau of Land Resources

pc: File

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

web site: www.maine.gov/dep

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

IN THE MATTER OF

DIRIGO CENTER DEVELOPERS, LLC	) SITE LOCATION OF DEVELOPMENT ACT
Westbrook, Cumberland County	) NATURAL RESOURCES PROTECTION ACT
DIRIGO PLAZA	) FRESHWATER WETLAND ALTERATION
L-02734-23-C-N (approval)	) WATER QUALITY CERTIFICATION
L-02734-TG-D-N (approval)	) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S. Sections 481 et seq. and 480-A et seq., and Section 401 of the Federal Water Pollution Control Act, the Department of Environmental Protection has considered the application of DIRIGO CENTER DEVELOPERS, LLC with the supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. History of Project: In Department Order #L-02734-14-A-X dated October 10, 1971, the Department approved the development of a quartzite stone quarry. In Department Order #L-02734-80-B-T dated May 25, 2006, the Department approved the transfer of the quarry from Blue Rock Industries to Pike Industries, Inc. The development covers an area of approximately 82 acres. Activities that were conducted on site include open pit mining, rock crushing, asphalt recycling, and concrete mixing. The quarry pit lies along the municipal boundaries of the Cities of Westbrook and Portland. Development on the parcel is located in the City of Westbrook and bounded by the Westbrook Arterial, Larrabee Road, Main Street (Westbrook) and Interstate I-95.

B. Summary: The applicant proposes to redevelop the 82-acre parcel with approximately 490,000 square feet of mixed use retail and restaurant space. The parcel is bisected by a Maine Central Railroad line that divides the proposed project into a North and South Campus. The North Campus will include eight buildings covering approximately 305,300 square feet, seven parking areas, and access roads. The South Campus will include two buildings covering approximately 186,600 square feet, three parking areas, and access roads. Overall, the proposed project will result in the creation of approximately 52.6 acres of new developed area of which 43.3 acres will be new impervious area. The proposed project is shown on a set of plans, the first of which is entitled “Commercial Development: Dirigo Plaza,” prepared by Jones & Beach Engineers, Inc., and dated October 20, 2015, with a last revision date of October 7, 2016. The project site is located between the Westbrook Arterial, Larrabee Road, and Main Street in the City of Westbrook. No new development is proposed for the portion of the site located within the City of Portland.

The applicant is also seeking approval under the Natural Resources Protection Act (NRPA) to alter approximately 64,218 square feet of freshwater wetlands at five locations and the replacement of an existing culvert crossing of for Nason Brook.

C. Current Use of Site: The site of the proposed project is currently developed with an open pit quarry, the remains of asphalt recycling and concrete mixing operations, staging areas for construction material, parking lots, and an administrative office building. Approximately seven acres of undeveloped woodland and freshwater wetlands are located at the southeastern corner of the parcel.

2. FINANCIAL CAPACITY:

The total cost of the project is estimated to be $70,500,000. The applicant submitted a letter from The Washington Trust Company (a commercial lending institution), dated August 20, 2015 indicating that it intends to provide financing for this project.

The Department finds that the applicant has demonstrated adequate financial capacity to comply with Department standards.

3. TECHNICAL ABILITY:

The applicant provided resume information for key persons involved with the project and a list of projects successfully constructed by the applicant. The applicant also retained the services of Jones & Beach Engineering, Inc., a professional engineering firm, and Gove Environmental Services, Inc. to assist in the design and engineering of the project.

The Department finds that the applicant has demonstrated adequate technical ability to comply with Department standards.

4. NOISE:

The project site is located adjacent to a heavily travelled, commercially developed section of Westbrook. The proposed project will generate minor noise sources associated with traffic moving through the project site. The applicant proposes to comply with the City of Westbrook's Noise Ordinance, including during construction of the project.

Based on the information contained in the application, the Department anticipates that the project will have a minor sound impact and will be in compliance with the Department's Noise Rules, Chapter 375(10).

5. SCENIC CHARACTER:

The project site is located between the Westbrook Arterial, Larrabee Road, and Main Street, which are busy travel routes. The adjacent land uses are commercial in nature. The access roads through the project site will be planted with ornamental trees and shrubs. A landscape plan was submitted that depicts the plantings for the site. The

photometric model shown on the Lighting Plans indicate that light intensities of 0.5 foot-candles will not intrude beyond the project site, except for those buildings that front Main Street.

The quarry pit will be allowed to fill with water and will serve as a visual attraction. The applicant proposes to construct a bituminous asphalt path with security fencing around the pond. Trees, shrubs, and ground cover will be planted along developed portions of the new pond edge for enhancement.

Based on the project's location and design, the Department finds that the proposed project will not have an unreasonable adverse effect on the scenic character of the surrounding area.

6. WILDLIFE AND FISHERIES:

The Maine Department of Inland Fisheries and Wildlife (MDIFW) reviewed the proposed project. In its comments, MDIFW stated that it found no records of any Essential or Significant Wildlife Habitats, or other wildlife habitats of special concern associated with this site. MDIFW visited the site on July 14, 2015, September 11, 2015 and September 17, 2015 to determine if New England cottontail were present on the site. Game cameras did not capture evidence that this species of rabbit was present. Based on this information and that the site does not have suitable habitat for New England cottontail , MDIFW concluded that the proposed project will not have a significant impact to New England cottontail or its habitat.

To address potential stream impacts, the applicant proposes to maintain 100-foot wide undisturbed buffers along both sides of Nason Brook which flows west to east through the middle of the South Campus. Protection of the stream buffers is outlined in Finding 8.

An existing 60-inch concrete culvert in Nason Brook will be replaced with a 17-foot wide, open-bottomed, precast concrete culvert. MDIFW recommended that the proposed instream work must be performed during low water from July 15 to October 1 of any calendar year. All work within 100 feet of the streams must be permanently stabilized by October 1 or the applicant must implement and maintain overwinter stabilization prior to November 1 in accordance with the Maine Erosion and Sediment Control BMP Manual. No other fisheries concerns were identified.

The Department finds that the applicant has made adequate provision for the protection of wildlife and fisheries provided that all instream work is performed from July 15 to October 1 of any calendar year.

7. HISTORIC SITES AND UNUSUAL NATURAL AREAS:

The Maine Historic Preservation Commission reviewed the proposed project and stated that it will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

The Maine Natural Areas Program database does not contain any records documenting the existence of rare or unique botanical features on the project site and, as discussed in Finding 6, MDIFW did not identify any unusual wildlife habitats located on the project site.

The Department finds that the proposed development will not have an adverse effect on the preservation of any historic sites or unusual natural areas either on or near the development site.

8. BUFFER STRIPS:

The applicant proposes to provide no-disturbance buffers for the protection of Nason Brook as discussed in Finding 6. The applicant proposes to use the deed restriction language for forested, no-disturbance buffers and meadow buffers contained in the Stormwater Rules, Chapter 500, Appendix G, to protect the stream buffers discussed in Finding 6.

Prior to the start of construction of the South Campus, the location of the stream buffers must be permanently marked on the ground. The applicant must execute and record all required deed restrictions, including the appropriate buffer deed restrictions, within 60 days of the date of this Order and must submit a copy of the recorded deed restriction, including the plot plan, to the Bureau of Land Resources (BLR) within 60 days of its recording.

Provided buffer areas are protected from future disturbance as outlined above, the Department finds that the applicant has made adequate provision for buffer strips.

9. SOILS:

The applicant submitted a soil survey map and report, prepared by a certified soils scientist and a geotechnical report prepared by a registered professional engineer, based on the soils found at the project site. This material was reviewed by staff from the Division of Environmental Assessment (DEA) of the Bureau of Water Quality (BWQ).

The applicant indicated that blasting associated with construction of the project may be necessary and submitted a generic blasting plan in the application. DEA also reviewed a Blasting Plan (last revised August 2, 2016) submitted by the applicant and outlining the proposed procedures for removing ledge and recommended that the applicant be required to submit a site-specific Blasting Plan for blasting that occurs within 500 feet of non-owned off-site structures such as buildings and wells. Prior to the start of any blasting on

the project site, the applicant must submit a site map showing blast areas and a blasting plan to the BLR for review and approval. The blasting plan must be prepared by a qualified blaster and include the blasting standards contained in 38 M.R.S. § 490-Z(14), and the plan must include an anticipated blast design/shot pattern specifically tailored to the project.

If a rock crusher is being utilized on site, the applicant must ensure that the crusher is licensed by the Department's Bureau of Air Quality and is being operated in accordance with that license.

The Department finds that, based on these reports and Blasting Plan, and DEA's review, the soils on the project site present no limitations to the proposed project that cannot be overcome through standard engineering practices provided that a site-specific blasting plan is submitted for review and approval prior to commencement of blasting activities.

10. STORMWATER MANAGEMENT:

The proposed project includes approximately 52.6 acres of new developed area of which 43.3 acres will be new impervious area. The site lies within the watershed of Nason Brook, an urban impaired stream. The applicant submitted a stormwater management plan based on the Basic, General, Urban Impaired Stream, and Flooding standards contained in Department Rules, Chapter 500. The proposed stormwater management system consists of catch basins, subsurface drainage systems, 13 underdrained soil filters, three gravel wetland units, four Filterra units with chambered system, four Oldcastle sand filters with chambered systems, and 14 FocalPoint Biofiltration systems. The quarry pit will be allowed to fill with water and then used, in part, as a wet pond to provide stormwater detention.

A. Basic Standards:

(1) Erosion and Sedimentation Control: The applicant submitted an Erosion and Sedimentation Control Plan (Section 14 of the application) that is based on the performance standards contained in Appendix A of Chapter 500 and the Best Management Practices outlined in the Maine Erosion and Sediment Control BMPs, which were developed by the Department. This plan and plan sheets containing erosion control details were reviewed by, and revised in response to the comments of, the BLR.

Erosion control details will be included on the final construction plans and the erosion control narrative will be included in the project specifications to be provided to the construction contractor. Prior the start of construction, the applicant must conduct a pre-construction meeting to discuss the construction schedule and the erosion and sediment control plan with the appropriate parties. This meeting must be attended by the applicant's representative, Department staff, the design engineer, the contractor, and the third-party inspector.

Given the size and nature of the project site, the maximum area that may be exposed, and not temporarily or permanently stabilized, at any one time will be limited to no more than 10 acres, and the applicant must retain the services of a third party inspector in accordance with the Special Condition for Third Party Inspection Program, which is attached to this Order.

(2) Inspection and Maintenance: The applicant submitted a maintenance plan that addresses both short- and long-term maintenance requirements. The maintenance plan is based on the standards contained in Appendix B of Chapter 500. This plan was reviewed by, and revised in response to the comments of, BLR. The applicant will be responsible for the maintenance of all common facilities including the stormwater management system.

The application included executed long-term maintenance contracts (minimum of 5 years and renewable) for the on-going maintenance of the proprietary stormwater control structures.

Storm sewer grit and sediment materials removed from stormwater control structures during maintenance activities must be disposed of in compliance with the Maine Solid Waste Management Rules.

(3) Housekeeping: The proposed project will comply with the performance standards outlined in Appendix C of Chapter 500.

Based on BLR's review of the erosion and sedimentation control plan and the Based on BLR's review of the erosion and sedimentation control plan and the maintenance plan, the Department finds that the proposed project meets the Basic Standards contained in Chapter 500(4)(A) provided that a pre-construction meeting is held; the applicant retains the services of a third-party inspector; the maximum area that is exposed, and not temporarily or permanently stabilized; is limited to no more than 10 acres; and storm sewer grit and sediment are disposed as described above.

B. General Standards:

The applicant's stormwater management plan includes general treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. This mitigation is being achieved by using Best Management Practices (BMPs) that will control runoff from no less than 95% of the impervious area and no less than 80% of the developed area.

The stormwater management system proposed by the applicant was reviewed by, and revised in response to comments from, BLR. After a final review, BLR commented that the proposed stormwater management system is designed in accordance with the General Standards contained in Chapter 500(4)(B) and recommended the applicant retain its design engineer or other qualified professional engineer to oversee the construction of the

stormwater management structures according to the details and notes specified on the approved plans. Within 30 days of completion of the whole system or at least once per year, the applicant shall submit a log of inspection reports detailing the items inspected, photographs taken, and dates of each inspection to the BLR for review. The applicant must submit a log of inspection reports detailing the items inspected, photographs taken, and the date of each inspection to the BLR for review.

Based on the stormwater system's design and BLR's review, the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the General Standards contained in Chapter 500(4)(B) provided that a professional engineer is retained to oversee construction of the stormwater management structures as described above.

C. Urban Impaired Stream Standard:

The proposed project is in the watershed of Nason Brook, an urban impaired stream. The Department has approved a compensation fee utilization plan (CFUP) developed by the City of Portland to accept compensation fees to reduce the impact of stormwater pollution in the watershed of urban impaired streams. The proposed project will mitigate for portions of the existing impervious area; however, given the size of the new development, payment of a compensation fee will still be required. To comply with Chapter 500(4)(E)(2), the applicant proposes to submit a payment of $208,875 to the City of Portland to be utilized in accordance with the approved CFUP at other sites in the watershed.

Based on the payment of a compensation fee, the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the Chapter 500 Urban Impaired Stream Standard provided that prior to the start of construction, the applicant submits the compensation fee as described above.

D. Flooding Standard:

The applicant is proposing to utilize a stormwater management system based on estimates of pre- and post-development stormwater runoff flows obtained by using Hydrocad, a stormwater modeling software that utilizes the methodologies outlined in Technical Releases #55 and #20, U.S.D.A., Soil Conservation Service and detains stormwater from 24-hour storms of 2-, 10-, and 25-year frequency. The post-development peak flow from the site will not exceed the pre-development peak flow from the site.

BLR commented that the proposed system is designed in accordance with the Flooding Standard contained in Chapter 500(4)(F).

Based on the system's design and BLR's review, the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the Flooding Standard contained in Chapter 500(4)(F) for peak flow from the project site, and channel limits and runoff areas.

The Department further finds that the proposed project will meet the Chapter 500 standards for: (1) management of stormwater discharges; (2) discharge to freshwater wetlands; and (3) discharges to public storm sewer systems.

11. GROUNDWATER:

The project site is not located over a mapped sand and gravel aquifer. The proposed project does not propose any withdrawal from the groundwater.

The Department finds that the proposed project will not have an unreasonable adverse effect on ground water quality or quantity.

12. WATER SUPPLY:

Once complete, the proposed project is anticipated to use 47,500 gallons of water per day. Water will be supplied by the Portland Water District. The applicant submitted a letter from the District, dated January 19, 2016, indicating that it will be capable of servicing this project.

The Department finds that the applicant has made adequate provision for securing and maintaining a sufficient and healthful water supply.

13. WASTEWATER DISPOSAL:

Once complete, the proposed project is anticipated to discharge 47,500 gallons of wastewater per day to the City of Westbrook's wastewater treatment facility. The applicant submitted a letter from the City of Westbrook, dated March 17, 2016, stating that it will accept these flows. This project was reviewed by the Division of Water Quality Management (DWQM) of the BWQ, which commented that the City of Westbrook's wastewater treatment facility has the capacity to treat these flows and is operating in compliance with the water quality laws of the State of Maine.

Based on DWQM's comments, the Department finds that the applicant has made adequate provision for wastewater disposal at a facility that has the capacity to ensure satisfactory treatment.

14. SOLID WASTE:

Once complete, the proposed project is anticipated to generate 78.3 tons of recyclable material and 53.8 tons of municipal solid waste per month. All general solid wastes from the proposed project will be disposed of at Waste Management's Crossroads Landfill in Norridgewock, which is currently in substantial compliance with the Maine Solid Waste Management Rules.

The proposed project will generate an indeterminate amount of stumps and grubbings. All stumps and grubbings generated will be ground on site and the resulting material utilized for erosion control, in compliance with the Maine Solid Waste Management Rules.

The proposed project will generate approximately 3,263 cubic yards of construction debris and demolition debris. All construction and demolition debris generated will be disposed of at Waste Management's Crossroads Landfill in Norridgewock, which is currently in substantial compliance with the Maine Solid Waste Management Rules.

Based on the above information, the Department finds that the applicant has made adequate provision for solid waste disposal.

15. FLOODING:

The proposed project is not located within the 100-year flood plain of any river or stream.

The Department finds that the proposed project is unlikely to cause or increase flooding or cause an unreasonable flood hazard to any structure.

16. WETLAND IMPACTS:

The applicant proposes to directly alter 64,218 square feet (1.5 acres) of freshwater wetland at five locations to construct the proposed project. Wetland impacts are shown on the set of plans referenced in Finding 1. Given the disturbed nature of the project site, the undeveloped areas that include freshwater wetland are found in disconnected pockets throughout the site. Wetland impact #1 involves filling an approximately 21,000 square foot area located between existing buildings and a parking lot. This wetland drains into the city's storm sewer system. Wetland impact #2 is located along the Westbrook Arterial and drains into Nason Brook. This wetland is located at the proposed entrance into the site from the Westbrook Arterial. Traffic constraints, such as sight distance and an existing median, limit the southern entrance into the project site to this location. Wetland impacts #3 and #4 are located within the undeveloped area in the South Campus. Given the location of Nason Brook and the condition of disturbed soils in this portion of the site, building in the wetlands is unavoidable. Developing this area is necessary to ensure the financial feasibility of the overall project. Wetland impact #5 is located adjacent to Nason Brook and will be filled as a result of the construction of wingwalls associated with the new stream crossing.

In addition to the proposed wetland alterations, the applicant proposes to replace the existing 60-inch concrete culvert in Nason Brook with a17-foot wide, open-bottomed, precast concrete culvert. Recreating the stream bottom conditions after replacing the culvert will temporarily affect approximately 1,319 square feet of wetland.

The Wetland and Waterbodies Protection Rules, 06-096 CMR 310, interpret and elaborate on the NRPA criteria for obtaining a permit. The rules guide the Department in

its determination of whether a project's impacts would be unreasonable. A proposed project would generally be found to be unreasonable if it would cause a loss in wetland area, functions and values and there is a practicable alternative to the project that would be less damaging to the environment. Each application for a NRPA permit that involves a freshwater wetland alteration must provide an analysis of alternatives in order to demonstrate that a practicable alternative does not exist.

A. Avoidance. No activity may be permitted if there is a practicable alternative to the project that would be less damaging to the environment. The applicant submitted an alternative analysis for the proposed project completed by Jones & Beach Engineers and dated February 2, 2016. The project purpose is to construct a large retail center that includes food services and restaurant facilities. The applicant considered several locations in Portland, Scarborough, Falmouth, and Westbrook. After considering each location's development costs, site restrictions, and impacts to the environment, the proposed site was selected as the most practicable location.

Given the scale of the proposed project and the location of Nason Brook and the freshwater wetlands on the project site, filling wetlands to construct the proposed project is unavoidable. The applicant considered multiple layouts before deciding that the selected alternative was the most practicable in terms of development costs and the amount of wetlands that would be lost as a result of the construction of the proposed project.

B. Minimal Alteration. The amount of freshwater wetland to be altered must be kept to the minimum amount necessary for meeting the overall purpose of the project. Given the scope of the proposed development and the location of the wetland pockets, the applicant considered multiple layouts before deciding that the selected alternative was the most practicable in terms of development costs and the amount of wetlands that would be lost as a result of the construction of the proposed project.

C. Compensation. Compensation is required to achieve the goal of no net loss of wetland functions and values. In accordance with Chapter 310, Section 5(C), compensation is required when the Department determines that a wetland alteration will cause a wetland function or functions to be lost or degraded as identified by a functional assessment or by the Department's evaluation of the project.

The applicant submitted a functional assessment, dated February 2, 2016, that described the wetlands to be altered by the proposed project and identified primary functions and values as floodflow alteration, sediment and toxicant retention, and nutrient removal. Lesser wetland functions occurring in the wetland areas to be filled included production export and wildlife habitat.

The applicant proposes to make a contribution into the In-Lieu Fee (ILF) program of the Maine Natural Resource Conservation Program (MNRCP) in the amount of $271,137 for the cumulative wetland impacts totaling 64,218 square feet. Prior to the start of construction, the applicant must submit a payment in the amount of $271,137, payable to

"Treasurer, State of Maine", and directed to the attention of the ILF Program Administrator at 17 State House Station, Augusta, Maine 04333.

The Department finds that the applicant has avoided and minimized freshwater wetland impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project provided that prior to the start of construction, the location of the wetlands on the parcel not proposed to be altered are permanently marked on the ground, and the applicant submits the ILF payment as described above.

17. ALL OTHER:

All other Findings of Fact, Conclusions and Conditions remain as approved in Department Order #L-2734-14-A-X, and subsequent Orders.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S. Sections 480-A et seq. and Section 401 of the Federal Water Pollution Control Act:

A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.

B. The proposed activity will not cause unreasonable erosion of soil or sediment.

C. The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

D. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life provided that all instream work is performed from July 15 to October 1 of any calendar year; that buffer areas are protected from future disturbance as outlined in Finding 8; prior to the start of construction the applicant makes a contribution to the ILF program; and the location of the wetland edges adjacent to any development are permanently marked on the ground.

E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.

F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.

G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.

H. The proposed activity is not on or adjacent to a sand dune.

I. The proposed activity is not on an outstanding river segment as noted in 38 M.R.S. Section 480-P.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S. Sections 481 et seq.:

A. The applicant has provided adequate evidence of financial capacity and technical ability to develop the project in a manner consistent with state environmental standards.

B. The applicant has made adequate provision for fitting the development harmoniously into the existing natural environment and the development will not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or in neighboring municipalities provided that prior to the start of construction of the South Campus, the location of the stream buffers are permanently marked on the ground.

C. The proposed development will be built on soil types which are suitable to the nature of the undertaking and will not cause unreasonable erosion of soil or sediment nor inhibit the natural transfer of soil provided that a site-specific blasting plan is submitted for review and approval prior to commencement of blasting activities.

D. The proposed development meets the standards for stormwater management in Section 420-D and the standard for erosion and sedimentation control in Section 420-C provided that the pre-construction meeting is held; a third-party inspector is hired; the maximum area that may be exposed, and not temporarily or permanently stabilized, at any one time is limited to no more than 10 acres; storm sewer grit and sediment materials are disposed of properly; a professional engineer is retained to inspect and document the installation of stormwater components; and, a payment is submitted to the City of Portland Stormwater Compensation Fee Utilization Plan, all as described in Finding 10.

E. The proposed development will not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur.

F. The applicant has made adequate provision of utilities, including water supplies, sewerage facilities and solid waste disposal required for the development and the development will not have an unreasonable adverse effect on the existing or proposed utilities in the municipality or area served by those services.

G. The activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties nor create an unreasonable flood hazard to any structure.

THEREFORE, the Department APPROVES the application of DIRIGO CENTER DEVELOPERS, LLC to construct the Dirigo Plaza commercial and retail center as described in Finding 1, SUBJECT TO THE FOLLOWING CONDITIONS and all applicable standards and regulations:

1. The Standard Conditions of Approval, a copy attached.

2. In addition to any specific erosion control measures described in this or previous orders, the applicant shall take all necessary actions to ensure that its activities or those of its agents do not result in noticeable erosion of soils or fugitive dust emissions on the site during the construction and operation of the project covered by this approval.

3. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

4. All instream work shall be limited to the period from July 15 to October 1 of any calendar year.

5. Prior to the start of construction of the South Campus, the location of the stream buffers shall be permanently marked on the ground.

6. Prior the start of construction, the applicant shall conduct a pre-construction meeting. This meeting shall be attended by the applicant's representative, Department staff, the design engineer, the contractor, and the third-party inspector.

7. The applicant shall retain the services of a third-party inspector in accordance with the Special Condition for Third-Party Inspection Program, which is attached to this Order.

8. The applicant shall retain the design engineer or another qualified engineer to oversee the construction of the stormwater management system according to the details and notes specified on the approved plans. Within 30 days of completion of the whole system or at least once per year, the applicant shall submit a log of inspection reports detailing the items inspected, photographs taken, and dates of each inspection to the BLR for review.

9. Prior to the start of any blasting on the project site within 500 feet of non-owned off-site structures such as buildings and wells, the applicant shall submit a site-specific Blasting Plan to the BLR for review and approval.

10. Prior to start of construction, the applicant shall submit a total payment of $208,875 to the City of Portland Stormwater Compensation Fee Utilization Plan for Nason Brook.

11. The maximum area that may be exposed, and not temporarily or permanently stabilized, at any one time shall be limited to no more than 10 acres.

12. Storm sewer grit and sediment materials removed from stormwater control structures during maintenance activities shall be disposed of in compliance with the Maine Solid Waste Management Rules.

13. If a rock crusher is being utilized on site, the applicant shall ensure that the crusher is licensed by the Department's Bureau of Air Quality and is being operated in accordance with that license.

14. The applicant shall execute and record all required deed restrictions, including the appropriate stream buffer deed restrictions, within 60 days of the date of this Order. The applicant shall submit a copy of the recorded deed restriction, including the plot plan, to the BLR within 60 days of its recording.

15. Prior to start of construction, the location of the wetlands on the parcel not authorized for alteration shall be permanently marked on the ground.

16. Prior to the start of construction, the applicant shall submit a payment in the amount of $271,137, payable to "Treasurer, State of Maine", to the attention of the ILF Program Administrator at 17 State House Station, Augusta, Maine 04333.

17. All other Findings of Fact, Conclusions and Conditions remain as approved in Department Order #L-2734-14-A-X, and subsequent Orders, and are incorporated herein.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED IN AUGUSTA, MAINE, THIS 7TH DAY OF OCTOBER, 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Mark Bergeron
For: Paul Mercer, Commissioner

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES.

RLG/L02734CNDN/ATS#80316 & 80317

Filed
OCT 7 2016
State of Maine
Board of Environmental Protection

Department of Environmental Protection

SITE LOCATION OF DEVELOPMENT (SITE)
STANDARD CONDITIONS

A. Approval of Variations from Plans. The granting of this approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation. Further subdivision of proposed lots by the applicant or future owners is specifically prohibited without prior approval of the Board, and the applicant shall include deed restrictions to that effect.

B. Compliance with All Applicable Laws. The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.

C. Compliance with All Terms and Conditions of Approval. The applicant shall submit all reports and information requested by the Board or the Department demonstrating that the applicant has complied or will comply with all preconstruction terms and conditions of this approval. All preconstruction terms and conditions must be met before construction begins.

D. Advertising. Advertising relating to matters included in this application shall refer to this approval only if it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.

E. Transfer of Development. Unless otherwise provided in this approval, the applicant shall not sell, lease, assign or otherwise transfer the development or any portion thereof without prior written approval of the Board where the purpose or consequence of the transfer is to transfer any of the obligations of the developer as incorporated in this approval. Such approval shall be granted only if the applicant or transferee demonstrates to the Board that the transferee has the technical capacity and financial ability to comply with conditions of this approval and the proposals and plans contained in the application and supporting documents submitted by the applicant.

F. Time frame for approvals. If the construction or operation of the activity is not begun within four years, this approval shall lapse and the applicant shall reapply to the Board for a new approval. The applicant may not begin construction or operation of the development until a new approval is granted. A reapplication for approval may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.

G. Approval Included in Contract Bids. A copy of this approval must be included in or attached to all contract bid specifications for the development.

H. Approval Shown to Contractors. Work done by a contractor pursuant to this approval shall not begin before the contractor has been shown by the developer a copy of this approval.

Natural Resources Protection Act (NRPA)
Standard Conditions

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCES PROTECTION ACT, 38 M.R.S.A. § 480-A ET SEQ., UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

A. Approval of Variations From Plans. The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.

B. Compliance With All Applicable Laws. The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.

C. Erosion Control. The applicant shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval.

D. Compliance With Conditions. Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicant construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated.

E. Time frame for approvals. If construction or operation of the activity is not begun within four years, this permit shall lapse and the applicant shall reapply to the Board for a new permit. The applicant may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.

F. No Construction Equipment Below High Water. No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit.

G. Permit Included In Contract Bids. A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.

H. Permit Shown To Contractor. Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit.

Revised (4/92) DEP LW0428

STORMWATER STANDARD CONDITIONS

STRICT CONFORMANCE WITH THE STANDARD AND SPECIAL CONDITIONS OF THIS APPROVAL IS NECESSARY FOR THE PROJECT TO MEET THE STATUTORY CRITERIA FOR APPROVAL

Standard conditions of approval. Unless otherwise specifically stated in the approval, a department approval is subject to the following standard conditions pursuant to Chapter 500 Stormwater Management Law.

(1) Approval of variations from plans. The granting of this approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents must be reviewed and approved by the department prior to implementation. Any variation undertaken without approval of the department is in violation of 38 M.R.S.A. §420-D(8) and is subject to penalties under 38 M.R.S.A. §349.

(2) Compliance with all terms and conditions of approval. The applicant shall submit all reports and information requested by the department demonstrating that the applicant has complied or will comply with all terms and conditions of this approval. All preconstruction terms and conditions must be met before construction begins.

(3) Advertising. Advertising relating to matters included in this application may not refer to this approval unless it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.

(4) Transfer of project. Unless otherwise provided in this approval, the applicant may not sell, lease, assign, or otherwise transfer the project or any portion thereof without written approval by the department where the purpose or consequence of the transfer is to transfer any of the obligations of the developer as incorporated in this approval. Such approval may only be granted if the applicant or transferee demonstrates to the department that the transferee agrees to comply with conditions of this approval and the proposals and plans contained in the application and supporting documents submitted by the applicant. Approval of a transfer of the permit must be applied for no later than two weeks after any transfer of property subject to the license.

(5) Time frame for approvals. If the construction or operation of the activity is not begun within four years, this approval shall lapse and the applicant shall reapply to the department for a new approval. The applicant may not begin construction or operation of the project until a new approval is granted. A reapplication for approval may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.

(6) Certification. Contracts must specify that "all work is to comply with the conditions of the Stormwater Permit." Work done by a contractor or subcontractor pursuant to this approval may not begin before the contractor and any subcontractors have been shown a copy of this approval with the conditions by the developer, and the owner and each contractor and subcontractor has certified, on a form provided by the department, that the approval and conditions have been received and read, and that the work will be carried out in accordance

with the approval and conditions. Completed certification forms must be forwarded to the department.

(7) Maintenance. The components of the stormwater management system must be adequately maintained to ensure that the system operates as designed, and as approved by the department.

(8) Recertification requirement. Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the department.

(a) All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

(b) All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the facilities.

(c) The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the department, and the maintenance log is being maintained.

(9) Severability. The invalidity or unenforceability of any provision, or part thereof, of this permit shall not affect the remainder of the provision or any other provisions. This permit shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

November 16, 2005 (revised December 27, 2011)

Special Condition
for
Third Party Inspection Program

THIRD-PARTY INSPECTION PROGRAM

1.0 THE PURPOSE OF THE THIRD-PARTY INSPECTION

As a condition of this permit, the Maine Department of Environmental Protection (MDEP) requires the permit applicant to retain the services of a third-party inspector to monitor compliance with MDEP permit conditions during construction. The objectives of this condition are as follows:

1) to ensure that all construction and stabilization activities comply with the permit conditions and the MDEP-approved drawings and specifications,

2) to ensure that field decisions regarding erosion control implementation, stormwater system installation, and natural resource protection are based on sound engineering and environmental considerations, and

3) to ensure communication between the contractor and MDEP regarding any changes to the development's erosion control plan, stormwater management plan, or final stabilization plan.

This document establishes the inspection program and outlines the responsibilities of the permit applicant, the MDEP, and the inspector.

2.0 SELECTING THE INSPECTOR

At least 30 days prior to starting any construction activity on the site, the applicant will submit the names of at least two inspector candidates to the MDEP. Each candidate must meet the minimum qualifications listed under section 3.0. The candidates may not be employees, partners, or contracted consultants involved with the permitting of the project or otherwise employed by the same company or agency except that the MDEP may accept subcontractors who worked for the project's primary consultant on some aspect of the project such as, but not limited to, completing wetland delineations, identifying significant wildlife habitats, or conducting geotechnical investigations, but who were not directly employed by the applicant, as Third Party inspectors on a case by case basis. The MDEP will have 15 days from receiving the names to select one of the candidates as the inspector or to reject both candidates. If the MDEP rejects both candidates, then the MDEP shall state the particular reasons for the rejections. In this case, the applicant may either dispute the rejection to the Director of the Bureau of Land Resources or start the selection process over by nominating two, new candidates.

3.0 THE INSPECTOR'S QUALIFICATIONS

Each inspector candidate nominated by the applicant shall have the following minimum qualifications:

1) a degree in an environmental science or civil engineering, or other demonstrated expertise,

2) a practical knowledge of erosion control practices and stormwater hydrology,

3) experience in management or supervision on large construction projects,

4) the ability to understand and articulate permit conditions to contractors concerning erosion control or stormwater management,

5) the ability to clearly document activities being inspected,

6) appropriate facilities and, if necessary, support staff to carry out the duties and responsibilities set forth in section 6.0 in a timely manner, and

7) no ownership or financial interest in the development other than that created by being retained as the third-party inspector.

4.0 INITIATING THE INSPECTOR'S SERVICES

The applicant will not formally and finally engage for service any inspector under this permit condition prior to MDEP approval or waiver by omission under section 2.0. No clearing, grubbing, grading, filling, stockpiling, or other construction activity will take place on the development site until the applicant retains the MDEP-approved inspector for service.

5.0 TERMINATING THE INSPECTOR'S SERVICES

The applicant will not terminate the services of the MDEP-approved inspector at any time between commencing construction and completing final site stabilization without first getting written approval to do so from the MDEP.

6.0 THE INSPECTOR'S DUTIES AND RESPONSIBILITIES

The inspector's work shall consist of the duties and responsibilities outlined below.

1) Prior to construction, the inspector will become thoroughly familiar with the terms and conditions of the state-issued site permit, natural resources protection permit, or both.

2) Prior to construction, the inspector will become thoroughly familiar with the proposed construction schedule, including the timing for installing and removing erosion controls, the timing for constructing and stabilizing any basins or ponds, and the deadlines for completing stabilization of disturbed soils.

3) Prior to construction, the inspector will become thoroughly familiar with the project plans and specifications, including those for building detention basins, those for installing the erosion control measures to be used on the site, and those for temporarily or permanently stabilizing disturbed soils in a timely manner.

4) During construction, the inspector will monitor the contractor's installation and maintenance of the erosion control measures called for in the state permit(s) and any additional measures the inspector believes are necessary to prevent sediment discharge to off-site properties or natural resources. This direction will be based on the approved erosion control plan, field conditions at the time of construction, and the natural resources potentially impacted by construction activities.

5) During construction, the inspector will monitor the contractor's construction of the stormwater system, including the construction and stabilization of ditches, culverts, detention basins, water quality treatment measures, and storm sewers.

6) During construction, the inspector will monitor the contractor's installation of any stream or wetland crossings.

7) During construction, the inspector will monitor the contractor's final stabilization of the project site.

8) During construction, the inspector will keep logs recording any rain storms at the site, the contractor's activities on the site, discussions with the contractor(s), and possible violations of the permit conditions.

9) During construction, the inspector will inspect the project site at least once a week and before and after any significant rain event. The inspector will photograph all protected natural resources both before and after construction and will photograph all areas under construction. All photographs will be identified with, at a minimum the date the photo was taken, the location and the name of the individual taking the photograph. *Note: the frequency of these inspections as contained in this condition may be varied to best address particular project needs.*

10) During construction, the inspector will prepare and submit weekly *(or other frequency)* inspection reports to the MDEP.

11) During construction, the inspector will notify the designated person at the MDEP immediately of any sediment-laden discharges to a protected natural resource or other significant issues such as the improper construction of a stormwater control structure or the use of construction plans not approved by the MDEP.

7.0 INSPECTION REPORTS

The inspector will submit weekly written reports *(or at another designated frequency)*, including photographs of areas that are under construction, on a form provided by the Department to the designated person at the MDEP. Each report will be due at the MDEP by the Friday *(or other designated day)* following the inspection week (Monday through Sunday).

The weekly report will summarize construction activities and events on the site for the previous week as outlined below.

1) The report will state the name of the development, its permit number(s), and the start and end dates for the inspection week (Monday through Sunday).

2) The report will state the date(s) and time(s) when the inspector was on the site making inspections.

3) The report will state the date(s) and approximate duration(s) of any rainfall events on the site for the week.

4) The report will identify and describe any erosion problems that resulted in sediment leaving the property or sediment being discharged into a wetland, brook, stream, river, lake, or public storm sewer system. The report will describe the contractor's actions to repair any damage to other properties or natural resources, actions to eliminate the erosion source, and actions to prevent future sediment discharges from the area.

5) The report will list the buildings, roads, parking lots, detention basins, stream crossings or other features open to construction for the week, including those features or areas actively worked and those left unworked (dormant).

6) For each area open to construction, the report will list the date of initial soil disturbance for the area.

7) For each area open to construction, the report will note which areas were actively worked that week and which were left dormant for the week. For those areas actively worked, the report will briefly state the work performed in the area that week and the progress toward final stabilization of the area -- e.g. "grubbing in progress", " grubbing complete", "rough grading in progress", "rough grading complete", "finish grading in progress", "finish grading complete", "permanent seeding completed", "area fully stable and temporary erosion controls removed", etc.

8) For each area open to construction, the report will list the erosion and sedimentation control measures installed, maintained, or removed during the week.

9) For each erosion control measure in-place, the report will note the condition of the measure and any maintenance performed to bring it to standard.

Third Party Inspection Form

This report is prepared by a Third Party Inspector to meet the requirements of the Third Party Inspector Condition attached as a Special Condition to the Department Order that was issued for the project identified below. The information in this report/form is not intended to serve as a determination of whether the project is in compliance with the Department permit or other applicable Department laws and rules. Only Department staff may make that determination.

TO: *PM, Maine DEP (@maine.gov)*	FROM:
PROJECT NAME/ LOCATION:	DEP #:
DATE OF INSPECTION:	DATE OF REPORT:
WEATHER:	CONDITIONS:

SITE CHARACTERISTICS:

# ACRES OPEN:	# ACRES ACTIVE:	# ACRES INACTIVE:
LOCATION OF OPEN LAND:	LOCATION OF ACTIVE LAND:	LOCATION OF INACTIVE LAND:
OPEN SINCE:	OPEN SINCE:	OPEN SINCE:

PROGRESS OF WORK:

INSPECTION OF:	**Satisfactory**	**Minor Deviation** (corrective action required)	**Unsatisfactory** (include photos)
STORMWATER CONTROL (VEGETATIVE & STRUCTURAL BMP'S)			
EROSION & SEDIMENTATION CONTROL (TEMPORARY & PERMANENT BMP'S)			
OTHER: (PERMIT CONDITIONS, ENGINEERING DESIGN, ETC.)			

COMMENTS/CORRECTIVE ACTIONS TAKEN (attach additional sheets as necessary):

Photos (must be labeled with date, photographer and location):

Cc:		
Original and all copies were sent by email only.		

DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: March 2012 **Contact: (207) 287-2811**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's ("DEP") Commissioner: (1) in an administrative process before the Board of Environmental Protection ("Board"); or (2) in a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S.A. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S.A. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S.A. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This INFORMATION SHEET, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S.A. §§ 341-D(4) & 346, the *Maine Administrative Procedure Act*, 5 M.R.S.A. § 11001, and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 CMR 2 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days of the date on which the Commissioner's decision was filed with the Board will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by the Board's receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner a copy of the appeal documents and if the person appealing is not the applicant in the license proceeding at issue the applicant must also be sent a copy of the appeal documents. All of the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time submitted:

1. *Aggrieved Status*. The appeal must explain how the person filing the appeal has standing to maintain an appeal. This requires an explanation of how the person filing the appeal may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested*. The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.
6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing on the appeal is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.
7. *New or additional evidence to be offered.* The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered by the Board in an appeal only when the evidence is relevant and material and that the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed the license normally remains in effect pending the processing of the appeal. A license holder may proceed with a project pending the outcome of an appeal but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, including the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, and any materials submitted in response to the appeal will be sent to Board members with a recommendation from DEP staff. Persons filing appeals and interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, a license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2; 5 M.R.S.A. § 11001; & M.R. Civ. P 80C. A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. Failure to file a timely appeal will result in the Board's or the Commissioner's decision becoming final.

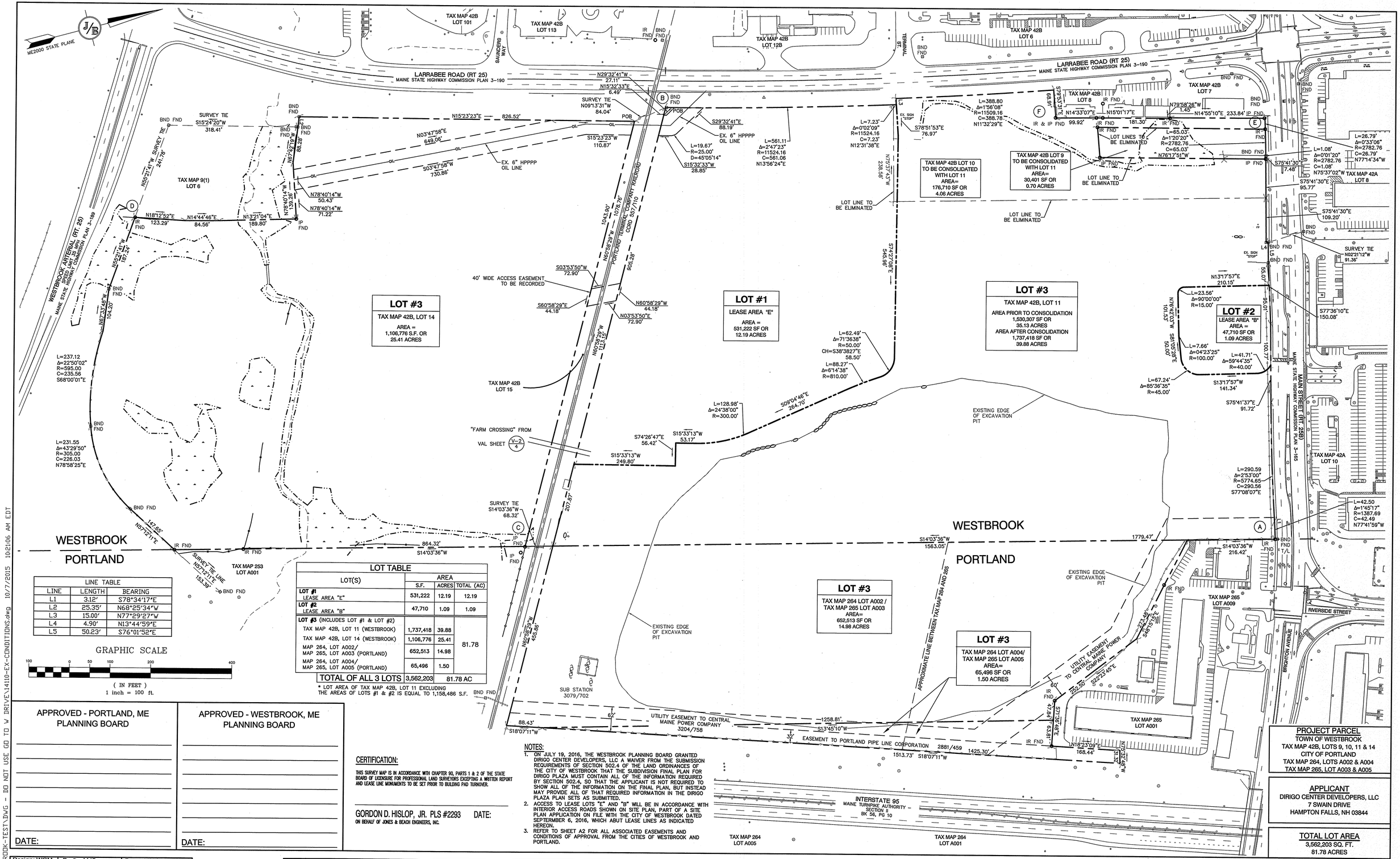
An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S.A. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452 or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.


ME2000 STATE PLANE
TAX MAP 42B LOT 101
TAX MAP 42B LOT 113
TAX MAP 42B LOT 12B
TAX MAP 42B LOT 6
TAX MAP 42B LOT 7
SAUNDERS WAY
TERMINAL ST.
LARRABEE ROAD (RT 25)
MAINE STATE HIGHWAY COMMISSION PLAN 3-190
WESTBROOK ARTERIAL (RT 25)
MAINE STATE HIGHWAY COMMISSION PLAN 3-189
MAIN STATE HIGHWAY COMMISSION PLAN 3-185
MAIN STREET (RT 25B)
TAX MAP 9(1) LOT 6
TAX MAP 253 LOT A001
TAX MAP 42A LOT 8
TAX MAP 42A LOT 10
TAX MAP 265 LOT A009
TAX MAP 265 LOT A001
TAX MAP 264 LOT A005
TAX MAP 264 LOT A001
TAX MAP 42B LOT 15
SURVEY TIE S15°24'20"W 318.41'
SURVEY TIE N15°21'41"W 241.78'
SURVEY TIE N09°13'31"W 84.04'
SURVEY TIE S14°03'36"W 68.32'
SURVEY TIE N02°21'12"W 91.36'
SURVEY TIE N57°12'11"E 153.39'
POB
IR FND
IP FND
BND FND
N15°23'23"E 626.52'
N03°47'58"E 649.06'
S03°47'58"W 730.86'
S15°23'23"W 110.87'
S29°32'41"E 88.19'
N29°32'41"W 27.11'
N15°32'33"E 6.49'
EX. 6" HPPPP OIL LINE
L=19.67' R=25.00' D=45°05'14" S15°32'33"W 28.85'
L=561.11' Δ=2°47'23" R=11524.16 C=561.06 N13°56'24"E
L=7.23' Δ=0°02'09" R=11524.16 C=7.23' N12°31'38"E
L=388.80 Δ=1°56'08" R=11509.16 C=388.78 N11°32'29"E
S78°51'53"E 76.97'
N14°33'07"E 68.39'
N15°01'17"E 181.30'
N79°58'26"W 1.45'
N14°55'10"E 233.84'
IR & IP FND 99.92'
L=65.03' Δ=1°20'20" R=2782.76 C=65.03' N76°17'51"W
L=1.08' Δ=0°01'20" R=2782.76 C=1.08' N75°37'02"W
L=26.79' Δ=0°33'06" R=2782.76 C=26.79' N77°14'34"W
S75°41'30"E 7.48'
S75°41'30"E 95.77'
S75°41'30"E 109.20'
S77°36'10"E 150.08'
S74°42'06"E 543.36'
N75°37'43"W 238.58'
N13°17'57"E 210.15'
S13°17'57"W 141.34'
S75°41'37"E 91.72'
L=23.56' Δ=90°00'00" R=15.00'
L=7.66' Δ=04°23'25" R=100.00'
L=41.71' Δ=59°44'35" R=40.00'
L=67.24' Δ=85°36'35" R=45.00'
N76°42'03"W 101.53'
S88°03'28"E 50.00'
100.77'
L=290.59 Δ=2°53'00" R=5774.65 C=290.56 S77°08'07"E
L=42.50 Δ=1°45'17" R=1387.69 C=42.49 N77°41'59"W
L=237.12 Δ=22°50'02" R=595.00 C=235.56 S68°00'01"E
L=231.55 Δ=43°29'50" R=305.00 C=226.03 N78°58'25"E
N52°21'41"W 241.78'
N52°21'41"W 197.24'
N67°33'48"W 104.20'
N18°12'52"E 123.29'
N14°44'46"E 84.56'
N13°21'04"E 189.80'
N78°40'14"W 88.28'
N78°40'14"W 139.26'
N78°40'14"W 50.43'
N78°40'14"W 71.22'
N57°12'11"E 147.65'
S14°03'36"W 864.32'
S14°03'36"W 1563.05'
S14°03'36"W 216.42'
1779.47'
S03°53'50"W 72.90'
S60°58'29"E 44.18'
N60°58'29"W 44.18'
N03°53'50"E 72.90'
N60°58'29"W 1078.76'
N60°58'29"W 1043.98'
N60°58'29"W 143.10'
N60°58'29"W 455.86'
N60°58'29"W 207.87'
S09°04'46"E 264.70'
L=128.98' Δ=24°38'00" R=300.00'
S74°26'47"E 56.42'
S15°33'13"W 53.17'
S15°33'13"W 249.80'
L=62.49' Δ=71°36'38" R=50.00' CH=S38°38'27"E 58.50'
L=88.27' Δ=6°14'38" R=810.00'
S18°07'11"W 88.43'
S18°07'11"W 1513.73'
S13°45'10"W 1258.81'
N18°23'09"E 168.44'
N18°23'09"E 253.13'
S48°16'15"E 223.48'
S82°23'45"E 252.50'
S18°47'47"W 63.18'
S18°47'47"W 3.98'
"FARM CROSSING" FROM VAL SHEET V-2 4
40' WIDE ACCESS EASEMENT TO BE RECORDED
EXISTING EDGE OF EXCAVATION PIT
SUB STATION 3079/702
UTILITY EASEMENT TO CENTRAL MAINE POWER COMPANY 3204/758
EASEMENT TO PORTLAND PIPE LINE CORPORATION 2881/459
UTILITY EASEMENT TO CENTRAL MAINE POWER COMPANY
APPROXIMATE LINE BETWEEN TAX MAP 264 AND 265
INTERSTATE 95 MAINE TURNPIKE AUTHORITY – SECTION II BK 56, PG 10
PORTLAND TERMINAL COMPANY RAILROAD CHRD 557°10'
LOT LINES TO BE ELIMINATED
LOT LINE TO BE ELIMINATED
LOT LINE TO BE ELIMINATED
LOT LINE TO BE ELIMINATED
TAX MAP 42B LOT 10 TO BE CONSOLIDATED WITH LOT 11 AREA= 176,710 SF OR 4.06 ACRES
TAX MAP 42B LOT 9 TO BE CONSOLIDATED WITH LOT 11 AREA= 30,401 SF OR 0.70 ACRES
LOT #3 TAX MAP 42B, LOT 14 AREA = 1,106,776 S.F. OR 25.41 ACRES
LOT #1 LEASE AREA "E" AREA = 531,222 SF OR 12.19 ACRES
LOT #3 TAX MAP 42B, LOT 11 AREA PRIOR TO CONSOLIDATION 1,530,307 SF OR 35.13 ACRES AREA AFTER CONSOLIDATION 1,737,418 SF OR 39.88 ACRES
LOT #2 LEASE AREA "B" AREA = 47,710 SF OR 1.09 ACRES
LOT #3 TAX MAP 264 LOT A002 / TAX MAP 265 LOT A003 AREA= 652,513 SF OR 14.98 ACRES
LOT #3 TAX MAP 264 LOT A004/ TAX MAP 265 LOT A005 AREA= 65,496 SF OR 1.50 ACRES
EXISTING EDGE OF EXCAVATION PIT
EXISTING EDGE OF EXCAVATION PIT
EX. SIGN "STOP"
EX. SIGN "STOP"
IR FND
IP FND
BND FND
WESTBROOK
PORTLAND
WESTBROOK
PORTLAND
RIVERSIDE STREET
BRIGHTON AVENUE
62'
32'
80'
88.43'
1258.81'
1513.73'
1425.30'
864.32'
1779.47'
207.87'
455.86'
1043.98'
1078.76'
143.10'
147.65'
153.39'
252.50'
223.48'
63.18'
3.98'
253.13'
168.44'
88.43'
1563.05'
216.42'
1513.73'
1425.30'
1258.81'
543.36'
264.70'
509°04'46"E
S74°26'47"E 56.42'
S15°33'13"W 53.17'
S15°33'13"W 249.80'
S18°07'11"W 88.43'
S18°07'11"W 1513.73'
S13°45'10"W 1258.81'
S14°03'36"W 1563.05'
S14°03'36"W 216.42'
S14°03'36"W 864.32'
S82°23'45"E 252.50'
S48°16'15"E 223.48'
S18°47'47"W 63.18'
S18°47'47"W 3.98'
N18°23'09"E 168.44'
N18°23'09"E 253.13'
N57°12'11"E 147.65'
N57°12'11"E 153.39'
N60°58'29"W 1078.76'
N60°58'29"W 1043.98'
N60°58'29"W 143.10'
N60°58'29"W 455.86'
N60°58'29"W 207.87'
N75°37'43"W 238.58'
N76°42'03"W 101.53'
S88°03'28"E 50.00'
100.77'
S74°42'06"E 543.36'
S77°36'10"E 150.08'
S75°41'37"E 91.72'
S13°17'57"W 141.34'
N13°17'57"E 210.15'
95.01'
95.07'
S75°41'30"E 109.20'
S75°41'30"E 95.77'
S75°41'30"E 7.48'
N75°37'02"W
N77°14'34"W
N76°17'51"W
N79°58'26"W 1.45'
N14°55'10"E 233.84'
N15°01'17"E 181.30'
N14°33'07"E 68.39'
S78°51'53"E 76.97'
N12°31'38"E
N11°32'29"E
N29°32'41"W 27.11'
N15°32'33"E 6.49'
N09°13'31"W 84.04'
N15°23'23"E 626.52'
N03°47'58"E 649.06'
S03°47'58"W 730.86'
S15°23'23"W 110.87'
S29°32'41"E 88.19'
N52°21'41"W 241.78'
N52°21'41"W 197.24'
N67°33'48"W 104.20'
N18°12'52"E 123.29'
N14°44'46"E 84.56'
N13°21'04"E 189.80'
N78°40'14"W 88.28'
N78°40'14"W 139.26'
N78°40'14"W 50.43'
N78°40'14"W 71.22'
S03°53'50"W 72.90'
S60°58'29"E 44.18'
N60°58'29"W 44.18'
N03°53'50"E 72.90'
S77°12'11"E 147.65'
S77°12'11"E 153.39'
S14°03'36"W 68.32'
S09°13'31"W 84.04'
S15°32'33"W 6.49'
S15°23'23"W 110.87'
S29°32'41"E 88.19'
S15°33'13"W 53.17'
S15°33'13"W 249.80'
S74°26'47"E 56.42

SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF WESTBROOK TAX MAP 42B, LOTS 10, 11 & 14, AND PORTLAND TAX MAP 264, LOTS A002 AND A004.

2. OWNER OF RECORD: PIKE INDUSTRIES, INC. CCRD BOOK 23504, PAGE 113, CORRECTED BY BOOK 23578, PAGE 296.
   a. WESTBROOK TAX MAP 42B, LOT 14 REFERENCE DEED 8964/221, 2001/491, 2198/493.
   b. WESTBROOK TAX MAP 42B, LOT 11 REFERENCE DEED 2198/493, 1737/445.
   c. WESTBROOK TAX MAP 42B, LOT 10 REFERENCE DEED 4166/68 (15274/222).
   d. PORTLAND TAX MAP 264, LOT A002 REFERENCE DEED 3162/899, 1921/59.
   e. PORTLAND TAX MAP 264, LOT A004 REFERENCE DEED 2755/81.

   OWNER OF RECORD: L. L. LATHROP, INC. CCRD BOOK 21632, PAGE 224; WESTBROOK TAX MAP 42B, LOT 9.

3. WESTBROOK ZONING DISTRICT: GATEWAY COMMERCIAL DISTRICT
   LOT AREA MINIMUM = 20,000 SF
   LOT FRONTAGE MINIMUM = 200'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 20'
   SIDE SETBACK = 20'
   REAR SETBACK = 20'
   MAX. BUILDING HEIGHT = 50'

4. PORTLAND ZONING DISTRICT: B-4 COMMERCIAL CORRIDOR ZONE
   LOT AREA MINIMUM = 10,000 SF
   LOT FRONTAGE MINIMUM = 60'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 20'
   SIDE SETBACK 1-2 STORIES = 10'
   SIDE SETBACK 3 OR MORE STORIES = 12'
   REAR SETBACK = 20'
   WETLAND SETBACK = 50'
   MAX. BUILDING HEIGHT = 65'
   MAX. SEALED SURFACE = 80%

5. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.

6. BASIS OF BEARING FOR THIS SURVEY IS MAINE ME2000 STATE PLANE COORDINATES. ELEVATIONS ARE BASE ON NGVD 29. STATIONS "POR 4" AND "CHARTER" WERE USED TO ESTABLISH HORIZONTAL CONTROL. STATIONS "CHARTER", "GERALD" AND "GERALD RM 1" WERE USED TO ESTABLISH VERTICAL CONTROL.

7. LOT AREAS:
   MAP 42B LOT 9: 30,401 SQ. FT., 0.70 ACRES
   MAP 42B LOT 10: 176,685 SQ. FT., 4.056 ACRES
   MAP 42B LOT 11: 1,530,307 SQ. FT., 35.131 ACRES
   MAP 42B LOT 14: 1,106,776 SQ. FT., 25.408 ACRES
   MAP 264 LOT A002 (265/A003): 652,513 SQ. FT., 14.980 ACRES
   MAP 264 LOT A004 (265/A005): 65,497 SQ. FT., 1.504 ACRES
   TOTAL AREA: 3531697 SQ. FT., 81.077 ACRES

8. PART OF THE SUBJECT PROPERTY IS LOCATED WITHIN FEDERALLY DESIGNATED "C" ZONE - AREAS OF MINIMAL FLOODING. REFERENCE FEMA COMMUNITY PANEL NOs. 230054 0006 B, DATED JANUARY 2, 1981; 230051 006 C, DATED DECEMBER 8, 1998; AND 230051 0012C, DATED DECEMBER 8, 1999.

9. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY WESTBROOK AND PORTLAND PERMITS, FEES AND BONDS.

10. ALL CONSTRUCTION WILL CONFORM TO TOWN AND CITY STANDARDS AND REGULATIONS, AND MEDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.

11. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.

12. GRANITE BOUNDS TO BE SET AT ALL ROADWAY POINTS OF CURVATURE AND TANGENCY. IRON RODS WITH SURVEY CAPS TO BE SET AT ALL PROPERTY CORNERS AND ANGLE POINTS, UNLESS OTHERWISE INDICATED. ALL MONUMENTS SET ARE 5/8" IRON RODS WITH ALUMINUM CAPS MARKED "JONES & BEACH ENGINEERS BOUNDARY, DO NOT DISTURB, STRATHAM, N.H." AS SHOWN.

13. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY BRENDAN QUIGLEY OF GOVE ENVIRONMENTAL SERVICES DURING THE MONTH OF OCTOBER 2014, IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:
   a. THE CORPS OF ENGINEERS FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS.
   b. THE NORTH CENTRAL & NORTHEAST REGIONAL SUPPLEMENT TO THE FEDERAL MANUAL.
   c. THE CURRENT VERSION OF THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, AS PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION AND/OR THE CURRENT VERSION OF THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, AS PUBLISHED BY THE USDA, NRCS, AS APPROPRIATE.
   d. THE CURRENT NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, AS PUBLISHED BY THE US FISH AND WILDLIFE SERVICE.

13. LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.

14. ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

15. THE TAX MAP AND LOT NUMBERS AND ABUTTING OWNERS ARE BASED ON THE CITY OF WESTBROOK AND CITY OF PORTLAND TAX RECORDS AND ARE SUBJECT TO CHANGE.

16. RESEARCH WAS PERFORMED AT THE CITY OF WESTBROOK ASSESSOR'S OFFICE, THE CITY OF PORTLAND ASSESSOR'S OFFICE, AND THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

17. THIS SURVEY IS NOT A CERTIFICATION TO OWNERSHIP OR TITLE OF LANDS SHOWN. OWNERSHIP AND ENCUMBRANCES ARE MATTERS OF TITLE EXAMINATION NOT OF A BOUNDARY SURVEY. THE INTENT OF THIS PLAN IS TO RETRACE THE BOUNDARY LINES OF DEEDS REFERENCED HEREON. OWNERSHIP OF ADJOINING PROPERTIES IS ACCORDING TO ASSESSOR'S RECORDS. THIS PLAN MAY OR MAY NOT INDICATE ALL ENCUMBRANCES EXPRESSED, IMPLIED OR PRESCRIPTIVE.

18. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.

19. PER PLAN REFERENCE 6, WESTBROOK TAX MAP 42B LOT 11 IS ALLOWED ONE ENTRANCE TO STATE HIGHWAY 12, AND TAX MAP 42B LOT 14 IS ALLOWED TWO ENTRANCES TO STATE HIGHWAY 12.

20. SUBJECT LOT MAY BENEFIT FROM A "FARM CROSSING" SHOWN ON THE RAILROAD PLAN, REFERENCE 3. THE PLAN LOCATION IS SHOWN HEREON.

21. A SITE-SPECIFIC CLASS 'B' HIGH INTENSITY SOIL SURVEY WAS PERFORMED BY MICHAEL CUOMO, SOIL SCIENTIST, DURING JUNE, 2015, BASED ON THE STANDARDS OF THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS. THE MAP IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY.

ABUTTERS

WESTBROOK

TAX MAP 9(1) LOT 5
PORTLAND WATER DISTRICT
PO BOX 3553
PORTLAND, ME 04104-3553

TAX MAP 9(1) LOT 6
LLEWELLYN A. RANDALL, SR, DEVISEES
C/O LLEWELLYN A. RANDALL, JR
681 STROUDWATER STREET
WESTBROOK, ME 04092
BK 2685/PG 105

TAX MAP 9(1) LOT 8B
MAINE TURNPIKE AUTHORITY
430 RIVERSIDE STREET
PORTLAND, ME 04103
BK 16036/PG 331

TAX MAP 42A LOT 8
WALLACE E. CAMPT, SR., TRUSTEE
CAMP SIBLING TRUST
PO BOX 109
WESTBROOK, ME 04098
BK 30134/PG 136

TAX MAP 42A LOT 10
PORTLAND ASSOC, LLC
C/O WS ASSET MANAGEMENT INC.
33 BOYLSTON STREET, SUITE 3000
CHESTNUT HILL, MA 02467
BK 25490/PG 39

TAX MAP 42B LOT 6
W E 100 LARRABEE ROAD LLC
C/O WINSTANLEY ENTERPRISES LLC
150 BAKER AVENUE EXT. SUITE 303
CONCORD, MA 01742
BK 26693/PG 280

TAX MAP 42B LOT 7
MIDAS PROPERTIES, INC.
C/O MARVIN F. POER & CO.
PO BOX 52427
ATLANTA, GA 30355
BK 8662/PG 169

TAX MAP 42B LOT 8
SHOEMAKER LLC
C/O CHARLOTTE SHOEMAKER
5100 SW 111 LANE ROAD
OCALA, FL 34473
BK 20854/PG 0074

TAX MAP 42B/LOT 9
LL LATHROP LLC
10 MOULTON STREET SUITE 4
PORTLAND, ME 04101
BK 21632/PG 224

TAX MAP 42B LOT 12B
DAVID B. MOORE REVOC. TRUST
DAVID B. MOORE, TRUSTEE
C/O HARCROS CHEMICAL INC.
5200 SPEAKER ROAD
KANSAS CITY, KS 66106
BK 20960/PG 218

TAX MAP 42B LOT 15
PORTLAND TERMINAL COMPANY
GUILFORD TRANSPORTATION
IRON HORSE PARK
NORTH BILLERICA, MA 01862-1681
BK 2590/PG 301

TAX MAP 42B LOTS 101 & 113
WWS PROPERTIES LLC
C/O BILL DODGE AUTO GROUP INC.
PO BOX 9567
WESTBROOK, ME 04098-5067

ABUTTERS

PORTLAND

TAX MAP 243 LOT B001001
CITY OF PORTLAND
389 CONGRESS STREET
PORTLAND, ME 04101

TAX MAP 264 LOT A001
SAI PRASAD LLC
1150 BRIGHTON AVENUE
PORTLAND, ME 04102
BK 29899/PG 331

TAX MAP 264 LOT A005
RAND ROAD HOLDINGS LLC
7 RAND ROAD
PORTLAND, ME 04104
BK 31342/PG 191

TAX MAP 265 LOT A001, A008 & A009
PORTLAND HOTELS REALTY INC.
1200 BRIGHTON AVENUE
PORTLAND, ME 04102
BK 26152/PG 307

TAX MAP 266 LOT C002
CENTRAL MAINE POWER CO.
LOCAL TAX
70 FARM VIEW DRIVE
NEW GLOUCESTER, ME 04260

MAINE DEPT. OF TRANSPORTATION
REGION 1
51 PLEASANT HILL ROAD
SCARBOROUGH, ME 04070-0358

MAINE DEPT. OF TRANSPORTATION
REGION 3
PO BOX 817
ROUTE 2
DIXFIELD, ME 04224

PLAN REFERENCES

1. "PROPERTY OF BLUE ROCK QUARRY, WESTBROOK, MAINE" DATED: FEBRUARY 24, 1965, SCALE 1" = 100', BY ENGINEERING LABORATORY SERVICE. CCRD PAGE 68 VOLUME 40.
2. "ALTA/ASCM LAND TITLE SURVEY FOR SUSSE CHALET PROJECT, B&C SITE NO. 97620-6, 1200 BRIGHTON AVENUE, PORTLAND, MAINE" DATED: MAY 2, 1997, SCALE 1" = 30', BY BOCK & CLARK'S NATION SURVEYORS NETWORK.
3. "RIGHT-OF-WAY AND TRACK MAP, THE PORTLAND & OGDENSBURG RY., OWNED & OPERATED BY THE PORTLAND TERMINAL COMPANY. STATION 158+40 TO STATION 211+20" DATED: JUNE 10, 1916, SCALE 1" = 100', OFFICE OF CHIEF ENGINEER, PORTLAND, MAINE. SHEET V-2/4.
4. "MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY '12' PORTLAND-WESTBROOK CUMBERLAND COUNTY, STATE PROJECT NO U-012-1(502)" DATED: AUGUST 1963, SCALE 1" = 50'. S.H.C FILE NO 3-165. CCRD PLAN BOOK 74, PAGES 3-4.
5. "MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY '127' WESTBROOK CUMBERLAND COUNTY, FEDERAL AID PROJECT NO SU-0127(2) SECT. II" DATED: MAY 1968, SCALE 1" = 50'. S.H.C FILE NO 3-190. CCRD PLAN BOOK 103, PAGE 26.
6. "MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY '12' WESTBROOK CUMBERLAND COUNTY, FEDERAL AID PROJECT NO F-012-1(9)" DATED: OCTOBER 1972, SCALE 1" = 50'. S.H.C FILE NO 3-189. CCRD PLAN BOOK 127, PAGES 25-26.
7. "MAINE TURNPIKE AUTHORITY, MAINE TURNPIKE, SECTION 2-PORTLAND TO AUGUSTA, PROPERTY PLAN, CITY OF PORTLAND CUMBERLAND COUNTY" SHEET 4. DATED: AUGUST 18, 1952, SCALE 1" = 100'.
10. "MAINE TURNPIKE AUTHORITY, MAINE TURNPIKE, SECTION 2-PORTLAND TO AUGUSTA, PROPERTY PLAN, CITY OF PORTLAND CUMBERLAND COUNTY" SUPPLEMENTAL SHEET 14, DATED: JANUARY 1955, SCALE 1" = 200'.
11. "MAINE TURNPIKE AUTHORITY, MAINE TURNPIKE, PROPERTY AND RIGHT-OF-WAY PLAN, SECTION 2 - PORTLAND TO AUGUSTA, BRIDGE REPLACEMENT PROJECT, BRIGHTON AVENUE UNDERPASS, PORTLAND, MAINE. SUPPLEMENTAL DRAWING 1 OF 1. DATED: APRIL 2004, SCALE 1" = 25'.
12. "MIDAS REALTY CORP, BOUNDARY AND TOPOGRAPHIC SURVEY, MAIN ST. AND LARRABEE ROAD, WESTBROOK, MAINE" DATED: APRIL 15, 1980, SCALE 1" = 20', BY TIMOTHY O. BROWN PE.
13. "PLAN OF STATE AID ROAD, LOWER MAIN STREET, CITY OF WESTBROOK, MAINE" DATED: JUNE 1916, SCALE 1" = 50', BY D. R. DURAN. ON FILE AT CITY OF WESTBROOK ENGINEERING OFFICE.
14. "CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, TOWN LINE BETWEEN PORTLAND AND WESTBROOK" DATED JANUARY 3, 1946, SCALE 1" = 500', CITY OF PORTLAND PLAN 471/45.
15. "CITY OF PORTLAND MAINE DEPT. OF PUBLIC WORKS, BRIGHTON AT RIVERSIDE" DATED OCTOBER 1, 1973, SCALE 1" = 30', CITY OF PORTLAND PLAN 574/1.
16. "BOUNDARY & TOPOGRAPHIC SURVEY AT 1200 BRIGHTON AVENUE, PORTLAND, MAINE FOR WALSH ENGINEERING, 1 KAREN DRIVE #2A, WESTBROOK, MAINE 04092" DATED: JULY 2, 2014, SCALE 1" = 30', BY OWEN HASKELL, INC.
17. "CITY OF PORTLAND PROPERTY REVALUATION SHEET" SHEETS 141 AND 142. SCALE 1" = 300'.
18. "DIVISION OF PROPERTY OF LARRABEE OFFICE PARK FOR ROBERT BILLINGS" DATED JANUARY 22, 2003, SCALE 1" = 20', BY SEBAGO TECHNICS. PROJECT #98490.

GENERAL LEGEND

EXISTING	DESCRIPTION
	PROPERTY LINES
	SETBACK LINES
	TREE LINE
60	MAJOR CONTOUR
59	MINOR CONTOUR
	EDGE OF PAVEMENT
	OVERHEAD ELECTRIC
	IRON PIPE/IRON ROD
	CONCRETE BOUND
	BENCHMARK (TBM)
	UTILITY POLE
	SOIL BOUNDARY

AREA TABLE:

TAX MAP 42B LOT 9 30,401 SQ. FT. 0.70 AC.	TAX MAP 264 LOT A002 652,513 SQ. FT. 14.98 AC.
TAX MAP 42B LOT 10 176,710 SQ. FT. 4.06 AC.	TAX MAP 264 LOT A004 65,496 SQ. FT. 1.50 AC.
TAX MAP 42B LOT 11 1,530,307 SQ. FT. 35.13 AC.	TOTAL PORTLAND AREA 718,009 SQ. FT. 16.48 AC.
TAX MAP 42B LOT 14 1,106,776 SQ. FT. 25.41 AC.	

LINE TABLE		
LINE	LENGTH	BEARING
L1	3.12'	S78°34'17"E
L2	25.35'	N68°25'34"W
L3	15.00'	N77°29'27"W
L4	4.90'	N13°44'59"E
L5	50.23'	S76°01'52"E

CURVE TABLE					
CURVE	LENGTH	DELTA	RADIUS	CHORD	BEARING
C1	7.23'	0°02'09"	11524.16'	7.23'	N12°31'38"E

ADDITIONAL NOTES:

1. ON JULY 19, 2016, THE WESTBROOK PLANNING BOARD GRANTED DIRIGO CENTER DEVELOPERS, LLC A WAIVER FROM THE SUBMISSION REQUIREMENTS OF SECTION 502.4 OF THE LAND ORDINANCES OF THE CITY OF WESTBROOK THAT THE SUBDIVISION FINAL PLAN FOR DIRIGO PLAZA MUST CONTAIN ALL OF THE INFORMATION REQUIRED BY SECTION 502.4, SO THAT THE APPLICANT IS NOT REQUIRED TO SHOW ALL OF THE INFORMATION ON THE FINAL PLAN, BUT INSTEAD MAY PROVIDE ALL OF THAT REQUIRED INFORMATION IN THE DIRIGO PLAZA PLAN SETS AS SUBMITTED.
2. THE PARCELS INCLUDED WITHIN THIS SUBDIVISION PLAN ARE TO BE USED FOR RETAIL AND OTHER COMMERCIAL USES.
3. REFER TO SHEET A3 FOR SUBDIVISION-LOT CONSOLIDATION PLAT.

EASEMENTS:

1. RIGHTS AND EASEMENTS SET FORTH IN A DEED FROM HANS NYHOLM HANSEN TO FRANZ M. HANSEN DATED MAY 14, 1947 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 1868, PAGE 483.
2. RIGHTS AND EASEMENTS FROM HANS NYHOLM HANSEN TO SOCONY-VACUUM OIL COMPANY, INCORPORATED, AS SET FORTH IN AN INSTRUMENT DATED AUGUST 20, 1947 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 1891, PAGE 16. PLOTTED AS SHOWN.
3. RIGHTS AND EASEMENT GRANTED TO CENTRAL MAINE POWER COMPANY ALONG THE WESTERLY AND SOUTHERLY LINE OF PARCEL 2 AS REFERENCED IN A DEED FROM THE CITY OF PORTLAND TO BLUE ROCK QUARRY DATED JULY 13, 1948 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 1921, PAGE 59. NOT PLOTTABLE.
4. RIGHTS AND EASEMENTS FROM BLUE ROCK QUARRY TO CENTRAL MAINE POWER COMPANY AS SET FORTH IN AN INSTRUMENT DATED OCTOBER 28, 1950 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2024, PAGE 115. NOT PLOTTABLE
5. RIGHTS AND EASEMENTS GRANTED TO CENTRAL MAINE POWER COMPANY AS DESCRIBED IN A DEED FROM THE CITY OF PORTLAND TO THE MAINE TURNPIKE AUTHORITY DATED APRIL 8, 1955 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2244, PAGE 15. NOT PLOTTABLE.
6. RIGHTS AND EASEMENTS FROM BLUE ROCK QUARRY TO CENTRAL MAINE POWER COMPANY AS SET FORTH IN AN INSTRUMENT DATED SEPTEMBER 20, 1963 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2783, PAGE 216, AS AFFECTED BY AN INDENTURE BETWEEN BLUE ROCK INDUSTRIES AND CENTRAL MAINE POWER COMPANY DATED DECEMBER 10, 1971 AND RECORDED IN BOOK 3204, PAGE 758. PLOTTED AS SHOWN.
7. RIGHTS AND EASEMENT FROM BLUE ROCK QUARRY TO THE STATE OF MAINE AS SET FORTH IN AN INSTRUMENT DATED APRIL 13, 1964, RECORDED IN BOOK 2817, PAGE 85, AND AS DEPICTED ON RIGHT OF WAY MAP STATE HIGHWAY "12", WESTBROOK DATED AUGUST 1963 AND RECORDED IN PLAN BOOK 74, PAGE 4. AS SHOWN.
8. RIGHTS AND EASEMENTS FROM BLUE ROCK QUARRY TO PORTLAND PIPE LINE CORPORATION AS SET FORTH IN AN INSTRUMENT DATED FEBRUARY 8, 1965 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2881, PAGE 459. PLOTTED AS SHOWN.
9. RIGHTS AND EASEMENTS FROM BLUE ROCK QUARRY TO CENTRAL MAINE POWER COMPANY AS SET FORTH IN AN INSTRUMENT DATED MARCH 8, 1969 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3079, PAGE 702. PLOTTED AS SHOWN.
10. EASEMENT FROM CARL N. HANSEN AND THERESA HANSEN TO THE CITY OF WESTBROOK DATED SEPTEMBER 12, 1963 AND RECORDED IN THE CUMBERLAND COUNY REGISTRY OF DEEDS IN BOOK 2817, PAGE 77 (AFFECTS PARCEL ONE) PLOTTED AS SHOWN.

CONDITIONS OF APPROVAL:

CITY OF WESTBROOK:

1. APPROVAL IS DEPENDENT UPON, AND LIMITED TO, THE PROPOSALS AND PLANS CONTAINED IN THE APPLICATION DATED SEPTEMBER 13, 2016 AND SUPPORTING DOCUMENTS AND ORAL REPRESENTATIONS SUBMITTED AND AFFIRMED BY THE APPLICANT, AND CONDITIONS, IF ANY, IMPOSED BY THE PLANNING BOARD, AND ANY VARIATION FROM SUCH PLANS, PROPOSALS AND SUPPORTING DOCUMENTS AND REPRESENTATIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE CITY PLANNER OR THE PLANNING BOARD.

APPROVED - WESTBROOK, ME
PLANNING BOARD

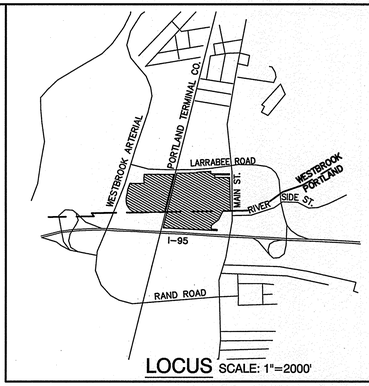
DATE:

CITY OF PORTLAND:

1. THE APPLICANT SHALL PROVIDE EVIDENCE OF ALL REQUIRED STATE AND LOCAL APPROVALS, INCLUDING BUT NOT LIMITED TO MAINE DOT TRAFFIC MOVEMENT PERMIT, DEP SITE LOCATION OF DEVELOPMENT ACT, STORMWATER PERMIT, NATURAL RESOURCES PROTECTION ACT PERMIT, AND WESTBROOK SUBDIVISION REVIEW, PRIOR TO THE ISSUANCE OF A STREET OPENING PERMIT FROM PORTLAND'S DEPARTMENT OF PUBLIC WORKS;
2. THE APPLICANT SHALL PROVIDE THE MONETARY COMPENSATION OF $220,000 FOR MITIGATION OF TRAFFIC IMPACTS ALONG BRIGHTON AVENUE FOR THE INSTALLATION OF PEDESTRIAN AND ADA IMPROVEMENTS, PRIOR TO THE ISSUANCE OF A STREET OPENING PERMIT FROM PORTLAND'S DEPARTMENT OF PUBLIC WORKS.
3. IF ANY REVISIONS ARE PROPOSED TO THE TRAFFIC MOVEMENT PERMIT OR OFF-SITE TRAFFIC MITIGATION MEASURES PLANNED N PORTLAND, WHICH DIFFER FROM THE THOSE PRESENTED IN THE APPLICATION REVIEWED ON OCTOBER 18, 2016, THEN THE APPLICANT SHALL SUBMIT AN AMENDED SUBDIVISION PLAN FOR REVIEW PURSUANT TO PORTLAND'S SUBDIVISION ORDINANCE.

APPROVED - PORTLAND, ME
PLANNING BOARD

DATE:

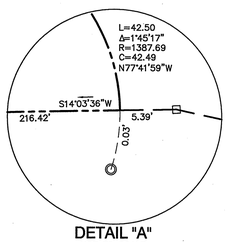


LOCUS SCALE: 1"=2000'

CERTIFICATION:

THIS SURVEY MAP IS IN ACCORDANCE WITH CHAPTER 90, PARTS 1 & 2 OF THE STATE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS EXCEPTING A WRITTEN REPORT AND LEASE LINE MONUMENTS TO BE SET PRIOR TO BUILDING PAD TURNOVER.

GORDON D. HISLOP, JR. PLS #2293 DATE:
ON BEHALF OF JONES & BEACH ENGINEERS, INC.



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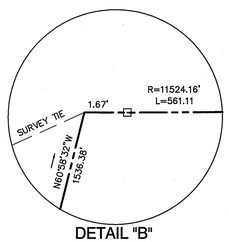
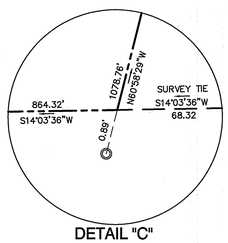
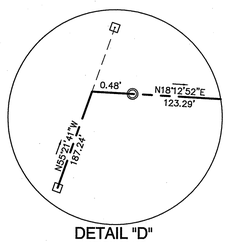
NOT TO SCALE



DETAIL "B"
NOT TO SCALE



DETAIL "C"
NOT TO SCALE



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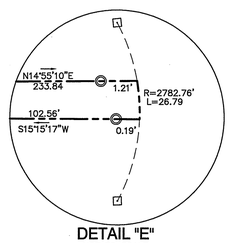
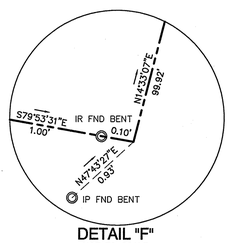


DETAIL "E"
NOT TO SCALE



DETAIL "F"
NOT TO SCALE

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14

CITY OF PORTLAND
TAX MAP 264, LOT A002 & A004
TAX MAP 265, LOT A003 & A005

APPLICANT
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

Design: WGM	Draft: MJS
Checked: WGM	Scale: AS NOTED
Drawing Name: 14110-EX-CONDITIONS.DWG	Date: 2/23/15 Project No.: 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

DRAFT

REV.	DATE	REVISION	BY
2	10/14/16	REVISED PER NEW SURVEY & PLANNING BOARD COMMENTS	ISM
1	6/23/16	REVISED PER ADDITIONAL SURVEY	ISM
0	2/2/16	ISSUED FOR REVIEW	BWG

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name: SUBDIVISION-LOT CONSOLIDATION PLAT NOTES & CONDITIONS
Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME
Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
A2
SHEET 1 OF 2
JBE PROJECT NO. 14110

W:\14110-WESTBROOK-TEST\DWG - DO NOT USE GO TO W DRIVE\14110-EX-CONDITIONS.dwg 10/7/2015 10:06 AM EDT

Section 2 - Completed Application and Fees

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.

Applicant Signature: _____ Date: 8-4-16

I have provided digital copies and sent them on: _____ Date: 8-4-16

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: Dirigo Plaza

PROPOSED DEVELOPMENT ADDRESS:

58 & 80 Main Street, Westbrook, ME

PROJECT DESCRIPTION:

See Attached Description

CHART/BLOCK/LOT: Tax Map 264, Lot A002
Tax Map 264, Lot A004
Tax Map 265, Lot A003
Tax Map 265, Lot A005

PRELIMINARY PLAN _____ (date)
FINAL PLAN _____ (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Dirigo Center Developers, LLC Business Name, if applicable: Address: 7 Swain Drive City/State : Hampton Falls, NH Zip Code: 03844	**Applicant Contact Information** Work # 603-926-7662 Home# Cell # Fax# e-mail: jeffreygove@yahoo.com
Owner – (if different from Applicant) Name: Pike Industries, Inc. Address: 3 Eastgate Park Road City/State : Belmont, NH Zip Code: 03220	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Agent/ Representative Name: Wayne Morrill, Jones & Beach Engineers, Inc. Address: 85 Portsmouth Avenue City/State : Stratham, NH Zip Code: 03885	**Agent/Representative Contact information** Work # 603-772-4746 Cell # e-mail: wmorrill@jonesandbeach.com
Billing Information Name: J & J Gove Development, LLC Address: 7 Swain Drive City/State : Hampton Falls, NH Zip Code: 03844	**Billing Information** Work # 603-926-7662 Cell # Fax# e-mail: jeffreygove@yahoo.com

Engineer	Engineer Contact Information
Name: Wayne Morrill, Jones & Beach Engineers, Inc. Address: 85 Portsmouth Avenue City/State : Stratham, NH Zip Code: 03885	Work # 603-772-4746 Cell # Fax# e-mail: wmorrill@jonesandbeach.com
Surveyor	**Surveyor Contact Information**
Name: David Hislop Address: 34 Old Post Road City/State : Newington, NH Zip Code: 03801	Work # 603-436-1330 Cell # Fax# e-mail: dave@khlandsurveying.com
Architect	**Architect Contact Information**
Name: Phase Zero Design (attn. Tim Tobin) Address: 35 Pond Park Road, Bay 16 City/State : Hingham, MA Zip Code: 02043	Work # (781) 452-7121 Cell # Fax# e-mail: ttobin@phasezerodesign.com
Attorney	**Attorney Contact Information**
Name: James Katsiaficas Address: One Canal Plaza, PO Box 426 City/State : Portland, ME Zip Code: 04112	Work # 207-774-2635 ext. 8108 Cell # Fax# e-mail: jkatsiaficas@perkinsthompson.com

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)
_X_ Subdivisions ($500 + $25/lot)
# of Lots _1_ x $25/lot = $525.00
___ 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:
	8-4-16

PROJECT DATA

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

Total Area of Site	717,869 (Portland)	sq. ft.
Proposed Total Disturbed Area of the Site	32,226 (Portland)	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)	19,166	sq. ft.
Impervious Area (Total Proposed)	29,459	sq. ft.
Building Ground Floor Area and Total Floor Area		
Building Footprint (Total Existing)	0	sq. ft.
Building Footprint (Total Proposed)	0	sq. ft.
Building Floor Area (Total Existing)	0	sq. ft.
Building Floor Area (Total Proposed)		sq. ft.
Zoning		
Existing	Business (B4), Industrial (IL)	
Proposed, if applicable		
Land Use		
Existing	Industrial Operations	
Proposed	Recreation Area	
Residential, If applicable	N/A	
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)		
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)		
Proposed Bedroom Mix	N/A	
# 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	N/A	
# of Parking Spaces (Total Existing)		
# of Parking Spaces (Total Proposed)		
# of Handicapped Spaces (Total Proposed)		
Bicycle Parking Spaces	N/A	
# of Bicycle Spaces (Total Existing)		
# of Bicycle Spaces (Total Proposed)		
Estimated Cost of Project	$145,000	

WESTBROOK

PROJECT DATA

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

Total Area of Site	2,844,468 (Westbrook)	sq. ft.
Proposed Total Disturbed Area of the Site	2,289,949 (Westbrook)	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)	172,933	sq. ft.
Impervious Area (Total Proposed)	1,883,534	sq. ft.
Building Ground Floor Area and Total Floor Area		
Building Footprint (Total Existing)	21,500	sq. ft.
Building Footprint (Total Proposed)	489,500	sq. ft.
Building Floor Area (Total Existing)	21,500	sq. ft.
Building Floor Area (Total Proposed)	489,500	sq. ft.
Zoning		
Existing	Gateway Commercial District	
Proposed, if applicable		
Land Use		
Existing	Industrial Operations	
Proposed	Mixed-Use Retail	
Residential, If applicable	N/A	
# of Residential Units (Total Existing)		
# of Residential Units (Total Proposed)		
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)		
Proposed Bedroom Mix	N/A	
# 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)	51	
# of Parking Spaces (Total Proposed)	2,215	
# of Handicapped Spaces (Total Proposed)	65	
Bicycle Parking Spaces		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	5+	
Estimated Cost of Project	$70,000,000	

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
N/A		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**
		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)**
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 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
X		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
N/A		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
N/A		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
N/A		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.

Subdivision Application
City of Portland, ME

Project:
"Dirigo Plaza"
58 & 80 Main Street
Westbrook, ME 04092

Applicant:
Dirigo Center Developers, LLC
7 Swain Drive
Hampton Falls, NH 03844

Table of Contents

Section 1 - Project Description
Section 2 - Completed Application and Fees
Section 3 - Drainage Summary
Section 4 - Title, Right, and Interest
Section 5 - Financial and Technical Capacity
Section 6 - Easements, Covenants, and Public or Private Right-Of-Ways
Section 7 - Construction Management Plan
Section 8 - Traffic Study & Transportation Plans
Section 9 - Significant Natural Features
Section 10 - City Master Plan Compliance
Section 11 - Utility Service
Section 12 - Solid Waste
Section 13 - Fire Code Compliance
Section 14 - City of Portland Design Standards
Section 15 - Emissions Standards
Section 16 - Abutters
Section 17 - Plans

Section 1 - Project Description

JONES&BEACH
ENGINEERS INC.
85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

August 4, 2016

Barbara Barhydt, Development Review Manager
Planning Division
City of Portland
389 Congress Street
Portland, ME 04101

Re: Proposed Subdivision & Site Plan Application -- Dirigo Plaza, Mixed-Use Retail and Restaurant Development, 58 & 80 Main Street, Westbrook, ME 04092
80 Main Street & 11 Larrabee Road, Westbrook, ME
Tax Map 42B, Lots 9, 10, 11 & 14
JBE Job No.: 14110

Dear Ms. Barhydt:

Our client, Dirigo Center Developers, LLC, proposes a one-lot subdivision and construction of a recreation trail which is located partially within the City of Portland. A three-lot subdivision is proposed in the City of Westbrook, consisting of two long-term lease lots and one lot representing the remainder of the property. The lot that contains the remaining non-leased land extends over the City of Westbrook/City of Portland boundary line. The Portland portion of this lot is approximately 16.48-acres in area, and contains approximately 3.82-acres of Industrial zoned land, while the remaining 12.66-acres is zoned as Commercial Business (B4). The real property tax map and lot numbers that correspond to this Portland portion of the parcel are Tax Map 264/Lot A002, Tax Map 264/Lot A004, Tax Map 265/Lot A003, and Tax Map 265/A005.

A 5' wide asphalt recreational trail is proposed around the perimeter of the existing quarry and is shown on the attached plan titled "Overall Site Plan". The recreational trail will be sloped to direct surface runoff towards the existing pit across a grassed buffer area (see trail detail within Section 3 of this application). The proposed new impervious area in Portland is approximately 10,293 S.F. with a total land disturbance of 32,226 S.F.

There will be no new structures erected as part of the proposed trail construction. A traffic analysis has been prepared for the development in Westbrook and has been submitted to the Planning Division and Department of Public Works. The proposed construction also will not disturb any identified significant natural areas. We are in the process of obtaining several State permits will be obtained including MDEP Site Location of Development Application (SLODA) Permit, Natural Resources Protection Act (NRPA) Permit, and MDOT Traffic Movement Permit

(TMP). Included in this application is a copy of correspondence from MDEP confirming that the SLODA permit has been accepted for review.

Earlier this year, we submitted a subdivision and site plan application to begin the Portland review process, and the attached materials are submitted to supplement and complete that application. As required by Sec. 14-495 of the City of Portland Code of Ordinances ("Code"), enclosed please find a completed application form and five copies of the existing conditions plan, subdivision-lot consolidation plat and overall site plan. The plat is prepared in conformity with Sec. 14-436 of the Code. A plan titled "Subdivision – Lot Consolidation Plat" has been included with these additional application materials.

Please let us know if the planning Division requires any additional information or if you have any questions or comments regarding this submittal.

Very truly yours,
Jones & Beach Engineers, Inc.

Wayne Morrill
Vice President

cc: Jeffrey Levine, Director of Planning and Urban Development
Stuart O'Brien, Planning Director
Jon Jennings, City Manager
Dirigo Center Developers, LLC
James N. Katsiaficas, Esq.

Section 4 - Title, Right, and Interest

Dirigo Center Developers, LLC has right, title and interest in the subject property as follows:

Pike Industries Parcel. J&J Gove Development, LLC has definitive purchase/option agreement in full force and effect with Pike Industries for the following parcels in Westbrook and Portland, Maine:

Tax Map 42B Lots 10, 11 and 14 in Westbrook, ME
Tax Map 264 Lots A002 and A004 in Portland, ME

The original agreement dated August 25, 2014 has been amended by the First Addendum to Purchase and Sale with an effective date of March 1, 2015 executed by both parties and a certain letter agreement dated June 3, 2015 executed by the parties' respective counsel. The outside date to close under these documents is September 24, 2016. J&J Gove Development, LLC assigned this agreement to Dirigo Center Developers, LLC by an "Assignment and Assumption of Purchase and Sale Agreement" dated July 14, 2016.

L.L. Lathrop Parcel. J&J Gove has definitive purchase/option agreement in full force and effect with L.L. Lathrop for the following parcel in Westbrook, Maine:

Tax Map 042B Lot 9

The agreement is dated July 28, 2015 and has an outside closing date of July 28, 2016 with the option to extend to October 2016. J&J Gove Development, LLC assigned this agreement to Dirigo Center Developers, LLC by an "Assignment and Assumption of Contract for the Sale of Commercial Real Estate" dated July 14, 2016.

Portland Terminal Company. J&J Gove has a definitive purchase/option agreement with the Portland Terminal Company for a permanent easement across its property of 2,640 square feet in Westbrook, Maine, and more fully described in Exhibit A of the agreement dated February 2, 2016. The outside date for closing is September 24, 2016. &J Gove Development, LLC nominated Dirigo Center Developers, LLC as its successor under that agreement by a "Nomination of Successor Party" dated July 14, 2016.

All of these purchase/option agreements may be extended by mutual agreement of the parties if deemed necessary.

Attachments: Purchase Option Agreements
Letter of Authorization from J&J Gove Development
Assignment and Assumption of Purchase and Sale Agreement
Assignment and Assumption of Contract for the Sale of Commercial Real Estate
Nomination of Successor Party

ASSIGNMENT AND ASSUMPTION OF PURCHASE AND SALE AGREEMENT

Reference is made to that certain Purchase and Sale Agreement dated as of August 25, 2014 by and between PIKE INDUSTRIES, INC., a Delaware corporation ("**Seller**"), and J&J GOVE DEVELOPMENT, LLC, a New Hampshire limited liability company ("**Buyer**"), as amended (the "**Purchase Agreement**").

Buyer hereby assigns all of its right, title and interest in and to the Purchase Agreement to DIRIGO CENTER DEVELOPERS, LLC, a Maine limited liability company ("**Assignee**"); and Assignee hereby assumes all such right, title and interest in and to the Purchase Agreement.

Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

Executed as a sealed instrument this 14th day of July, 2016.

J&J GOVE DEVELOPMENT, LLC,
a New Hampshire limited liability company

By: _____
Name: Jeffrey Gove
Title: Managing Member

DIRIGO CENTER DEVELOPERS, LLC,
a Maine limited liability company

By: _____
Name: Jeffrey Gove
Title: Managing Member

ASSIGNMENT AND ASSUMPTION OF CONTRACT FOR THE SALE OF COMMERCIAL REAL ESTATE

Reference is made to that certain Contract for the Sale of Commercial Real Estate dated as of August 11, 2015 by and between L.L. LATHROP, INC., a Maine corporation ("**Seller**"), and J&J GOVE DEVELOPMENT, LLC, a New Hampshire limited liability company ("**Buyer**"), as amended (the "**Purchase Agreement**").

Buyer hereby assigns all of its right, title and interest in and to the Purchase Agreement to DIRIGO CENTER DEVELOPERS, LLC, a Maine limited liability company ("**Assignee**"); and Assignee hereby assumes all such right, title and interest in and to the Purchase Agreement.

Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

Executed as a sealed instrument this 14th day of July, 2016.

J&J GOVE DEVELOPMENT, LLC,
a New Hampshire limited liability company

By: _____
Name: Jeffrey Gove
Title: Managing Member

DIRIGO CENTER DEVELOPERS, LLC,
a Maine limited liability company

By: _____
Name: Jeffrey Gove
Title: Managing Member

NOMINATION OF SUCCESSOR PARTY

Reference is made to that certain Purchase and Sale Agreement dated as of February 2, 2016 by and between PORTLAND TERMINAL COMPANY, a Maine corporation ("**Seller**"), and J&J GOVE DEVELOPMENT, LLC, a New Hampshire limited liability company ("**Original Buyer**"), as may be amended (the "**Purchase Agreement**").

Pursuant to Section 22 of the Purchase Agreement, Buyer hereby nominates DIRIGO CENTER DEVELOPERS, LLC, a Maine limited liability company, as its nominee to act in the name, place and stead of the Original Buyer and to act as successor buyer of the Premises and in order to take title to the Premises at the Closing.

Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

Executed as a sealed instrument this 14th day of June, 2016.

Dirigo Center Developers, LLC, a Maine limited liability company, accepts the foregoing nomination and agrees to act as the successor to the Original Buyer as aforesaid.

J&J GOVE DEVELOPMENT, LLC,
a New Hampshire limited liability company

By: _____
Name: Jeffrey F. Gove
Title: Managing Member

DIRIGO CENTER DEVELOPERS, LLC,
a Maine limited liability company

By: _____
Jeffrey F. Gove, Managing Member

PERKINS | THOMPSON
ATTORNEYS & COUNSELORS AT LAW

ESTABLISHED 1871

ONE CANAL PLAZA
PO BOX 426
PORTLAND ME 04112
TEL 207.774.2635
FAX 207.871.8026

www.perkinsthompson.com

July 15, 2016

Barbara Barhydt,
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101

PHILIP C. HUNT
JOHN S. UPTON
PEGGY L. McGEHEE
MELISSA HANLEY MURPHY
JOHN A. HOBSON
JAMES N. KATSIAFICAS
TIMOTHY P. BENOIT
J. GORDON SCANNELL, JR.
FRED W. BOPP III
MARK P. SNOW
WILLIAM J. SHEILS
DAVID B. McCONNELL
PAUL D. PIETROPAOLI
RANDY J. CRESWELL
JULIANNE C. RAY
DAWN M. HARMON
CHRISTOPHER M. DARGIE
PETER J. McDONELL
SARA N. MOPPIN
SHAWN K. DOIL
JOSEPH G. TALBOT
LAUREN B. WELIVER
JOSEPH C. SIVISKI
JOHN W. MASLAND

Re: Site Plan and Subdivision Application, Dirigo Plaza; Dirigo Center Developers, LLC Documentation – Right, Title and Interest and Financial and Technical Capacity.

Dear Barbara:

I am writing to inform you and the City of Portland Planning Department that the name of the applicant for the Dirigo Plaza project has changed from J&J Gove Development Group to Dirigo Center Developers, LLC, and to update the applicant's showing of Right, Title and Interest and of Financial and Technical Capacity to reflect this change.

Therefore, enclosed please find copies of executed "Nomination of Successor Party" and "Assignment and Assumption of Purchase and Sale Agreement" forms to transfer the rights of J&J Gove Development, LLC in the Portland Terminal Company, Pike Industries, Inc., and L. L. Lathrop, Inc. parcels, respectively, to the newly created limited liability company for the Dirigo Plaza project, Dirigo Center Developers, LLC. Also enclosed are an executed "Designation of Borrower" form to recognize Dirigo Center Developers, LLC as the to-be-formed limited liability company that will be the Borrower, and a "Letter of Authorization" authorizing third party consultants and Perkins Thompson to represent Dirigo Center Developers, LLC, and Jones & Beach Engineers, Inc. to serve as its agent in this review process.

Although the applicants' legal entity has changed from J&J Gove Development Group to Dirigo Center Developers, LLC, the identities of the individuals who are members of the new entity LLC and who are developing the parcels and the project have not changed. Those individuals remain Jeffrey Gove and Christopher Nash.

Thank you for your assistance in this matter.

Sincerely,

Jim Katsiaficas

James N. Katsiaficas

cc: Jeffrey Gove, Dirigo Center Developers, LLC
Wayne Morrill, Vice President, Jones & Beach Engineers, Inc.
David J. Tracy, Esq., Hinckley Allen
Philip Saucier, Esq., Bernstein Shur
Katherine Joyce, Esq., Bernstein Shur

NOMINATION OF SUCCESSOR PARTY

Reference is made to that certain Purchase and Sale Agreement dated as of February 2, 2016 by and between PORTLAND TERMINAL COMPANY, a Maine corporation ("**Seller**"), and J&J GOVE DEVELOPMENT, LLC, a New Hampshire limited liability company ("**Original Buyer**"), as may be amended (the "**Purchase Agreement**").

Pursuant to Section 22 of the Purchase Agreement, Buyer hereby nominates DIRIGO CENTER DEVELOPERS, LLC, a Maine limited liability company, as its nominee to act in the name, place and stead of the Original Buyer and to act as successor buyer of the Premises and in order to take title to the Premises at the Closing.

Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

Executed as a sealed instrument this 14th day of June, 2016.

Dirigo Center Developers, LLC, a Maine limited liability company, accepts the foregoing nomination and agrees to act as the successor to the Original Buyer as aforesaid.

J&J GOVE DEVELOPMENT, LLC,
a New Hampshire limited liability company

By: _____
Name: Jeffrey F. Gove
Title: Managing Member

DIRIGO CENTER DEVELOPERS, LLC,
a Maine limited liability company

By: _____
Jeffrey F. Gove, Managing Member

ASSIGNMENT AND ASSUMPTION OF PURCHASE AND SALE AGREEMENT

Reference is made to that certain Purchase and Sale Agreement dated as of August 25, 2014 by and between PIKE INDUSTRIES, INC., a Delaware corporation ("**Seller**"), and J&J GOVE DEVELOPMENT, LLC, a New Hampshire limited liability company ("**Buyer**"), as amended (the "**Purchase Agreement**").

Buyer hereby assigns all of its right, title and interest in and to the Purchase Agreement to DIRIGO CENTER DEVELOPERS, LLC, a Maine limited liability company ("**Assignee**"); and Assignee hereby assumes all such right, title and interest in and to the Purchase Agreement.

Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

Executed as a sealed instrument this 14th day of July, 2016.

J&J GOVE DEVELOPMENT, LLC,
a New Hampshire limited liability company

By: _____
Name: Jeffrey Gove
Title: Managing Member

DIRIGO CENTER DEVELOPERS, LLC,
a Maine limited liability company

By: _____
Name: Jeffrey Gove
Title: Managing Member

ASSIGNMENT AND ASSUMPTION OF
CONTRACT FOR THE SALE OF COMMERCIAL REAL ESTATE

Reference is made to that certain Contract for the Sale of Commercial Real Estate dated as of August 11, 2015 by and between L.L. LATHROP, INC., a Maine corporation ("**Seller**"), and J&J GOVE DEVELOPMENT, LLC, a New Hampshire limited liability company ("**Buyer**"), as amended (the "**Purchase Agreement**").

Buyer hereby assigns all of its right, title and interest in and to the Purchase Agreement to DIRIGO CENTER DEVELOPERS, LLC, a Maine limited liability company ("**Assignee**"); and Assignee hereby assumes all such right, title and interest in and to the Purchase Agreement.

Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

Executed as a sealed instrument this 14th day of July, 2016.

J&J GOVE DEVELOPMENT, LLC,
a New Hampshire limited liability company

By: _____
Name: Jeffrey Gove
Title: Managing Member

DIRIGO CENTER DEVELOPERS, LLC,
a Maine limited liability company

By: _____
Name: Jeffrey Gove
Title: Managing Member

DESIGNATION OF BORROWER

Reference is hereby made to that certain financing letter (the "**Financing Letter**") issued by The Washington Trust Company (the "**Lender**") to the undersigned in connection with the project commonly known as Dirigo Center and located at Larrabee Road and Main Street in Westbrook, Maine, dated August 20, 2015. The undersigned hereby acknowledge and agree that Dirigo Center Developers, LLC, a Maine limited liability company, shall be the limited liability company controlled by Jeffrey Gove and Christopher Nash which was referenced in the Financing Letter as the to be formed limited liability company which will act as the Borrower in connection with the loan transaction referenced in the Financing Letter.

_____
Jeffrey F. Gove

_____
Christopher F. Nash

Dirigo Center Developers, LLC, a Maine limited liability company

By:_____
Jeffrey F. Gove, Managing Member

July 14, 2016

LETTER OF AUTHORIZATION

This is a supplemental Letter of Authorization to the Original Letter of Authorization provided by Jeffrey F. Gove and J & J Gove Development, LLC dated July 1, 2014.

The undersigned, Jeffrey F. Gove, J & J Gove Development, LLC, a New Hampshire limited liability company, and Dirigo Center Developers, LLC, a Maine limited liability company, do hereby acknowledge and agree that said Dirigo Center Developers, LLC and the principals thereof, including Jeffrey F. Gove, do hereby authorize and empower Jones & Beach Engineers, Inc., P.O. Box 219, Stratham, New Hampshire, to act on their behalf concerning the property located in Westbrook, Maine, commonly known as Tax Map 42B, Lots 9, 10, 11 and 14. The aforesaid parcel is located on 58 and 80 Main Street in Westbrook, Maine. This Letter of Authorization also further confirms that all other third party consultants are authorized to continue to represent the undersigned parties in connection with the above-referenced property including, without limitation, James N. Katsiaficas of the firm of Perkins Thompson in Portland, Maine. Without limiting the foregoing, the undersigned do hereby appoint Jones & Beach Engineers, Inc. as our agent to act on our behalf in the review process to include any required signatures.

J & J Gove Development, LLC, a New Hampshire limited liability company

By: _____
Jeffrey F. Gove, Managing Member

_____
Jeffrey F. Gove

Dirigo Center Developers, LLC, a Maine limited liability company

By: _____
Jeffrey F. Gove, Managing Member

July 14, 2014

Section 6 - Easements, Covenants, and Public or Private Right-Of-Ways

The property within Portland contains several utility easements and an existing railroad crossing easement shown on the existing conditions plan that is included with this application.

Subject properties:
Owner of Record: Pike Industries, Inc. CCRD Book 23504, Page 113, Corrected by Book 23578, Page 296

a. Westbrook Tax Map 42B, Lot 14 (Ref. Deed BK8964/PG221, 2001/491, 2198/493)
b. Westbrook Tax Map 42B, Lot 11 (Ref. Deed 2198/493, 1737/445)
c. Westbrook Tax Map 42B, Lot 10 (Ref. Deed 4166/68)
d. Portland Tax Map 264, Lot A002 (Ref. Deed 3162/899, 1921/59)
e. Portland Tax Map 264, Lot A004 (Ref. Deed 2755/81)

Easements:
Utility Easement to Portland Pipe Line Corporation (BK2881/PG459)
Utility Easement to Central Maine Power Company (3204/758)
Petroleum Easement to Buckeye Partners (1891/16)

Railroad Crossing:
Farm crossing: Plan - "Right-Of-Way and Track Map, The Portland & Ogdensburg Ry., Owned & Operated by the Portland Terminal Company, Station 158+40 to Station 211+20" Dated: June 10, 1916. Scale 1"=100'. Office of Chief Engineer, Portland, Maine (Sheet V-2/4)

BK8964PG0221

053314

WARRANTY DEED

Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS,

THAT, I, Irene E. Elwell of Westbrook, County of Cumberland, State of Maine, being unmarried, for consideration paid, grant to BLUE ROCK INDUSTRIES of Westbrook, County of Cumberland, State of Maine, whose mailing address is 58 Main Street, Westbrook, Maine 04092 with warranty covenants, a certain lot or parcel of land situated southeasterly of, but not adjacent to, Larrabee Road in Westbrook, County of Cumberland and State of Maine, being more particularly bounded and described as follows:

MAINE REAL ESTATE TAX PAID

Beginning at a 5/8" capped rebar marked RLS #1155 set on the town line between the City of Portland and the City of Westbrook and land now or formerly of the State of Maine (C.C.R.D. 3397-194) as shown on a Plan of Maine State Highway Commission Right of Way Map dated October, 1972 recorded in the Cumberland County Registry of Deeds Plan Book 127 Page 26, said iron bearing South 31-19-46 West two thousand seven hundred seventeen and fifty-four hundredths (2727.54) feet from a 6" X 6" concrete town line monument as shown on a plan of the town line between Portland and Westbrook dated January 3, 1946 per the City of Portland Department of Engineering;

Thence, South 74-29-39 West along said land of the State of Maine one hundred forty-seven and sixty-three hundredths (147.63) feet to a 6" X 6" concrete monument set at a point of curvature at Station 15+00.81 as shown on said Plan of the State Highway Commission;

Thence, southwesterly continuing along said land of the State of Maine and a curve to the left having a radius of three hundred five and no hundredths (305.00) feet an arc distance of two hundred thirty-one and sixty-six hundredths (231.66) feet to a 6" X 6" concrete monument set at a point of compound curvature at Station 18+27.415 as shown on said plan;

Thence, westerly along said land of the State of Maine and a curve to the left having a radius of five hundred ninety-five and no hundredths (595.00) feet an arc distance of two hundred thirty-seven and one hundredths (237.01) feet to a point at Station 21+14.218 on said plan;

Thence, North 50-16-41 West along said land of the State of Maine one hundred four and twenty hundredths (104.20) feet to a point at Station 71+95.56 on said plan;

Thence, North 38-07-34 West along said land of the State of Maine one hundred eighty-seven and thirty hundredths (187.30) feet to a capped 5/8" rebar and land now or fomerly of Llewellyn A. Randall, Sr. (C.C. Probate Docket #61110);

Thence, North 35-19-07 East along said land of Randall and remains of a wire fence one hundred twenty-two and eighty-one hundredths (122.81) feet to a wooden fence post;

Thence, North 23-10-52 East continuing along said land of Randall and remains of a wire fence eighty-three and forty-eight hundredths (83.48) feet to a wooden fence post;

Thence, North 30-44-25 East continuing along said land of Randall and remains of a wire fence one hundred eighty-eight and fifty-three hundredths (188.53) feet to a wooden fence post;

Thence, North 43-09-19 East continuing along said land of Randall twenty-nine and seventy-seven hundredths (29.77) feet to a capped 5/8" rebar and land now or formerly of Blue Rock Industries (C.C.R.D. 2001-491);

Thence, South 47-07-02 East along said land of Blue Rock Industries eight hundred twenty and no hundredths (820.00) feet to a capped 5/8" rebar set on the town line between the City of Portland and the City of Westbrook;

Thence, South 31-19-46 West along the town line one hundred sixty-nine and ninety-one hundredths (169.91) feet to the point of beginning.

Containing 7.53 acres, more or less.

Bearings are observed Magnetic, September, 1989.

Meaning and intending to convey the same land conveyed to Grantor herein by the Estate of D. Emerson Elwell in a deed dated December 31, 1985 and recorded in the Cumberland County Registry of Deeds in Book 7029, Page 308.

WITNESS my hand and seal this 25th day of the month of October, 1989.

Signed, Sealed and Delivered
in presence of

U. Charles Remmel II

Irene E. Elwell
Irene E. Elwell

State of Maine, County of Cumberland, ss. October 25, 1989

Then personally appeared the above named Irene E. Elwell and acknowledged the foregoing instrument to be her free act and deed.

Before me,

RECEIVED
RECORDED REGISTRY OF DEEDS
1989 OCT 26 PM 2:27
CUMBERLAND COUNTY

U. Charles Remmel II
~~Notary Public~~/
Attorney at Law

U. Charles Remmel II
Type or print name

Know all Men by these Presents, That

I, George W. Hunter of Westbrook, in the County of Cumberland and State of Maine, in consideration of one dollar and other valuable considerations, paid by Blue Rock Quarry of said Westbrook, in said County and State, the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Blue Rock Quarry, its successors and assigns forever, a certain lot or parcel of land situated in said Westbrook, and bounded and described as follows, to wit:

Commencing on the easterly side line of Stroudwater Street at a stone post set in the division line between Westbrook and Portland, measuring down on the division line easterly from said stone post three thousand ninety-six and seventy-two hundredths (3096.72) feet; thence from this point extending along the said division line between Westbrook and Portland a distance of forty-two (42) rods, more or less to the Railroad Right of way; thence northerly along said Railroad Right of Way a distance of of fifty-two (52) rods, more or less, to the land now or formerly owned by John W. Washburn; thence westerly by said Washburn land forty-two (42) rods, more or less, to land of Elijah P. Hunter; thence southerly by the said Elijah P. Hunter land and land of grantor to the point of beginning.

Meaning and intending hereby to convey the same premises which I. purchased by warranty deed from Antonio Galli dated June 19, 1942 and recorded in Cumberland Registry of Deeds, in Book 1683, Page 8.

U.S.I.R. $1.65 G.H.W. 6/20/50

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Blue Rock Quarry its successors and assigns, to it and said Grantee, its successors their use and behoof forever. And I do covenant with the heirs and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said George W. Hunter and Annetta R. Hunter wife of the said George W. Hunter joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises, our hands and seals this sixteenth day of June have hereunto set one thousand nine hundred and fifty. in the year of our Lord

Signed, Sealed and Delivered in presence of

Grover Welch

to both

George W. Hunter Seal

Annetta R. Hunter Seal

State of Maine. CUMBERLAND, SS. June 16th, 1950. Personally appeared the above named George W. Hunter and acknowledged the foregoing instrument to be his free act and deed.

Before me, Grover Welch, Justice of the Peace

Received June 20, 1950, at 10 o'clock 20 m. A. M., and recorded according to the original.

Know all Men by these Presents, That

I, Hans N. Hansen of Westbrook, in the County of Cumberland and State of Maine,

in consideration of One Dollar and other valuable considerations, paid by Blue Rock Quarry, a corporation established by law, and having a place of business at said Westbrook, in said County of Cumberland and State of Maine,

the receipt whereof I do hereby acknowledge, do hereby, give, grant, bargain, sell and convey unto the said Blue Rock Quarry, its successors and assigns forever, a certain lot or parcel of land situated southerly of Main Street, in said Westbrook, in said County of Cumberland and State of Maine, bounded and described as follows:- Said parcel is bounded on the southeast by land formerly of John Larrabee and now of the Grantee herein; on the southwest by land formerly of G. Skillins and land formerly of D. & S. Conant; on the northwest by land of Hannah Fluent set off to her in the division of the Estate of her father Benjamin Larrabee; on the northeast by the following described line; Beginning at an iron in the division line between land of the Grantor and land of the Grantee herein, said iron being distant S. 32° 11' W. 938.49' from the southwesterly side line of Main Street; thence N 59° 01' W. 417.66' to an iron in a fence marking the division line between land of the Grantor and land formerly of the said Fluent;

Said above-described courses are magnetic and of the date of 1951.

Subject to the right of way of the Maine Central Railroad Company.

Said above-described parcel being a portion of the lot of land conveyed by Bernice W. Bixby et als to Hans N. Hansen by deed dated September 2, 1926 and recorded in Cumberland County Registry of Deeds, in Book 1246, Page 89.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Blue Rock Quarry its successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors heirs and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; except as noted; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors heirs and assigns forever, against the lawful claims and demands of all persons.

U.S.I.R. $3.30 10/22/54 H.N.H.

In Witness Whereof, I, the said Hans N. Hansen and Lina M. Hansen wife of the said Hans N. Hansen joining in this deed as Grantor, and relinquishing and conveying all rights by descent and all other rights in the above described premises,

our hand s and seal s this 22nd day of October have hereunto set in the year of our Lord one thousand nine hundred and fifty-four.

Signed, Sealed and Delivered in presence of

Roger P. Welch to both

Hans N. Hansen Seal

Lina M. Hansen Seal

State of Maine, CUMBERLAND, ss. October 22 1954. Personally appeared the above named Hans N. Hansen and acknowledged the foregoing instrument to be his free act and deed.

Before me, Roger P. Welch Justice of the Peace

Received October 29, 19 54 at 8 o'clock - m. A. M., and recorded according to the original.

Know all Men by these Presents, That

W. H. Hinman, Inc., a corporation organized and existing under the laws of Commonwealth of Massachusetts and located at North Anson in the County of Somerset in said State of Maine,

in consideration of one dollar and other valuable considerations, paid by Blue Rock Quarry a corporation organized and existing under the laws of the State of Maine and having a principal office at Westbrook, County of Cumberland in said State of Maine,

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Blue Rock Quarry, its successors and assigns forever, a certain lot or parcel of land situated in the City of Westbrook, County of Cumberland, and State of Maine, bounded and described as follows: Beginning at a stone hub marked "W.D." set in the Southerly side of Main Street at the division line between Westbrook and Portland; thence Westerly by said Main Street fifty (50) rods, more or less, to land now or formerly owned by John W. Washburn; thence Southerly by said Washburn's land to land owned now or formerly by Daniel Conant; thence by said Conant's land and land now or formerly belonging to Edward Chapman and land belonging to Ann Quimby heirs, in an Easterly direction, by and in various courses, to the Portland City Line; thence Northerly by that line to the point of beginning, the stone hub marked "W.D."

This land, about fifty-six (56) acres, more or less, formerly belonged to John Larrabee and was conveyed by his heirs to his son, Frederick D. Larrabee by their deed dated March 6, A. D. 1882 and recorded in Cumberland County Registry of Deeds, Book 436, Page 404, and was conveyed to John Larrabee Jones by Lydia W. J. Stevens by deed dated February 12, A. D. 1922 and recorded in said Cumberland County Registry of Deeds, Book 1095, Page 51.

This conveyance is made subject to such rights as the Portland and Ogdensburg Railroad may have in said premises.

Excepting however from the above described property, a certain lot or parcel of land which Antonio Galli conveyed to George W. Hunter under date of June 19, A. D. 1942 and recorded in said Registry, Book 1683, Page 8.

Being the same premises which were conveyed to Antonio Galli by deed of said John Larrabee Jones dated November 15, A. D. 1938 and recorded in said Registry, Book 1554, Page 484.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Blue Rock Quarry, its successors

~~heirs~~ and assigns, to it and their use and behoof forever. And we do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; that we have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our successors ~~heirs~~ shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

U.S.I.R. 4.95 W.H.H.Inc. 3/14/44

In Witness Whereof, the said W. H. Hinman, Inc. joining in this deed as Grantor, and relinquishing and conveying their right by descent and all other rights in the above described premises,

their hand and seal this fourteenth day of March have hereunto set one thousand nine hundred and forty-four. in the year of our Lord

Signed, Sealed and Delivered in presence of

Arlene L. Davis — W. H. HINMAN, INC. CORPORATE SEAL

Geraldine A. McCarty — G. W. Yeaton, Asst. Treas.

State of Maine, ~~CUMBERLAND~~, ss. ——— 19 —

Personally appeared the above named G. W. Yeaton, Assistant Treasurer of W. H. Hinman, Inc. and acknowledged the above instrument to be his free act and deed. ———

Before me, E. H. Wyman, Jr., Notary Public Notarial Seal of Edwin H. Wyman, Jr.

Received March 15 19 44, at 10 o'clock 45 m. A. M., and recorded according to the original.

68 1888

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, THAT, We, Carl N. Hansen and Philip A. Hansen, both of Westbrook, Maine, Rudolf E. Hansen of Panacea, Florida, Richard O. Hansen of Los Angeles, California and Jeannette E. Currier of Ypsilanti, Michigan, in consideration of One Dollar ($1.00) and other valuable considerations, paid by Blue Rock Industries, a Maine corporation, the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Blue Rock Industries, its Successors and Assigns forever, a certain lot or parcel of land, with the buildings thereon, situated on the southerly side of Main Street in Westbrook in the County of Cumberland and State of Maine, bounded and described as follows:

Beginning at an iron pipe set in the ground in said southerly side of said Main Street at the northwesterly corner of land of Blue Rock Industries; thence South twenty-eight degrees fifty-six minutes five seconds West (S 28° 56' 05" W) along said Blue Rock Industries land nine hundred thirteen (913) feet, more or less, to an iron pipe set in the ground; thence North sixty degrees four minutes thirty seconds West (N 60° 04' 30" W) along said Blue Rock Industries land two hundred fifty-five (255) feet, more or less, to an iron pipe set in the ground in the easterly side of Larrabee Road; thence northerly along said Larrabee Road five (5) feet, more or less, to a monument set in the ground; thence northwesterly along said Larrabee Road fifteen (15) feet, more or less, to an iron pipe set in the ground; thence northeasterly along said Larrabee Road three hundred eighty-eight (388) feet, more or less, to an iron pipe set in the ground at the westerly corner of land of Franz M. Hansen et al.; thence South sixty-two degrees eleven minutes thirty-three seconds East (S 62° 11' 33" E) along said land of said Franz M. Hansen et al. sixty-eight (68) feet to an iron pipe set in the ground; thence North thirty-two degrees twenty-nine minutes thirty seconds East (N 32° 29' 30" E) along said Franz M. Hansen et al. land one hundred (100) feet, more or less, to an iron pipe set in the ground; thence

continuing North thirty-two degrees twenty-nine minutes thirty seconds East (N 32° 29' 30"E) along land of Noyes Land Company four hundred twenty-eight and seventy-five hundredths (428.75) feet, more or less, to an iron pipe set in the ground in said southerly side of said Main Street; thence easterly along said southerly side of Main Street twenty-six (26) feet to an iron pipe set in the ground at the northwesterly corner of land of Carl N. Hansen et al.; thence South thirty-two degrees twenty-nine minutes thirty seconds West (S 32° 29' 30"W) along said Carl N. Hansen et al. land four hundred twenty-eight and seventy-five hundredths (428.75) feet to an iron pipe set in the ground; thence South sixty-two degrees eleven minutes thirty-three seconds East (S 62° 11' 33"E) along said Carl N. Hansen et al. land seventy-four (74) feet, more or less, to an iron pipe set in the ground; thence North thirty-two degrees twenty-nine minutes thirty seconds East (N 32° 29' 30"E) and along said Carl N. Hansen et al. land four hundred twenty-eight and seventy-five hundredths (428.75) feet to an iron pipe set in the ground in said southerly side of said Main Street; thence easterly along said Main Street one hundred (100) feet to the point of beginning.

Being a part of the same premises conveyed by Bernice W. Bixby et als. to Hans N. Hansen by deed dated September 2, 1926 and recorded in the Cumberland County Registry of Deeds in Book 1246, Page 89. The interest of the Grantors herein was acquired under the will of the said Hans N. Hansen which has been duly probated in Probate Court for Cumberland County, Docket No. 65511.

References also made to a deed from Franz M. Hansen to the Grantors herein dated August 28, 1975 and recorded in the Cumberland County Registry of Deeds, Book 3737, Page 131.

TO HAVE AND TO HOLD the aforegranted and bargained premises, with all privileges and appurtenances thereof to the said Blue Rock Industries, its Successors and Assigns, to it and its use and behoof forever.

AND we do covenant with the said Grantee, its Successors and Assigns, that we are lawfully seized in free of the premises; that they are free of all incumbrances; that we have good right

to sell and convey the same to the said Grantee to hold as aforesaid; and that we and our Heirs, shall and will Warrant and Defend the same to the said Grantee, its Successors and Assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, we, the said Carl N. Hansen and Theresa E. Hansen, wife of the said Carl N. Hansen, Philip A. Hansen and Doris Hansen, wife of the said Philip A. Hansen, Rudolf E. Hansen and Helen Hansen, wife of the said Rudolf E. Hansen, Richard O. Hansen and Gladys Hansen, wife of the said Richard O. Hansen and Jeannette E. Currier and George Currier, husband of the said Jeannette E. Currier, joining in this deed as Grantors, and relinquishing and conveying our rights by decent of all other rights in the above described premises, have hereunto set our hands and seals this 3rd day of October in the year of our Lord one thousand nine hundred and seventy-seven.

Signed, Sealed and Delivered
in presence of

Robert E. Hansen — Carl N. Hansen
Richard T. Brown — Theresa E. Hansen
Agapito Pagocalderos — Philip A. Hansen
Jeannette E. Hansen — Doris Hansen
Agapito Pagocalderos — Rudolf E. Hansen
Agapito Pagocalderos — Helen Hansen
John Berns — Richard O. Hansen
John Berns — Gladys Hansen
Janice C. Libby — Jeannette E. Currier
Janice C. Libby — George Currier

STATE OF MAINE
Cumberland, ss

October 3, 1977

Personally appeared the above named Carl N. Hansen and acknowledged the above instrument to be his free act and deed.

Before me,

Justice of the Peace

JAN 24 1978

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 3 H25 M. and recorded in
Book 4166 Page 108 Register

3819

899

Know All Men by These Presents,

That the CITY OF PORTLAND, a body politic and corporate, located in the County of Cumberland and State of Maine,

~~a corporation organized and existing under the laws of the State~~ ~~of~~ ~~in the County of~~ ~~and State of~~

in consideration of One Dollar ($1.00) and other good and valuable considerations

paid by BLUE ROCK INDUSTRIES, a corporation organized and existing under the laws of the State of Maine and having a place of business in the City of Westbrook, County of Cumberland and State of Maine,

the receipt whereof it does hereby acknowledge, does hereby remise, release, bargain, sell and convey and Forever Quit-Claim unto the said

Blue Rock Industries, its successors

~~heirs~~ and assigns forever,

a certain lot or parcel of land situate in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at a point in the boundary line running between Portland and Westbrook; said point being distant two hundred sixteen and thirty two one-hundredths (216.32) feet Southerly along the said Portland/Westbrook boundary line from the Southerly street line of Brighton Avenue; thence Southeasterly from said point of beginning, making an included angle of one hundred seventeen degrees and fifty five minutes (117° 55') through the East, with the Northerly direction of the said Portland/Westbrook boundary line, a distance of two hundred seventy three and seventy five one-hundredths (273.75) feet, more or less, to a point; thence Southeasterly, making a deflection angle of twenty five degrees, fourteen and one-half minutes (25° 14-1/2') to the right, a distance of fifty two feet (52) to a point and an intersection with the Northerly line of land owned by Blue Rock Industries; thence Westerly, along the said Northerly line of Blue Rock Industries land and making an included angle of fifty three degrees, nine and one-half minutes (53° 09-1/2') through the Northwest with the Northwesterly direction of the last described course, a distance of two hundred seventy three and seventeen one-hundredths (273.17) feet to a point and an intersection with the boundary line running between Portland and Westbrook; thence Northerly, along the said boundary line, making an angle of ninety degrees (90°) with the last described course, a distance of one hundred and seventy (170) feet to the point of beginning.

The above described lot or parcel of land contains 26,274 square feet or 0.60 acres.

Being a portion of the premises conveyed to the Grantor by George Warren and Lewis P. Warren by deed, dated July 3, 1871, and recorded in the Cumberland County Registry of Deeds in Book 386, Page 393.

900

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to it the said Blue Rock Industries, its successors

and Assigns forever.

And the said Grantor Corporation does covenant with the said Blue Rock Industries, its successors

and Assigns, that it will Warrant and Forever Defend the premises to it the said Grantee, its successors and Assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said CITY OF PORTLAND

has caused this instrument to be sealed with its corporate seal and signed in its corporate name by John G. DePalma

, its Director of Finance thereunto duly authorized, this 20th day of November in the year one thousand nine hundred and seventy.

Signed, Sealed and Delivered in presence of

CITY OF PORTLAND

By John G. DePalma
Director of Finance

(CORPORATE SEAL)

State of Maine. CUMBERLAND ss. Nov 20 1970.

Personally appeared the above named JOHN G. DE PALMA,

Director of Finance of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

NOTARY PUBLIC

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE MAR 18 1971
Received at 10 H 05 M AM, and recorded in BOOK 3162 PAGE 899
C. Lytle Dwyer Register

Know all Men by these Presents, That

City of Portland, a body politic and corporate, located in the County of Cumberland and State of Maine

in consideration of One dollar ($1.00) and other valuable considerations paid by Blue Rock Quarry, a corporation organized and existing under the laws of the State of Maine and located at Westbrook in said County of Cumberland and State of Maine,

the receipt whereof it do ~~e~~hereby acknowledge, does hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said Blue Rock Quarry its successors and assigns forever, a certain lot or parcel of land situated on the southerly side of Brighton Avenue in said Portland, being a part of the premises known as the "City Home" property, so-called, and bounded and described as follows: viz;

Beginning at a point in the division line between the City of Portland and the City of Westbrook, distant southerly along the said division line four hundred (400) feet from the southerly side line of Brighton Avenue, thence easterly and making an angle of ninety(90)degrees with the said division line between the City of Portland and the City of Westbrook a distance of four hundred and thirty-five (435)feet, thence southerly and making an angle of ninety(90) degrees with the last described line and on a line parallel to and distant four hundred and thirty-five (435)feet at right angles from the said division line between the City of Portland and the City of Westbrook to the northerly side line of the Portland Terminal Company (Mountain Division) Location, thence northwesterly by the said northerly side line of the Portland Terminal Company Location to the said division line between the City of Portland and the City of Westbrook, thence northerly by the said division line between the City of Portland and the City of Westbrook to the point of beginning, together with the right of passage over City land between the above described land and Brighton Avenue.

Meaning and intending to convey hereby a strip of land four hundred and thirty-five feet (435) wide, located on the westerly side of the City Farm, so-called, northerly of the Portland Terminal Company Location and containing about 14.5 acres, and being part of the premises conveyed by George Warren and Lewis P. Warren to the Town of Deering by deed, dated July 3, 1871 and recorded in Cumberland County Registry of Deeds, Book 386, Page 393.

This conveyance is made subject to the rights of the Central Maine Power Company, its successors and assigns, to erect, construct, maintain, replace and repair pole lines and wires for the conduct of electricity along the westerly and southerly boundaries of the premises hereby conveyed.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to it the said Blue Rock Quarry, its Successors ~~heirs~~ and assigns forever.

And the said Grantor Corporation does covenant with the said Blue Rock Quarry, its successors ~~heirs~~ and assigns, that it will warrant and forever defend the premises to it the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons claiming by, through or under it.

In Witness Whereof, the said City of Portland has caused this instrument to be sealed with its corporate seal and signed in its corporate name by John R. Gilmartin, its Treasurer thereunto duly authorized,

~~have hereunto set~~ hand ~~and seal~~ this thirteenth day of July in the year ~~of our Lord~~ one thousand nine hundred and forty-eight.

Signed, Sealed and Delivered in presence of

Edward T. Gignoux

CITY OF PORTLAND CORPORATE SEAL

By John R. Gilmartin

Its Treasurer

State of Maine, County of Cumberland, ss. July 13th, 1948

Personally appeared the above named John R. Gilmartin, Treasurer of said Grantor Corporation as aforesaid,

and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

BEFORE ME,

Edward T. Gignoux, Justice of the Peace

RECEIVED July 14 19 48 , at 1 o'clock - m. P.M., and recorded according to the original.

81

KNOW ALL MEN BY THESE PRESENTS

That, the MAINE TURNPIKE AUTHORITY, a body corporate and politic, duly created and existing by virtue of an act of the Legislature of the State of Maine, Chapter 69 of the Private and Special Laws of 1941, as amended, and having an office at Augusta, in the County of Kennebec and State of Maine,

Maine Turnpike Authority

in consideration of one ($1.00) dollar and other valuable considerations

paid by Blue Rock Quarry, a corporation duly organized and existing under the laws

of the State of Maine, and having its principal place of business in the City of

Westbrook, County of Cumberland and State of Maine, the receipt whereof is hereby

acknowledged, does hereby remise, release, bargain, sell and convey and forever

QUIT CLAIM unto the said Blue Rock Quarry, its successors and assigns, forever, a

certain lot or parcel of land situate in the City of Portland, County of Cumberland

and State of Maine, bounded and described as follows, to wit:

to

Blue Rock Quarry

Q C

Beginning at a point on the westerly Right of Way line of the Maine Turnpike, so-called, said point being located one hundred fifty (150) feet distant westerly from the survey base line of the Maine Turnpike, so-called, measured at right angles at Station 2379+85.02 as shown on a Property Plan entitled, "Maine Turnpike Authority, Maine Turnpike, Section 2 - Portland to Augusta," dated January 1955, revised April 1963, on file in the office of the Maine Turnpike Authority, the parcel of land herein described being shown on Portland Supplemental Sheet No. 14 of said plan;

thence, north thirteen degrees forty four minutes east (N13°-44'E) by the line of land of Blue Rock Quarry, a distance of about one thousand four hundred twenty six and twenty hundredths (1426.20) feet to a point on the line of land now or formerly of the City of Portland, said point being located two hundred fifty-eight and fifty nine hundredths (258.59) feet distant westerly from the said survey base line measured at right angles at Station 2394+07.08;

thence, south seventy six degrees sixteen minutes east (S76°-16'E) by the line of said land now or formerly of the City of Portland, a distance of about one hundred eight and ninety one hundredths (108.91) feet to a point on the westerly right of way line of the said Maine Turnpike said point being located one hundred fifty (150) feet distant westerly from the said survey base line, measured at right angles at Station 2394+15.37;

thence, south eighteen degrees six minutes west (S18°-06'W) parallel to the said survey base line and one hundred fifty (150) feet distant westerly therefrom, a distance of about one thousand four hundred thirty and thirty five hundredths (1430.35) feet to the point of beginning.

containing approximately one and seventy eight hundredths (1.78) acres

The bearings in the foregoing description are referred to the True Meridian.

Being the same premises designated as Parcel No. 13E conveyed to the Maine Turnpike Authority by the City of Portland by Quit Claim Deed dated April 8, 1955, recorded in Cumberland County Registry of Deeds in Book 2244, Page 15.

F82

82 This conveyance is made subject to Central Maine Power Company Easement designated as Easement No. 2 shown on the aforementioned Property Plan and more particulary described in the mentioned Quit Claim Deed dated April 8, 1955, recorded in Book 2244, Page 15.

To Have and To Hold the same, together with all the privileges and appurtenances thereunto belonging to the said Blue Rock Quarry, its successors and assigns to it and their use and behoof forever. And it does covenant with the said Grantee, Blue Rock Quarry, its successors and assigns, that it will warrant and forever defend the premises to the said Grantee, Blue Rock Quarry, its successors and assigns, against the lawful claims and demands of all persons claiming by, through or under it.

IN WITNESS WHEREOF, the MAINE TURNPIKE AUTHORITY has caused these presents to be executed in its behalf by Paul C. Thurston, its Chairman, and its corporate seal to be affixed by Lucius D. Barrows, its Secretary and Treasurer, both hereunto duly authorized this 6th day of May in the year of our Lord one thousand nine hundred and sixty three.

MAINE TURNPIKE AUTHORITY

By: Paul C Thurston
Chairman

Attest: Lucius D Barrows
Secretary and Treasurer

STATE OF MAINE

County of Cumberland ss. May 6 , 1963

Before me appeared Paul C Thurston, to me personally known, who, being by me duly sworn did say that he is the Chairman of the MAINE TURNPIKE AUTHORITY, and that the seal affixed is the corporate seal of said MAINE TURNPIKE AUTHORITY, and that these presents were signed and sealed in behalf of and by authority of the said MAINE TURNPIKE AUTHORITY and the said Paul C Thurston acknowledged said instrument to be the free act and deed of said MAINE TURNPIKE AUTHORITY.

Before me,

R. Leon Gary
Justice of the Peace

We hereby certify that the parcel described in the foregoing deed acquired by the Maine Turnpike Authority in the acquisition of the Right of Way, is not needed by the Maine Turnpike Authority and will serve no useful purpose in connection with the maintenance and operation of the Turnpike and the conveyance of the same by this deed is approved.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
Consulting Engineers

By: James P. Tamm

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE JUN 17 1963
Received at 9 H — M C.M, and recorded in
BOOK 2755 PAGE 81 Samuel P. Thompson Register

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KNOW ALL MEN BY THESE PRESENTS, that BLUE ROCK QUARRY, a Maine corporation having a principal place of business in Westbrook, County of Cumberland and State of Maine

of

in consideration of Two Hundred Seventy-three Dollars ($273.00) paid by Portland Pipe Line Corporation, a Maine corporation having an office at Portland, Maine, the receipt whereof is hereby acknowledged, do(es) hereby give, grant, bargain, sell, convey and confirm unto the said Portland Pipe Line Corporation, its successors and assigns, a right of way and easement for the purpose of constructing, maintaining, operating, altering, repairing, removing, changing the size of and replacing a line of pipe, with such valves and fittings as may be necessary or convenient, for the transportation as a common carrier for hire of oil, crude petroleum and refined petroleum products or combinations thereof or similar thereto, natural and artificial gas, casinghead and natural gasoline, and any other liquids or gasses over a route to be selected by the Grantee under, upon, over and through a strip of land thirty (30) feet in width located in Portland, in said County, lying southerly of Brighton Avenue, so-called, and bounded and described as follows: Beginning at a point in the westerly line of the Maine Turnpike right of way at the intersection of the southeasterly line of land of this Grantor with the northeasterly sideline of land of Portland Terminal Company; thence running in a northwesterly direction along said Portland Terminal Company sideline thirty (30) feet to a point; thence running in a northeasterly direction parallel with and thirty (30) feet distant from said westerly line of said Maine Turnpike Authority ninety-one (91) rods, more or less, to the southerly sideline of land of the City of Portland; thence running in an easterly direction along said southerly sideline of land of the City of Portland, a distance of thirty (30) feet to said westerly line of said Maine Turnpike right of way; thence running in a southwesterly direction along said westerly line of the Maine Turnpike right of way ninety-one (91) rods, more or less, to the point of beginning.

Blue Rock Quarry

to

Portland Pipe Line Corp

-

Ease

together with the right of ingress and egress for all purposes incident to the grants herein made.

Also the right to lay, construct, maintain, operate, alter, repair, remove and replace at any time an additional line or lines of pipe alongside of the line or lines hereinbefore mentioned, as provided, upon payment to the Grantor(s), its/~~his~~ ~~her~~/~~their~~ ~~heirs~~/~~executors~~/~~administrators~~/successors and assigns, for each additional line so laid of an amount equal to the consideration above named. Such additional line or lines shall be laid subject to the same rights and conditions as apply to the original line.

TO HAVE AND TO HOLD the said rights of way and easements with all the privileges and appurtenances thereof unto the said Portland Pipe Line Corporation, its successors and assigns, so long as a

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pipe line is maintained on said premises. The Grantor~~s~~ reserve(s) for itself~~/themselves/herself~~ and its~~/his/her/their~~ successors and assigns, the right to fully use and enjoy said premises except as the same may be necessary or convenient for the purposes herein granted to the said Portland Pipe Line Corporation, its successors and assigns. The Grantor~~s~~ covenant(s) to and with the Grantee, its successors and assigns, that the Grantor~~s~~ is~~/are~~ sole owner~~s~~ of the above described premises and has~~/have~~ good right, title and capacity to convey in the manner aforesaid the rights of way and easements hereby granted, and that said premises are free of all encumbrances.

The said Portland Pipe Line Corporation, for itself, its successors and assigns, by the acceptance hereof, agrees to pay to the Grantor~~s~~ or its~~/his/her/their/heirs/executors/administrators~~, successors or assigns, any damages to grass, timber, growing crops and improvements, which may result from its acts or omissions in laying, maintaining, operating, replacing, changing or removing said pipe line(s), said damage, if any, if not mutually agreed upon to be ascertained and determined by three disinterested persons, one of whom shall be appointed by the Grantor~~s~~ or its~~/his/her/their/heirs/executors/administrators~~, successors or assigns, one by Portland Pipe Line Corporation or its successors or assigns, and the third by the two so appointed; and the award of such three persons shall be final and conclusive.

Portland Pipe Line Corporation further agrees for itself, its successors and assigns, to bury and maintain all pipe lines so as not to interfere with the cultivation of said lands.

IN WITNESS WHEREOF the said Blue Rock Quarry

has caused this instrument to be sealed with its corporate seal and signed in its corporate name by P.V. Corey

thereunto duly authorized, this its 18th President day of February in the year one thousand nine hundred and sixty-five.

Signed, Sealed and Delivered
in Presence of

E.G. Wilkins

By P V Corey
Its Pres.

BLUE ROCK QUARRY INCORPORATED 1944 MAINE

(Corporate Seal)

State of Maine
Cumberland, SS.

1965.

Personally appeared the above named P.V. Corey, President of said Grantor as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Ernest G. Wilkins
Notary Public

ERNEST G. WILKINS NOTARY PUBLIC MAINE

My Commission Expires 4-14-71

FEB 26 1965
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 10 H 58 M & M, and recorded in
BOOK 2881 PAGE 459 Register

758

25815

THIS INDENTURE made the 10th day of December , 1971 by and between BLUE ROCK INDUSTRIES (hereafter "Blue Rock"), a corporation organized and existing under the laws of Maine and located at Portland, in the County of Cumberland and State of Maine, and CENTRAL MAINE POWER COMPANY (hereafter "Central Maine"), a corporation organized and existing under the laws of the State of Maine and located at Augusta, in the County of Kennebec and State of Maine.

WHEREAS, Central Maine has acquired easements from the City of Portland and Blue Rock Quarry, predecessor in title to Blue Rock Industries, for the location and relocation of Central Maine's transmission line known as Section 188; and

WHEREAS, the parties desire to relocate a portion of the present transmission line as a result of an exchange of parcels of land between Blue Rock and the City of Portland; and

WHEREAS, Central Maine is willing to release a portion of its prior easement in exchange for a conveyance from Blue Rock of a new location.

NOW, THEREFORE, the Central Maine Power Company in consideration of One Dollar ($1.00) and other valuable considerations (including the grant to it of an easement by Blue Rock, hereinafter described) paid by Blue Rock Industries, receipt whereof is hereby acknowledged, does hereby Remise, Release, Bargain, Sell and Convey and Quit Claim unto said Blue Rock Industries, its successors and assigns, forever:

> All of its rights in and to a portion of a strip of land in part sixty (60) feet wide and in part seventy (70) feet wide, and being a portion of the easement conveyed to Central Maine by Blue Rock Quarry by deed dated September 20, 1963, and recorded in Cumberland County Registry of Deeds in Book 2783, Page 216, said portion lying northerly, westerly and northeasterly of Central Maine's Pole Number 58 on its Section 188 to the southerly sideline of Brighton Avenue, the center of which pole is located One Thousand One Hundred and Fifty-Nine (1,159) feet on a true course of North 18° 06' East from land of the Portland Terminal Company and the point of beginning of said Central Maine easement, dated October 21, 1963.

TO HAVE AND TO HOLD, the aforementioned and bargained premises with all the privileges and appurtenances thereof to the Blue Rock Industries, its successors and assigns, to its

and their use and behoof forever.

And the Central Maine Power Company does Covenant with the said Blue Rock Industries, its successors and assigns, that it will warrant and defend the premises to the said Blue Rock Industries, its successors and assigns, forever against the lawful claims and demands of all persons claiming through or under it.

AND FURTHERMORE, the Blue Rock Industries in consideration of One Dollar ($1.00) and other valuable considerations (including the above release to it of rights by Central Maine Power Company) paid by Central Maine Power Company, the receipt whereof is hereby acknowledged, does hereby Remise, Release, Bargain, Sell and Convey, and forever Quit Claim unto the said Central Maine Power Company, its successors and assigns forever, the perpetual right and easement to erect, construct, maintain, repair, rebuild, respace, replace, operate, patrol and remove electric transmission, distribution and communication lines consisting of suitable and sufficient poles and towers with sufficient foundations together with wires strung upon and extending between the same for the transmission of electric energy and intelligence, together with all necessary fixtures, anchors, guys, crossarms, and other electrical equipment and

appurtenances, over and across its land located partly in the City of Portland and partly in the City of Westbrook, County of Cumberland, State of Maine. The location of said easement is more particularly bounded and described as follows:

> A strip of land so much of which lies thirty-five (35) feet westerly and thirty-five (35) feet easterly of the Central Maine Power Company survey base line and its projection at both ends as now staked out across land of said Blue Rock Industries. Said survey base line is more particularly described as follows: Beginning at a point which is the center of Central Maine Power Company's pole number 58 on its Section 188, said point being One Thousand One Hundred Fifty-Nine (1,159) feet on a true course of North 18° 06' East from land of the Portland Terminal Company and the point of beginning of said Central Maine easement, dated October 21, 1963; thence from said point of beginning North 21° 46' West, Four Hundred Thirty-Seven (437) feet to a point; thence North 45° 28' West, Two Hundred Ninety-One (291) feet to a point; thence North 13° 50' East, Two Hundred Fourteen (214) feet, more or less, to Brighton Avenue.
>
> The above bearings refer to the true meridian.

Also any right, title and interest which Blue Rock may have, reversionary or otherwise, in and to said Brighton Avenue for the purpose of projecting the rights and easements herein conveyed across said Brighton Avenue to land of abutting owners adjoining the opposite side thereof.

Also the right and easement at any and all times to clear and keep clear said strip of all trees, timber and bushes growing on said strip by such means as Central Maine Power Company, its successors and assigns, may select; and the right to keep said strip free from any excavation (except as hereinafter expressly reserved to Blue Rock) and unoccupied by any buildings, structures or other material which in the opinion of the Central Maine Power Company, its successors and assigns, would interfere with or endanger the safe and convenient operation and maintenance of said transmission lines as now or hereinafter constructed over,

along and across said strip substantially along the location of the above-described survey base line.

RESERVING, however, to said Blue Rock Industries, its successors and assigns, the right to excavate earth and rock from the westerly side of that part of the above-described seventy (70) foot strip; provided, however, that said removal of earth and rock shall be restricted to the following conditions, viz: No earth or over burden shall be removed from the above-described seventy (70) foot strip nearer than five (5) feet distant westerly of the survey base line described herein and a one and one-quarter to one (1 1/4 to 1) slope to the west shall be left from said five (5) foot distance westerly of said survey base line and no rock shall be removed nearer than twenty-five (25) feet distant westerly of the said survey base line; provided always, that the removal of rock shall not disturb said one and one-quarter to one (1 1/4 to 1) slope.

FURTHER RESERVING, however, to said Blue Rock Industries / its Successors and Assigns the use of the most westerly ten (10) feet of the above-described strip provided that no structure of any kind except paving may be constructed on said ten (10) foot strip and provided further, that Blue Rock Industries' use of said ten (10) foot strip in no way interferes with Central Maine Power Company's use of said strip in connection with its operations of a public utility.

TO HAVE AND TO HOLD the aforegranted rights and easements with all the privileges and appurtenances thereof to the said Central Maine Power Company, its successors and assigns, to its and their use and behoof forever, and the said Blue Rock Industries does Covenant with the said Central Maine Power Company, its successors and assigns, that it and its successors and assigns, shall and will warrant and defend the same to the said Central Maine Power Company, its successors and assigns forever, against the lawful claims and demands of all persons or corporations

claiming by, through or under it.

IN WITNESS WHEREOF, the Blue Rock Industries has caused this instrument to be sealed with its corporate seal and signed in its corporate name by E. H. Wyman, Jr., its Vice President thereunto duly authorized and the said Central Maine Power Company has caused this instrument to be sealed with its corporate seal and signed in its corporate name by G. G. Beverage, its Assistant Treasurer, thereunto duly authorized, as of the day and year first above written.

Signed, Sealed and Delivered
in presence of

BLUE ROCK INDUSTRIES

By E. H. Wyman, Jr.
Its Vice Pres.

CENTRAL MAINE POWER COMPANY

By G. G. Beverage
Its Assistant Treasurer

STATE OF MAINE

COUNTY OF CUMBERLAND, December 3, 1971

Then personally appeared the above named E. H. Wyman, Jr. Vice President of said Blue Rock Industries as aforesaid, and acknowledged the foregoing instrument to be his free act and

732 deed in his said capacity, and the free act and deed of said corporation.

Before me,

Justice of the Peace
Notary Public

STATE OF MAINE

COUNTY OF KENNEBEC December 10, 1971

Then personally appeared the above named G. G. Beverage, Assistant Treasurer of said Central Maine Power Company as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Justice of the Peace
Notary Public

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 4 H 35 M M, and recorded in
BOOK 3207 PAGE 735 DEC 13 1971
Register

16

Me. P. L. 7-15-47 (750) 16

Line No. 52

THIS INSTRUMENT WITNESSETH, That

Hansnyholm Hansen & Lena Hansen

of 78 Main St. Westbrook, Maine

hereinafter called Grantor, for and in consideration of the sum of Five Dollars the receipt of which is hereby acknowledged, and the further consideration of a sum equal to One Dollar ($1.00) per lineal rod of pipe line crossing the property hereinafter described, to be paid or tendered on or before December 31, 1949, and before constructing the pipe line hereinafter mentioned, do hereby grant and convey unto SOCONY-VACUUM OIL COMPANY, INCORPORATED, a New York corporation having its principal office at 26 Broadway, New York, N. Y., hereinafter called Grantee, a right of way over, under and through Grantor's lands in the Town of Westbrook County of Cumberland, State of Maine, bounded and described as follows:

On the North by lands of Maine Street
On the East by lands of Himmenn Land
On the South by lands of --- ---
On the West by lands of Lufkin Land

containing 25 acres, more or less, for the purposes, from time to time, of constructing at a location to be designated by Grantee herein, and maintaining and operating one or more lines of pipe with such valves and fittings as may be necessary or convenient, for the transportation of petroleum, gas and petroleum products and, from time to time, altering, enlarging, replacing, repairing and removing the same, with free ingress and egress for all of the above purposes, including the right to cut and fell any brush or trees along the line of construction. Should the additional consideration not be paid or tendered, as above provided, this grant shall terminate and not be binding on either party hereto.

The Grantor herein reserves the right to fully use and enjoy the said premises except for the purposes hereinbefore granted, and the Grantee hereby agrees to pay any damages which may arise to crops or fences from the laying, maintaining, operating or removing of said pipe lines; said damages, if not mutually agreed upon, to be ascertained and determined by three disinterested persons, one thereof to be appointed by the said Grantor, his heirs or assigns; one by the said Grantee, its successors or assigns, and the third by the two so appointed as aforesaid, and the written award of such three persons shall be final and conclusive.

Should more than one pipe line be laid under this grant, a sum equal to One Dollar per lineal rod of pipe crossing the property above described shall be paid for each additional line so laid, as well as the damages, as above provided, and all pipe lines laid under this grant shall be buried to a sufficient depth so as not to interfere with the cultivation of the soil.

TO HAVE AND TO HOLD the above granted easement and right of way, with the appurtenances thereof, unto it the said Grantee, its successors and assigns at all times hereafter. And the Grantor warrants said title.

I. Lena Hansen wife of the aforesaid Hansnyholm Hansen

in consideration aforesaid, do hereby relinquish all right by descent in and to the rights hereinabove granted.

It is hereby understood that the party securing this grant on behalf of Grantee is without authority to make and has not made any covenant, agreement or representation not herein expressed.

IN WITNESS WHEREOF, We have hereunto set ourhands and seals this 20th day of August, 1947.

Signed, Sealed and Delivered in the presence of:

V. M. Chesbro

Hans Nyholm Hansen Seal
Lena Hansen Seal

STATE OF MAINE **COUNTY OF** Cumberland ss. Aug. 22nd 1947.

Personally appeared the above named Lena Hansen

and acknowledged the foregoing instrument to be her free act and deed.

Before me, John L. Goodwin Notary Public Notarial Seal
My Commission Expires 6/30/49

Received August 25 19 47, at 10 h. 20 m. A. M., and recorded according to the original.

PERKINS | THOMPSON
ATTORNEYS & COUNSELORS AT LAW

ESTABLISHED 1871

ONE CANAL PLAZA
PO BOX 426
PORTLAND ME 04112
TEL 207.774.2635
FAX 207.871.8026

www.perkinsthompson.com

September 14, 2016

Barbara Barhydt,
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101

PHILIP C. HUNT
JOHN S. UPTON
PEGGY L. McGEHEE
MELISSA HANLEY MURPHY
JOHN A. HOBSON
JAMES N. KATSIAFICAS
TIMOTHY P. BENOIT
J. GORDON SCANNELL, JR.
FRED W. BOPP III
MARK P. SNOW
WILLIAM J. SHEILS
DAVID B. McCONNELL
PAUL D. PIETROPAOLI
RANDY J. CRESWELL
JULIANNE C. RAY
DAWN M. HARMON
CHRISTOPHER M. DARGIE
SARA N. MOPPIN
PETER J. McDONELL
SHAWN K. DOIL
JOSEPH G. TALBOT
LAUREN B. WELIVER
JOSEPH C. SIVISKI
JOHN W. MASLAND

Re: Site Plan and Subdivision Application, Dirigo Plaza; Dirigo Center Developers, LLC; CMP Correspondence

Dear Barbara:

In last week's "Response Letter -- Stormwater Management Plan" from Jones & Beach Engineers Inc. to Lauren Swett of Woodard & Curran, we explained that Central Maine Power Company would not permit us to locate the proposed trail in Portland around the lake/pond to be created on this site because it would be within the power line easement and the necessary metallic safety fencing would present a safety hazard, and that we would send a copy of CMP's letter when it became available.

A copy of CMP's letter is attached. Without CMP's permission to locate the trail and associated safety fencing within the power line easement, we cannot construct this project element. Therefore, we will provide plans shortly removing the trail from the Portland portion of the project and showing the fencing CMP has requested. We believe that as a result, site plan approval no longer will be needed for this project, but we are continuing to proceed with our subdivision application and we look forward to presenting this application to the Planning Board at its September 27, 2016 workshop.

Sincerely,

James N. Katsiaficas

cc: Jeff Levine, Planning & Urban Development Director, City of Portland
Jennie Franceschi, Director of Planning and Code Enforcement, City of Westbrook
Jeffrey Gove, Dirigo Center Developers, LLC
Wayne Morrill, Vice President, Jones & Beach Engineers, Inc.
David J. Tracy, Esq., Hinckley Allen
Philip Saucier, Esq., Bernstein Shur
Katherine Joyce, Esq., Bernstein Shur

CENTRAL MAINE POWER

September 14, 2016

Ian MacKinnon, EIT, CPESC-IT
Project Engineer
Jones and Beach Engineers, Inc.
85 Portsmouth Avenue
PO Box 219
Stratham, NH 03885

RE: Transmission ROW request for Trail Walkway for Dirigo Plaza in Westbrook, ME
CMP Section 188 Poles 55-62 in Portland (Pike Industries/Blue Rock Quarry)

Dear Mr. MacKinnon:

Central Maine Power (CMP) has reviewed the proposed recreational trail with 4' chain-link fence located within a 60' CMP transmission line easement located in the City of Portland and offer the following comments:

- The use of a metallic fence within the easement is a serious safety concern for CMP. Electrical elements making contact with the fence in any scenario pose a great threat to public safety. Locating the fence outside of the easement will place the fence in areas that will not prevent pedestrians from entering the quarry and in areas that fence construction is not possible. Changing the material of the fence (e.g. wood or vinyl materials) within the easement will not provide adequate security, strength, and durability compared to a metallic fence.

- Proximity to the quarry within the easement poses a safety concern due to the sudden elevation changes along the quarry perimeter. The existing right of way is at the edge of a 200' drop at the quarry boundary.

- Portions of the proposed recreational trail will traverse the very steep side of the existing quarry. Construction of the trail and associated retaining walls will inhibit access to the transmission lines and poles for maintenance activities. The existing conditions already provide limited access to portions of the transmission lines and should not be altered.

Due to safety concerns and limited maintenance access, CMP is not in support of the construction of a recreational trail and 4' metallic chain link fence within the CMP easement. Additionally, CMP would like the project developer to install a security fence with lockable gate on the southern side of the existing quarry to deter access to the easement and eastern side of the quarry. A detail is attached.

Here is a link to our CMP Handbook of Standard Requirements that provide some guidance on our requirements (but is not inclusive) (http://www.cmpco.com/MediaLibrary/3/6/Content Management/YourAccount/PDFs and Docs/handbook.pdf).

If you have any questions or concerns about the information I have provided, please contact me at (207) 842-2367.

Sincerely,

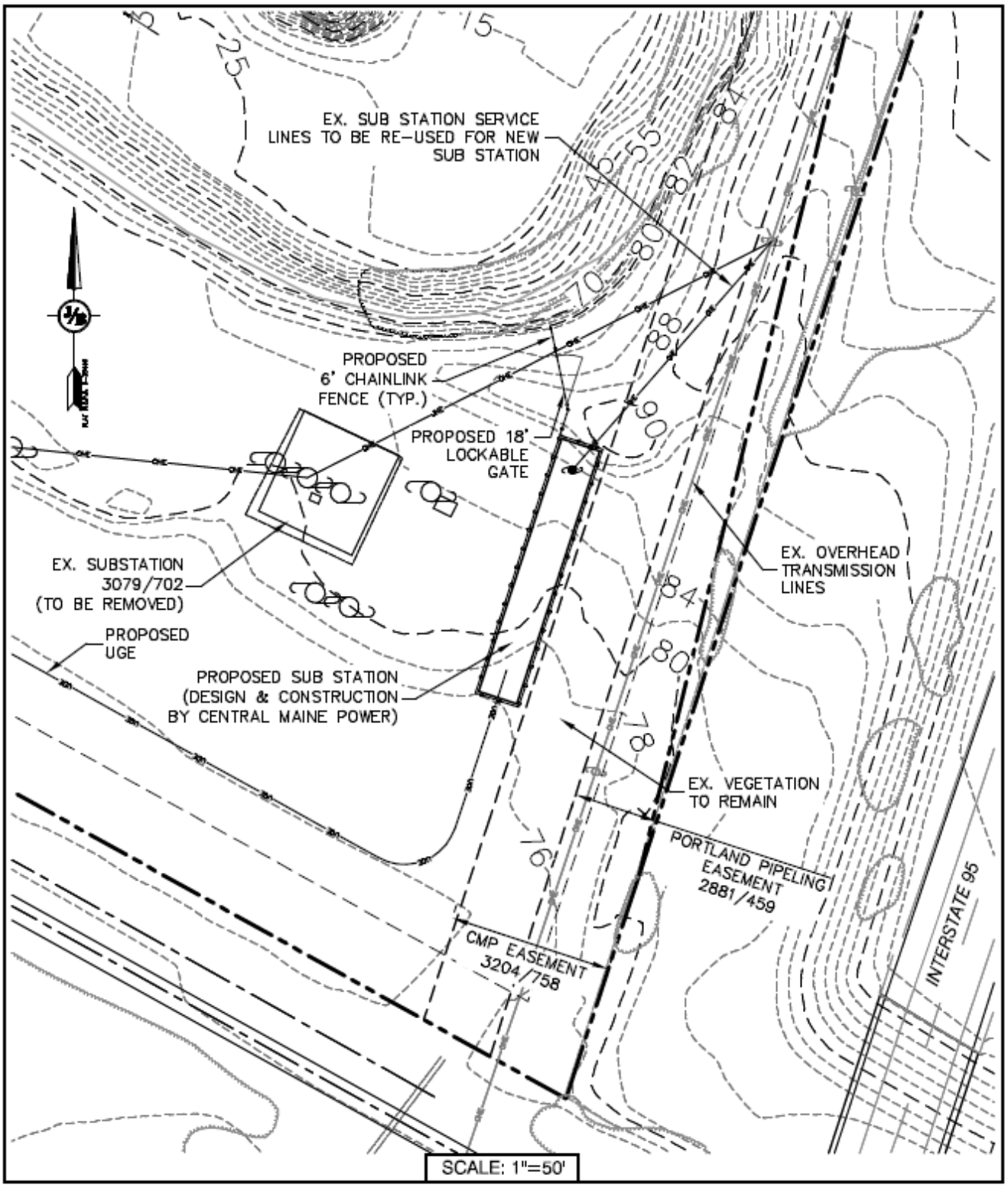
Jamie Cough

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103

Take care of the environment. Print in black and white and only if necessary.

CENTRAL MAINE POWER

September 14, 2016

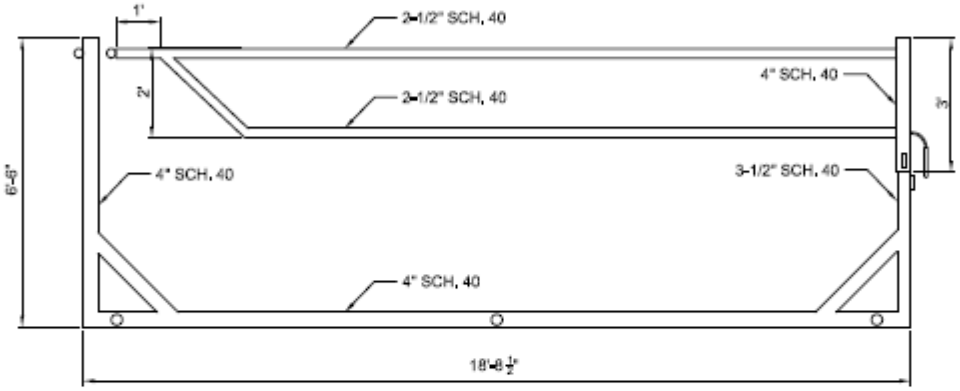


Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

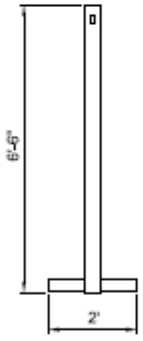
Drawing Name:	PROPOSED ELECTRIC DESIGN EXHIBIT
Project:	"DIRIGO PLAZA" WESTBROOK, ME
Owner of Record:	PIKE INDUSTRIES, INC, • 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
EXH-1
SHEET 1 OF 1
JBE PROJECT No. 14110

CU Type: UC_XXXX				
BILL OF MATERIAL				
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TL-xxxx
1	1	ST	*	18' ACCESS ROAD GATE



FRONT VIEW



SIDE VIEW

TYPICAL DEPTH BELOW GROUND
IS BETWEEN 2' - 0" AND 2' - 6"

X

CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 344kV, U_T345 for 345kV & greater.

For correct CU: substitute 2 for NYSEG, 3 for CMP or 4 for RG&E in place of asterisk (U*_).

Contact Engineering Standards - Transmission for the creation of new standards and CUs.

Drawing Scale: NA

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

ANSI A 8-1/2" X 11"

IBERDROLA USA

IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL

TRANSMISSION STANDARDS - RIGHT-OF-WAY ACCESS ROAD GATE

Revision 00

DATE / /2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TL-05-001	Sheet 1
C.Gauvin	3/17/2015	Best/Becken/Hart	/ /2015	Barry R. Hart	/ /2015		

com

Section 5 -Financial and Technical Capacity

Financing:

Bank financing will be utilized for funding the desired improvements. The Washington Trust Company has provided J&J Gove Development, LLC a letter of Commitment to Fund. Numerous additional banks are eager to participate in the loan as well. As permitted under that letter, J&J Gove Development has designated Dirigo Center Developers, LLC to be the development entity that will be the borrower.

Attachment: Letter of Commitment to Fund - Washington Trust Company
Designation of Borrower

Technical Capacity.

Dirigo Center Developers, LLC – Developer

Jeffrey Gove and Christopher Nash are principals of Dirigo Center Developers, LLC, the development LLC for this project, and also are principals of J&J Gove Development, LLC, a retail development and brokerage company based in Topsfield, Massachusetts with each over 20 years of experience in retail real estate. The company develops retail properties and provides retail brokerage services throughout New England. Previous company projects in Maine include The Shops at Falmouth Village in Falmouth, Wild Oats in Portland, Maine Crossing in South Portland, OfficeMax in Auburn, and Lowe's of North Windham in North Windham.

Jones & Beach Engineers, Inc. – Civil Engineer and Surveyor - See attached

S.W. Cole Engineering, Inc. – Geotechnical/Environmental Engineer

Gove Environmental Services - Environmental Consultant

Phase Zero Design - Architect

Knight Hill Land Surveying Services, Inc. - Surveyor

Michael Cuomo - Soil Scientist

Attachment: Letter of Authorization from Dirigo Center Developers, LLC.
Jones & Beach Technical Capacity Report

THE WASHINGTON TRUST Company Member FDIC

August 20, 2015

Mr. Jeffrey Gove
Mr. Christopher Nash
Westbrook ME, LLC
7 Swain Drive
Hampton Falls, NH 03844

RE: Financing for a to be built multi-tenanted retail center located at Larrabee Road and Main Street, Westbrook, ME

Dear Jeff and Chris:

It was a pleasure to see you last week and to discuss your retail development planned for Westbrook, ME. We like the project, have reviewed your request for the financing, and are interested in providing financing. The Washington Trust Company (Bank) is considering the following loan structure based on what we know of the project at this time. The proposed terms and conditions contained herein are provided for discussion purposes only and in no way constitute an offer, agreement or legally binding commitment to lend. The actual terms and conditions upon which the Bank might extend credit are subject to satisfactory completion of underwriting due diligence, approval in accordance with the Bank's commercial lending policy, satisfactory review of documentation and such other terms and conditions as are determined by the Bank or its counsel in their sole discretion.

Borrower
To be formed limited liability company controlled by Jeffrey Gove and Christopher Nash.

Guarantors
The loan shall be fully guaranteed on a joint and several basis by Jeffrey Gove and Christopher Nash.

Amount
Up to 75% LTV of the stabilized value and subject to an underwriting
DSC of 1.35x based on leases in place.

Use of Funds
To provide construction and permanent funds.

Term
Construction/Stabilization: Up to two years
Permanent Period: 8 years

Interest Rate Options/Term
Construction/Stabilization:
Float at the 30 day LIBOR + 2.75%.

Permanent Period:
Float at the 30 day LIBOR + 1.90%, or
Float at the 30 day LIBOR + 1.90% fixed via a swap interest rate derivative for a period of up to 8 years, or
Fix via the comparable FHLBB classic advance rate plus 1.90% for 1-7 years.

If the floating rate option is selected, Borrower may consider purchasing an interest rate cap at closing.

Repayment
Monthly payments of interest only during construction period thereafter principal and interest based upon a (25) twenty five year amortization schedule.

Commitment Fee
One half of one percent (1/2%) to be paid at closing.

Prepayment
Borrower may prepay loan at any time, however, in the event the loan is repaid during the first 36 months from closing, a 1% exit fee shall be required. If the swap rate is taken, the loan shall be subject to any swap breakage fee, if applicable. If the FHLBB rate is selected, early prepayment will be tied to a make whole provision.

Collateral
Loan to be secured by a first mortgage position on property located at Larrabee Road & Main Street, Westbrook, ME. Collateral assignment of leases and rents will be required as well as all permits, approvals, construction contracts and related documents.

Construction
Bank reserves the right to approve the contractor and/or the major subcontractors. We will request a reference from the contractor's bonding agent. The loan proceeds will be advanced in accordance with the Bank's standard construction loan advance procedures with 10% retainage held back until the project is 50% complete and the retainage is reduced to 5%. A monthly draw request budget will be requested. Interest reserve will be carved out of the construction loan to fund interest expense monthly.

Engineering
The Bank shall require a plan/budget review of the project prior to closing and periodic inspections by the Bank's inspecting engineer prior to all hard cost loan advances.

Financial Covenants
The loan will be subject to annual DSC test to support a minimum DSC of 1.15x. Testing will start at the end of the first year of stabilized occupancy. If the rate is floating and not subject to a swap, a 200bp increase over the floating rate in place as of year-end will be used to calculate DSC for the covenant test. DSC defined as gross revenue less operating expenses (net operating income) divided by the fully amortizing annual debt service. The maximum LTV covenant will be 75%.

Appraisal
Bank to obtain acceptable appraisal indicating a stabilized market value of the property to support a maximum 75% LTV ratio.

Fees
Fees incurred in connection with the closing of this transaction will be the responsibility of the Borrower and will include, but are not limited to, appraisal, environmental, construction inspection fees, review of plans and spec fees, and legal fees.

No Material Adverse Change
There shall be no material adverse change (as determined by the Bank) from the information furnished to us in the circumstances or conditions affecting the Borrower or the mortgaged property.

Annual Financial Reporting
- Copies of Borrowers independently prepared financial statements and tax returns, as available.
- Copies of Guarantors personal tax returns (two years) and current personal financial statements signed.
- Global cash flow statements for managing members' portfolio.
- Other financial reporting deemed reasonable.

Insurance
Upon approval and prior to loan closing, the Borrower will have delivered to the Bank satisfactory evidence of builders risk insurance, casualty and liability insurance on the mortgaged property, including flood insurance only if the mortgaged property is located in a flood hazard zone.

Other Underwriting Provisions
- Other terms and conditions may be imposed as the Bank completes its due diligence process.
- Sponsors to provide to Bank a global cash flow analysis relative to its real estate portfolio to demonstrate solvency and adequate cash flow.
- Guarantors shall maintain a minimum amount of liquid assets (cash, marketable securities and other cash equivalents) and a minimum net worth on an aggregate basis. The amounts are to be determined.
- Receipt and satisfactory review of leases and tenancy.
- Satisfactory underwriting of tenancy.
- Bonding agent reference for construction contractor(s).
- Satisfactory environmental reporting and review of reports.
- Satisfactory appraisal to be ordered by the Bank establishing a maximum LTV of 75% of the value.
- Satisfactory credit references for borrowers and sponsorship.
- Borrower to establish primary operating account at The Washington Trust Company.
- Subject to the Bank participating a percentage of the loan to another lender.

Special Requirements
Borrower to furnish all necessary documents pertaining to this transaction, including, but not limited to: surveys, title insurance, Certificate of Good Standing from the Secretary of State, Certificate of Good Standing from the Division of Taxation, liability and fire insurance mortgagee and loss payee. All documents in connection with this transaction are subject to review and approval by the legal counsel to The Washington Trust Company.

This term sheet briefly outlines the Bank's potential financing. It is not a commitment letter. A formal commitment may be issued upon the satisfactory completion of underwriting, as well as the approval of the Bank's Finance Committee. If these terms and conditions are satisfactory to you, please indicate by signing below and returning one signed copy to the undersigned with $10,000 to be applied to closing and underwriting fees.

If the loan request is approved, the funds will be applied toward closing costs. If the loan request is not approved, the fee will be returned less any out-of-pocket expenses. If the transaction is approved and not closed, the fee will be considered earned by the Bank.

Please return this term sheet to my attention by September 1, 2015, otherwise this term sheet shall be deemed null and void and of no further force or effect after such date.

Very truly yours,

Laurel Bowerman, VP
Commercial Real Estate Team
The Washington Trust Company

Borrowers:

Westbrook LLC

By: _____ Date_____

DESIGNATION OF BORROWER

Reference is hereby made to that certain financing letter (the "**Financing Letter**") issued by The Washington Trust Company (the "**Lender**") to the undersigned in connection with the project commonly known as Dirigo Center and located at Larrabee Road and Main Street in Westbrook, Maine, dated August 20, 2015. The undersigned hereby acknowledge and agree that Dirigo Center Developers, LLC, a Maine limited liability company, shall be the limited liability company controlled by Jeffrey Gove and Christopher Nash which was referenced in the Financing Letter as the to be formed limited liability company which will act as the Borrower in connection with the loan transaction referenced in the Financing Letter.

Jeffrey F. Gove

Christopher F. Nash

Dirigo Center Developers, LLC, a Maine limited liability company

By: Jeffrey F. Gove, Managing Member

July 14, 2016

LETTER OF AUTHORIZATION

This is a supplemental Letter of Authorization to the Original Letter of Authorization provided by Jeffrey F. Gove and J & J Gove Development, LLC dated July 1, 2014.

The undersigned, Jeffrey F. Gove, J & J Gove Development, LLC, a New Hampshire limited liability company, and Dirigo Center Developers, LLC, a Maine limited liability company, do hereby acknowledge and agree that said Dirigo Center Developers, LLC and the principals thereof, including Jeffrey F. Gove, do hereby authorize and empower Jones & Beach Engineers, Inc., P.O. Box 219, Stratham, New Hampshire, to act on their behalf concerning the property located in Westbrook, Maine, commonly known as Tax Map 42B, Lots 9, 10, 11 and 14. The aforesaid parcel is located on 58 and 80 Main Street in Westbrook, Maine. This Letter of Authorization also further confirms that all other third party consultants are authorized to continue to represent the undersigned parties in connection with the above-referenced property including, without limitation, James N. Katsiaficas of the firm of Perkins Thompson in Portland, Maine. Without limiting the foregoing, the undersigned do hereby appoint Jones & Beach Engineers, Inc. as our agent to act on our behalf in the review process to include any required signatures.

J & J Gove Development, LLC, a New Hampshire limited liability company

By:_____
Jeffrey F. Gove, Managing Member

_____
Jeffrey F. Gove

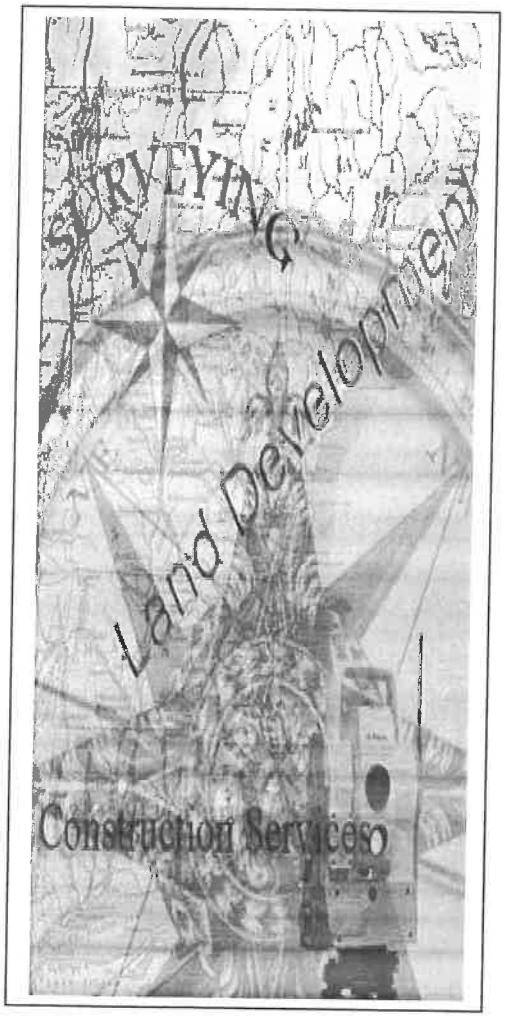
Dirigo Center Developers, LLC, a Maine limited liability company

By:_____
Jeffrey F. Gove, Managing Member

July 14, 2014

Jones & Beach Engineers, Inc.
Civil & Sanitary Engineers
Land Surveyors

J & J Gove Development, LLC
Site Plan Design
Larrabee Road (Route 25) & Main Street (Route 25B)
Westbrook, ME



Request for Qualifications

Site Plan Design

Westbrook, Maine

Jones & Beach Engineers, Inc.

Civil Engineers & Land Surveyors

Statement of Qualifications

December 30, 2015

JONES & BEACH ENGINEERS, INC.
85 PORTSMOUTH AVENUE
PO BOX 219
STRATHAM, NH 03885

PO BOX 484
ALTON, NH 03809

jbe@jonesandbeach.com
www.jonesandbeach.com

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I. COMPANY INTRODUCTION

II. SITE/CIVIL ENGINEERING EXPERIENCE

- SITE PLANS

III. COMPANY SERVICES

IV. PERSONNEL QUALIFICATIONS

- Jonathan S. Ring, PE, President
- Bradford A. Jones, Vice President, Senior Construction Services Manager
- Wayne G. Morrill, Jr., Vice President, Senior Project Manager
- Barry W. Gier, PE, Vice President, Senior Project Manager
- David M. Collier, LLS, Survey Manager
- Christopher S. Albert, Certified Wetland Scientist (CWS), Certified Professional in Erosion and Sediment Control (CPESC), Certified Professional in Stormwater Quality (CPSWQ), Licensed Septic System Designer (LSSD), Senior Project Manager

I. COMPANY INTRODUCTION

Since 1977, Jones & Beach Engineers, Inc. (JBE) has provided a wide variety of Engineering and Surveying services to industrial, municipal, commercial, and residential clients throughout New England. The company is a full-service civil engineering design firm with in-house survey. We have valuable experience with residential, commercial, and industrial projects throughout New England. The owners of JBE are working design engineers and will be participating in the project.

With four employee owners, the firm has been able to expand not only its ability to serve clients, but its range of services as well. We have years of extensive experience with Municipal Zoning Ordinances, Site Plan and Subdivision Regulations, Stormwater design and management, surface water quality, wetland resource protection, innovative design (such as bioretention features and porous pavement), constructability, and inspecting contractor work. In the design realm, the company has continued to cultivate its design capabilities through in-house seminars and off-site training.

We have served since 1994 as Town Engineer for Hampton Falls, NH, and we provided consulting and peer review services for the Town of Derry, NH, from June 2008-2011. We also serve as Engineer for the Epping Water and Sewer Commission.

We look forward to consulting with you to assess your professional needs and to explore the ways in which we might be of service. Specific project experience and resumés for key personnel are included for reference.

II. SITE/CIVIL ENGINEERING EXPERIENCE

• SITE PLANS

Epping, NH – Brickyard Square

Located at the intersection of Route 101 and Route 125, this 48.67-acre parcel was developed with 277,000 S.F. of retail space and a 5,200 S.F. restaurant. The proposed retail development impacted 7.31-acres of forested wetlands within 29-acres of on-site disturbance; mitigation included a 12.87-acre conservation easement on-site and off-site mitigation of 109-acres. Two detention ponds totaling 90,000 S.F. in size were designed for stormwater management which incorporated the use of Multi-Stage Discharge Structures (MSDS). Jones & Beach Engineers, Inc. (JBE) handled the Federal 401 Water Quality Certificate (WQC), Town Planning Board and Zoning Board of Adjustment Approvals, NHDES Dam Permit, NHDES Site Specific Permit, Existing Conditions Survey, Construction Survey and Construction Supervision.

Reference: Waterstone Retail Development, Inc.
Douglas Richardson
145 Rosemary Street, Suite B
Needham, MA 02494
(781) 559-3301 Ext. 112

Seabrook, NH – Lowe's Home Improvement Warehouse

Located on Lafayette Road (Route 1), this 17.45-acre parcel was developed for a 130,000 S.F. Lowe's Home Improvement Warehouse and a 5,000 S.F. restaurant pad. The parcel was adjacent to Mary's Brook, which is a tributary river to the Cains Mill watershed. Mitigation for the project included preservation of a one acre lot on Cains Mill Pond and river sampling/monitoring before, during and after construction. Jones & Beach Engineers, Inc. (JBE) was responsible for Town Planning Board and Zoning Board of Adjustment approvals, NHDES Dam Permit, NHDES Site Specific Permit, Existing Conditions Survey, Construction Survey and Construction Supervision.

Seabrook, NH – The Home Depot

This 135,000 S.F. Home Depot was designed on a 21-acre parcel on the southerly end of Lafayette Road (Route 1). The project was adjacent to Mill Pond and Boston and Maine Railroad, mitigation for the project included an on-site constructed wetland, wet pond, design of a town park for access to Mill Pond and Route 1 box culvert design with a fish ladder. Jones & Beach Engineers, Inc. (JBE) responsibilities included town Planning Board and Zoning Board of Adjustment Approvals, NHDOT Roadway Design, NHDES Dam Permit, NHDES Site Specific Permit, Existing Conditions Survey and Construction Survey and Construction Supervision.

Epping, NH – New England Dragway

New England Dragway is located on a 300+ acre site on the north side of Route 27. Jones & Beach Engineers, Inc. (JBE) has been the site engineer for the track since 1977. Past approvals have included NHDES Site Specific Permits and Subsurface Disposal Designs. In 2008, the track constructed a parking area on a nine-acre section of land and filled approximately two-acres of

wetlands without permits. Working in conjunction with West Environmental, Inc. JBE permitted the fill of the wetland with mitigation of a 24-acre conservation easement and 13-acre wetland mitigation area. The design of a gravel wetland and conversion of a section of the pit area to porous pavement were key components of the design that obtained a Federal 401 Water Quality Certification (WQC), Army Corps of Engineers, and NHDES Alteration of Terrain Permits.

Stratham, NH – Shaw's Supermarket

Shaw's at Stratham Crossing is an 80,000 S.F. Shaw's Supermarket that anchors this commercial development, which includes pad sites for a restaurant and bank. The stormwater detention facilities double for on-site fire protection requirements. The adjacent brook and nearby tidal river were permanently protected with conservation easements totaling 70-acres.

Epping, NH – Eppicenter

Located between Main Street and NH Route 125, the Eppicenter is situated at the hub of one of the fastest growing commercial markets in the state. Comprised of a 12,124 S.F. strip center and a detached 1,766 S.F. Starbuck's coffee shop, the project required the complete redevelopment of the highly visible 1.11-acre site. Once a local restaurant and an abandoned gas station, the location is now characterized by upscale architecture and verdant landscaping. With extensive client involvement, Jones & Beach Engineers, Inc. (JBE) worked diligently to maximize the site's yield while maintaining its functionality and appeal. The result is a valuable addition to Epping's emerging retail district and a welcome enhancement to the vitality of the local economy.

Epping, NH – Epping Crossing

Jones & Beach Engineers, Inc. (JBE) served as surveyor for the 200-acre property and site design engineer for the 220,000 S.F. four building industrial portion of the development. Working with other consultants for the retail phase, complete site and utility plans were prepared to provide municipal services from off-site. An extensive wetland mitigation package was developed by the team of consultants to impact more than 9-acres of man-created wetlands.

Developer: Realty Acquisitions
Ms. Susan J. Conway and Mr. Mark Stevens
PO Box 432
Stratham, NH 03885
(603) 778-7521

North Windham, ME – Lowe's, Home Improvement Store

North Windham Properties, LLC, proposes to construct a large-scale commercial development on a 23.75-acre parcel of land located to the west of Manchester Drive in North Windham, ME. A drainage analysis of 60.77-acres of the site and its offsite contributing watershed areas was conducted for the purpose of estimating the peak rates of stormwater run-off and to subsequently design adequate drainage structures. Two models were compiled, one for the area in its existing (pre-construction) condition, and a second for its proposed (post-construction) condition. The analysis was conducted using data for the 2 Yr. - 24 Hr. (3.0"), 10 Yr. - 24 Hr. (4.7"), and 25 Yr. - 24 Hr. (5.5") storm events using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment.

The proposed site development consists of a 138,134 S.F. building with a 31,659 S.F. garden center, accessways, parking lots, and associated drainage structures. These improvements will, together with other proposed site conditions, divide the area into forty-two subcatchments. One additional subcatchment (#73) was included in the model in order to simulate the development of three-acres of impervious surfaces in the area to the north of Landing Road. This was done so as to design the drainage infrastructure to accommodate the potential future development of the site's remaining land. The run-off from these subcatchments, increased from that of the existing conditions due to the addition of 12.61-acres of impervious surfaces, will be directed by way of curbing and grading to a drainage system consisting of culverts, catch basins with sumps and grease hoods tributary to drain manholes and a trunk line, two detention ponds (one of which is designed as a constructed wetland), and vegetated swales so as to reduce peak rates of run-off and provide proper treatment so as to minimize any potential for site-generated storm water to impact off-site areas.

Ellsworth, ME – Lowe's, Home Improvement Store

Jones & Beach Engineers, Inc. (JBE) designed the Site Plan used by Topsfield Real Estate Corporation to construct a Lowe's Home Improvement Warehouse on a 17.81-acre parcel of land located in the previously permitted "King Property Commercial Subdivision" on Kingsland Crossing off of U.S. Route 3 in Ellsworth, ME. A drainage analysis of 58.15-acres of the site and its off-site contributing watershed areas was conducted for the purpose of estimating the peak rates of stormwater run-off and to subsequently design adequate drainage structures. Two models were compiled, one for the area in its existing (pre-construction) condition prior to the aforementioned Commercial Subdivision, and a second for its proposed (post-construction) condition. The analysis was conducted using data for the 2 Yr. - 24 Hr. (2.7"), 10 Yr. - 24 Hr. (4.2"), 25 Yr. - 24 Hr. (4.9"), and 50 Yr. - 24 Hr. (5.4") storm events using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment. A summary of the existing and proposed conditions peak rates of run-off is as follows:

Prior to the commencement of the Commercial Subdivision, the project site was comprised of woodland, portions of field, wetlands, and a cell tower and was bordered by U.S. Route 3, Beechland Road, forest, and a number of offsite developments that included accessways, and paved and gravel parking lots. Impervious surfaces in and around the site totaled 8.54-acres, and slopes ranged from flat to nearly 20%. Soil classifications were taken from the previous plans done by WBRC of Bangor, Maine, who obtained them from a Class B High Intensity Soils Survey performed by S.W. Cole Engineering and a Class D Hancock County Medium Intensity Soil Survey. These studies defined the majority of the site's soils as Hydrologic Soil Group (HSG) C with a few small sections of HSG D. Existing topography divided the site into eleven subcatchments, all of which drained off-site by way of overland routes or existing stormwater infrastructure. For the purposes of this analysis, it was analyzed

at four points: at Beechland Road (Reach #100), at the western property line in a forested wetland (Reach #200), at the northern property line (Reach #300), and at a culvert that crosses U.S. 3 to the east (Reach #400).

As a part of the previous plan set, WBRC prepared a drainage analysis of both the existing and proposed conditions of the subdivision, the later being a "full build-out" scenario that provided for future development (of which this proposal is a part). However, given the scale of the Lowe's proposed conditions and the complexity of its drainage system, the required modeling assumptions were vastly different than WBRC's, especially where storm sewers and associated tailwater was concerned. As such, although limited amounts of the data found in the previous document were utilized in this publication (particularly the "future" impervious surfaces credited to the site's stormwater infrastructure), the majority was discarded in favor of a new analysis for both the existing and proposed conditions.

The proposed Lowe's site development consisted of a 138,672 S.F. home improvement store with an attached 31,689 S.F. fenced-in Garden Center, and associated accessways, parking, and infrastructure. These improvements, together with other site conditions being constructed as part of the surrounding subdivision, divided the area into forty-five subcatchments. The run-off from these subcatchments, increased from that of the existing conditions due to the addition of 19.86-acres of impervious surfaces (17.08-acres of which were contemplated in the WBRC analysis), will be directed to both the subdivision's drainage system and a new system exclusively for Lowe's. The subdivision's system (currently under construction), included a drainage system comprised of swales, culverts, catch basins, and drain manholes tributary to a detention pond that was designed to handle 23.16-acres of impervious area and 12.86-acres of non-impervious area. The Lowe's system will consist of offline catch basins with sumps and grease hoods tributary to drain manholes and trunk lines, and a retention pond intended to detain and treat 219.51% of the areas that are in excess of that which was previously permitted (6.11-acres of impervious and 0.73-acres of non-impervious where only 2.78-acres of impervious and 0.50-acres of non-impervious are required to match the previous plan). Taken together, these improvements served to reduce peak rates of run-off so as to minimize any potential for site-generated storm water to impact off-site areas.

As the above table demonstrates, the proposed peak rates of run-off were decreased from those found in the existing conditions at the analysis points in all analyzed cases, thereby minimizing any potential for a negative impact on abutting properties by allowing for better control of stormwater run-off.

In addition, the potential for increased erosion and sedimentation was handled by way of erosion control blankets, swales, sedimentation sumps, grease hoods, a retention pond, riprap stabilized swales, riprap inlet and outlet protection aprons, and a number of temporary measures such as silt fence (or organic filter berms), mulching, dust control, catch basin inlet protection measures, and stabilized construction entrances. The use of Best Management Practices per the MEDEP *Maine Erosion and Sedimentation Control BMP's* handbook have been applied to the design of these structures and were observed during all stages of construction. All land disturbed during Lowe's construction was temporarily or permanently stabilized within forty-five days of groundbreaking, and existing wetlands and abutting property owners suffered minimal adversity resultant of this development.

III. COMPANY SERVICES

Jones & Beach Engineers, Inc. (JBE) is a full-service Civil Engineering and Land Surveying Company providing a wide range of services, including the following:

- Site Plan and Subdivision Approvals from Municipalities.
- Wetland Delineations and Assessments.
- State and Federal Permit Applications and Approvals for Wetland Impacts, Stormwater Design, Sanitary Sewer Discharges, State Highway Permits and USEPA Phase I and II Permits.
- Roadway and Stormwater Drainage Analysis and Design.
- Property Condition Assessment and Reports for Mobile Home Communities.
- Local and State Highway Erosion Control Inspections.
- Stormwater Management and Hydraulic Studies.
- Wastewater and Water System Design and Modeling.
- Porous Pavement and Water Quality Design.
- Town Engineer Services (Hampton Falls, NH).
- Municipal Building and School Site Design and Review Services.
- Residential and Commercial On-Site Effluent Disposal Systems.
- Grant Writing and Application Submissions.
- Phase I and II Hydrogeologic Studies, Landfill Closure Design, and Permitting.
- Boundary Surveys.
- Existing Conditions Surveys.
- GPS Control for Aerial Photography Mapping.
- ALTA/ACSM Land Title Surveys.
- As-Built Surveys.
- Utility Route Surveys.
- Robotic and Global Positioning System (GPS) Instrumentation to Sub-Centimeter Accuracy.
- Plot Plans, Flood Elevation and Foundation Certificates.

- Construction Services, Survey Layout, Inspections and Cost Estimating.
- Solicitation and Preparation of Construction Documents and Specifications.

IV. PERSONNEL QUALIFICATIONS

- **Jonathan S. Ring, PE, President**
- **Bradford A. Jones, Vice President, Senior Construction Services Manager**
- **Wayne G. Morrill, Jr., Vice President, Senior Project Manager**
- **Barry W. Gier, PE, Vice President, Senior Project Manager**
- **David M. Collier, LLS, Survey Manager**
- **Christopher S. Albert, Certified Wetland Scientist (CWS), Certified Professional in Erosion and Sediment Control (CPESC), Certified Professional in Stormwater Quality (CPSWQ), Licensed Septic System Designer (LSSD), Senior Project Manager**

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Civil & Sanitary Engineers
Land Surveyors

J & J Gove Development, LLC
Site Plan Design
Larrabee Road (Route 25) & Main Street (Route 25B)
Westbrook, ME

JONATHAN S. RING, P.E.
PRESIDENT

Mr. Ring became a Licensed Professional Civil Engineer in 1989 and practices in the states of New Hampshire, Maine, and Massachusetts. He obtained an MS Degree in Civil Engineering from the University of New Hampshire in 1985 and a BA in German from UNH in 1976. He is a NH Licensed Septic System Designer.

Mr. Ring was first employed with the Kimball Chase Company in Portsmouth, NH, beginning as Site Design Engineer and quickly becoming a Project Manager of Subdivisions and Site Plans. He specialized in drainage, roadway and site design, with projects ranging from two-lot residential subdivisions to a 350-lot mobile home park with municipal water and sewer. Site Plans included the 200-unit River Woods at Exeter elderly residential community, 100,000 S.F. Rockingham County Court House, and a 371,000 S.F. retail center.

In April of 1996, Mr. Ring joined Jones & Beach Engineers, Inc. (JBE) as Senior Project Engineer, where he performed quality control plan reviews and continued his work as designer and Project Manager of various developments. Communities in which he has worked range from Kennebunkport and Wells, Maine, to Belmont, Concord, Exeter, Peterborough, Manchester, and Salem, NH, and Hyannis, Massachusetts. In 2001, he became an owner of the firm and President.

He is known for attention to detail, communication, teamwork on projects, and public presentation skills. As a six-year member and former chairman of the Exeter Planning Board, he has experienced both sides of the table. He has prepared and served as a professional witness on behalf of the Town of Hampton Falls and several private companies.

He is Chairman of the Exeter Area Chamber of Commerce Board of Directors and a member of ASCE, GSDI, NSPE, NAACP, SAACC, the NH and Rockingham County 4-H Foundations, and the Bahá'í Faith.

Project Highlights:

- Londonderry, NH: Lorden Commons – Phase 1 Conservation Subdivision with 50 single-family lots and 3,600 L.F. of roadway (total project 133-lots) ~ Project Manager
- Hampton Falls and Derry, NH: More than 30 Engineering and Plan Reviews of residential subdivisions and commercial site plans for Planning Boards.
- Stratham, NH: 150,000 S.F. Cooperative Middle School ~ Project Manager and Site Designer
- Exeter, NH: Exeter Hospital campus including the 60,000 S.F. Synergy Fitness Center, 600 vehicle Parking Garage, and 120,000 S.F. Center for Ambulatory Care and Medical Office Building ~ Project Manager
- Epping, NH: "Epping Crossing", a 4 lot, 220,000 S.F. of buildings and Industrial Park site with subdivision development off Route 125 ~ Principal-In-Charge

- Exeter, NH: Forest Ridge Open-Space Conservation Subdivision with 59 single-family lots and 36 multi-family units, including 20-units of Workforce Housing, and 10,000 L.F. of road ~ Project Manager

- Exeter, NH: St. Michael Parish Campus with a 15,500 S.F. Church and 9,300 S.F. Parish Center, and accessory structures with porous pavement and Low Impact Design (LID) ~ Principal-In-Charge

- Alton, NH: Woodlands Subdivision with 49-units on 21 residential lots and 6,200 L.F. of road ~ Project Manager

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BRADFORD A. JONES
VICE PRESIDENT / SENIOR CONSTRUCTION SERVICES MANAGER

Mr. Jones attended the University of New Hampshire Thompson School for two years of Civil Engineering Technology. He holds a NH Installer's License for Septic Systems.

Mr. Jones began working in the engineering field at the age of 18 as a survey rod man, moved rapidly to crew chief, designer, and construction inspection. He spent five years at Midway Excavators gaining valuable experience in the field. In 1987, Mr. Jones began full-time employment at the family business bringing expertise in design review for constructability, cost estimation, site inspection, and field survey. In 2000, he became an owner of the firm and was named a Vice President.

Mr. Jones is extremely competent in the areas of road and site construction management and inspection, land development including roadway, drainage, fire cisterns, water and sewer systems, and subsurface disposal septic systems. Construction and contract maintenance provide invaluable tools for clients.

Project Highlights:

- Maplevale 36-lot Subdivision in East Kingston, NH, Mitchell Road Residential Subdivision in Nottingham, NH, Home Depot in Seabrook, NH, Chisholm Farms Subdivision in Stratham, NH, and Windsor Meadows Condominiums ~ Construction Manager and Inspector

- Epping, Seabrook, Hampton, Concord, NH, and Salisbury, Amesbury, Lynn, MA: CVS Pharmacy ~ Inspector for sites with parking, access drives, utilities, and drainage

- North Windham, ME: LOWE's Home Improvement Warehouse development site ~ Construction Inspector and Manager for the Developer

- Barrington, NH: 93,000 S.F. Turbo Cam International light industrial manufacturing facility with on-site and off-site improvements including access roadways, porous pavement parking, drainage, utilities and on-site sanitary sewer ~ Construction Inspector

- Epping, NH: 30,092 S.F. Exeter Hospital Medical Office Building ~ Inspector for all site work construction including porous pavement

- Seabrook, NH: Sewer Main Contracts 3, 8 and 10, and PSNH Seabrook Power Station sewer connection. This work included 6 sewage pumping stations ~ Resident Construction Inspector

- Merrimack, NH: 150,000 GPD sewage pumping station and a 200+ unit residential development located in Bedford, NH ~ Construction Inspector

- Hampton Falls, NH: Spring Hill Subdivision, Field Stone Estates, The River at Heron Landing, Starvish Lane, and Linden Road Subdivision ~ Construction Inspector

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WAYNE G. MORRILL, JR.
VICE PRESIDENT / SENIOR PROJECT MANAGER

Mr. Morrill attended the New Hampshire Technical Institute in Stratham and received his Associates Degree in Electro-Mechanical Drafting in 1988. He is proficient in the use of computer programs such as AutoCAD and Land Desktop Development. He is a NH Licensed Septic System Designer, Evaluator and Installer.

In 1988, Mr. Morrill joined Jones & Beach Engineers, Inc. (JBE) as a CAD Technician. As a Project Supervisor his responsibilities include, but are not limited to, project management, cost analysis, site inspection, design of subdivisions and commercial development plans, and municipal and state presentations. In 2001, he became an owner of the firm and was named a Vice President.

Mr. Morrill is extremely competent in all areas of project management and development. He is innovative, bright, dependable and thorough, paying close attention to detail. He has excellent rapport with clients, working closely with them, and quickly gaining their trust. He acts as a representative for clients at Planning Board Meetings, Zoning Board Hearings and during project negotiations.

Project Highlights:

- Seabrook, NH: 135,318 S.F. Home Depot Retail Development on Route 1 ~ Project Manager and Site Designer
- North Windham, Ellsworth and Thomaston, ME: 165,000 S.F. Lowe's Home Improvement Stores ~ Principal-In-Charge
- Seabrook, NH: 150,000 S.F. Lowe's Home Improvement Warehouse Development on Route 1 ~ Project Manager and Site Designer
- Seabrook, NH: 12-lot Industrial Park with 1,025 L.F. of roadway on Ledge Road ~ Project Manager and Site Designer
- Seabrook, NH: 90,000 S.F. Kohl's Department Store, an attached 12,500 S.F. Retail Space, a 5,495 S.F. Restaurant, and associated access-ways and parking ~ Principal-In-Charge
- Lynn, MA: 13,013 S.F. CVS Pharmacy with associated parking, drainage and utilities ~ Principal-In-Charge
- Epping, NH: Brickyard Square of Epping was completed in three phases. Phase 1 was a 77,232 S.F. Retail Building with associated parking, drainage and utilities. Phase 2 was a total of 89,040 S.F. comprised of 20-Retail Building Units with associated parking, drainage and utilities. Phase 3 was a total of 110,676 S.F. comprised of 3 Retail Buildings and a Cinema with associated parking, drainage and utilities ~ Principal-In-Charge
- Concord, NH: 13,225 S.F. CVS Pharmacy and a 2,598 S.F. Burger King Restaurant with associated driveway, drive-thrus, parking, drainage and utilities ~ Principal-In-Charge
- Amesbury, MA: 13,225 S.F. CVS Pharmacy with associated parking, prescription drive-thru, drainage and utilities and 2,500 S.F. Mansard Mixed Use Building ~ Principal-In-Charge
- Brentwood, NH: 19,097 S.F. Tractor Supply Building and 15,000 S.F. Outdoor Fenced Merchandise Display Area, with associated parking, utilities and drainage ~ Principal-In-Charge

- Barrington, NH: 93,000 S.F. Turbo Cam International light industrial manufacturing facility with access roads, porous pavement parking lots, on-site sanitary sewer, LID features ~ Principal-In-Charge

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BARRY W. GIER, P.E.
VICE PRESIDENT / SENIOR PROJECT MANAGER

Mr. Gier graduated from the University of Kansas in 1997 with a BS Degree in Civil Engineering. He is a Licensed Professional Civil Engineer in the State of New Hampshire.

Mr. Gier joined Jones & Beach Engineers, Inc. (JBE) in 2011 bringing more than fifteen years of experience with him. Given his level of expertise, accuracy and attention to detail, he is an extremely valuable resource. He began his career working with Civil Engineering firms developing site plans and subdivisions. He also worked on numerous Regional Airport projects involving Runway Designs and Construction, Safety Area Construction, and Wildlife Area Mitigation. He has extensive knowledge and experience with Roadway Design, Stormwater Design, Sanitary Sewer Design, Water Distribution System Design, Airport Design, Waste Water Treatment Plant Design, Construction Specifications and Construction Monitoring, and Stormwater Field Inspections. He has also handled Federal, State, and Local permitting for various public and private projects in addition to coordination with Regulatory Agencies, Municipal Officials, Commissions and Boards. His duties include the planning, designing and tracking of cost-estimates for building structures and facilities, including parking areas, water and sewer systems, and drainage facilities, as well as handling environmental permitting.

Project Highlights:

- Stratham, NH: MBRAUN Site Design, Engineering and Permitting of 14,000 S.F. building addition with access, parking, and drainage revisions ~ Project Engineer and Site Designer
- Barrington, NH: 93,000 S.F. Turbo Cam International Corporate Headquarters and manufacturing facility with associated parking, utilities and drainage ~ Project Manager and Engineer
- Barrington, NH: Convenience Store/Gas Station Site Design, Engineering and Permitting ~ Project Engineer and Site Designer
- Hampton, NH: 8-Lot Subdivision including a 500 L.F. roadway, municipal sewer and water, and gravel wetland stormwater system ~ Project Engineer and Site Designer
- Hampton, NH: Multi-Family Residential Development including two 9,000 S.F. buildings and parking ~ Project Engineer and Site Designer
- Exeter, NH: Exeter Hospital Site Plan Engineering of a 13,000 S.F. building addition with access, parking and drainage revisions ~ Project Engineer and Site Designer
- Seabrook, NH: Route 1 Commercial Development ~ Project Engineer and Site Designer
- Dover, NH: Exit 9 Professional Office Project including an 80,000 S.F. building, parking, and underground detention system ~ Project Manager and Site Designer
- Dover, NH: Thornwood Commons / Thornwood Village, 100-Acre Mixed-Use Development including 3,000 L.F. of roadway with Round-About, 20-acres of single-family residences, 25-acres of commercial/office use, existing dam redesign, and automotive dealership design ~ Project Manager and Site Designer

- Portsmouth, NH: Pease 153, 155 and 157 International Drive, Multi-Building Office Park including LEED Site Design ~ Project Manager and Site Designer
- Somersworth, NH: High Street Retail Center, Commercial Complex ~ Project Manager and Site Designer
- Dover, NH: 9-Lot Subdivision ~ Project Manager and Site Designer

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DAVID M. COLLIER, L.L.S.
SURVEY MANAGER

Mr. Collier attended Old Dominion University-College of Engineering and Technology where he studied Land Surveying and he continued his studies at the University of New Hampshire. He became a Licensed Land Surveyor in the State of New Hampshire in 2001. His professional affiliations include the New Hampshire Land Surveyor's Association, where he has served as President, as a member of the Executive Committee, and as Liaison to New Hampshire Register of Deeds Association and the New Hampshire Planners Association. He is a member of the New Hampshire GPS Consortium, where he served as Director from 2004-2005, and of the Alton Planning Board, where he currently serves as Chairman. He also received the New Hampshire Land Surveyor's Association Survey Excellence Award in 2009.

Mr. Collier joined Jones & Beach Engineers, Inc. (JBE) in 2011 bringing with him more than twenty years of surveying experience while working at Richard D. Bartlett & Associates. While there he served as Project Manager and Vice President overseeing many different projects involving all types of surveying including Boundary Surveys, Topographic Surveys, Subdivisions, Lot Line Adjustments, Construction Layouts, and Elevation Certifications. The City of Concord exclusively used the firm as the surveyor for the City and Mr. Collier oversaw several of these projects and worked directly with City Officials to provide existing conditions plans for on-staff City Engineers to prepare designs.

Mr. Collier has first-hand experience and understanding of the Land Survey process from the initial research and field survey work, to the drafting and preparation of final documents for recording. He also has experience managing day to day field and office operations.

Project Highlights:

- Seabrook, NH: Kohl's Department Store, ALTA Land Title Survey of 13-acres ~ Project Manager, Land Surveyor
- Epping, NH: Brickyard Square at Epping, Construction Layout, Coordination of Horizontal and Vertical Control ~ Project Manager, Land Surveyor
- Hooksett, NH: Wal-Mart ACSM/ALTA Land Title Survey of 21-acres and corridor survey of 2,000 L.F. of roadway ~ Project Manager, Land Surveyor
- Concord, NH: Topographic and Right-of-Way Survey for 4-mile Roadway Improvement Project ~ Project Manager, Land Surveyor
- Isles of Shoals, White Island, NH: As-Built Survey of Piling Locations for Catwalk Restoration ~ Project Manager, Land Surveyor
- Hampton, NH: Boundary Survey of 8.56-Acre parcels on Juniper Lane ~ Land Surveyor
- Gilford, NH: Boundary and Topographic Survey of 21.56-Acre parcel and 1,700 L.F. Right-of-Way Survey ~ Land Surveyor
- Seabrook, NH: Boundary, Topographic, and ACSM/ALTA Land Title Survey of 1.08-Acre parcel along Route 1 ~ Land Surveyor

- Allenstown, NH: Boundary and Topographic Survey of 5.03-Acre NHDOT surplus parcel ~ Land Surveyor

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Civil & Sanitary Engineers
Land Surveyors

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Site Plan Design
Larrabee Road (Route 25) & Main Street (Route 25B)
Westbrook, ME

CHRISTOPHER S. ALBERT, CWS, LSSD, CPESC, CPSWQ
SENIOR PROJECT MANAGER

Mr. Albert joined Jones & Beach Engineers, Inc., in 2007 bringing more than 20 years of experience in municipal design, permitting, and construction management. He is a graduate from the University of New Hampshire with a BS in Forestry Science and a minor in Soils. He is a Certified Wetland Scientist, Certified Professional in Erosion & Sediment Control and Stormwater Quality, Certified Water System Operator Grade 1A, and a NH Licensed Septic System Designer and Granite State Septic System Certified Evaluator. He is certified by OSHA for the 40 Hour Hazardous Site/Safety Trainer, confined space and is a 40-hour supervisor trainer. Mr. Albert is the former President of the New Hampshire Association of Natural Resource Scientists (NHANRS). Mr. Albert is also the Representative for the Town of Epping's Southeast Watershed Alliance (SWA) and the Chairman to the Non-point Source Advisory Committee for the Granite State Designers and Installers (GSDI). He has recently been appointed by the Governor to the NH Joint Board of Natural Resource Scientists.

Project Highlights:

- Allenstown, NH: Olde Towne Homeowners Cooperative – Design Engineer and Project Manager for the installation of a second well source, new 20,000 gallon atmospheric tank, uranium and radon treatment system, and new variable speed pumps in a new mechanical room. Project funded under the 2009 ARRA DWSRF loan program.

- Candia, NH: Hillcrest Apartments Water System Upgrade – Design Engineer and Project Manager for the Pump House Upgrade. Project included a new 6,000 gallon atmospheric storage tank with a new electrical and mechanical system. Project funded by the DWSRF loan program and listed in the 2012 Report.

- Pelham, NH: Old Lawrence Road – Design Engineer and Project Manager for the Water System Upgrade. Project entailed the construction of a new well house building with a 5,000 gallon atmospheric tank, Kinetico Treatment System, new mechanical and electrical systems.

- Cambridge, MA: MIT Westgate Apartments – Water System Upgrade – Design Engineer for the design and construction of a new water system loop around Westgate Apartments.

- Exeter, NH: Exeter River Landing – Water System Upgrade – Design Engineer and Project Manager for the Well House Upgrade. Project in the early design phase for the upgrade of the existing well house with a new 20,000 gallon atmospheric tank, Green Sand Filter system with variable speed pumps, electrical MCC panel and mechanical piping.

- Evans Mobile Home Park, Epping, NH – Prepared NHDES Drinking Water Record Drawing Plans. Currently working on an Engineer's Opinion of Cost to tie into Municipal Water and Sewer abandoning the existing Public water System and on-site leachfields.

- State of NH, Mountain Top Projects – Design Engineer and Manager on four sites in New Hampshire for the design of new generators, building enclosures, telecommunication building, State and Federal FCC and FAA permitting. Generators fueled by propane. Coordinated with Mechanical and Electrical Engineers on design. Current knowledge of NFPA 37 and 58.

- Newfields, NH: Village Water and Sewer Commission and Board of Selectmen – Design Engineer for the Bald Hill Road culvert replacement. Design Engineer for the sidewalk design along NH Route 87 for the Town. Construction management on the NH Route 85 bridge waterline design and installation, coordinated work with NHDOT. Preliminary Design and well-siting report for the Goldsmith Well.

- Epping, NH: Water and Sewer Commission and Board of Selectmen: Design Engineer and construction manager for the Prescott Road culvert replacement. Construction Manager for a 500,000 gpd Wastewater Treatment System Upgrade; the WWTF entailed a Zenon bio-membrane filtration system. Formation of the Operations and Management manual for treatment plant and coordination with plant operators; Project Engineer for the Mill Street Pump Station; Project Manager and QC and QA review on-site and structural construction for the 300,000 gallon elevated steel water storage tank, managed sub-contractors and negotiated contracts for the Commission; Hoar Pond Well #2 final DES report, installation and commissioning; Project Engineer for the NH Route 125 water and sewer infrastructure improvements and construction of the NH Route 125 sanitary sewer pump station upgrade; Town engineering review for sewer and water site plan review and inspections for developmental projects in Town ~ Project Engineer, Site Designer & Construction Manager.

- Dorchester, NH, North Dorchester Road: Recently completed the topographic survey and wetland delineation. Project Manager for the replacement design of (2) 6-foot diameter CMP culverts on Rocky Brook.

- Bow, NH, Bow Bog Road: Design Engineer and Project Manager. Contract administrator and inspector for the construction phase.

- Warren, NH, Baker River Restoration: Design Engineer and Project Manager for multiple projects along the Barker River. Assisted in disaster relief and repairs to two bridges after Tropical Storm Irene. Pavement and Culvert inventory plan.

- Barrington, NH: Project Manager for the pavement and culvert inventory for the Town Roads.

Section 3 - Drainage Summary

A full drainage analysis and report has been completed and provided to the Planning Division and DPW for review. Within this section the summaries of that drainage report have been included as an overview with this application along with a recreation trail detail showing how runoff will flow towards the existing quarry.

1. EXECUTIVE SUMMARY

The purpose of this project is to construct a retail site development with associated parking, drainage, and utilities located on the existing Pike Industries parcel bounded by Maine Street, Larrabee Road, the Westbrook Arterial, and U.S. Interstate 95 in Westbrook, ME.

A drainage analysis of the development site and its offsite contributing watershed areas was conducted for the purpose of estimating the peak rate of stormwater runoff and to subsequently design adequate drainage structures. Two models were compiled, one for the area in its existing (pre-development) condition, and a second for its proposed (post-development) condition. The analysis was conducted using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment. A summary of the existing and proposed conditions peak rates of runoff is as follows:

COMPONENT	PEAK DISCHARGE COMPARISON									
	1 Year		2 Year		10 Year		25 Year		100 Year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Analysis Point #1	104.07	87.01	136.20	116.63	238.62	207.96	258.31	255.32	309.98	309.36

The drainage design intent for this site is to maintain the post-development peak flow to the pre-development peak flow conditions to the extent practicable and to effectively treat stormwater from the development of this site. This has been accomplished through the use of underdrained grass swales, gravels wetlands, and sand filters to maintain the peak discharge and effectively treat stormwater exiting the site.

6.1 INTRODUCTION

The intent of this project is to construct a retail commercial development consisting of multiple retail buildings and restaurants totaling 491,886 sq.ft. with associated parking, drainage, and utilities on City of Westbrook Map 42B / Lots 9, 10, 11, & 14.

6.2 METHODOLOGY

The existing and proposed watersheds were modeled utilizing HydroCad stormwater software, version 9.10. The watersheds were analyzed utilizing the SCS TR-20 methodology for hydrograph development and the TR-55 methodology for Time of Concentration (Tc) determination. The Dynamic-Storage-Indicating method for reach and pond routing was utilized. Type III, 24-hour hydrographs were developed for the 1-year, 2-year, 10-year, 25-year, and 100-year storm events corresponding to rainfall events of 2.60", 3.10", 4.60", 5.80" & 8.10" respectively.

Existing topography and site features were obtained through on-ground topography and existing conditions survey completed by Jones & Beach Engineers and Aerial Photography completed by Sewall Consulting. Existing soil conditions were derived from a combination of borings performed by Jones and Beach Engineers, a Site Specific Soil Survey conducted by Michael Cuomo, CWS, PWS, CSS, CPESC, and soils information obtained from the NRCS Web Soil Survey.

6.3 EXISTING CONDITIONS ANALYSIS

The study area consists of the subject property and upstream contributing area. The study area contains 212.789 acres including offsite contributing areas. The existing site was previously disturbed and is currently operated as a gravel quarry with concrete plant. The majority of the site is disturbed with multiple stockpiles located throughout.

Existing soil conditions were obtained from Site Specific Soils Mapping, on-site test pits, and NRCS Web Soil Survey. The existing soils are classified by the NRCS as a combination of Buxton, Elmwood, Hinckley, Hollis, Scantic, and Swanton soils. Areas of prior disturbance or prior fill were classified based upon the underlying soils.

One (1) Analysis Point (AP) is defined for this project.

Analysis Point #1 is defined as the culvert located under Interstate 95 located in the south-east portion of the site.

The existing site is divided into multiple watersheds. Drainage direction is generally from north to south with roadway drainage being directed to a closed drainage system along Maine Street and Larrabee Road and discharging to the existing stream located in the southern portion of the site.

Drainage collected in the existing quarry is pumped to an existing catch basin located in the eastern portion of the site and is discharged to the wetlands located in the southern portion of the site.

6.4 PROPOSED CONDITIONS ANALYSIS

The proposed site includes the construction of multiple retail buildings and restaurants totaling 491,886 sq.ft. Drainage from the proposed site is collected in a series of closed drainage systems and treatment features throughout the site.

The majority of the drainage on the North Campus is collected in closed drainage systems and directed to the existing quarry. Prior to discharge to the quarry, stormwater is treated via Grassed Underdrained Soil Filters, Underground Sand Filters, and/or Gravel Wetlands. The existing quarry has been designed to operate as a wet pond for stormwater treatment and detention. The discharge from the existing quarry has been designed to gravity drain to the existing wetlands on the South Campus.

North Campus drainage not directed to the existing quarry is treated via Grassed Underdrained Soil Filters and/or Underground Sand Filters and discharged to the existing closed drainage systems located within Maine Street and Larrabee Road. These systems are collected along Larrabee Road and discharged to the existing stream located on the South Campus.

South Campus drainage is collected within closed drainage systems. Stormwater is treated via Grassed Underdrained Soil Filters and/or Underdrained Sand Filters prior to discharge to the existing wetland system and stream located within the South Campus.

As the table in the Executive Summary demonstrates, the proposed peak rates of runoff have been maintained at the existing peak rates of runoff for the analyzed storms to the extent practicable.

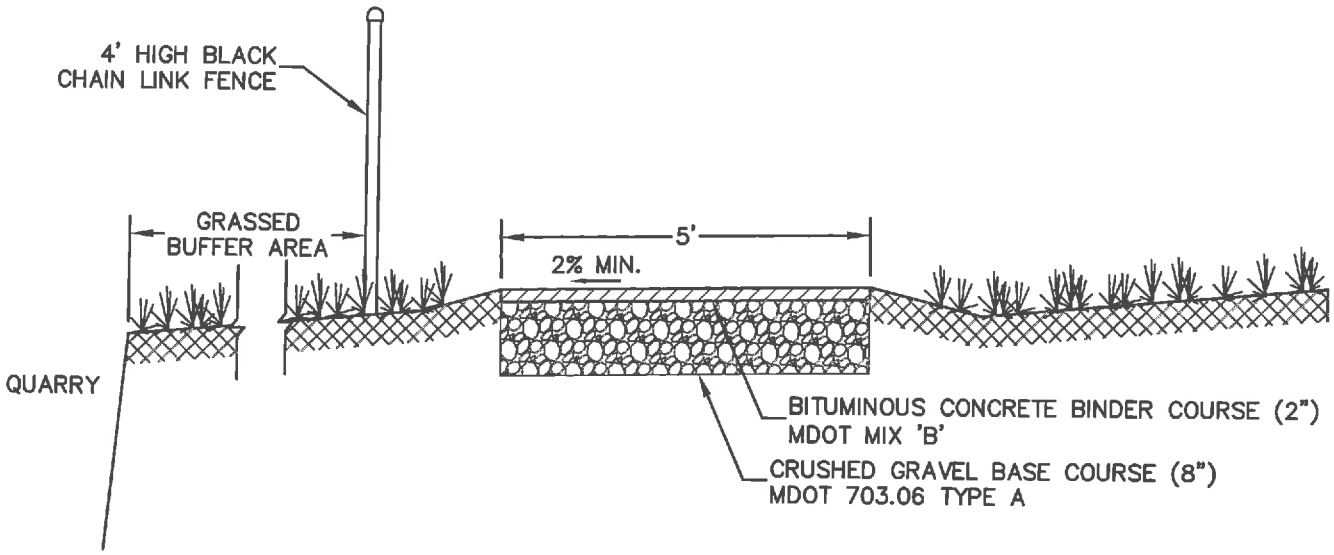
Infiltration was deemed impractical for this site due to the underlying marine clay soils throughout the site.

6.5 CONCLUSION

This proposed site development will have minimal adverse effect on abutting infrastructures or properties by way of stormwater runoff or siltation. Peak runoff rate from the proposed site has been maintained to the existing conditions peak rate to the extent practicable. Stormwater has been treated through the use of Grassed Underdrained Soil Filters, Underground Sand Filters, and/or Gravel Wetlands.

Respectfully Submitted,
JONES & BEACH ENGINEERS, INC.

Barry W. Gier, P.E.
Senior Project Manager



RECREATION TRAIL DETAIL

NOT TO SCALE

Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

Drawing Name:	REC. TRAIL DETAIL
Project:	"DIRIGO PLAZA"
Owner of Record:	PIKE INDUSTRIES, INC. 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
TD
SHEET 1 OF 1
JBE PROJECT
No. 14110

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Reach 16R: Culvert to Stream Avg. Flow Depth=2.51' Max Vel=5.49 fps Inflow=82.64 cfs 621,221 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=82.64 cfs 621,134 cf

Link AP-1: Highway culvert Inflow=104.01 cfs 815,162 cf
Primary=104.01 cfs 815,162 cf

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Reach 16R: Culvert to Stream Avg. Flow Depth=2.83' Max Vel=5.88 fps Inflow=105.67 cfs 808,456 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=105.66 cfs 808,354 cf

Link AP-1: Highway culvert Inflow=136.11 cfs 1,090,907 cf
Primary=136.11 cfs 1,090,907 cf

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Reach 16R: Culvert to Stream Avg. Flow Depth=3.64' Max Vel=6.77 fps Inflow=177.54 cfs 1,399,541 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=177.53 cfs 1,399,401 cf

Link AP-1: Highway culvert Inflow=238.47 cfs 1,948,068 cf
Primary=238.47 cfs 1,948,068 cf

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Reach 16R: Culvert to Stream Avg. Flow Depth=3.54' Max Vel=6.67 fps Inflow=167.44 cfs 1,864,976 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=167.66 cfs 1,864,741 cf

Link AP-1: Highway culvert Inflow=258.31 cfs 2,633,298 cf
Primary=258.31 cfs 2,633,298 cf

Summary for Reach 16R: Culvert to Stream

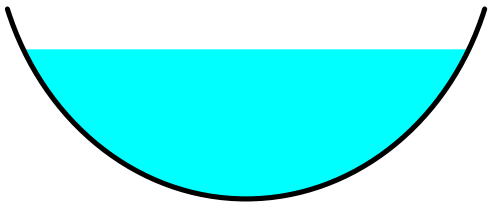
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[62] Hint: Exceeded Reach 15R OUTLET depth by 0.34' @ 13.55 hrs

Inflow Area = 5,495,687 sf, 38.37% Impervious, Inflow Depth > 4.07" for 25-YEAR event
Inflow = 167.44 cfs @ 12.25 hrs, Volume= 1,864,976 cf
Outflow = 167.66 cfs @ 12.30 hrs, Volume= 1,864,741 cf, Atten= 0%, Lag= 3.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.67 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.70 fps, Avg. Travel Time= 0.2 min

Peak Storage= 1,282 cf @ 12.30 hrs
Average Depth at Peak Storage= 3.54'
Bank-Full Depth= 4.50' Flow Area= 36.0 sf, Capacity= 273.67 cfs

12.00' x 4.50' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 51.0' Slope= 0.0137 '/'
Inlet Invert= 59.00', Outlet Invert= 58.30'



Summary for Link AP-1: Highway culvert

Inflow Area = 9,269,083 sf, 26.74% Impervious, Inflow Depth > 3.41" for 25-YEAR event
Inflow = 258.31 cfs @ 12.85 hrs, Volume= 2,633,298 cf
Primary = 258.31 cfs @ 12.85 hrs, Volume= 2,633,298 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Reach 16R: Culvert to Stream Avg. Flow Depth=3.66' Max Vel=6.78 fps Inflow=179.49 cfs 2,706,919 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=178.99 cfs 2,706,647 cf

Link AP-1: Highway culvert Inflow=309.98 cfs 3,930,409 cf
Primary=309.98 cfs 3,930,409 cf

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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

Reach 16R: Culvert to Stream Avg. Flow Depth=2.26' Max Vel=5.16 fps Inflow=65.91 cfs 503,992 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=65.92 cfs 503,990 cf

Link AP-1: Highway culvert Inflow=84.97 cfs 931,205 cf
Primary=84.97 cfs 931,205 cf

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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

Reach 16R: Culvert to Stream Avg. Flow Depth=2.58' Max Vel=5.58 fps Inflow=87.31 cfs 659,427 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=87.31 cfs 659,425 cf

Link AP-1: Highway culvert Inflow=114.36 cfs 1,239,536 cf
Primary=114.36 cfs 1,239,536 cf

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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

Reach 16R: Culvert to Stream Avg. Flow Depth=3.39' Max Vel=6.51 fps Inflow=153.34 cfs 1,152,080 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=153.34 cfs 1,152,078 cf

Link AP-1: Highway culvert Inflow=205.10 cfs 2,236,315 cf
Primary=205.10 cfs 2,236,315 cf

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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

Reach 16R: Culvert to Stream Avg. Flow Depth=3.66' Max Vel=6.79 fps Inflow=180.20 cfs 1,561,814 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=179.50 cfs 1,561,812 cf

Link AP-1: Highway culvert Inflow=252.41 cfs 3,078,546 cf
Primary=252.41 cfs 3,078,546 cf

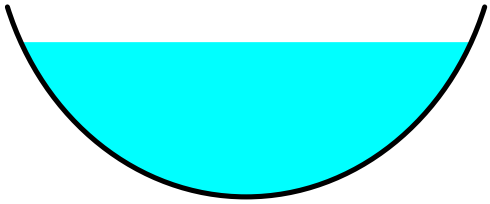
Summary for Reach 16R: Culvert to Stream

Inflow Area = 4,351,864 sf, 47.11% Impervious, Inflow Depth > 4.31" for 25-YEAR event
Inflow = 180.20 cfs @ 12.39 hrs, Volume= 1,561,814 cf
Outflow = 179.50 cfs @ 12.39 hrs, Volume= 1,561,812 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.79 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.35 fps, Avg. Travel Time= 0.6 min

Peak Storage= 1,347 cf @ 12.39 hrs
Average Depth at Peak Storage= 3.66'
Bank-Full Depth= 4.50' Flow Area= 36.0 sf, Capacity= 273.67 cfs

12.00' x 4.50' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 51.0' Slope= 0.0137 '/'
Inlet Invert= 59.00', Outlet Invert= 58.30'



Summary for Link AP-1: Highway culvert

Inflow Area = 9,264,015 sf, 51.29% Impervious, Inflow Depth > 3.99" for 25-YEAR event
Inflow = 252.41 cfs @ 12.50 hrs, Volume= 3,078,546 cf
Primary = 252.41 cfs @ 12.50 hrs, Volume= 3,078,546 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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

Reach 16R: Culvert to Stream Avg. Flow Depth=3.66' Max Vel=6.79 fps Inflow=179.69 cfs 2,365,290 cf
n=0.040 L=51.0' S=0.0137 '/' Capacity=273.67 cfs Outflow=179.27 cfs 2,365,288 cf

Link AP-1: Highway culvert Inflow=309.28 cfs 4,747,806 cf
Primary=309.28 cfs 4,747,806 cf

JONES & BEACH ENGINEERS INC.
85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

August 23, 2016

Maine DEP
Attn: Ben Viola, P.E.
312 Canco Road
Portland, ME 04103

RE: Site Location Response Letter 2
80 Main Street & 11 Larrabee Road, Westbrook, ME
Tax Map 42B, Lots 9, 10, 11 & 14
JBE Project No. 14110

Dear Mr. Viola:

On behalf of our client, Dirigo Center Developers, LLC, Jones & Beach Engineers, Inc., has received review comments from you dated July 28, 2016. Review comments are italicized and we offer the following responses in bold below:

1. *In response to my request for a letter from the City accepting infrastructure and responsibility for the infrastructure the applicant has submitted a letter from the City. The letter from the City only appears to "approve connection to/replacement of the existing drainage system along Larrabee Road" and makes no mention of accepting responsibility of all infrastructure. We would need a more specific acceptance of which infrastructure the City will be taking over and maintaining.*

   RESPONSE: A revised letter from the City of Westbrook has been provided accepting infrastructure within the City ROW has been included with this response.

2. *On the application form line 22 the applicant uses existing impervious area of 4.41 acres, new impervious area of 43 acres, which does not match the latest submittal that states an increase in impervious area of 36.26 acres. On the same form line a total of 81.78 acres is called out. I believe the total is total impervious area not total lot acreage. The same is true for the developed area on line 21. Please correct/clarify these numbers.*

   RESPONSE: A revised application form with numbers to match the numbers from Section 1 - Development Description and development areas from sheets W2-1 & W2-2 has been included with this response.

3. *The Stormwater Management Operation and Maintenance Manual names the Property Owner as the responsible party for stormwater infrastructure maintenance. Is the property owner the applicant, J&J Gove Development?*

   RESPONSE: Current property owner is Pike Industries, Inc. The application 'Dirigo Center Developers, LLC' (Formerly J&J Gove Development) will purchase the property and become the owner responsible for all maintenance upon approval of all permits.

4. *Parking lot sweeping needs to be part of the maintenance requirements.*

   RESPONSE: Parking lot sweeping has been included in the maintenance requirements within the O&M Manual.

5. *Some of the plans are not stamped, sign and dated. The Landscape Architects that stamped some of the plans is not licensed in Maine. We cannot accept plans stamped from professional not licensed in Maine.*

   RESPONSE: The landscape architect has obtained his Maine license, see license attached. At this time, he has not obtained a Maine stamp. The Maine stamp will be included on the landscape plans prior to the Final approval.

6. *I could not locate a plan showing the location of test pits for this project in the June 16, submittal. Test pits are required in the locations of all stormwater treatment BMPs being proposed.*

   RESPONSE: Plans clearly depicting the location of all test pits has been included in the back of the revised Drainage Report.

7. *Sheet D6 -*
   a. *I could not locate construction oversight notes for Grassed Underdrained Soil Filter.*
      RESPONSE: This section has been added to the Construction Oversight notes as well as to the detail.
   b. *The table has the Swale# in the row at the top of the table. Does this refer to the grassed underdrained soil filters?*
      RESPONSE: Yes. Swale # nomenclature has been modified to 'Soil Filter #" in the revised plans.
   c. *The HydroCad model does not match what is shown for the gravel wetland.*
      RESPONSE: HydroCad model has been updated as required.
   d. *The outlet from the outlet structure appears to be too low based on UNHSC design specifications manual. Please explain or correct.*
      RESPONSE: Outlet elevations have been revised as required by the design specifications manual.

8. *Whereas the site is an 80 acre parcel we would need to limit the amount of area open at any time. What is the applicant proposing for an area open at any time?*

   RESPONSE: A note has been added to sheets PH1-1 thru PH1-3 and sheets EC-1 thru EC-6 limiting the area of disturbance to 5 acres or less.

9. *Sheet EC-3 - Why is a stabilized construction entrance not needed for the South Campus?*

   RESPONSE: A stabilized construction entrance has been added as required.

10. *Sheet D5 -*
    a. *The sand filter table calls for 13 sand filters but I could only count 11 sand filter on sheets W2-1 and W2-2. The HydroCad model also uses 13 sand filters. Please explain or correct.*
       RESPONSE: Underground sand filters as previously designed have been replaced with alternative BMP selections.
    b. *Some of the elevations and orifices in the sand filter table do not match the HydoCAD model. Please correct.*
       RESPONSE: Underground sand filters as previously designed have been replaced with alternative BMP selections.
    c. *Is there a plan that shows the 10' long sharp-crested weir used in sand filter #1?*
       RESPONSE: Underground sand filters as previously designed have been replaced with alternative BMP selections.
    d. *The elevations in the sand filter table for sand filter #3 do not appear to work. It appears the sand filter would always be flooded. Please explain or correct.*
       RESPONSE: Underground sand filters as previously designed have been replaced with alternative BMP selections.
    e. *The Underdrained Soil Filter Section detail:*
       i. *What prevents water from draining into the common fill surrounding the sand filter?*
          RESPONSE: Underground sand filters as previously designed have been replaced with alternative BMP selections.
       ii. *Some of the outlet orifices are higher than the underdrain piping. Is this correct?*
          RESPONSE: Underground sand filters as previously designed have been replaced with alternative BMP selections.
       iii. *The note for 2 layers of geotextile needs work, the arrow points to the perimeter of the sand filter.*
          RESPONSE: Underground sand filters as previously designed have been replaced with alternative BMP selections.
       iv. *The BMP manual states,*

       "Subsurface soil filters including a detention/retention bed of chambers may only be approved as an alternative BMP design on a case-by-case basis as they generally require much more care in their design, construction and maintenance. Subsurface sand filters are viewed as having a higher risk of failure and should not be considered unless all other alternatives have been considered and deemed impracticable because of the compaction necessary for bearing strength that is usually required of subsurface systems, because there is no vegetation to insure long term permeability, to provide evapo-transpiration or a long-term

source of organic matter; and because there is no track record on this type of system (only on sand filters)".
I do not remember discussing or giving approval for sand filters. Based on the BMP manual discouraging the use of sand filter and the detail on sheet D5 calling for, "4" TOPSOIL SEED AND MULCH" on top of the sand filters, why can't underdrained soil filters be used in place of the sand filters?
RESPONSE: Underground sand filters as previously designed have been replaced with alternative BMP selections.

11. *Sheet 2-1-2 - How does the shape of the first bay of the gravel wetland function? It appears to me to be an odd shape. Perhaps a larger plan view of the gravel wetland would be helpful in understanding the shape.*

RESPONSE: Details of the gravel wetlands have been revised to include a larger scale of the gravel wetland to clarify design intent.

12. *Whereas the project involves large parking areas please explain what is planned for snow storage/snow removal? Can snow storage areas be added to a plan?*

RESPONSE: Snow storage areas are depicted on the C2 series sheets.

13. *The treatment tables use terms that are not found in chapter 500. The term and definitions are:*
    a. ***Impervious area.*** *"Impervious area" means the total area of a parcel covered with a low-permeability material that is highly resistant to infiltration by water, such as asphalt, concrete, or rooftop, and areas such as gravel roads and unpaved parking areas that will be compacted through design or use to reduce their permeability. Common impervious areas include, but are not limited to, rooftops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and macadam or other surfaces which similarly impede the natural infiltration of stormwater. Pervious pavement, pervious pavers, pervious concrete and underdrained artificial turf fields are all considered impervious. For the purpose of determining jurisdictional thresholds, the Department may, depending on the design, consider such facilities to provide alternative treatment as described in Section 4(B)(3)(e) of this Chapter.*
    b. ***Landscaped area.*** *"Landscaped area" means an area of land that has been disturbed and re-planted or covered with one or more of the following: grass or other herbaceous plants, shrubs, trees, or mulch; but not including area that has reverted to a natural, vegetated condition. An area of grass is considered landscaped if it is mowed more than twice per twelve month period.*
    c. ***Developed area.*** *"Developed area" means an impervious area, landscaped area, or unrevegetated area. Developed area includes all disturbed areas except an area that is returned to a condition that existed prior to the disturbance and is revegetated within one calendar year of being disturbed, provided the area is not mowed more than twice per year.*

14. *I am resending the sample treatment table because I cannot follow the one provided on the plans. Please make adjustments to your table.*

Sub Catchment #	*Total Area Sq Ft*	*Impervious Area Sq Ft*	*Impervious Area Treated Sq Ft*	*Landscaped Area Sq Ft*	*Developed Area Sq Ft*	*Developed Area Treated Sq Ft*	*Treatment BMP*	*Comments*
Total								
Percent Treatment			%			%		

RESPONSE: Treatment tables have been updated as requested in both layout and definition.

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Barry W. Gier
Vice President

cc: Dirigo Center Developers, LLC

Attachments:
1.) 2 copies - Site Plans "Commercial Development 'Dirigo Plaza'", latest revision 8/23/16
2.) 1 copy - Drainage Analysis - Dirigo Plaza, latest revision 8/23/16
3.) Letter signed by Eric Dudley, Director of Engineering & Public Services, City of Westbrook.
4.) Revised Form A, Page 1, Site Location of Development Permit Application
5.) Howard Snyder, State of Maine License for Landscape Architect.
6.) Stormwater Operations and Maintenance Manual, latest revision 8/23/16

JONES & BEACH
ENGINEERS INC.
85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

August 3, 2016

Eric Dudley, P.E.
Director of Engineering & Public Services
City of Westbrook
371 Saco St.
Westbrook, ME 04092

Mr. Dudley,

On behalf of our client, Dirigo Center Developers, LLC, Jones & Beach Engineers, Inc. (J&B) obtained approval from the Department of Engineering & Public Services on March 11, 2016 to connect into the existing drainage infrastructure along Larrabee Road. As part of the MaineDEP review of our project's Site Location of Development Application the state is requesting that our office confirm with the City of Westbrook that the city will be responsible for the upgraded drainage infrastructure within the right-of-way once construction is complete and approved. The property owner and operator, Dirigo Center Developers, LLC, will be responsible for maintaining all drainage infrastructure outside of the right-of-way.

J&B appreciates your cooperation on this very important project. If you have any questions or need additional information, please feel free to call.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Wayne Morrill
Vice President

cc: Dirigo Center Developers, LLC

The City of Westbrook accepts responsibility for the upgraded drainage infrastructure within the Larrabee Road right-of-way once work is complete and the City has approved all work performed.

x _____ Date: 8/4/16

State of Maine

DEPARTMENT OF PROFESSIONAL AND FINANCIAL REGULATION
OFFICE OF PROFESSIONAL AND OCCUPATIONAL REGULATION
ARCHITECTS, LANDSCAPE ARCHITECTS & INTERIOR DESIGNERS

License Number LAR4368

Be it known that

HOWARD AMORY SNYDER

has qualified as required by Title 32 MRSA Chapter 3A and is licensed as:

LANDSCAPE ARCHITECT

ISSUE DATE
June 27, 2016

Anne L. Head
Commissioner

EXPIRATION DATE
June 30, 2017

✂ Detach

STATE OF MAINE
DEPARTMENT OF PROFESSIONAL AND FINANCIAL REGULATION
OFFICE OF PROFESSIONAL AND OCCUPATIONAL REGULATION
ARCHITECTS, LANDSCAPE ARCHITECTS & INTERIOR DESIGNERS

License Number LAR4368
HOWARD AMORY SNYDER
LANDSCAPE ARCHITECT

ISSUED 06/27/2016 EXPIRES 06/30/2017

STATE OF MAINE
DEPARTMENT OF PROFESSIONAL AND FINANCIAL REGULATION
35 State House Station
Augusta, Maine 04333-0035
(207) 624-8603

Anne L. Head
Commissioner

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901

FOR DEP USE **FORM A PAGE 1**
ATS # _____
L-_____
Total Fees: _____
Date: Received _____

****

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☒ **20 acre development** ☐ **Planning Permit** ☐ **Metallic Mining**	☐ **Marine Oil Terminal** ☐ **Structure** ☐ **Subdivision**	☐ **Major Amendment** ☐ **Minor Amendment**

1. Name of Applicant:	Dirigo Center Developers, LLC	**6. Name of Agent (if applicable):**	Jones & Beach Engineers, Inc.
2. Applicant's Mailing Address:	7 Swain Drive, Hampton Falls, NH	**7. Agent's Mailing Address:**	85 Portsmouth Ave., Stratham, NH
3. Applicant's Daytime Phone #:	603-926-7662	**8. Agent's Daytime Phone # :**	603-772-4746
4. Applicant's Fax # (if available):		**9. Agent's Fax # (if available):**	603-772-0227
5. Applicant's *e-mail address* (REQUIRED -license will be sent via: e-mail):	jeffreygove@yahoo.com	**10. Agent's *e-mail address* (REQUIRED - license will be sent via e-mail):**	wmorrill@jonesandbeach.com

PROJECT INFORMATION

11. Name of Development:	"Dirigo Plaza"						
12. Map and Lot #'s:	**Map #:** 42B	**Lot #:** 9-11,1	**13. Deed Reference #'s:**		**Book #:**		**Page #:**
14. Location of Project City/Town:	Westbrook, ME	**15. County:**	Cumberland	**16. UTM Northing**	43°40'38"	**17. UTM Easting**	70°19'52"
18. Brief Description of Project including total parcel size:	Mixed-use Retail, Restaurant, and Office Space Development						

19. Type of Direct Watershed: (Check all that apply)

☐ Lake not most at risk ☐ River, stream or brook ☐ Coastal wetland
☐ Lake most at risk ☒ Urban impaired stream ☐ Wellhead or public water
☐ Lake most at risk, severely blooming ☐ Freshwater wetland

20. Name of Waterbody Project Site drains to:	Nasons Brook		
21. Amount of Developed Area:	Total acres: 81.78	Existing Developed area: 45.7 acres	New Developed area: 7.8 acres
22. Amount of Impervious Area:	Total acres: 81.78	Existing Impervious areas 35.3 acres	New Impervious area: 41 acres

23. Development started prior to obtaining a license?:	☐ **Yes** ☒ **No**		
24. .Development or any portion of the site subject to enforcement action?	☐ **Yes** ☒ **No**	**If yes**, name of enforcement staff involved?	
25. Common scheme of development?:	☒ **Yes** ☐ **No**	**26. Title, Right or Interest:**	☐ **own** ☐ **lease** ☒ **purchase option** ☐ **written agreement**
27. Natural Resources Protection Act permit required?:	☒ **Yes** ☐ **No**	**If yes:** ☐ **PBR**	☐ **Tier 1** ☒ **Full Permit** ☐ **Tier 2**
28. Existing DEP Permit number (if applicable):			
29. Names of DEP staff person(s) present at the pre-application meeting:	Robert Green, Ben Viola		
30. Does agent have an interest in project? If yes, what is the interest?	☐ **Yes** ☒ **No**		

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

JONES & BEACH ENGINEERS INC.
85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

August 24, 2016

Maine DEP - Bureau of Land & Water Quality
Attn. John Hopeck, Ph.D.
17 State House Station
Augusta, ME 04333

RE: Response Letter
80 Main Street & 11 Larrabee Road, Westbrook, ME
Tax Map 42B, Lots 9, 10, 11 & 14
JBE Project No. 14110

Dear Mr. Hopeck:

On behalf of our client, Dirigo Center Developers, LLC, Jones & Beach Engineers, Inc., has received review comments from you dated March 29, 2016. Review comments are italicized and we offer the following responses in bold below:

1. *The information submitted for review includes a soil survey and geotechnical report, but does not include any figures locating the test pits, borings, and other explorations conducted for these investigations. (Also note that the soils map received is not signed and stamped by the investigating soils scientist; at least the record copy of this document must include – in addition to the locations of any logged explorations used in the mapping – this documentation by the soil scientist.) Drawing C3 shows several test pit locations, mostly in the locations of stormwater management structures, although many of these test pits locations and labels are illegible due to the number of contour lines and other features overlying the apparent test pit locations. In any event, the information received for review does not include logs of these explorations. Complete logs and clear, legible figures describing and showing the locations of all explorations conducted as part of exploration of this site for the proposed project must be submitted for review and approval. Changes to designs or additional information may be required following review of this information not supplied with the original application; for example, some of the sand filters and subsurface galleries may require clay or synthetic liners if they are in permeable soils or excavated to or into bedrock, and registration of these structures as injection wells may be required. Note that the geotechnical report received for review is somewhat general and does not deal with the specific requirements at any of the proposed structures (see Section 5.0 of the report); based on review of the boring logs, the geotechnical report, and other information received to date and otherwise known from the site, it is likely that significant additional information*

will be required to support Department approval of at least many of the larger proposed structures.

RESPONSE: The following documents have been provided to aid in further review:

- **Soils Map stamped by Maine Soil Scientist**
- **Initial Geotechnical Report by S.W. Cole Engineers, dated 4/21/15**
- **Exploration Plans with test pits and boring locations, TP-1 & TP-2**
- **Test pit logs for all test pits shown on Exploration Plans.**

2. *Section 15 of the application and several of the site plans refer to a fueling station or similar facility to be located at this site. From several of the site plans, this area appears to be intended for propane storage, but it is not clear if other fuels will be stored or sold from the facility. As is the case with the more detailed geotechnical information necessary for at least some structures, and noted in the previous paragraph, more specific information regarding fuel storage, leak prevention, treatment of runoff, and other relevant factors, potentially including but not limited to more complete design information and subsurface data for the facility and associated stormwater management structure, must be submitted for review and approval prior to construction of this facility in order to minimize the risk of groundwater contamination. Are the spill containment grooves shown in a detail on Drawing D2 intended for this area?*

   RESPONSE: The proposed fueling station has been removed from the project design. See latest plan set dated 8/23/16.

3. *The information received for review does not include the SWPPP or any description, other than as shown on the relevant detail sheets, of measures to remove pollutants from wastewater prior to discharge to the quarry or to the subsurface Storm Tech units. A complete description of snow storage and snow removal should also be included with this material. Section 15 states that stormwater is expected to infiltrate from these units; this may not occur to any significant extent, given the soils at the site, although it is not possible to assess that at present, due to the absence of subsurface data noted in paragraph 1. However, infiltration of stormwater from large connected impervious areas, such as this development, has been shown at many locations to result in significant groundwater contamination, primarily from chloride, although mobilization of other contaminants is common as a result of gradual or rapid failure of the systems to manage incoming contaminant loads or storage of contaminants within the system. The applicant should expect that groundwater monitoring will be required for any operation using groundwater infiltration for disposal of runoff from non-roof areas at this site.*

   RESPONSE: Pollutants are removed from stormwater via the use of Underdrained Grassed Soil Filters, Underground Sand Filters, and a Gravel Wetland. These systems remove pollutants from stormwater prior to discharge to the Quarry and/or wetlands. Our calculations do not anticipate infiltration due to existing soils but any infiltration that does occur will have been previously treated. Snow storage areas are depicted on sheets C2-1-1 through C2-2-2. A groundwater monitoring program is being established for long-term monitoring on-site.

   A SWPPP will be provided for the project prior to start of construction.

4. *The copy of the site plan included in Section 20 of the application, apparently identifying the area of pre-survey and other features related to the blasting assessment, is not legible. A color copy, or other clear copy of this figure, should be submitted for review and approval. In addition, the proposed sound level limits and ground vibration limits are not consistent with Department requirements; the blasting plan submitted also does not include specific provisions for flyrock control. At a minimum, the following performance standards should be specifically required in the plan:*

    a) *ground vibration at offsite structures not owned or controlled by the developer may not exceed the limits shown in Figure B-1 of Appendix B, U.S. Bureau of Mines Report of Investigations 8507;*
    b) *air overpressure offsite may not exceed the limits provided at Department Rules Chapter 375.10(C)(4)(c) and 38 MRSA §490-Z(14)(H);*
    c) *flyrock must be controlled so as to remain on the site and may not enter a protected resource unless the Department has previously approved alteration of that resource in the impacted area;*
    d) *records of blasts generally consistent with the requirements of 38 MRSA §490-Z(14)(L) must be kept (note that the Department generally does not consider such records incomplete if the social security number of the blaster is not included); these records may be combined with the information required by the City of Westbrook and listed on page 5 of the submitted blast plan. To be consistent with the requirements of the city (see Section 34-20 of the Westbrook blasting ordinance), all records must be kept and be available to the Department, the city, and other parties for at least five years from the date of the last blast.*

RESPONSE: See attached Blasting Assessment (Rev. 1) by S.W. Cole Engineers addressing blasting questions and concerns.

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Barry W. Gier
Vice President

cc: Dirigo Center Developers, LLC

REPORT

April 21, 2015
15-0083 S

Explorations and Preliminary Geotechnical Engineering Services

Proposed Retail Development
Larrabee Road and Main Street
Westbrook, Maine

PREPARED FOR:
J & J Gove Development, LLC
Attention: Jeff Gove
7 Swain Drive
Hampton Fall, NH 03844

PREPARED BY:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
207-657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing*
- *GeoEnvironmental Services*
- *Ecological Services*

www.swcole.com

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Attachment A Limitations
Sheets 1 & 2 Exploration Location Plans
Appendix A Exploration Logs and Key to the Notes and Symbols
Appendix B Laboratory Test Results

DRAFT

S.W.COLE ENGINEERING, INC.

www.swcole.com

15-0083 S

April 21, 2015

J & J Gove Development, LLC
Attn: Jeff Gove
7 Swain Drive
Hampton Falls, NH 03844

Subject: Explorations and Preliminary Geotechnical Engineering Services
Proposed Retail Development
Larrabee Road and Main Street
Westbrook, Maine

Dear Jeff:

In accordance with our Agreement, dated January 20, 2015, we have performed subsurface explorations for the subject project. This report summarizes our findings and preliminary geotechnical recommendations and its contents 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 at the site in order to provide preliminary geotechnical recommendations relative to foundations, earthwork and pavement associated with the proposed construction. Our scope of services included explorations, soils laboratory testing, a preliminary geotechnical evaluation of the findings and preparation of this report.

1.2 Proposed Construction

The site is generally located on the southeast corner of Larrabee Road and Main Street in Westbrook, Maine. The site is the former Pike Industries quarry and asphalt plant and is generally bound by Larrabee Road, Main Street, the Maine Turnpike and the Westbrook Arterial.

We understand development plans call for the construction of several retail and restaurant building pads and an automobile fueling station with associated paved parking and access drives. We understand finished floor elevation for the proposed building pads will generally be within 2 feet of existing grade and the former quarry will be used as stormwater management pond.

Proposed and existing site features are shown on the "Exploration Location Plans" attached as Sheet 1 and 2.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Subsurface explorations made at the site included twenty four, widely spaced test borings made across the proposed building pads and fueling station in February and March 2015. The borings were made by S.W.COLE Explorations, LLC and Great Works Test Boring, Inc. working under subcontract to S. W. Cole Engineering, Inc. (S.W.COLE). The exploration locations were selected and established in the field by S.W.COLE using GPS methods. The approximate exploration locations are shown on the "Exploration Location Plans" attached as Sheets 1 and 2. Logs of the explorations and a key to the notes and symbols used on the logs are attached as Appendix A.

2.2 Testing

The borings were performed using a combination of hollow-stem auger, solid-stem auger, cased wash-boring and rod probing techniques. The soils in the test borings were sampled at 2 to 10 foot intervals using a split spoon sampler and Standard Penetration Test (SPT) methods. Where softer clay soils were encountered, Shelby Tube samples were obtained for laboratory testing and Vane Shear Testing (VST) was performed to measure in-situ shear strength. SPT blow counts and VST results are shown on the logs.

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. The results of soil moisture content and Atterberg Limit testing are shown on the logs attached is Appendix A.

DRAFT

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

The explorations encountered a subsurface profile generally consisting of uncontrolled fill overlying relic organics, overlying native deposits of outwash sands, overlying glaciomarine clay, overlying marine sands, overlying glacial till and bedrock at depth. The principal strata encountered are summarized below; not all the strata were encountered at each exploration. Refer to the attached logs for more detailed subsurface information.

Uncontrolled Fill: The uncontrolled fills generally consisted of fine-grained granular materials likely generated from decades of quarrying and on-site aggregate production. The fills were generally loose to dense and ranged from about 2 to 20 feet thick at the exploration locations. Thicker layers of fill are noted on the logs where the test borings advanced through existing stockpiles of material above the ground surface.

Relic Organics: The relic organics varied from fibrous peat to sandy topsoil sporadically encountered beneath the uncontrolled fills. Where encountered, the relic organic layer ranged from about 2 to 4 feet thick.

Outwash Sands: The outwash sands generally consisted of silty sand and varied in thickness from about 3 to 5 feet where encountered.

Glaciomarine Clay: The native glaciomarine clays are typical of coastal Maine and generally consist of a relatively thin upper crust of very stiff silty clay overlying a deep deposit of soft, compressible silty clay which extends to depths exceeding 100 feet in certain borings. Based on field testing, the softer silty clay has in-situ shear strengths generally ranging from 450 to 600 psf.

Marine Sands: Below the glaciomarine clays, where penetrated, these soils generally consisted of loose to medium dense gray silty sand.

Glacial Till: Where encountered, the glacial till consisted of a dense silty gravelly sand.

Bedrock: Bedrock was encountered in B-6 at a depth of about 62 feet below the ground surface.

3.2 Groundwater

The soils were generally saturated below a depth of about 10 feet. Free groundwater was not observed during the short time that the boreholes remained open. Groundwater likely becomes perched on relatively impervious native clays. Long-term groundwater levels are likely influenced by the abandoned quarry on the site. It should be anticipated that groundwater levels will fluctuate, especially in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings and our understanding of the proposed construction, we offer the following geotechnical considerations for planning and permitting:

- The proposed construction appears feasible from a geotechnical standpoint; however, some premium costs related to geotechnical issues will be required.

- Historic filling of the site requires the use of Rammed Aggregate Piers (RAPs) to improve ground conditions for conventional spread footings and on-grade floor slabs. Where the depth of fill is less than about 7 feet, we recommend removing and replacing the uncontrolled fills and buried organics in lieu of RAPs. Buildings should also be setback from the quarry rim to meet IBC requirements. Building pad preparation recommendations are summarized on Sheets 1 and 2. Post-construction settlement will likely exceed Costco's allowable tolerance of 1 inch total and may also exceed Costco's ½ inch differential in 50 feet tolerance, careful balancing of site grades will help to reduce post-construction settlement.

- In general, we recommend finished floor elevations within 2 feet of existing grade with paved areas generally sloping away from the buildings for positive drainage. The Costco, Market Basket and Hobby Lobby finished floor elevations should be constructed within 1 foot of existing grade.

- The southernmost building pad (B-201, B-202 and B-203) should be relocated and the footprint reduced to fit within the historic stockpile limits or preloaded.

- Certain manhole and utility structures will need to be overexcavated to remove uncontrolled fills and organic materials beneath these structures.

DRAFT

4.2 Foundation and Floor Slab Considerations

The proposed building pads are underlain with uncontrolled fills and a sporadic relic organic layer. Ground improvement using Rammed Aggregate Piers (RAPs) is recommended in certain building pads with removal and replacement of uncontrolled fills and relic organics in other building pads. Following removal and replacement of existing uncontrolled fill and ground improvement using RAPs, conventional spread footing foundations and on-grade floor slabs appear suitable for the proposed building. Post-construction settlement will likely exceed Costco's allowable tolerance of 1 inch total and may also exceed Costco's ½ inch differential in 50 feet tolerance; establishing proposed finished floor elevations within 1 foot of existing grades will help to reduce post-construction settlement.

Building pads must be setback from the quarry rim to meet IBC requirements. Global stability of proposed development approaching the quarry rim must be evaluated during the design phase. Building pad preparation recommendations are summarized on Sheets 1 and 2.

We anticipate an allowable bearing pressure of 3 ksf for spread footings supported on subgrades improved with RAPs or backfilled with compacted granular borrow after removal of uncontrolled fills and relic organics. Similarly, a subgrade reaction modulus of 100 pci is attainable for floor slabs supported on RAPs or compacted granular borrow over properly prepared subgrades. RAPs are generally spaced 2 to 3 feet apart below footings and 6 to 9 feet below floor slabs. Additional geotechnical investigation is required to determine the depths of RAPs for support of building foundations and on-grade floor slabs.

The 100-year Air Freezing Index for the Westbrook, Maine is about 1,400-Farenheit 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 E, according to 2012 International Building Code/ASCE 7.

4.3 Excavation, Dewatering and Grading Considerations

Excavations will generally encounter uncontrolled fills, relic organics and native silty sands; some bedrock may also be encountered as excavations approach the former quarry. We anticipate excavation can be made with conventional equipment and blasting for bedrock removal. We recommend that excavation to subgrade be made with a smooth-edged

bucket to lessen disturbance of subgrade soils. The uncontrolled fills and native silty sands are moisture and frost susceptible and therefore, earthwork is best undertaken during the drier, non-freezing weather of Summer and Fall.

Free groundwater was not encountered within the short timeframe that the boreholes remained open. We anticipate that groundwater may seep into deeper utility excavations and that sumping and pumping through crushed stone bedding materials will likely be adequate for dewatering. Additionally, we anticipate that sump and pump dewatering techniques will be adequate for shallow foundation excavations.

In general, we recommend finished floor elevations within 2 feet of existing grade with paved areas generally sloping away from the buildings for positive drainage. The Costco, Market Basket and Hobby Lobby finished floor elevations should be constructed within 1 foot of existing grade.

4.4 Pavement Considerations

We anticipate paved areas will be subjected primarily to passenger vehicle and delivery truck traffic. Considering the site soils, and proposed usage, we offer the following pavement section for consideration. Materials are based on MaineDOT Standard Specifications.

FLEXIBLE (HMA) PAVEMENT SECTION	
Pavement Layer	**Material Thickness**
MaineDOT 9.5 mm Hot Mix Asphalt (50 Gyration Design)	1 ¼ inches
MaineDOT 19.0 mm Hot Mix Asphalt (50 Gyration Design)	2 ¼ inches
MaineDOT 703.06 Aggregate Base Type A	6 inches
MaineDOT 703.06 Aggregate Subbase Type D	12 inches
Woven Subgrade Reinforcement, Mirafi 600X	Access Drives

We recommend pavement subgrades be proof-rolled and densify with a vibratory drum roller compactor prior to installing pavement subbase gravels or geotextile fabrics. Areas that become soft or yielding should be removed and replaced with compacted granular fill prior to installing subbase gravels or geotextile fabrics.

It should be understood that frost penetration can be on the order of 4.5 feet in this area. In the absence of full depth excavation of frost susceptible soils below paved areas and subsequent replacement with non-frost susceptible compacted fill, frost penetration into the subgrade will occur and some heaving and distress of pavement must be anticipated.

4.5 Reuse of On-Site Soils

The uncontrolled fills, free from organics and deleterious material, and native silty sands are considered suitable for reuse as compacted fill to raise site grades. The relic organics are considered unsuitable for reuse. The contractor should anticipate the need to aerate or moisture condition the uncontrolled fills and native silty sands for reuse. These materials are moisture and frost susceptible and therefore best reused during Summer and Fall months; reuse in Winter and early Spring is not considered feasible.

5.0 CLOSURE

Details of the proposed construction and site grading are conceptual at this time. Details relative to structural loading are not currently available. We recommend that S.W.COLE be engaged to review the schematic designs to develop and undertake a design phase geotechnical investigation for detailed design and preparation of construction documents.

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you as the project progresses.

Sincerely,

S. W. Cole Engineering, Inc.

Timothy J. Boyce, P.E.
Senior Geotechnical Engineer

EMW:tjb

DRAFT

Attachment A
Limitations

This report has been prepared for the exclusive use of J & J Gove Development, LLC. for specific application to the proposed Retail Development on Larrabee Road and Main Street in Westbrook, 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.

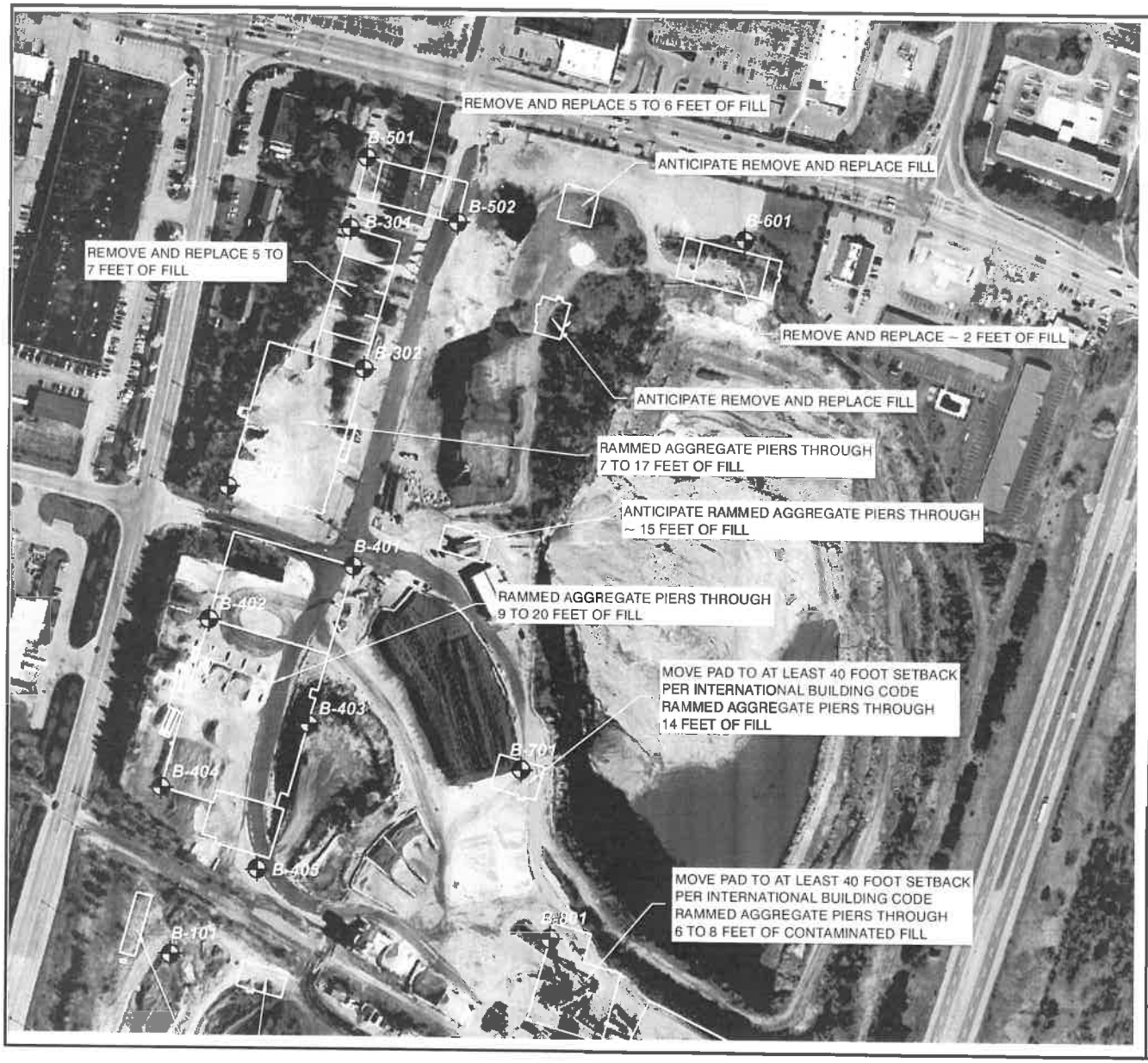
The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations 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.

DRAFT



200 0 200 400

Scale in Feet

NO.	DATE	DESCRIPTION	BY
1	4/17/2015	REVISED BORINGS B-5, B-202, B 405, B- 601 AND B-802, REMOVE B-602	CEM
--	3/17/2015	DRAFT SUBMISSION	CEM

S.W.COLE ENGINEERING, INC.

J & J GOVE

EXPLORATION LOCATION SUMMARY PLAN

PROPOSED RETAIL DEVELOPMENT
LARRABEE ROAD, WESTBROOK ARTERIAL, RAILROAD AND MAINE TURNPIKE
WESTBROOK, MAINE

Job No.	15-0083	Scale	1"=200'
Date:	03/17/2015	Sheet	1

R:\2015\15-0083\SVY\Dgn\15-0083 ELP Summary 20150317.dwg, 4/17/2015 4:02:05 PM, 1:2,400,

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-1
SHEET: 1 OF 1
PROJECT NO.: 15-0083
DATE START:
DATE FINISH:
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S. W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:				
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-1

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-1
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/3/2015
DATE FINISH: 3/3/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 3' +/-
SOILS SATURATED BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										ASPHALT MILLINGS (FILL)
									2.5'	
	1D	24"	18"	4.0'	22	21	18	33	3.0'	GRAY SILTY SAND (STONE DUST - FILL)
	2D	24"	18"	6.0'	13	39	43	60		BROWN SILTY SAND (FILL) ~ VERY DENSE ~
									8.0'	
									9.0'	GRAY-BROWN TO BROWN GRAVELLY SILTY SAND (FILL)
	3D	24"	16"	11.0'	3	3	2	2	10.5'	GRAY CLAYEY SILT, SOME FINE SAND ~ LOOSE ~
									12.0'	BLACK ORGANICS ~ LOOSE ~
	4D	24"	18"	16.0'	6	11	14	16		BROWN SILTY CLAY ~ HARD ~ q_p = 9 KSF
										~ VERY STIFF ~ q_p = 6 KSF
	5D	24"	18"	21.0'	3	4	5	5	21.0'	~ MEDIUM ~ q_p = 1 KSF
	6D	24"	24"	26.0'	WOH	2	2	2		GRAY SILTY CLAY WITH FREQUENT FINE SAND PARTINGS ~ MEDIUM ~
	1C	24"	22"	31.0'	HYDRAULIC PUSH					
									39.0'	
										GRAY SAND SOME SILT - OBSERVATION OF WASH CUTTINGS

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-1

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-1
SHEET: 2 OF 2
PROJECT NO.: 15-0083
DATE START: 3/3/2015
DATE FINISH: 3/3/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 3' +/-
SOILS SATURATED BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	2C	24"	0"	41.0'	HYDRAULIC PUSH					NO TUBE RECOVERY @ 2C
										GRAY SAND SOME SILT
										NO SAMPLING - OBSERVATION OF WASH CUTTINGS
									49.0'	
										BOTTOM OF EXPLORATION @ 49.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-1

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-2
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/3/2015
DATE FINISH: 3/3/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 4' +/-
SOILS SATURATED BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										ASPHALT MILLINGS (FILL)
									2.2'	
	1D	24"	18"	4.0'	9	13	13	10		LIGHT BROWN SAND, SOME SILT, TRACE GRAVEL (FILL)
	2D	24"	4"	6.0'	5	4	3	3		~ LOOSE ~
									7.0'	
	3D	24"	22"	11.0'	5	6	9	12		BROWN SILTY CLAY ~ VERY STIFF ~ q_p = 8 KSF
									12.0'	
	4D	24"	20"	16.0'	3	4	4	6		GRAY SILTY CLAY WITH OCCASIONAL FINE SAND PARTINGS ~ STIFF ~ q_p = 4.5 KSF q_p = 3 KSF
									17.0'	
	5D	24"	24"	21.0'	WOH	1	1	1		GRAY WITH BLACK STREAKING SILTY CLAY
										ADVANCE BY ROD PROBE BELOW 21.0'
										HYDRAULIC PUSH ROD PROBE 21.0 - 33.5'
										SAND LAYERS AND SEAMS 28.5' TO 29.5'
									33.5'	SWITCH TO 140 LB HAMMER @ 33.5'
										25 BLOWS FOR NO PENETRATION - BOUNCING PROBABLE BEDROCK OR DENSE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 33.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-2

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-3
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/2/2015
DATE FINISH: 3/2/2015
ELEVATION:
SWCOLE REP.: E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST AT GROUND SURFACE
SOILS SATURATED BELOW 19' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									1.0'	ASPHALT MILLINGS (FILL)
	1D	24"	18"	3.0'	16	24	8	13		DARK GRAY-BROWN SANDY SILT, SOME GRAVEL, WITH ORGANICS (FILL) ~ DENSE ~ P.I.D. = 0.8 PPM
	2D	24"	20"	6.0'	21	17	22	28	7.0'	
	3D	24"	20"	11.0'	5	5	8	11		BROWN SILTY CLAY q_p = 7 KSF ~ VERY STIFF ~
	4D	24"	24"	16.0'	3	4	5	6	14.0'	GRAY-BROWN SILTY CLAY q_p = 4 - 5 KSF ~ STIFF ~
	5D	24"	24"	21.0'	WOR	1	1	1	18.0'	GRAY SILTY CLAY
	6D	24"	24"	26.0'	WOH - 24"					ADVANCE BY ROD PROBE BELOW 21.0' HYDRAULIC PUSH ROD PROBE 21.0 - 88.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-3
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START:
DATE FINISH:
ELEVATION:
SWCOLE REP.: E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST AT GROUND SURFACE
SOILS SATURATED BELOW 19' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY HYDRAULIC PUSH ROD PROBE 21.0 - 88.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-3
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/2/2015
DATE FINISH: 3/2/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST AT GROUND SURFACE
SOILS SATURATED BELOW 19' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 21.0 - 88.5'
									88.5'	SWITCH TO 140 LB HAMMER @ 88.5':
										88.5' - 89.0' : 28 BLOWS
										89.0' - 89.5' : 24 BLOWS
										89.5' - 90.0' : 20 BLOWS
									90.0'	PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 90.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-3

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-4
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/2/2015
DATE FINISH:
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 5' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									0.5'	ASPHALT MILLINGS (FILL)
	1D	24"	16"	2.0'	19	17	32	26		GRAY-BROWN TO BLACK SILTY SAND, SOME GRAVEL (FILL) ~ DENSE ~
									4.2'	
	2D	24"	18"	6.0'	2	5	4	3	5.5'	GRAY-BROWN FINE TO MEDIUM SAND, SOME SILT ~ LOOSE ~
										GRAY SILTY CLAY q_p = 5 KSF
									8.0'	~ STIFF ~
										BROWN SILTY CLAY
	3D	24"	20"	11.0'	4	6	8	10		q_p = 8 KSF
										~ VERY STIFF ~
									14.0'	
									15.0'	GRAY-BROWN SILTY CLAY ~ MEDIUM ~ q_p = 1.5 KSF
	4D	24"	22"	16.0'	2	2	2	3		GRAY SILTY CLAY
	5D	24"	24"	21.0'	WOR - 12"		WOH - 12"			WITH SHELL FRAGMENTS @ 5D
										ADVANCE BY ROD PROBE BELOW 21.0'
										HYDRAULIC PUSH ROD PROBE 21.0 -61.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-4

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-4
SHEET: 2 OF 2
PROJECT NO.: 15-0083
DATE START: 3/2/2015
DATE FINISH:
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 5' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 21.0 -61.5'
									61.5'	SWITCH TO 140 LB HAMMER @61.5':
										61.5 - 62.0' : 23 BLOWS
										62.5' - 63.0' : 25 BLOWS
										62.5' - 63.0' : 20 BLOWS
									63.0'	PROBABLE GRANULAR SOILS

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-4

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-5
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/6/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5' +/-
SOILS SATURATED BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	1D	24"	18"	5.0'	11	24	10	13		DARK BROWN TO BLACK GRAVELLY SILTY SAND WITH COBBLES, METAL, ASPHALT, PLASTIC, CONCRETE RUBBLE (FILL)
	2D	24"	16"	7.0'	14	8	6	6		~ MEDIUM DENSE ~
	3D	9"	8"	10.8'	WOH	50-3"				
	4D	24"	3"	17.0'	9	10	11	16	16.8	
	5D	24"	22"	22.0'	2	2	3	3	22.0'	GRAY-BROWN SILTY CLAY ~ MEDIUM ~ q_p = 1.5 KSF, q_p = 0.5 KSF
	1C	24"	24"	27.0'	PISTON SAMPLER					GRAY WITH BLACK STREAKING SILTY CLAY
	1V			27.8'	3 5/8" X 7" VANE					S_v = 0.5 / 0.08 KSF
	1V'			28.6'	3 5/8" X 7" VANE					S_v = 0.49 / 0.08 KSF
	2C	24"	24"	37.0'	PISTON SAMPLER					w = 58.2%, W_L = 45, W_P = 23 ~ SOFT ~
	2V			37.8'	3 5/8" X 7" VANE					S_v = 0.45 / 0.04 KSF
	2V'			38.6'	3 5/8" X 7" VANE					S_v = 0.48 / 0.07 KSF

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-5

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-5**
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START: 3/6/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5' +/-
SOILS SATURATED BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	3C	24"	24"	47.0'	PISTON SAMPLER					GRAY WITH BLACK STREAKING SILTY CLAY
	3V			47.8'	3 5/8" X 7" VANE					$w = 53.0\%$, $W_L = 38$, $W_P = 20$
	3V'				3 5/8" X 7" VANE					$S_v = 0.71$ KSF / 0.03 KSF - POSSIBLE INFLUENCED BY SAND SEAMS
										NO VANE PENETRATION @ 3V' - PROBABLE SAND SEAM
										ADVANCE BY ROD PROBE BELOW 48.6'
										HYDRAULIC PUSH ROD PROBE 48.6' - 110.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-5
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/6/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5' +/-
SOILS SATURATED BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY WITH BLACK STREAKING SILTY CLAY HYDRAULIC PUSH ROD PROBE 48.6' - 110.0'
									110.0'	BOTTOM OF EXPLORATION @ 110.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-5

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-6
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/2/2015
DATE FINISH: 3/2/2015
ELEVATION:
SWCOLE REP.: E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 4' +/-
SOILS SATURATED BELOW 19' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										ASPHALT MILLINGS (FILL)
	1D	24"	22"	2.0'	40	47	44	48	2.0'	
										DARK BROWN TO BLACK SILTY SAND, SOME GRAVEL WITH CONCRETE FRAGMENTS (FILL)
	2D	24"	16"	6.0'	10	9	23	16		~ DENSE ~
									8.0'	
										BROWN SILTY CLAY
	3D	24"	20"	11.0'	6	11	14	18		q_p = 9 KSF
										~ HARD ~
										~ VERY STIFF ~
	4D	24"	22"	16.0'	3	5	6	6	16.0'	q_p = 4.5 - 6 KSF
										GRAY SILTY CLAY WITH OCCASIONAL FINE SAND PARTINGS
										~ SOFT ~
	5D	24"	24"	21.0'	1-12"		1-12"			ADVANCE BY ROD PROBE BELOW 21.0'
										HYDRAULIC PUSH ROD PROBE 21.0 -62.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-6

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-6**
SHEET: 2 OF 2
PROJECT NO.: 15-0083
DATE START: 3/2/2015
DATE FINISH: 3/2/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 4' +/-
SOILS SATURATED BELOW 19' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 21.0 -62.5'
									62.5	SWITCH TO 140 LB HAMMER @62.5':
									62.7'	62.5' - 62.7' : 50 BLOWS - BOUNCING PROBABLE DENSE GRANULAR SOILS OR BEDROCK
										BOTTOM OF EXPLORATION @ 62.7'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-6**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-101**
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/4/2015
DATE FINISH: 3/4/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 4' +/-
SOILS SATURATED BELOW 20' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	1D	24"	16"	2.0'	6	3	2	2	4.0'	GRAY-BROWN CLAYEY SILT, SOME FINE SAND WITH ORGANICS (FILL) ~ LOOSE ~
	2D	24"	16"	6.0'	4	5	2	10	9.0'	LIGHT GRAY CLAYEY SILT, SOME FINE SAND WITH TRACE ORGANICS (FILL) ~ LOOSE TO MEDIUM DENSE ~
	3D	24"	20"	11.0'	13	20	20	23	14.0'	GRAY SILT AND FINE SAND (FILL) ~ DENSE ~
	4D	24"	20"	16.0'	8	10	23	27	19.0'	~ DENSE ~ GRAY AND BLACK SANDY SILT WITH ORGANICS (FILL)
									20.0'	GRAY-BROWN SILTY SAND, TRACE ORGANICS (FILL) ~ LOOSE ~
	5D	24"	20"	21.0'	3	2	2	2	24.0'	~ LOOSE ~ GRAY SILT AND FINE SAND WITH ROOTLETS (FILL)
	6D	24"	10"	26.0'	4	15	10	6	29.0'	4" OF WOOD IN SAMPLER TIP @ 6D GRAY CLAYEY SILT, SOME FINE SAND ~ MEDIUM DENSE ~
	7D	24"	22"	31.0'	2	1	2	2	34.0'	q_p = 0.5 KSF GRAY-BROWN SILTY CLAY ~ MEDIUM ~
	8D	24"	24"	36.0'	WOH		1-12"	1		GRAY SILTY CLAY ~ MEDIUM ~ ADVANCE BY ROD PROBE BELOW 36.0' HYDRAULIC PUSH ROD PROBE 36.0 -54.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-101**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-101**
SHEET: 2 OF 2
PROJECT NO.: 15-0083
DATE START: 3/4/2015
DATE FINISH: 3/4/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 4' +/-
SOILS SATURATED BELOW 20' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 36.0 -54.5'
									54.5'	SWITCH TO 140 LB HAMMER @ 54.5':
										54.5' - 55.0' : 27 BLOWS
										55.0' - 55.5' : 26 BLOWS
										55.5' - 56.0' : 25 BLOWS
									56.5'	56.0' - 56.5' : 24 BLOWS - PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 56.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-101**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-201**
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/9/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	SSA	4" O.D.		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 10'
SOILS SATURATED BELOW 15' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									5.0'	DARK BROWN GRAVELLY SILTY SAND WITH COBBLES, BOULDERS, AND CONCRETE RUBBLE (FILL) ~ DENSE ~
	1D	24"	20"	7.0'	1	2	5	12	6.5'	DARK BROWN TO BLACK SILT AND FINE SAND WITH ORGANICS (FILL) ~ LOOSE ~
	2D	24"	18"	12.0'	3	5	6	8	12.0'	BROWN SILTY CLAY ~ VERY STIFF ~ q_p = 4.5 - 5 KSF
									16.0'	GRAY-BROWN SILTY CLAY ~ MEDIUM ~
	3D	24"	24"	17.0'	WOH - 18"			2		GRAY SILTY CLAY ~ MEDIUM TO SOFT ~ ADVANCE BY ROD PROBE BELOW 17.0' HYDRAULIC PUSH ROD PROBE 17.0' - 106.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-201**
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START: 3/9/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	SSA	4" O.D.		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 10'
SOILS SATURATED BELOW 15' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY HYDRAULIC PUSH ROD PROBE 17.0' - 106.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-201**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-201
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/9/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	SSA	4" O.D.		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 10'
SOILS SATURATED BELOW 15' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 17.0' - 106.0'
										FREQUENT SAND SEAMS BELOW 100'
									106.0'	SWITCH TO 140 LB HAMMER @ 106.0'
										106.0' - 107.0' : 44 BLOWS 107.0' - 108.0' : 42 BLOWS
									109.0'	108.0' - 109.0' : 54 BLOWS - PROBABLE DENSE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 109.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-201

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-202
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/9/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	SSA	4" O.D.		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5' +/-
SOILS SATURATED BELOW 30' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	1D	24"	16"	7.0'	4	6	7	10		GRAY CLAYEY SILT AND FINE SAND (FILL) ~ MEDIUM DENSE ~
	2D	24"	18"	17.0'	14	14	15	23		
	3D	24"	18"	22.0'	3	6	5	8		WOOD FIBERS IN CUTTINGS 22' TO 25' +/-
	4D	24"	18"	27.0'	1	3	5	3		~ LOOSE ~
									30.0'	
	5D	17"	10"	31.4'	46	31	50-5"			GRAY-BROWN SILTY SAND AND GRAVEL (FILL) ~ VERY DENSE ~ DARK BROWN ORGANICS IN CUTTINGS 32' - 35' +/-
									35.0'	POSSIBLE RELIC GROUND SURFACE
	6D	24"	18"	37.0'	8	8	5	6		q_p = 3 - 3.5 KSF GRAY-BROWN SILTY CLAY WITH FREQUENT FINE SAND SEAMS ~ STIFF ~ ADVANCE BY ROD PROBE BELOW 37.0' HYDRAULIC PUSH ROD PROBE 37.0' - 109.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-202

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-202
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START: 3/9/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	SSA	4" O.D.		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5' +/-
SOILS SATURATED BELOW 30' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY-BROWN TRANSITIONING TO GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 37.0' - 109.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-202**
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/9/2015
DATE FINISH: 3/9/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	SSA	4" O.D.		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5' +/-
SOILS SATURATED BELOW 30' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 37.0' - 109.5'
									109.5'	SWITCH TO 140 LB HAMMER @ 109.5'
									110.5'	109.5' - 110.5' : 76 BLOWS - PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 110.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-202**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-203**
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/10/2015
DATE FINISH: 3/10/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST AT GROUND SURFACE
SOILS SATURATED BELOW 3' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									0.5'	FOREST DUFF AND ORGANICS
	1D	24"	8"	2.0'	1-12"		2	2		q_p = 5 KSF
										BROWN SILTY CLAY
	2D	24"	24"	7.0'	2	2	5	7		~ VERY STIFF ~ q_p = 5 KSF
									10.0'	
	3D	24"	18"	12.0'	2	1	3	3		q_p = 1.5 KSF GRAY-BROWN SILTY CLAY q_p = 0.5 KSF
									14.0'	~ MEDIUM ~
	4D	24"	24"	17.0'	WOR	WOM-18"				GRAY SILTY CLAY
	1C	24"	24"	22.0'	PISTON SAMPLER					w = 53.4%, W_L = 46, W_P = 23
	1V			22.8'	3 5/8" X 7" VANE					S_v = 0.49 / 0.07 KSF ~ SOFT ~
	1V'			23.6'	3 5/8" X 7" VANE					S_v = 0.49 / 0.09 KSF

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-203

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-203
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START: 3/10/2015
DATE FINISH: 3/10/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST AT GROUND SURFACE
SOILS SATURATED BELOW 3' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	2C	24"	24"	42.0'	PISTON SAMPLER					$w = 49.5\%$, $W_L = 41$, $W_P = 20$
	2V			42.8'	3 5/8" X 7" VANE					$S_v = 0.59 / 0.05$ KSF ~ MEDIUM ~
	2V'			43.6'	3 5/8" X 7" VANE					$S_v = 0.59 / 0.07$ KSF
										ADVANCE BY ROD PROBE BELOW 43.6'
										HYDRAULIC PUSH ROD PROBE 43.6' - 110.5'
										GRAY SILTY CLAY

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-203

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-203
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/10/2015
DATE FINISH: 3/10/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST AT GROUND SURFACE
SOILS SATURATED BELOW 3' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 48.6' - 110.5'
										FREQUENT SAND SEAMS BELOW 100' +/-
									110.5'	SWITCH TO 140 LB HAMMER @ 110.5'
										110.5' - 111.5' : 50 BLOWS FOR 4" - BOUNCING
									110.9'	PROBABLE BEDROCK OR DENSE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 110.9'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-203

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-301
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/11/2015
DATE FINISH: 3/11/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5' +/-
SATURATED BELOW 14' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									3"	ASPHALT PAVEMENT
	1D	4"	4"	2.3'	50-4"				3.0'	BROWN GRAVELLY SAND, SOME SILT (FILL) ~ DENSE ~
									5.0'	GRAY SILTY GRAVEL AND SAND WITH CONCRETE (FILL) ~ DENSE ~
	2D	24"	20"	6.0'	11	14	15	11	9.0'	GRAY-BROWN SILTY FINE TO MEDIUM SAND WITH OCCASIONAL SILT PARTINGS ~ MEDIUM DENSE ~
	3D	24"	22"	11.0'	3	5	6	7	14.0'	q_p = 4 - 4.5 KSF GRAY SILTY CLAY ~ VERY STIFF ~
	4D	24"	24"	16.0'	1	1-12"		1		GRAY WITH BLACK STREAKING SILTY CLAY ~ MEDIUM ~ ADVANCE BY ROD PROBE BELOW 16.0' HYDRAULIC PUSH ROD PROBE 16.0' - 49.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-301

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-301**
SHEET: 2 OF 2
PROJECT NO.: 15-0083
DATE START: 3/11/2015
DATE FINISH: 3/11/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5' +/-
SATURATED BELOW 14' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 16.0' - 49.5'
									49.5'	SWITCH TO 140 LB HAMMER @ 49.5' :
										49.5' - 50.0' : 35 BLOWS
									50.5'	50.0' - 50.5' : 36 BLOWS - PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 50.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-301**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-302
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/6/2015
DATE FINISH: 3/6/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5', WET BELOW 10',
SATURATED BELOW 15' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									2.0'	BROWN GRAVELLY SAND, SOME SILT (FILL)
	1D	24"	16"	5.0'	7	3	2	5		BROWN TO BLACK SAND, SOME SILT, TRACE ORGANICS WITH BLACK SILT SEAMS (FILL) ~ LOOSE TO DENSE ~
	2D	24"	16"	7.0'	6	17	17	17	6.5'	
	3D	24"	18"	12.0'	3	5	5	5	11.8'	LIGHT BROWN SILTY FINE TO MEDIUM SAND ~ DENSE ~
									15.0'	GRAY-BROWN SILTY CLAY ~ STIFF ~
	4D	24"	24"	17.0'	WOR	1 - 18"				GRAY SILTY CLAY WITH FREQUENT FINE SAND SEAMS AND SHELLS
	1C	24"	24"	22.0'	PISTON SAMPLER					
	1V			22.8'	3 5/8" X 7" VANE					S_v = **0.62 / 0.11 KSF** ~ MEDIUM ~
	1V'				3 5/8" X 7" VANE					NO VANE PUSH - POSSIBLE SAND SEAM
	2C	24"	24"	32.0'	PISTON SAMPLER					w = 46.5%, W_L = 38, W_P = 19
	2V			32.8'	3 5/8" X 7" VANE					S_v = 0.54 / 0.08 KSF
	2V'			33.6'	3 5/8" X 7" VANE					S_v = 0.48 / 0.08 KSF ~ SOFT ~

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-302

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-302
SHEET: 2 OF 2
PROJECT NO.: 15-0083
DATE START: 3/6/2015
DATE FINISH: 3/6/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 5', WET BELOW 10',
SATURATED BELOW 15' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	3C	24"	24"	42.0'	PISTON SAMPLER					w = 39.8%, W_L = 42, W_P = 21
	3V			42.8'	3 5/8" X 7" VANE					S_v = 0.76 / 0.11 KSF ~ MEDIUM ~
	3V'			43.6'	3 5/8" X 7" VANE					S_v = 0.65 / 0.11 KSF
										GRAY SILTY CLAY
										ADVANCE BY ROD PROBE BELOW 43.6'
										HYDRAULIC PUSH ROD PROBE 43.6' - 51.5'
									51.5'	SWITCH TO 140 LB HAMMER @ 51.5'
										51.5' - 52.5' : 29 BLOWS
										52.5' - 53.5' : 25 BLOWS
										53.5' - 54.5' : 24 BLOWS
										54.5' - 55.5' : 23 BLOWS
									56.5'	55.5' - 56.5' : 24 BLOWS - PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 56.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-302

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-303
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/11/2015
DATE FINISH: 3/11/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED 0' - 9', WET 9' - 11',
SATURATED BELOW 14' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	1D	24"	12"	2.0'	1	3	4	9	2.5'	BROWN SAND, SOME SILT, TRACE GRAVEL, WITH ORGANICS (FILL) ~ LOOSE ~
	2D	24"	16"	4.0'	5	7	6	7	4.0'	GRAY SILTY GRAVELLY SAND (FILL) ~ MEDIUM DENSE ~
	3D	24"	16"	6.0'	5	5	2	4	9.0'	GRAY AND WHITE SILT, SOME FINE SAND (FILL) ~ LOOSE ~
	4D	24"	18"	11.0'	12	11	11	20	14.0'	P.I.D. = 1.8 PPM GRAY AND BLACK SAND AND SILT, TRACE ORGANICS (FILL) ~ MEDIUM DENSE ~ COBBLES 12' - 14'
	5D	24"	2"	16.0'	8	5	7	6	17.0'	POOR RECOVERY @ 5D - PUSHING OBSTRUCTION DARK BROWN SILTY SAND (PROBABLE FILL OR RELIC ORGANIC LAYER)
	6D	24"	24"	21.0'	1-12"		1-12"			GRAY SILTY CLAY ~ MEDIUM ~ ADVANCE BY ROD PROBE BELOW 21.0' HYDRAULIC PUSH ROD PROBE 21.0' - 68.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-303
SHEET: 2 OF 2
PROJECT NO.: 15-0083
DATE START: 3/11/2015
DATE FINISH: 3/11/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED 0' - 9', WET 9' - 11',
SATURATED BELOW 14' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 21.0' - 68.0'
									68.0'	SWITCH TO 140 LB HAMMER @ 68.0' :
										68.0' - 68.5' : 32 BLOWS
									69.0'	68.5' - 69.0' : 26 BLOWS - PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 69.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-303

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-401
SHEET: 1 OF 2
PROJECT NO.: 15-0083
DATE START: 3/5/2015
DATE FINISH: 3/5/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS DAMP BELOW 5' +/-
SOILS SATURATED BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									4"	ASPHALT PAVEMENT
									4.5'	GRAY-BROWN GRAVELLY SAND, SOME SILT (FILL) ~ DENSE ~
	1D	24"	18"	6.0'	22	30	9	7	9.0'	BROWN SAND, SOME SILT, WITH ORGANICS (FILL) ~ DENSE ~ WOOD IN AUGER CUTTINGS 7' - 9' +/-
	2D	24"	20"	11.0'	6	8	9	8	14.0'	BROWN SILTY FINE TO MEDIUM SAND ~ MEDIUM DENSE ~
	3D	24"	22"	16.0'	2	2	2	2		q_p = 1.5 KSF GRAY WITH BLACK STREAKING SILTY CLAY q_p = 0.5 KSF WITH FREQUENT SILTY SAND SEAMS ~ MEDIUM ~
	4D	24"	24"	21.0'	WOH	WOM-12"		1		ADVANCE BY ROD PROBE BELOW 21.0' HYDRAULIC PUSH ROD PROBE 21.0' - 57.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-401
SHEET: 2 OF 2
PROJECT NO.: 15-0083
DATE START: 3/5/2015
DATE FINISH: 3/5/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS DAMP BELOW 5' +/-
SOILS SATURATED BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 21.0' - 57.0'
									57.0'	SWITCH TO 140 LB HAMMER @ 57.0'
										57.0' - 57.5' : 31 BLOWS
										57.5' - 58.0' : 32 BLOWS
									58.5'	58.0' - 58.5; : 26 BLOWS - PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 58.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-401

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-402
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/10/2015
DATE FINISH: 3/10/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 3', WET BELOW 10',
SATURATED BELOW 15' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY-BROWN AND BLACK SILTY SAND WITH CONCRETE (FILL)
	1D	14"	14"	4.2'	16	30	50-2"		5.0'	~ DENSE ~
	2D	11"	11"	5.9'	24	50-5"				LIGHT BROWN SILTY SAND, SOME GRAVEL (FILL)
									10.0'	~ DENSE TO LOOSE ~
	3D	24"	16"	12.0'	5	5	1	1		GRAY CLAYEY SILT AND FINE SAND (FILL)
									15.0'	~ LOOSE ~
	4D	24"	18"	17.0'	10	17	16	13		GRAY-BROWN SILTY FINE TO MEDIUM SAND WITH OCCASIONAL SILT PARTINGS
									18.0'	~ DENSE ~
										GRAY-BROWN SILTY CLAY WITH OCCASIONAL SAND SEAMS
	5D	24"	22"	22.0'	3	4	5	5	22.0'	~ STIFF ~ q_p = 4 KSF, q_p = 2 KSF
										WASH TURNS GRAY @ 22' +/-
										GRAY SILTY CLAY
	1C	24"	24"	27.0'	PISTON SAMPLER					w = 42.1%, W_L = 35, W_P = 19
	1V			27.8'	3 5/8" X 7" VANE					S_v = 0.61 / 0.11 KSF ~ MEDIUM ~
	1V'			28.6'	3 5/8" X 7" VANE					S_v = 0.59 / 0.05 KSF

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-402

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-402**
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START: 3/10/2015
DATE FINISH: 3/10/2015
ELEVATION:
SWCOLE REP.: E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 3', WET BELOW 10',
SATURATED BELOW 15' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
	2C	24"	0"	47.0'	PISTON SAMPLER					NO TUBE RECOVERY @ 2C - PROBABLE SAND SEAMS
	3C	24"	20"	52.0'	PISTON SAMPLER					W_L = 28, W_P = 18
	2V			52.8'	3 5/8" X 7" VANE					S_v = 0.76 / 0.07 KSF ~ MEDIUM ~
	2V'			53.6'	3 5/8" X 7" VANE					S_v = 0.69 / 0.07 KSF
										ADVANCE BY ROD PROBE BELOW 53.6'
										HYDRAULIC PUSH ROD PROBE 53.6' - 81.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-402
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/10/2015
DATE FINISH: 3/10/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: GREAT WORKS TEST BORING, INC. DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT	HAMMER FALL
CASING:	HW	4"	140 LBS.	30"
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 3', WET BELOW 10',
SATURATED BELOW 15' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									81.0'	GRAY SILTY CLAY - HYDRAULIC PUSH ROD PROBE 53.6' - 81.0'
										SWITCH TO 140 LB HAMMER @ 81.0'
									82.0'	81.0' - 82.0' : 68 BLOWS - PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 82.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-402

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-403**
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/6/2015
DATE FINISH: 3/6/2015
ELEVATION:
SWCOLE REP.: E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS DAMP BELOW 4', MOIST BELOW 14',
SATURATED BELOW 16' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									1.0'	ASPHALT MILLINGS (FILL)
	1D	24"	18"	4.0'	15	18	18	18		GRAY SILT AND FINE SAND (FILL)
	2D	24"	18"	6.0'	6	14	19	18		~ MEDIUM DENSE TO DENSE ~
	3D	24"	20"	11.0'	7	16	19	21		
	4D	24"	18"	16.0'	9	11	12	13	18.0'	
									20.0'	DARK BROWN TO BROWN SAND, SOME SILT, TRACE ORGANICS (WITH ORGANIC ODOR)
	5D	24"	20"	21.0'	5	9	9	5		q_p = 2 KSF
									24.0'	GRAY-BROWN TO BROWN SILTY CLAY WITH CLAYEY SILT SEAMS ~ STIFF TO MEDIUM ~
	6D	24"	20"	26.0'	2	2	2	2		q_p = 2 KSF q_p = 1 KSF
	7D	24"	24"	31.0'	WOH	1	1	1		GRAY SILTY CLAY ~ MEDIUM ~ ADVANCE BY ROD PROBE BELOW 31.0' HYDRAULIC PUSH ROD PROBE 31.0' - 85.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-403**
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START: 3/6/2015
DATE FINISH: 3/6/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS DAMP BELOW 4', MOIST BELOW 14',
SATURATED BELOW 16' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 31.0' - 85.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-403**
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/6/2015
DATE FINISH: 3/6/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS DAMP BELOW 4', MOIST BELOW 14', SATURATED BELOW 16' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 31.0' - 85.5'
									85.5'	SWITCH TO 140 LB HAMMER @ 85.5':
										85.5' - 86.0' : 42 BLOWS
										86.0' - 86.5' : 38 BLOWS
									87.0'	86.5' - 87.0' : 37 BLOWS - PROBABLE GRANULAR SOILS
										BOTTOM OF EXPLORATION @ 87.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-403**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-404**
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/5/2015
DATE FINISH: 3/5/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 4' +/-
SOILS SATURATED BELOW 14' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									1.0'	CRUSHED STONE (FILL)
	1D	24"	20"	4.0'	34	28	33	31		P.I.D. = 0.3 PPM BROWN TO GRAY GRAVELLY SILTY SAND (FILL)
	2D	24"	22"	6.0'	16	16	16	23		~ DENSE ~ P.I.D. = 0.3 PPM
									9.0'	
	3D	24"	22"	11.0'	9	7	6	5		P.I.D. = 0.4 PPM GRAY SILT AND FINE SAND, SOME SILTY CLAY SEAMS WITH BLACK ORGANICS (FILL) ~ MEDIUM DENSE ~
									14.0'	
									15.0'	BROWN PEAT WITH WOOD ~ LOOSE ~
	4D	24"	18"	16.0'	2	2	2	7	15.5'	GRAY-BROWN SAND, SOME SILT, WITH ORGANICS ~ LOOSE ~
									18.0'	BROWN PEAT ~ LOOSE ~
	5D	24"	18"	21.0'	2	3	4	4	21.0'	GRAY-BROWN SILTY CLAY q_p = 3.5 - 4 KSF ~ STIFF ~
	6D	24"	24"	26.0'	2	2	1	2		GRAY SILTY CLAY ADVANCE BY ROD PROBE BELOW 26.0' HYDRAULIC PUSH ROD PROBE 26.0' - 90.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-404**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-404**
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START: 3/5/2015
DATE FINISH: 3/5/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 4' +/-
SOILS SATURATED BELOW 14' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY HYDRAULIC PUSH ROD PROBE 26.0' - 90.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-404**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-404
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/5/2015
DATE FINISH: 3/5/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 4' +/-
SOILS SATURATED BELOW 14' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY
										HYDRAULIC PUSH ROD PROBE 26.0' - 90.0'
									90.0'	BOTTOM OF EXPLORATION @ 90.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-404

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-405
SHEET: 1 OF 3
PROJECT NO.: 15-0083
DATE START: 3/4/2015
DATE FINISH: 3/4/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 9' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	1D	6"	6"	0.5'	65					GRAY-BROWN TO GRAY GRAVELLY SILTY SAND WITH TRACE ORGANICS (FILL)
	2D	22"	16"	5.8'	8	9	11	50-4"		~ MEDIUM DENSE ~
	3D	10"	6"	9.8'	5	50-4"				BOULDER OR RUBBLE 5.8' TO 7' +/-
									14.0'	WOOD IN AUGER CUTTINGS 12' - 14' +/-
	4D	24"	16"	16.0'	6	3	3	3	19.0'	GRAY-BROWN SILTY CLAY (POSSIBLY DISTURBED / FILL) ~ MEDIUM ~
	5D	24"	20"	21.0'	2	3	4	4	24.0'	GRAY-BROWN SILTY CLAY ~ MEDIUM ~
	6D	24"	24"	26.0'	1	2	1	2		GRAY SILTY CLAY ~ MEDIUM ~ ADVANCE BY ROD PROBE BELOW 31.0' HYDRAULIC PUSH ROD PROBE 31.0' - 90.0'
	7D	24"	24"	31.0'	1	1	1	1		

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-405
SHEET: 2 OF 3
PROJECT NO.: 15-0083
DATE START: 3/4/2015
DATE FINISH: 3/4/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 9' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY HYDRAULIC PUSH ROD PROBE 31.0' - 90.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-405

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-405**
SHEET: 3 OF 3
PROJECT NO.: 15-0083
DATE START: 3/4/2015
DATE FINISH: 3/4/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 9' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										GRAY SILTY CLAY HYDRAULIC PUSH ROD PROBE 31.0' - 90.0'
									90.0'	BOTTOM OF EXPLORATION @ 90.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-405**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-501
SHEET: 1 OF 1
PROJECT NO.: 15-0083
DATE START: 3/12/2015
DATE FINISH: 3/12/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 5' +/-
SATURATED BELOW 12' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									3"	ASPHALT PAVEMENT
	1D	11"	11"	2.9'	31	50-5"			4.0'	GRAY-BROWN GRAVELLY SAND, SOME SILT (FILL) ~ DENSE ~
									5.0'	GRAY SILTY GRAVELLY SAND, TRACE BRICK (FILL) ~ LOOSE ~
	2D	24"	20"	6.0'	4	5	6	7	5.5'	DARK BROWN SILTY SAND WITH ORGANICS
									8.0'	GRAY SILTY FINE SAND ~ MEDIUM DENSE ~
	3D	24"	20"	11.0'	3	4	5	6	12.0'	BROWN SILTY CLAY ~ VERY STIFF ~ q_p = 4-5 KSF
	4D	24"	24"	16.0'	WOR-12"		1	1	16.0'	GRAY WITH BLACK STREAKING SILTY CLAY ~ MEDIUM ~
										BOTTOM OF EXPLORATION @ 16.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-501

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-502
SHEET: 1 OF 1
PROJECT NO.: 15-0083
DATE START: 3/12/2015
DATE FINISH: 3/12/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 9' +/-
SOILS SATURATED BELOW 14' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									1"	ASPHALT PAVEMENT
									2.0'	GRAY-BROWN TO BROWN SILTY SAND (FILL)
										DARK GRAY-BROWN SILTY SAND, TRACE GRAVEL (FILL)
	1D	24"	20"	4.0'	17	29	27	23	3.5'	~ DENSE ~
	2D	24"	16"	6.0'	7	9	10	9		BROWN FINE TO MEDIUM SAND, SOME SILT ~ MEDIUM DENSE ~
									9.0'	
	3D	24"	20"	11.0'	3	4	5	7		~ VERY STIFF ~ q_p = 5 KSF ~ STIFF ~ q_p =3 KSF GRAY SILTY CLAY
									14.0'	~ MEDIUM ~
										GRAY WITH BLACK STREAKING SILTY CLAY
	4D	24"	24"	16.0'	WOR	1	1	1	16.0'	~ MEDIUM ~
										BOTTOM OF EXPLORATION @ 16.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-502

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-601
SHEET: 1 OF 1
PROJECT NO.: 15-0083
DATE START: 3/11/2015
DATE FINISH: 3/11/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS MOIST BELOW 9', WET BELOW 14'
SATURATED BELOW 19' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									2"	ASPHALT PAVEMENT
									2.0'	BROWN GRAVELLY SAND, SOME SILT, WITH COBBLES (FILL)
	1D	24"	20"	4.0'	21	25	24	20		BROWN GRAVELLY SILTY SAND
	2D	24"	14"	6.0'	12	18	19	25		~ DENSE ~
									9.0'	
	3D	24"	16"	11.0'	11	22	24	25		LIGHT GRAY-BROWN SILTY SAND, SOME GRAVEL, WITH COBBLES (GLACIAL TILL)
									14.0'	~ DENSE ~
	4D	24"	14"	16.0'	14	32	11	10		LIGHT GRAY GRAVELLY SILT AND SAND (GLACIAL TILL)
									21.0'	~ DENSE ~
	5D	24"	16"	21.0'	15	21	17	18		BOTTOM OF EXPLORATION @ 21.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-601

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-701
SHEET: 1 OF 1
PROJECT NO.: 15-0083
DATE START: 3/11/2015
DATE FINISH: 3/11/2015
ELEVATION:
SWCOLE REP.: E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 10.5' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									3"	ASPHALT PAVEMENT
									2.0'	BROWN SILTY SAND, TRACE GRAVEL (FILL)
										~ MEDIUM DENSE ~
	1D	24"	18"	4.0'	12	9	12	10	4.0'	BROWN SILTY FINE TO MEDIUM SAND (FILL)
	2D	24"	16"	6.0'	6	5	9	11		BROWN SILTY SAND (PROBABLE FILL)
										~ MEDIUM DENSE ~
									9.0'	
	3D	24"	18"	11.0'	4	5	5	4		BROWN SAND, SOME SILT, WITH CLAYEY SILT SEAMS (POSSIBLE FILL)
										~ LOOSE TO MEDIUM DENSE ~
									14.0'	
										BROWN SILTY GRAVELLY SAND
									15.5'	~ LOOSE ~
	4D	24"	20"	16.0'	3	1	4	2		BROWN SILTY CLAY q_p = 0.5 KSF
										~ MEDIUM ~
									19.0'	
	5D	24"	22"	21.0'	3	4	5	5		LAYERED BROWN CLAYEY SILT, SILTY SAND, AND SAND, TRACE SILT
										~ LOOSE ~
									24.0'	
									24.5'	GRAY AND BLACK SANDY CLAYEY SILT WITH SHELLS ~ LOOSE ~
	6D	24"	20"	26.0'	4	7	9	10	26.0'	GRAY-BROWN MEDIUM SAND, TRACE SILT, TRACE GRAVEL ~ MED. DENSE ~
										BOTTOM OF EXPLORATION @ 26.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-701

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-801
SHEET: 1 OF 1
PROJECT NO.: 15-0083
DATE START: 3/11/2015
DATE FINISH: 3/11/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET @ GROUND SURFACE
SOILS SATURATED BELOW 9' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									2"	ASPHALT MILLINGS
	1D	17"	17"	1.4'	12	30	50-5"		4.0'	BROWN TO GRAY SILTY SAND (FILL) ~ DENSE ~
	2D	24"	24"	6.0'	11	27	29	24	5.5'	GRAY TO BLACK SILTY SAND, SOME GRAVEL (FILL) ~ DENSE ~
									9.5'	LIGHT BROWN SILTY SAND ~ DENSE ~
	3D	24"	20"	11.0'	3	4	4	5	13.0'	q_p = 6 - 6.5 KSF BROWN SILTY CLAY ~ VERY STIFF ~
	4D	24"	24"	16.0'	WOR-12"		WOH-12"		24.0'	GRAY WITH BLACK STREAKING SILTY CLAY ~ MEDIUM ~ ADVANCE BY ROD PROBE BELOW 16.0" HYDRAULIC PUSH ROD PROBE 16.0' - 24.0' SWITCH TO 140 LB HAMMER @ 24.0'
									25.5'	24.0' - 24.5' : 24 BLOWS 24.5' - 25.0' : 20 BLOWS 25.0' - 25.5' : 18 BLOWS
										BOTTOM OF EXPLORATION @ 25.5'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-801

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: B-802
SHEET: 1 OF 1
PROJECT NO.: 15-0083
DATE START: 3/12/2015
DATE FINISH: 3/12/2015
ELEVATION:
SWCOLE REP. E. WALKER

PROJECT: PROPOSED RETAIL DEVELOPMENT
CLIENT : J & J GOVE DEVELOPMENT, LLC
LOCATION: LARRABEE ROAD AND MAIN STREET
DRILLING FIRM: S.W. COLE EXPLORATIONS, LLC DRILLER: BOB MARCOUX

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HSA	2 1/4"		
SAMPLER:	SS	1 3/8"	140 LBS.	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS WET BELOW 14',
SATURATED BELOW 18' +/-

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									2"	ASPHALT PAVEMENT
	1D	16"	16"	1.5'	15	37	50-4"			P.I.D. = 2.1 PPM
	2D	9"	9"	2.8'	48	50-3"				P.I.D. = 21 PPM
										DARK GRAY-BROWN GRAVELLY SAND, SOME SILT WITH METAL AND TRACE ORGANICS (FILL)
	3D	24"	18"	6.0'	13	12	15	11		<FUEL ODOR 1D, 2D, AND 3D> P.I.D. = 10.8 PPM
									8.0'	~ MEDIUM DENSE ~
	4D	24"	18"	11.0'	3	5	6	9		BROWN SILTY CLAY q_p = 6.5 - 7 KSF
									14.0'	~ VERY STIFF ~
	5D	24"	20"	16.0'	2	3	4	3		~ STIFF ~ q_p = 3 KSF
										~ MEDIUM ~
									19.0'	GRAY SILTY CLAY
	6D	24"	24"	21.0'	WOR	WOR	1	1	21.0'	GRAY WITH BLACK STREAKING SILTY CLAY ~ MEDIUM ~
										BOTTOM OF EXPLORATION @ 21.0'

SAMPLES:
D = SPLIT SPOON
C = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: B-802

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

KEY TO THE 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.

APPENDIX B
LABORATORY TESTING

DRAFT

S.W.COLE ENGINEERING, INC.

Consolidation Test

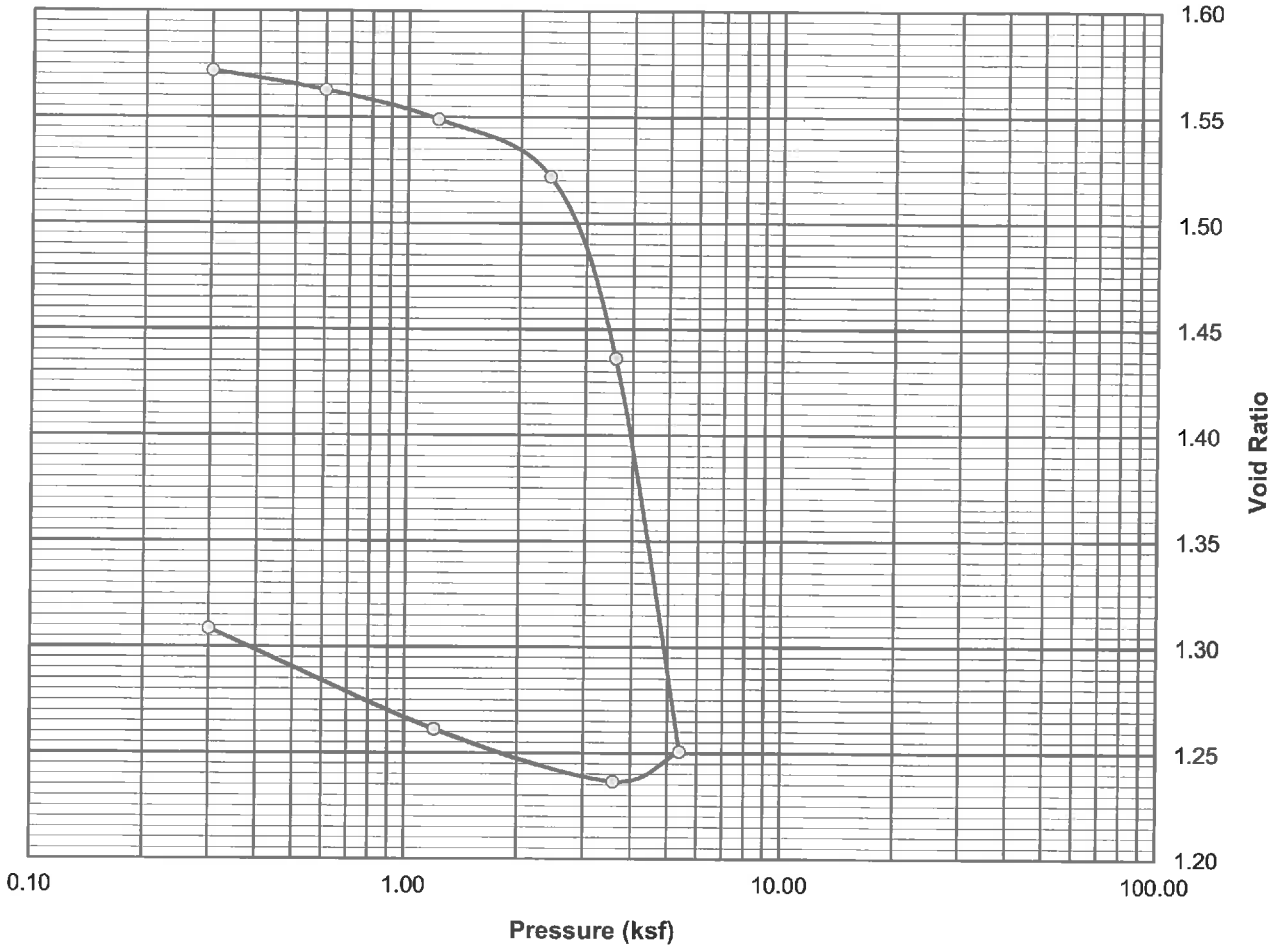
ASTM D-4767

Project Name: Proposed Retail Development, Westbrook, Maine
Client: J & J Development, LLC

Project Number: 15-0083
Lab ID: 18215B
Date: 3/12/2015

Boring: B-5
Sample: 1C
Depth: 25-27'

P_C =	3.0 KSF
C_C =	1.05
C_R =	0.05
w =	58.2%
W_L =	45
W_P =	23



Comments:

EMW
Reviewed By

S.W.COLE ENGINEERING, INC.

Consolidation Test

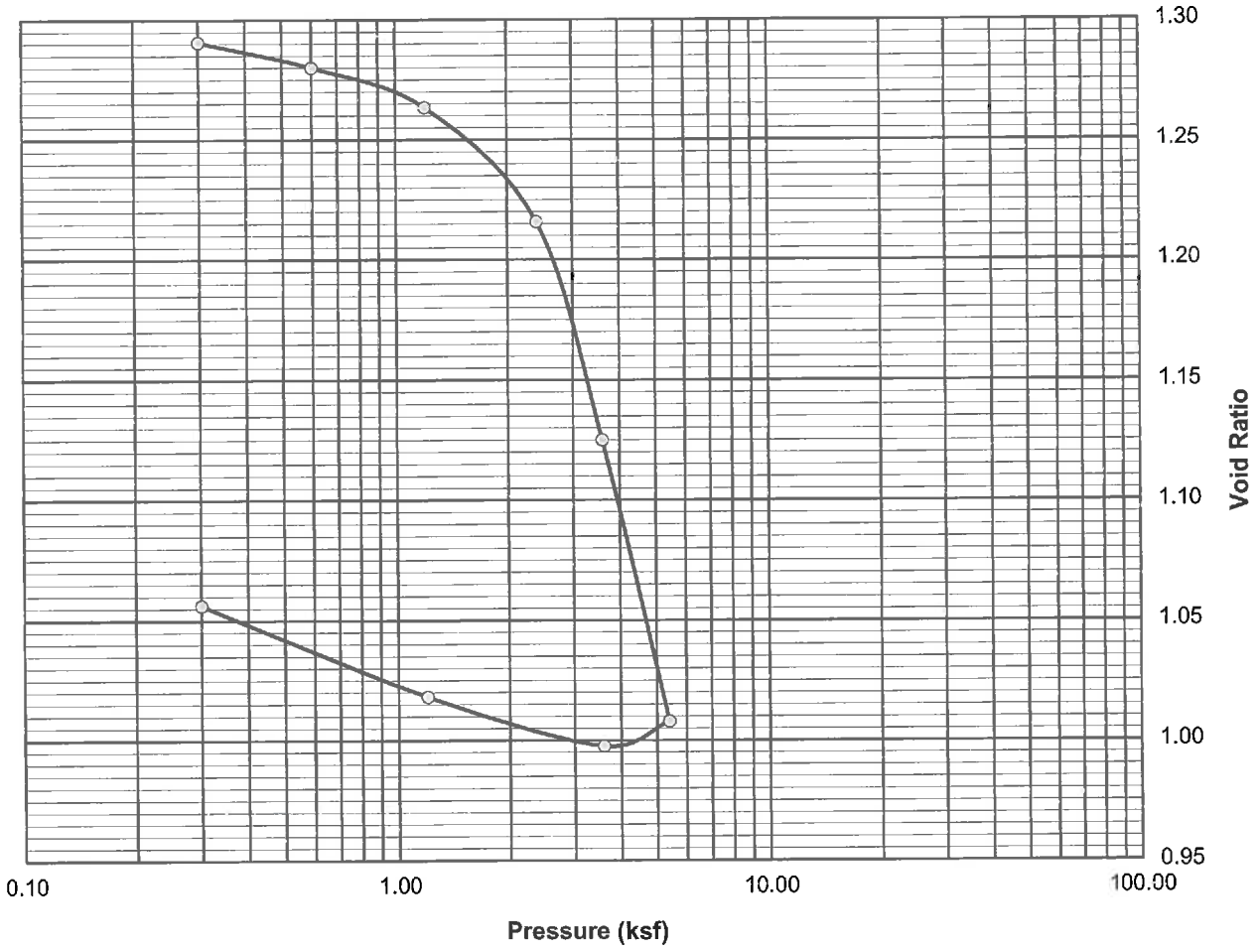
ASTM D-4767

Project Name: Proposed Retail Development, Westbrook, Maine
Client: J & J Development, LLC

Project Number: 15-0083
Lab ID: 18216B
Date: 3/12/2015

Boring: B-5
Sample: 2C
Depth: 35-37'

P_C =	2.6 KSF
C_C =	0.66
C_R =	0.04
w =	48.8%
W_L =	37
W_P =	22



Comments:

EMW
Reviewed By

S.W.COLE ENGINEERING, INC.

Consolidation Test

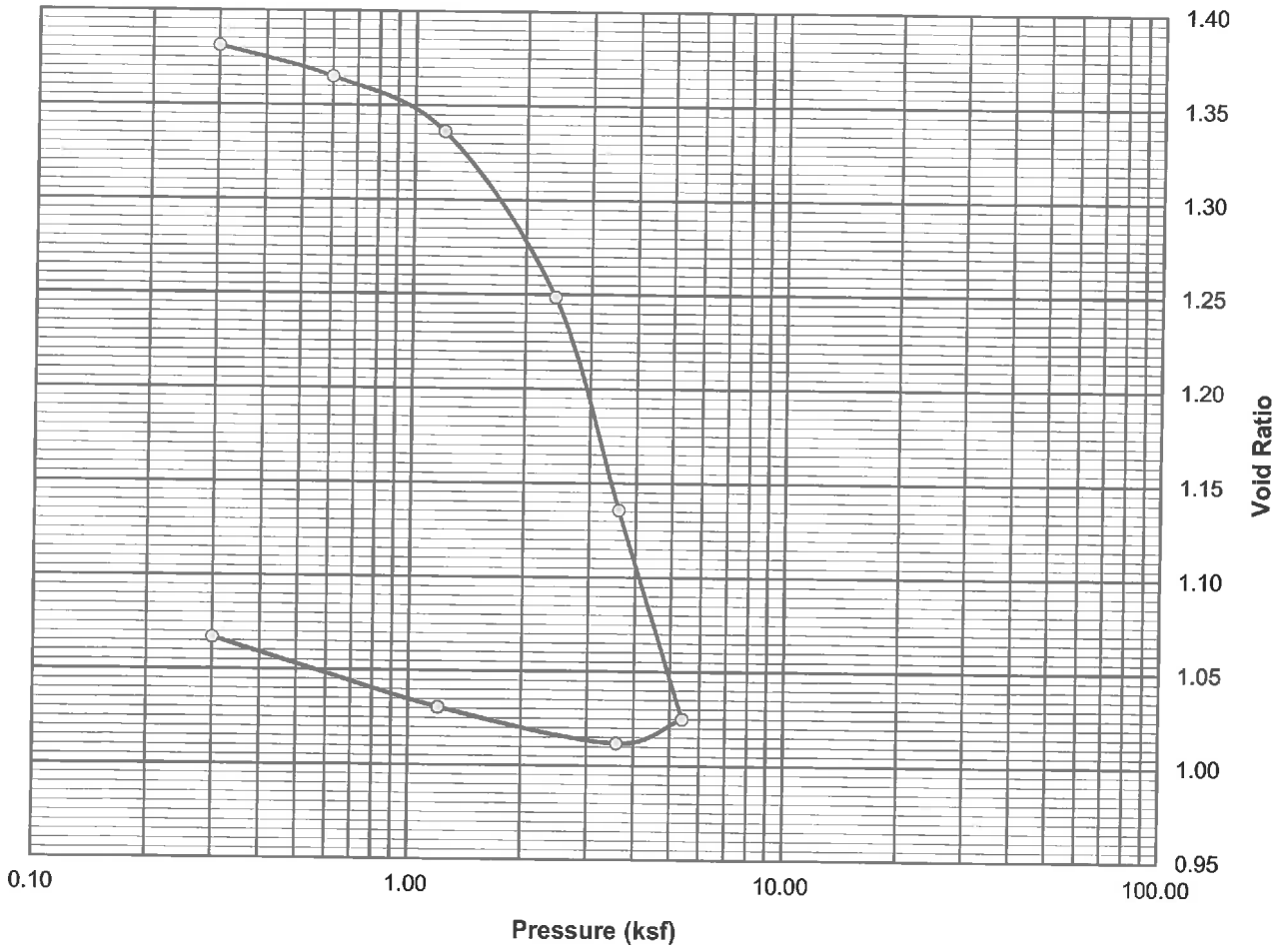
ASTM D-4767

Project Name: Proposed Retail Development, Westbrook, Maine
Client: J & J Development, LLC

Project Number: 15-0083
Lab ID: 18217B
Date: 3/12/2015

Boring: B-5
Sample: 3C
Depth: 45-47'

P_C =	2.0 KSF
C_C =	0.63
C_R =	0.05
w =	53.0%
W_L =	38
W_P =	20



Comments:

EMW
Reviewed By

S.W.COLE ENGINEERING, INC.

Consolidation Test

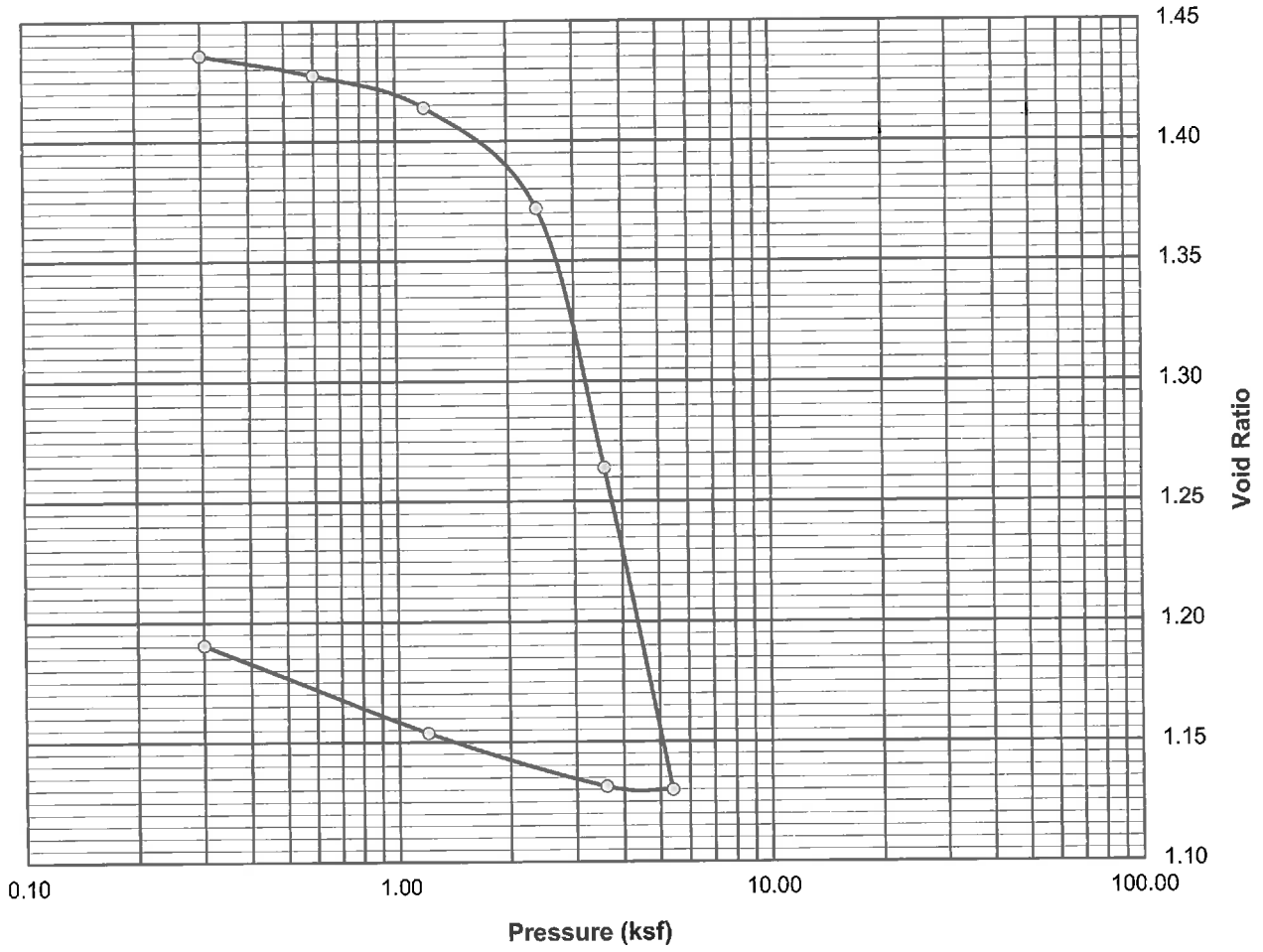
ASTM D-4767

Project Name: Proposed Retail Development, Westbrook, Maine
Client: J & J Development, LLC

Project Number: 15-0083
Lab ID: 18240B
Date: 3/25/2015

Boring: B-203
Sample: 1C
Depth: 20-22'

P_C =	2.4 KSF
C_C =	0.76
C_R =	0.03
w =	53.4%
W_L =	46
W_P =	23



Comments:

EMW
Reviewed By

S.W.COLE ENGINEERING, INC.

Consolidation Test

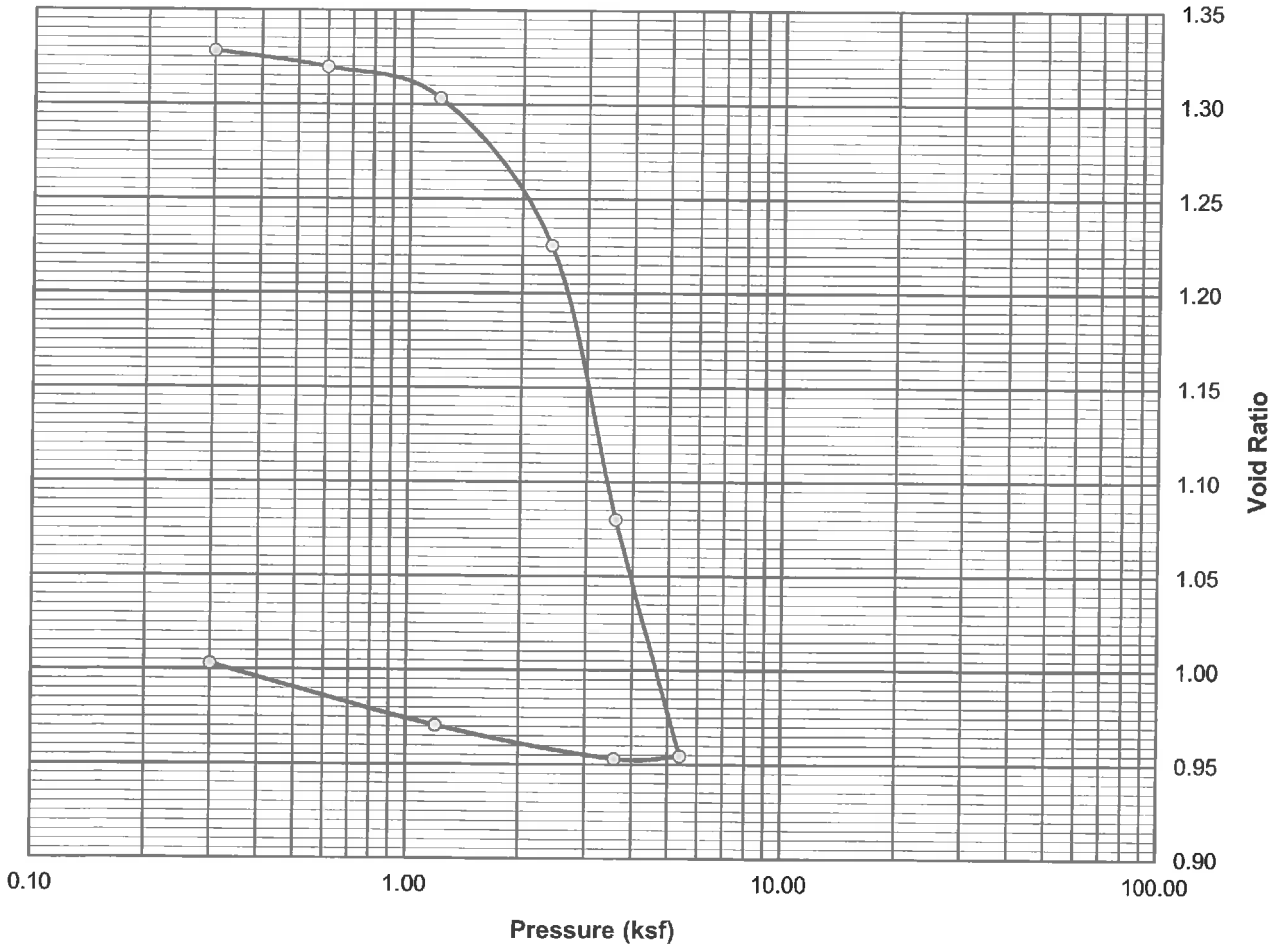
ASTM D-4767

Project Name: Proposed Retail Development, Westbrook, Maine
Client: J & J Development, LLC

Project Number: 15-0083
Lab ID: 18241B
Date: 3/25/2015

Boring: B-203
Sample: 2C
Depth: 40-42'

P_C =	2.0 KSF
C_C =	0.71
C_R =	0.03
w =	49.5%
W_L =	41
W_P =	20



Comments:

EMW
Reviewed By

S.W.COLE ENGINEERING, INC.

Consolidation Test

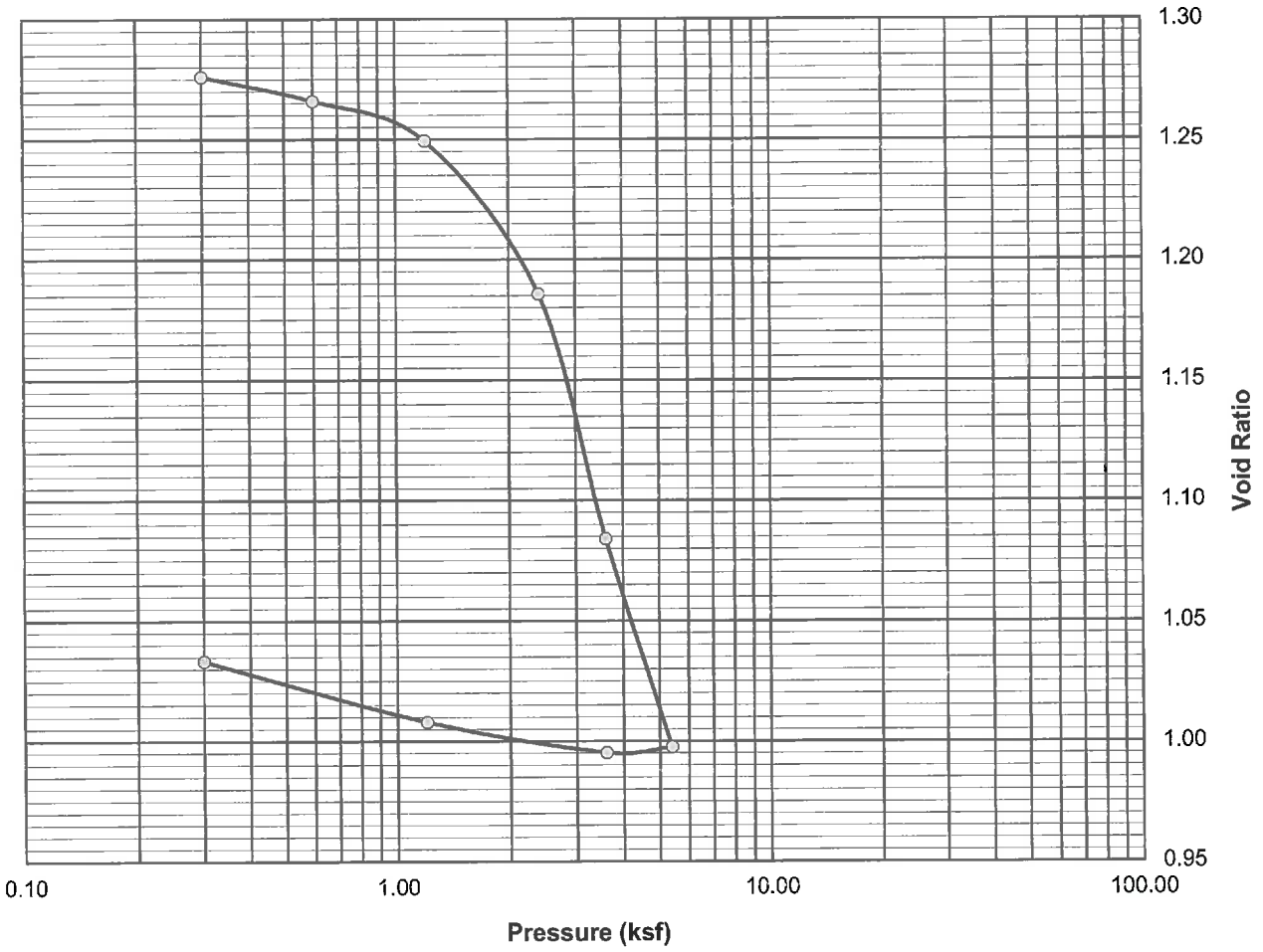
ASTM D-4767

Project Name: Proposed Retail Development, Westbrook, Maine
Client: J & J Development, LLC

Project Number: 15-0083
Lab ID: 18218B
Date: 3/12/2015

Boring: B-302
Sample: 2C
Depth: 30-32'

P_C =	1.8 KSF
C_C =	0.49
C_R =	0.03
w =	46.5%
W_L =	38
W_P =	19



Comments:

EMW
Reviewed By

S.W.COLE ENGINEERING, INC.

Consolidation Test

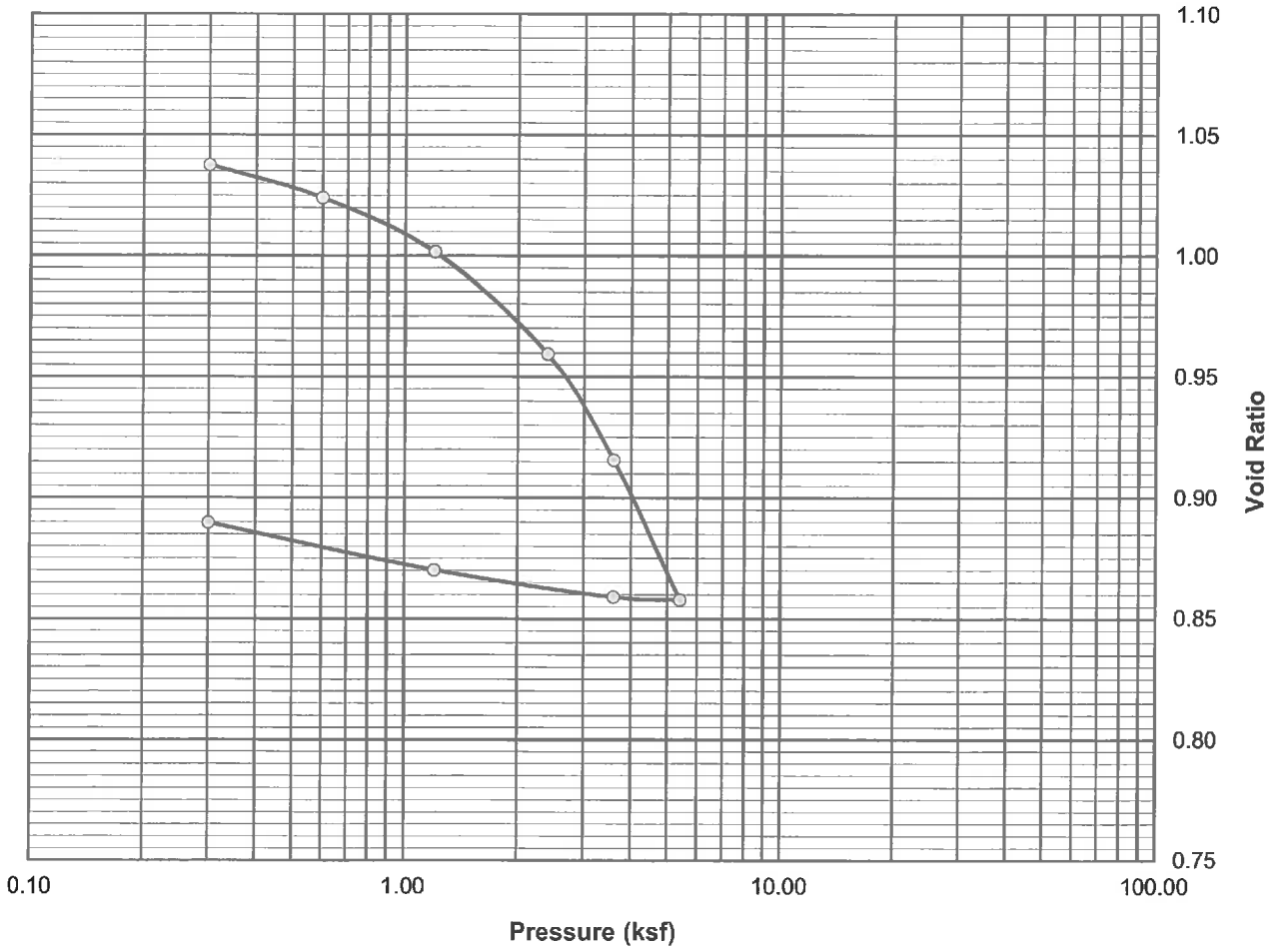
ASTM D-4767

Project Name: Proposed Retail Development, Westbrook, Maine
Client: J & J Development, LLC

Project Number: 15-0083
Lab ID: 18219B
Date: 3/14/2015

Boring: B-302
Sample: 3C
Depth: 40-42'

P_C =	2.3 KSF
C_C =	0.33
C_R =	0.04
w =	39.8%
W_L =	42
W_P =	21



Comments:

EMW
Reviewed By

S.W.COLE ENGINEERING, INC.

Consolidation Test

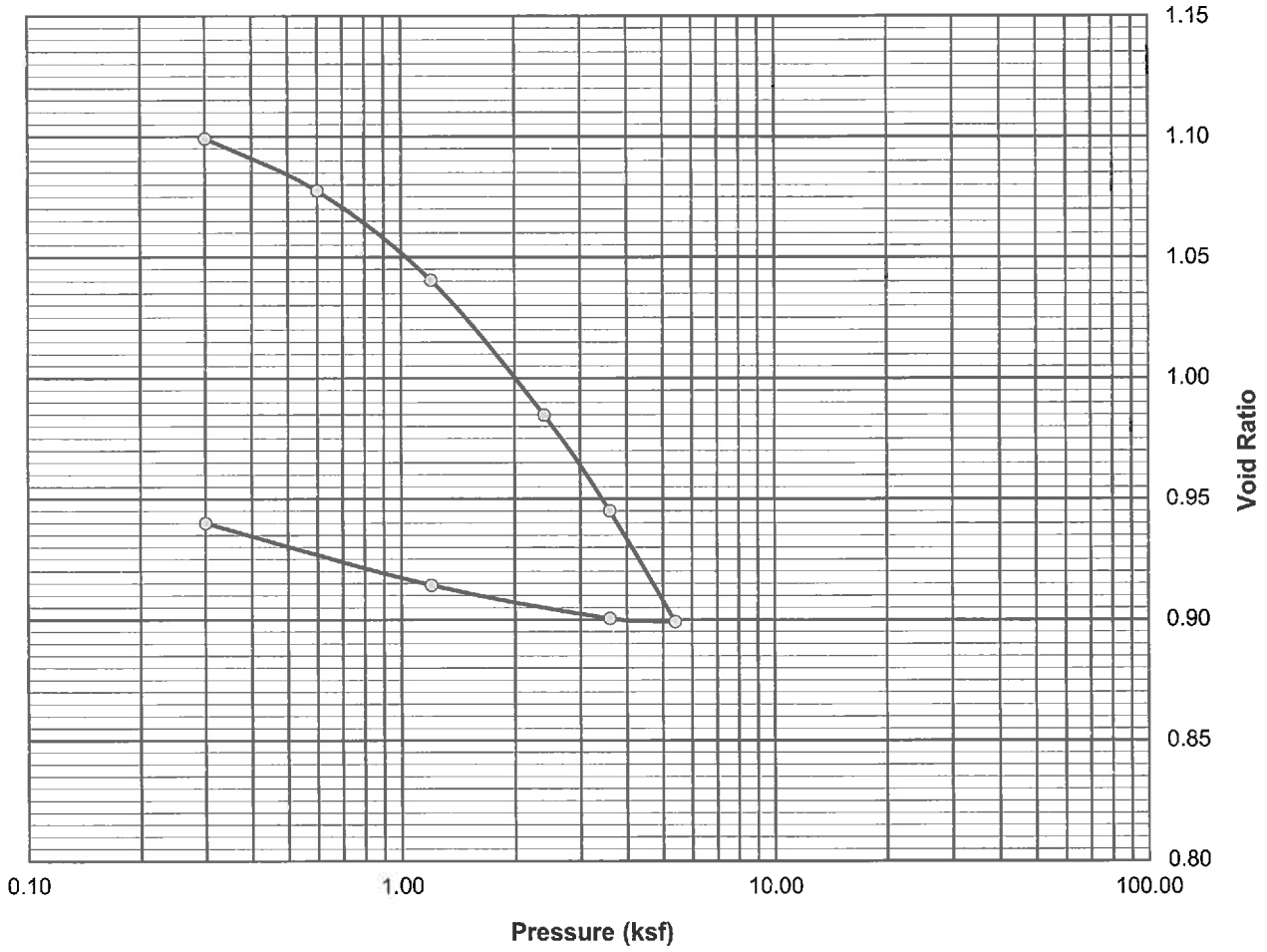
ASTM D-4767

Project Name: Proposed Retail Development, Westbrook, Maine
Client: J & J Development, LLC

Project Number: 15-0083
Lab ID: 18220B
Date: 3/14/2015

Boring: B-402
Sample: 1C
Depth: 25-27'

P_C =	1.5 - 1.8
C_C =	0.26
C_R =	0.07
w =	42.1%
W_L =	35
W_P =	19



Comments:

EMW
Reviewed By

Michael Cuomo, Soil Scientist

6 York Pond Road, York, Maine 03909

(207) 363-4532

mcuomosoil@gmail.com

Test Pit: **One**
Soil Description: Soil Fill in Pile (SO)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 24" Very dark grayish brown (10YR 3/2) fine sandy loam, granular, friable.
24 - 48" Light yellowish brown (2.5Y 6/3) stony fine sandy loam, friable, blocky.
48 - 60" Very dark brown (2.5Y 3/3) stony fine sandy loam, friable, blocky.
60 - 72" Dark yellowish brown (10YR 4/4) gravely fine sandy loam, firm, blocky.
72 - 84" Light gray (2.5Y 7/1) silt loam, firm, blocky, with redoximorphic ('redox.') features.

Test Pit: **Two**
Soil Description: Compact Reclaim over Sandy Fill (CR)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 12" Grayish brown (2.5Y 5/2) crushed concrete dust and chips less than 2" with some continuous buried pavement.
12 - 32" Light olive brown (2.5Y 5/4) sand, loose to compact, massive.
32 - 72" Light yellowish brown (2.5Y 6/3) stony loamy sand, firm, massive.

Test Pit: **Three**
Soil Description: Compact Reclaim over Sandy Fill (CR)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 24" Gray (2.5Y 5/1) crushed concrete dust and chips less than 2" with some continuous buried pavement.
24 - 36" Brownish yellow (10YR 6/6) loamy sand, friable, blocky.
36 - 72" Light olive brown (2.5Y 5/6) sand, loose to compact, massive.

Test Pit: **Four**
Soil Description: Compact Reclaim over Sandy Fill (CR)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 36" Gray (2.5Y 5/1) crushed concrete dust and chips less than 2" and crushed stone, with two continuous buried pavement layers.
24 - 36" Brownish yellow (10YR 6/6) loamy sand, friable, blocky.
36 - 72" Light olive brown (2.5Y 5/6) sand, loose to compact,

Michael Cuomo, Soil Scientist

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mcuomosoil@gmail.com

massive.

Test Pit: **Five**
Soil Description: Compact Reclaim over Sandy Fill (CR)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 12" Very dark gray (2.5Y 3/1) reclaimed asphalt, concrete dust and chips less than 2", firm.
12 - 30" Pale olive (5Y 6/3) stony fine sandy loam, firm, massive.
30 - 72" Light olive brown (2.5Y 5/3) stony loamy sand, friable, massive.

Test Pit: **Six**
Soil Description: Compact Reclaim over Sandy Fill (CR)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 36" Alternating layers of olive brown (2.5Y 4/4) gravely sandy loam, firm, massive; olive brown (2.5Y 4/3) crushed concrete, firm, massive; and pale olive (2.5Y 7/3) gravely sand, loose, single grain.
36 - 72" Olive brown (2.5Y 4/3) gravely fine sandy loam, firm, massive.

Test Pit: **Seven**
Soil Description: Stone Dust and Wash Tailings (SW)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 30" Very dark gray (2.5Y 3/1) reclaimed asphalt, crushed concrete dust and chips less than 2".
30 - 72" Gray (5Y 5/1) concrete dust and wash tailings, firm, blocky.
Observed water flowing into the pit from top to bottom.

Test Pit: **Eight**
Soil Description: Stone Dust & Wash Tailings in Pile (SP)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 30" Gray (5Y 5/1) silt from stone dust and wash tailings, firm, blocky.
30 - 84" Grayish brown (2.5Y 5/2) silt from stone dust wash tailings, firm, blocky.

Michael Cuomo, Soil Scientist

6 York Pond Road, York, Maine 03909
(207) 363-4532
mcuomosoil@gmail.com

Test Pit: **Nine**
Soil Description: Unstable Concrete Waste (UC)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 5" Very dark grayish brown (10YR 3/2) stony fine sandy loam fill, friable, granular.
5 - 72" Gray (5Y 6/1) crushed concrete dust and chips with large slabs of concrete.
72 - 84" Gray (2.5Y 5/1) silt loam, friable, massive, with redox. (Buried wetland surface).
Observed water flowing into pit at 30" depth.

Test Pit: **Ten**
Soil Description: Elmwood Soil (Em)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 10" Very dark gray (2.5Y 3/2) very fine sandy loam, granular, friable.
10 - 20" Dark yellowish brown (10YR 4/4) very fine sandy loam, blocky, friable.
20 - 36" Olive (5Y 5/4) very fine sandy loam, blocky, friable, with redox.
36 - 76" Gray (2.5Y 5/1) silty clay loam, firm, blocky, redox.

Test Pit: **Eleven**
Soil Description: Stone Dust and Wash Tailings (SW)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 30" Dark brown (10YR 3/3) silt from stone dust and wash tailings, granular, friable.
30 - 48" Light olive brown (2.5Y 5/3) silt from stone dust and wash tailings, friable, blocky, with redox.
48 - 90" Olive gray (5Y 5/2) silt from stone dust and wash tailings, friable, blocky, with redox.

Test Pit: **Twelve**
Soil Description: Soil Fill in Pile
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 12" Dark gray (2.5Y 5/1) gravely crushed concrete.
12 - 30" Light olive brown (2.5Y 5/3) stony loamy sand, firm, massive.
30 - 48" Pale olive (2.5Y 6/3) stony loamy sand, firm, massive.
48 - 84" Pale olive (5Y 6/4) stony loamy sand, friable, massive.

Michael Cuomo, Soil Scientist

6 York Pond Road, York, Maine 03909
(207) 363-4532
mcuomosoil@gmail.com

Soil Observation: **A**
Soil Description: Silty Poorly Drained Fill (SI)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 15" Light gray (2.5Y 7/2) gravely crushed concrete and sediment overflowed from sedimentation trap.
15 - 30" Dark gray (2.5Y 4/1) gravely crushed concrete and sediment overflowed from sedimentation trap.
30 - 40" Dark gray (2.5Y 4/1) gravely crushed concrete and sediment overflowed from sedimentation trap mixed with organic soils (muck) from underlying natural wetland.
Observation discontinued.

Soil Observation: **B**
Soil Name: Roundabout (Rd)
Job Site: Pike, Westbrook, Maine
Date: 22 June 2015

0 - 7" Very dark gray (2.5Y 3/1) very fine sandy loam, granular, friable, with redox.
7 - 14" Light gray (2.5Y 7/2) very fine sandy loam, blocky, friable with redox.
14 - 21" Light olive brown (2.5Y 5/3) loamy very fine sandy loam, blocky, friable, with redox.
21 - 40" Olive brown (2.5Y 4/4) silt loam, firm, blocky, with redox.
Observation discontinued.

TEST PITS
FOR
MAIN STREET
WESTBROOK, ME
FEBRUARY 15, 2016
JBE Project No. 14110

Performed by: Wayne Morrill, Jones & Beach Engineers, Inc., SSD #1358

Test Pit #13

0"- 12"		topsoil
12"-19"	2.5Y 6/4	light yellowish brown gravelly sand granular, friable
19"-32"	2.5Y 5/2	grayish brown loamy sand granular, friable

No SHWT
Roots to 32"
No H_2O observed
Refusal observed 32"

Test Pit #14

0"- 8"		topsoil
8"-22"	10YR 3/6	dark yellowish brown loamy sand granular, friable
22"-41"	2.5Y 5/6	light olive brown fine sand granular, friable
41"-65"	2.5Y 7/4	pale yellow loamy sand granular, friable

No SHWT
Roots to 22"
No H_2O observed
No Refusal observed

Test Pit #15

0"- 7"		topsoil
7"-33"	2.5Y 4/3	olive brown loamy sand granular, friable
33"-65"	2.5Y 6/4	light yellowish brown single grain sand granular, friable

No SHWT
Roots to 24"
No H_2O observed
No Refusal observed

Test Pit #16

0"- 6"		processed pavement
6"-46"	5Y 4/2	olive gray processed gravel granular, firm

No SHWT
No Roots observed
No H_2O observed
Refusal observed 46"

Test Pit #17

0"- 30"	2.5Y 5/1	gray stonedust
30"-42"	5Y 5/2	olive gray processed gravel granular, friable

No SHWT
No Roots observed
No H_2O observed
No Refusal observed

Test Pit #18

0"- 42"	2.5Y 4/2	dark grayish brown processed gravel granular, friable

No SHWT
No Roots observed
No H_2O observed
No Refusal observed

Test Pit #19

0"- 24"	2.5Y 3/1	very dark gray processed gravel granular, firm
24"-48"	5Y 4/3	olive loamy sand granular, friable

No SHWT
No Roots observed
No H_2O observed
No Refusal observed

Test Pit #20

0"-12"	5Y 5/1	gray processed gravel
12"-42"	5Y 4/2	olive gray processed gravel granular, firm

No SHWT
No Roots observed
No H_2O observed
Refusal observed 42"

Test Pit #21

0"- 8"		topsoil
8"-24"	10YR 4/6	dark yellowish brown loamy sand granular, friable
24"-44"	2.5Y 4/3	olive brown fine sandy loam granular, friable
44"-70"	Gley 1 3/2	very dark grayish green clay massive, firm

SHWT = 24"
Roots to 24"
H_2O observed 24"
No Refusal observed

Test Pit #22

0"-12"		topsoil
12"-39"	2.5Y 5/2	grayish brown loamy sand granular, friable
39"-58"	2.5Y 4/2	dark grayish brown loamy sand granular, friable
58"-73"	Gley 1 3/2	very dark grayish green clay massive, firm

SHWT = 30"
Roots to 42"
No H_2O observed
No Refusal observed

Test Pit #23

0"-6"		topsoil
6"-16"	2.5Y 3/3	dark olive brown fine sandy loam granular, friable
16"-36"	2.5Y 4/3	olive brown fine sandy loam granular, firm
36"-70"	5Y 4/1	dark gray loamy sand granular, firm

No SHWT
No Roots observed
H_2O observed 48"
No Refusal observed

Test Pit #24

0"-7"	5Y 5/2	olive gray glashil till
7"-36"	5Y 5/2	olive gray loamy sand granular, friable
36"-50"	2.5Y 4/3	olive brown loamy sand granular, friable

SHWT = 24"
Roots to 24"
H_2O observed 36"
No Refusal observed

Test Pit #25

0"-118"	5Y 6/1	gray glashil till

No SHWT
No Roots observed
No H_2O observed
No Refusal observed

Test Pit #26

0"-10"		topsoil
10"-16"	2.5Y 4/3	olive brown fine sandy loam granular, friable
16"-44"	2.5Y 4/2	dark grayish brown fine sandy loam granular, firm
44"-67"	Gley 1 3/2	very dark grayish green marine clay massive, firm

SHWT = 44"
Roots to 50"
No H_2O observed
No Refusal observed

Test Pit #27

0"-32"	5Y 6/1	gray glashil till
32"-66"	2.5Y 5/3	light olive brown loamy sand granular, friable
66"-70"	2.5Y 3/1	very dark gray topsoil

No SHWT
No Roots observed
No H_2O observed
No Refusal observed

Test Pit #28

0"-10"	5Y 6/1	gray glashil till
10"-27"	10YR 3/3	dark brown loamy sand granular, friable
27"-36"	2.5Y 2.5/1	black processed gravel granular, firm
36"-70"	5Y 4/1	dark gray silt clay loam massive, firm

SHWT = 36"
No Roots observed
No H_2O observed
No Refusal observed

Test Pit #30

0"-60"		crushed concrete

No SHWT
No Roots observed
No H_2O observed
No Refusal observed

Test Pit #31

0"-7"		topsoil
7"-16"	2.5Y 5/2	grayish brown fine sandy loam granular, friable
16"-31"	2.5Y 4/3	olive brown fine sandy loam granular, firm
31"-70"	5Y 4/2	olive gray silt clay loam massive, firm

SHWT = 16"
Roots to 36"
No H_2O observed
No Refusal observed

Test Pit #32

0"-18"	2.5Y 3/2	very dark grayish brown topsoil
18"-57"	5Y 4/2	olive gray silt clay loam massive, firm

SHWT = 18"
Roots to 30"
H_2O observed 18"
No Refusal observed

Test Pit #33

0"- 8"		topsoil
8"-24"	2.5Y 5/2	grayish brown loamy sand granular, friable

No SHWT
Roots to 24"
No H_2O observed
Refusal observed 24"

TEST PITS
FOR
58 & 80 MAIN STREET
WESTBROOK, MAINE
MAY 19, 2016
JBE Project No. 14110

Performed by: Gifford Colburn, Jones & Beach Engineers, Inc., SSD #1839

Test Pit #34

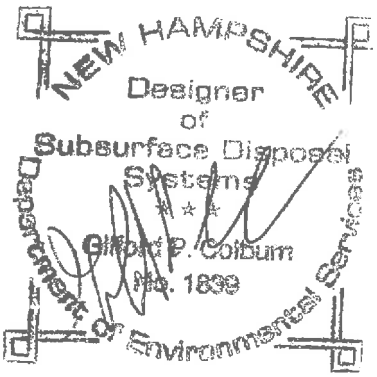
0"- 4"		gravel/ pavement
4"-24"		gravel fill p-stone
24"-56"	2.5Y 6/4	light yellowish brown sand granular, friable
56"-72"	10YR 5/6	yellowish brown sandy loam firm
72"-80"	5Y 5/1	gray clay, firm

SHWT = 56"
No Roots observed
No H_2O observed
No Refusal observed
Perc Rate = 8 min/inch

Test Pit #35

0"- 12"	10YR 6/4	light yellowish brown sand single grain
12"-34"	5Y 5/1	gray gravelly clay firm
34"-41"	5Y 2.5/1	black sandy loam granular, friable
41"-64"	10YR 5/3	brown gravel, loose

SHWT = 34"
No Roots observed
H_2O @ 64"
No Refusal observed
Perc Rate = 8 min/inch



Test Pit #36

0"- 12"		pavement, gravel
12"-28"	5Y 5/1	gray gravelly sandy clay
28"-65"	10YR 4/1	dark gray sandy loam firm

SHWT = 28"
No Roots observed
H_2O @ 63"
No Refusal observed
Perc Rate = 8 min/inch

Test Pit #37

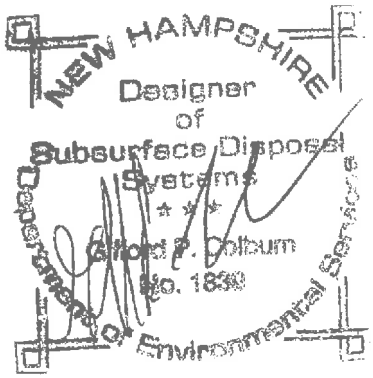
0"- 12"		topsoil
12"-32"	5Y 5/1	gray loamy clay
32"-68"	10YR 5/4	yellowish brown sand single grain with redox

SHWT = 32"
Roots @ 32"
No H_2O observed
No Refusal observed
Perc Rate = 8 min/inch

Test Pit #38

0"- 2"		topsoil
2"-72"		clay sandy loam blocky, firm

SHWT = 72"
Roots @ 2"
No H_2O observed
No Refusal observed
Perc Rate = 8 min/inch



Test Pit #39

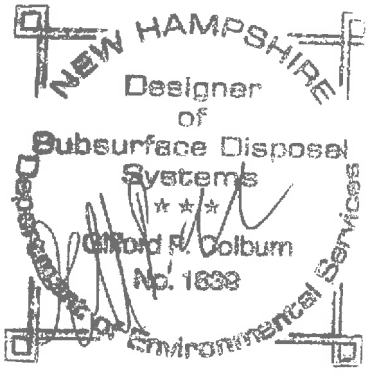
0"- 10"		gravelly fill, pavement
10"-30"	10YR 6/4	light yellowish brown sand single grain
30"-60"	10YR 5/3	brown sand/gravel with redox
60"-65"	5Y 5/1	gray sand single grain wet

SHWT = 30"
No Roots observed
H_2O @ 60"
No Refusal observed
Perc Rate = 8 min/inch

Test Pit #40

0"- 10"		gravelly fill, bricks
10"-30"	10YR 6/4	light yellowish brown sand single grain
30"-60"	10YR 5/3	brown sand/gravel with redox
60"-63"	5Y 5/1	gray sand single grain wet

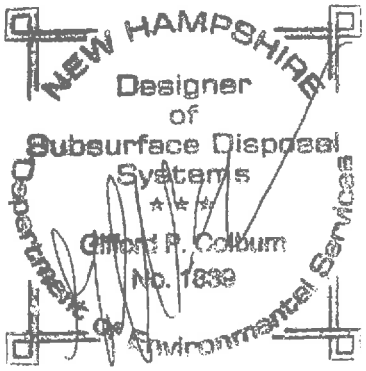
SHWT = 30"
No Roots observed
H_2O @ 60"
No Refusal observed
Perc Rate = 8 min/inch



Test Pit #41

0"- 16"		gravelly sandy loam fill
16"-46"	2.5Y 4/1	dark gray sandy loam firm
46"-72"	5Y 5/1	gray clay, firm with redox

SHWT = 46"
Roots @ 46"
No H_2O observed
No Refusal observed
Perc Rate = 8 min/inch



Section 20 – Blasting (rev 1)

1.0 INTRODUCTION

Following is an assessment of rock blasting associated with the proposed Dirigo Plaza mixed-use commercial development construction project in Westbrook, Maine.

Dirigo Plaza is proposed to be constructed on approximately 53 acres comprising the west end of the former Pike Industries rock quarry/asphalt batch plant facility in Westbrook (the "Site", see Site Location Map attached as Sheet 1). The Site is designated on City of Westbrook Tax Map 42B as Lots 9, 10 11 and 14.

The Site is bounded by Larrabee Road to the west, Main Street to the north, the Westbrook Arterial to the south, undeveloped land to the southeast and portions of the former rock quarry to the east-northeast. Improvements on the Site include the west end of the historic rock quarry, the former asphalt batch plant and several other structures that are proposed for demolition and removal during the Dirigo Plaza development. A Portland Pipeline Corporation buried petroleum pipeline corridor shared by Central Maine Power Company overhead power transmission lines is adjacent to the historic rock quarry east-northeast of the Site. A Buckeye Partners, LP buried petroleum pipeline corridor crosses the southwest end of the Site. Buried natural gas lines maintained by Unitil are located beneath Larrabee Road west of the Site and Main Street north of the Site. Other utilities in the Site area include buried Portland Water District and Westbrook Sewer District utilities along Larrabee Road and Main Street.

2.0 SITE PLAN

The Maine Site Location of Development Permit Application requires that a Site Plan be presented which indicates the "locations of all off-site structures and wells not owned or controlled by the applicant within 2,000 feet of any blast site".

The Site Plan is attached as Sheet 2. Numerous structures are located within 2,000 feet of the proposed blast area. The majority of these structures are industrial, commercial and retail-use buildings. The closest residential buildings to the proposed blast area are about 1,700 feet to the east-northeast.

Based on our research, which included discussions with the Portland Water District and the City of Westbrook Code Enforcement Office, and a review of Maine Geological Survey and Maine Department of Environmental Protection (MeDEP) maps and records, there are no private or public water supply wells in-use within 2,000 feet of the proposed blast area.

3.0 BLASTING ORDINANCE

The City of Westbrook has a Blasting Ordinance (Article II. Use of Blasting), which is attached as Appendix A.

The Blasting Ordinance describes City of Westbrook requirements for code compliance, transportation of explosives, permits, and blast event notice to off-Site property owners, inspections, monitoring and record keeping.

The Blasting Ordinance should be reviewed thoroughly by the blasting contractor prior to the initiation of construction blasting on the Site.

4.0 BLASTING ASSESSMENT

4.1 Anticipated Effects of Blasting

Minimal adverse effects of blasting can be anticipated provided that blasting activities are done as outlined below and in general conformance with the "Blasting Guidance Manual," Office of Surface Mining, Reclamation, and Enforcement (OSMRE), U.S. Department of Interior.

4.2 Blasting Plan

A Blasting Plan should be prepared by the blasting contractor to address the construction blasting at the Site. The Blasting Plan should include sketches of the blast locations, drill patterns, delay periods, and decking. The Plan should also indicate the type and amount of explosives to be used, including weight of explosives per delay, stemming, critical dimensions and the measures to protect off-site structures.

4.3 Blast-produced Sound

Sound (airblast overpressure) produced by blasting shall be regulated as outlined in MeDEP Chapter 375.10(C)(4)(c) and Maine Statute 38 MRSA 490-Z(14)(H). Blasting shall not occur in the period between sundown and sunrise the following day, or in the

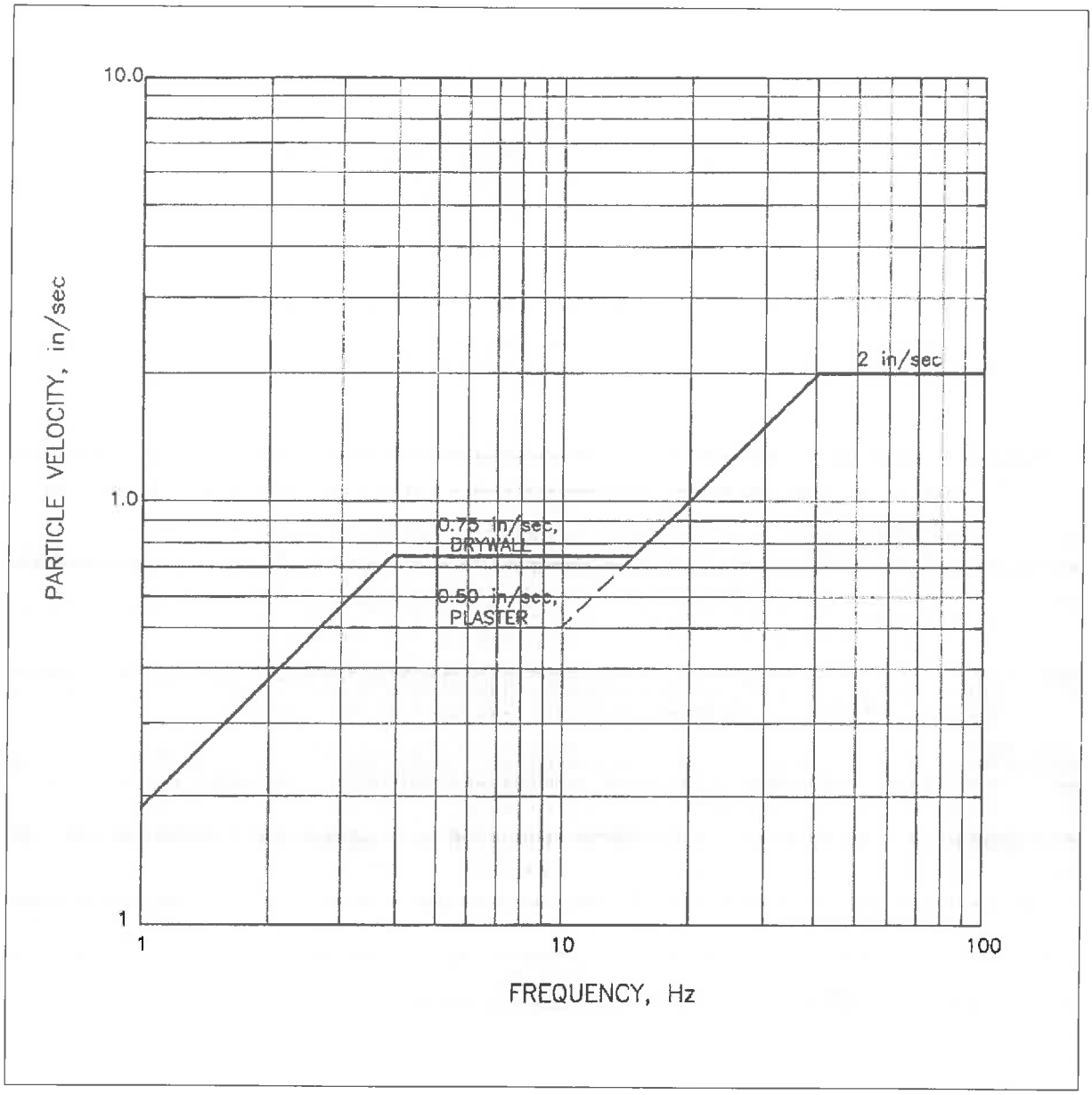
period between the hours of 7:00 p.m. and 7:00 a.m., whichever is greater. Blasting will not occur on Sundays and not more than 4 times per day.

The blasting program should be designed so that the sound generated by each blast at the nearest occupied structure not owned or controlled by the developer does not exceed the following limits {measured in peak linear sound level (dBL)}:

Number of Blasts per Day	Sound Level Limit
1	129 dBL
2	126 dBL
3	124 dBL
4	123 dBL

4.4 Blast-produced Ground Vibrations

Blasting should be undertaken in such a manner that at the property line nearest the blasting, it will produce ground vibrations that do not exceed the safe limits for structures shown below on Figure B of Appendix B, U.S. Bureau of Mines Report of Investigations 8507 (1980):



These limits are based on the frequency (hertz) and the peak particle velocity (inches per second) of the blast vibrations, and are generally-accepted limits for preventing cosmetic damage to residential structures.

4.5 Blast-produced Flyrock

The blasting contractor shall use sufficient stemming, matting or natural protective cover to prevent fly rock from leaving the project site or from entering protected natural resources or natural buffer strips, unless prior authorization has been received from the MeDEP. Crushed rock or other suitable material must be used for stemming when available; native gravel, drill cuttings or other material may be used for stemming only if no other suitable material is available.

4.6 Blasting Notification

In accordance with the City of Westbrook Blasting Ordinance, the blasting contractor shall notify all property owners within 500 feet of the blast area. The notice is to be by registered mail sent at least 5 business days prior to the intended date of commencement of blasting operations.

For each blasting event, the blaster shall notify City of Westbrook public safety communications on the day of the blast event at least 4 hours prior to the blast (public safety communications is to notify Westbrook Fire and Rescue and the code enforcement officer.)

Although Portland Pipeline Corporation, Buckeye Partners, LP and Unitil utilities in the Site area historically have been subjected to ground vibrations during commercial blasting in the quarry on the Site, they should be notified of the proposed Dirigo Plaza construction blasting prior to the initiation of blasting in order to discuss potential effects of the construction blasting on the buried pipelines in the vicinity of the blast area. The telephone number for Portland Pipeline Corporation in South Portland, Maine is (207) 767-0421, the telephone number for Buckeye Partners, LP is (1-866-432-4960) and the contact number for Unitil is (1-866-933-3821). All three utility companies can be notified by contacting Dig Safe of Maine (1-888-DIG-SAFE).

4.7 Pre-Blast Surveys

The City of Westbrook Blasting Ordinance indicates that all property owners within 500 feet of the blast area shall be provided the offer of a pre-blast survey prior to the initiation of blasting. The offer can be made along with the blasting notification sent to the property owners by registered mail (Section 3.3 above). The Site Plan (Sheet 2) depicts

approximately 15 to 20 off-site commercial and retail buildings within 500 feet of the proposed blast area.

The pre-blast surveys authorized to be made by the property owners should include a survey of the interior and exterior of each building with the use of a video camera and/or digital camera. A pre-blast survey summary form should be placed in the file when the survey is completed. The form should provide information on the location of visual observations made at the particular buildings and grounds that are surveyed. All records of the pre-blast surveys should be forwarded to J & J Gove Development, LLC at the end of a period of 6 months after completion of construction.

4.8 Blast Monitoring

A seismograph should be set up at the property line or the off-site structure that is closest to the blast area during each blast event. The seismograph will record the air blast, peak particle velocity and frequency of each blast.

Each seismograph used should record in full analog wave form each of the 3 mutually perpendicular components (longitudinal, transverse and vertical) of ground vibration motion in terms of particle velocity. The seismograph should have a Seismic Frequency Range of 2 to 150 Hz and a sound frequency of 2-500 Hz.

The following information at a minimum shall be documented for each blast:

- Seismograph Model
- Seismograph Calibration Date
- Date and Time of Blast
- Seismograph Location
- Distance to Blast
- Peak Particle Velocity {(in/sec) (horizontal, vertical and transverse)}
- Frequency
- Seismograph Operator
- Airblast Overpressure (dB or psi)

In addition, documentation should be provided by the blasting contractor showing the location of the seismograph relative to the blast, relative to the nearest off-site structure or property line and the stratum or structure on which the seismograph geophone was placed during the blast event.

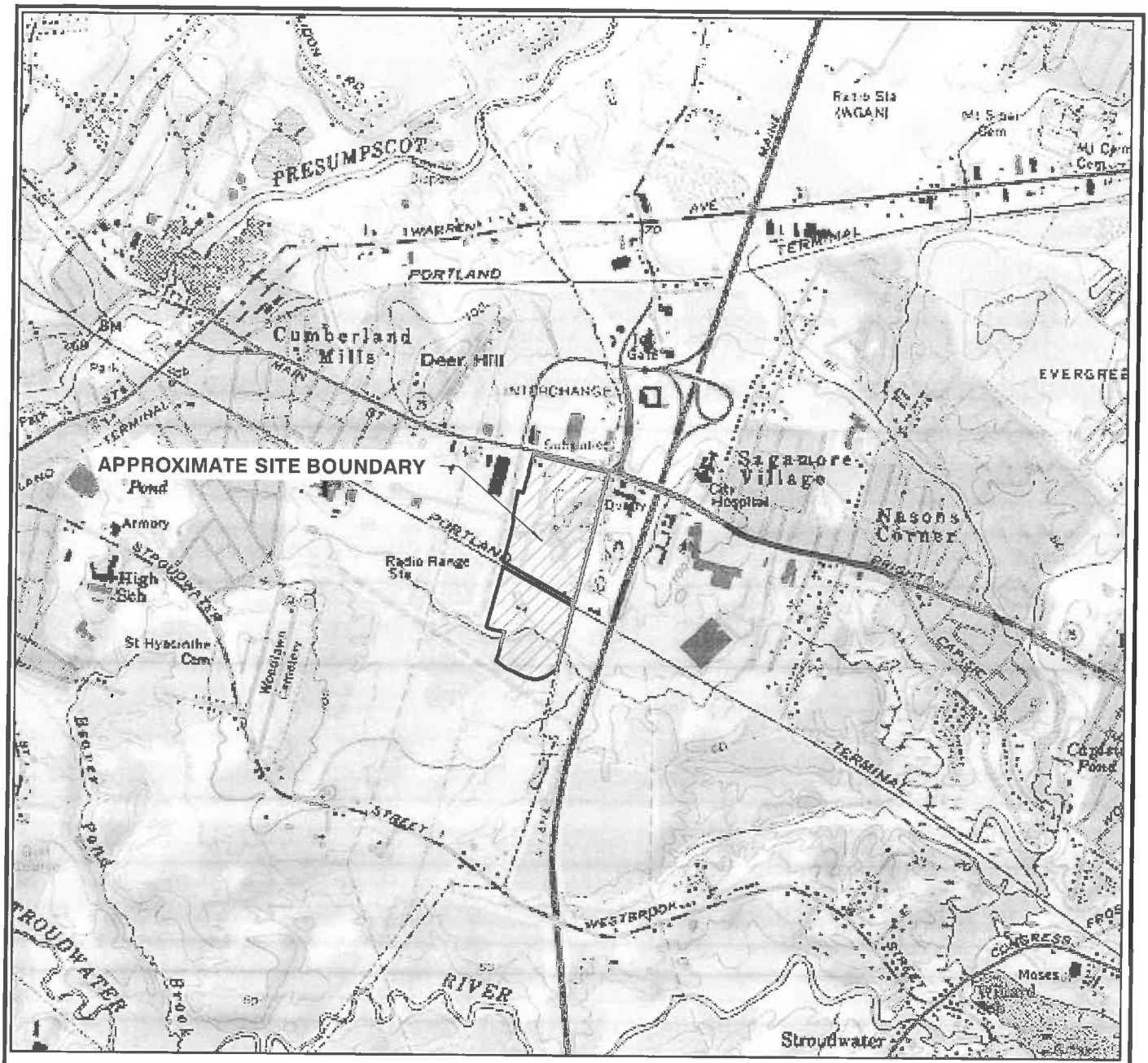
4.9 Blast Records

Records for each blast event will be kept in general accordance with Maine Statute 38 MRSA 490-Z(14)(L), and in accordance with the City of Westbrook Blasting Ordinance. A variation from the requirements of Maine Statute 38 MRSA 490-Z(14)(L) is that the social security number of the blaster does not need to be included on the records.

Blast records, including seismograph monitoring data, shall be kept by J & J Gove Development, LLC for a period of at least 5 years after blasting has ceased and shall be available for inspection upon request by the MeDEP and City of Westbrook officials.

Attachments

Sheet 1 – Site Location Map
Sheet 2 – Site Plan
Appendix A – Westbrook Blasting Ordinance



N
W E
S

2,000 0 2,000 4,000

Scale in Feet

S.W.COLE ENGINEERING, INC.

J & J GOVE DEVELOPMENT, LLC

SITE LOCATION MAP

PROPOSED DIRIGO PLAZA
CONSTRUCTION BLASTING ASSESSMENT
WESTBROOK, MAINE

Job No.	15-0083.1	Scale	1:24000
Date:	02/26/2016	Sheet	1

NOTE:
SITE LOCATION MAP PREPARED FROM ESRI ArcGIS ONLINE AND DATA PARTNERS INCLUDING USGS AND © 2007 NATIONAL GEOGRAPHIC SOCIETY.

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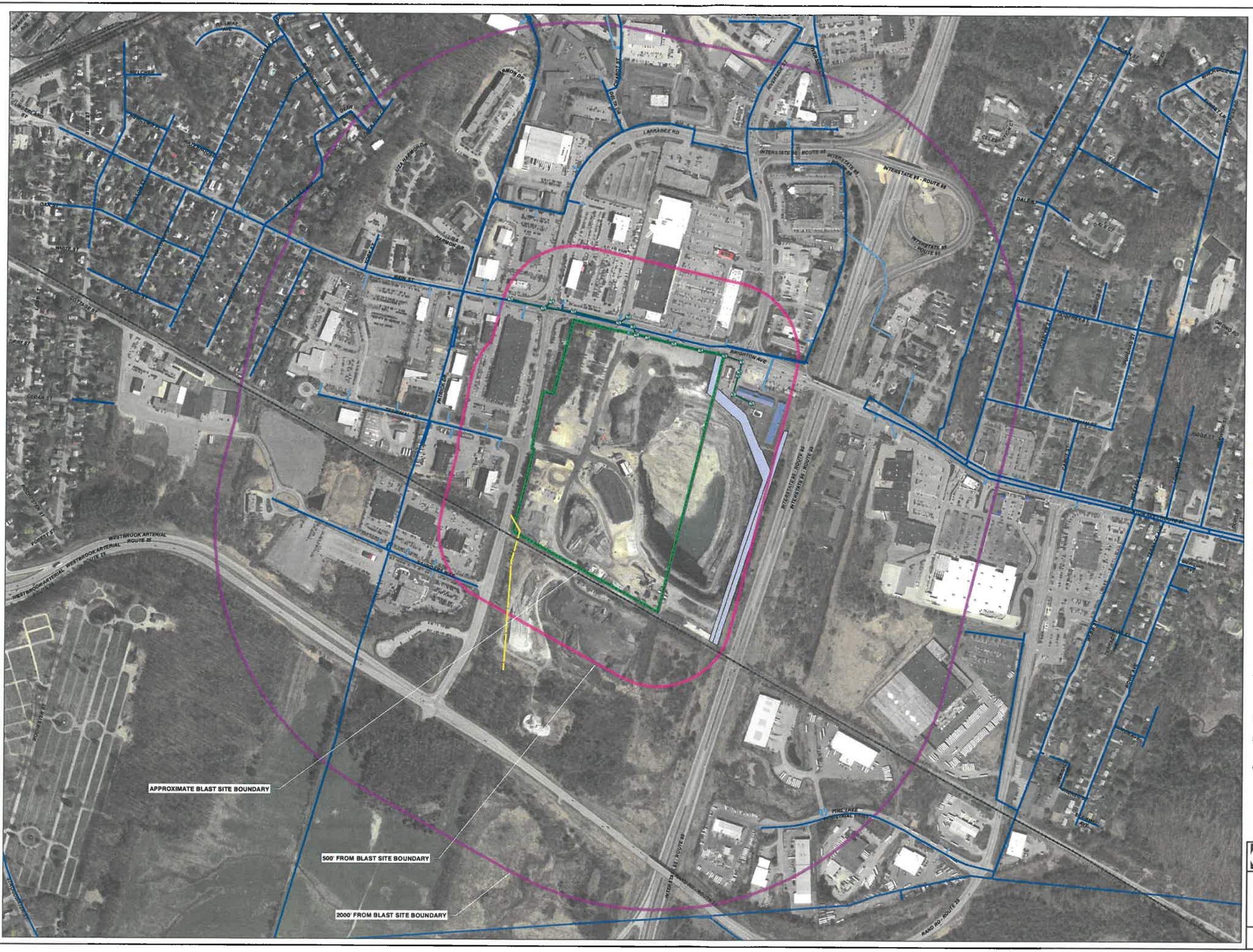

LEGEND

- SEWER MANHOLE, SEE NOTE 3
- SEWER LINE, SEE NOTE 3
- ACTIVE RAILROAD
- APPROXIMATE BUCKEYE OIL LINE EASEMENT, SEE NOTE 3
- WATER MAIN, SEE NOTE 4
- WATER SERVICE, SEE NOTE 4
- BLAST SITE BOUNDARY
- 500' DISTANCE FROM BLAST SITE BOUNDARY
- 2000' DISTANCE FROM BLAST SITE BOUNDARY
- CENTRAL MAINE POWER AND PORTLAND PIPE LINE EASMENTS

NOTES:

1. SITE PLAN PREPARED FROM IMAGERY FROM STATE OF MAINE AERIAL ORTHOPHOTOS ENTITLED "GEOLIBRARY_3IN_2012," PROVIDED BY THE STATE OF MAINE, MAINE OFFICE OF GIS AND MAINE GEOLIBRARY BOARD.
2. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. CONSTRUCTION BLASTING ASSESSMENT.
3. SEWER LINES, SEWER MANHOLES, BUCKEYE OIL LINE EASEMENT, CENTRAL MAINE POWER AND PORTLAND PIPE LINE CORPORATION EASEMENT FROM EXISTING CONDITIONS PLAN PREPARED BY JONES & BEACH ENGINEERS, INC.
4. WATER MAIN AND WATER SERVICE LINES PROVIDED BY PORTLAND WATER DISTRICT.
5. ACTIVE RAILROAD FROM STATEWIDE RAILROAD COVERAGE PROVIDED BY MAINE OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS (MEGIS)
6. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE CONSTRUCTION BLASTING ASSESSMENT FEATURES IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

300 0 300 600
Scale in Feet

S.W.COLE ENGINEERING, INC.

J & J GROVE DEVELOPMENT, LLC

SITE PLAN

PROPOSED DIRIGO PLAZA
CONSTRUCTION BLASTING ASSESSMENT
WESTBROOK, MAINE

Job No.	15-0083.1	Scale	1" = 300'
Date:	02/26/2016	Sheet	2

APPENDIX A

Chapter 33

VEHICLES FOR HIRE

(Vehicles for Hire deleted. See Taxicabs under Chapter 20, Licenses & Permits).

Chapter 34

WEAPONS AND EXPLOSIVES

Art. I. In General, **§§ 34-1 – 34-13**

Art. II. Use of Blasting Agents, **§§ 34-14 - 34-24**

ARTICLE I. IN GENERAL

Sec. 34-1. No hunting allowed; permit to discharge firearms required.

No person shall hunt with the use of a firearm within the city limits. Neither shall any person, without a permit from the chief of police, fire or discharge any gun, fowling piece, cannon, or firearm within the municipal boundaries, except in the performance of official military or law enforcement duties or in lawful self-defense. Nothing contained herein shall be construed to prevent the possession of firearms on one's own domicile nor prevent their transportation to a municipality allowing discharge of firearms. (1942, Rev. Code, Ch. XXVIII, § 1; Ord. of 5-18-87)

Sec. 34-2 – 34-3. ***Repealed.***

(1942 Rev. Code, Ch. XXVIII, Sec. 2; Ord. of 10-3-05)

Secs. 34-4 – 34-13. *Reserved.*

ARTICLE II. USE OF BLASTING

Sec. 34-14. Purpose.

This ordinance is intended to minimize negative impacts from blasting associated with construction and related activities. Such impacts include but are not limited to airborne shock waves, flying debris, ground vibrations, and dust which are physically harmful and otherwise detrimental to individuals and the community in the enjoyment of life, property and the conduct of business. It is also intended to prevent damage to geologic and environmental resources upon which depend such features as wells and wildlife. Extractive Industries shall not be subject to these requirements, however shall require an annual permit and be subject to all other State and Federal regulations on Mining/Quarrying activities. (1942 Rev. Code, Ch. XXVIII-A, § 2; Ord. of 12-1-69; Ord. of 10-3-05)

Sec. 34-15. Code compliance.

The use and storage of explosives and blasting agents in the city shall be conducted in compliance with all pertinent sections of the Code and, except as superseded by the provisions of this article, "National Fire Protection Association Codes", NFPA 1 Uniform Fire Code and NFPA 495 Explosive Materials Code, or other applicable state or federal regulation. In the case of a conflict with another provision, the stricter provision shall apply. (1942 Rev. Code, Ch. XXVIII-A, § 1; Ord. of 12-1-69; Ord. of 10-3-05)

Sec. 34-16. Transportation of explosives.

Every vehicle transporting explosives shall be compliant with NFPA 495, Chapter 7 and all federal and state laws and regulations. (1942 Rev. Code, Ch. XXVIII-A, §§ 3, 6; Ord. of 12-1-69; 10-3-05)

Sec. 34-17. Permit required. (See Master Fee Schedule.)

Prior to any blasting within the city, a permit must be obtained from the code enforcement officer. Prior to granting the permit, the code enforcement officer shall request comments on the application from the fire, police, and public services departments. Review by other departments may be sought if appropriate. Permit applications shall include the following information:

(a) Names, addresses, and contact numbers for the applicant, blaster, property owner, and general contractor, if any.

(b) Location(s) of proposed blasting activity.

(c) Estimated number of cubic yards of material to be removed by blasting.

(d) Start/end date.

(e) Planned number of blasts.

(f) A description of the project for which the blasting is being undertaken.

(g) Evidence of insurance. (Minimum liability of $3,000,000.00)

(h) Qualifications of personnel performing blasting and evidence of certification to conduct blasting in the state.

(i) The code enforcement officer may require a pre-blast survey and monitoring program.

(1942 Rev. Code, Ch. XXVIII-A, § 4; Ord. of 12-1-69; Ord. of 10-3-05)

Sec. 34-18. Notification.

(a) The blaster shall notify all property owners within five hundred (500) feet for all blasting projects. Notice shall be by registered mail sent at least five (5) business days prior to the intended date of commencement of blasting operations. Any property within five hundred (500) feet may request a pre-blast survey at the expense of the contractor. Additional notification may be required by the code enforcement officer.

(b) For any blasting operation, the blaster shall notify public safety communications who shall notify the fire rescue department and the code enforcement officer on the day of the blasting at least four (4) hours prior to the detonation(s). The notice may be given orally, but the burden of proof is on the blaster as to whether the notice was received.

(c) Where an excavator encounters a small amount of ledge when doing a street opening or in another similar small blasting project situation where advance notice is not reasonably feasible, the city engineer can modify the notice requirements. (1942 Rev. Code, Ch. XXVIII-A, § 5; Ord. of 12-1-69; Ord. of 10-3-05)

Sec. 34-19. Inspection and monitoring.

(a) The code enforcement officer, city engineer, fire chief or other duly authorized fire officer may observe any authorized blasting operations and may also order that additional ground vibration and air blast overpressure measurements using approved instrumentation be made by the blaster to ensure the limits specified in "NFPA 495 Explosive Materials Code" are not exceeded.

(b) All storage sites shall be subject to inspection and verification of compliance with this ordinance. (Ord. of 10-3-05)

Sec. 34-20. Records.

Persons responsible for all blasting projects shall maintain a record of each blast. All records shall be retained at least five (5) years following cessation of the blasting operation and shall be available for inspection by the code enforcement officer, city engineering, fire chief or other duly authorized fire officer and shall contain the following minimum data:

(a) Name of person responsible for the blasting operation.

(b) Location, date(s), and time of blast (not before 8 a.m., not after 5 p.m. Monday through Friday, excluding holidays).

(c) Name of blaster.

(d) Type of material blasted.

(e) Number of holes, burden and spacing.

(f) Diameter and depth of holes.

(g) Types of explosives used.

(h) Amount of explosives used.

(i) Whether mats or other protections were used.

(Ord. of 10-3-05)

Sec. 34-21. Appeal of denial by code enforcement officer.

Where the code enforcement officer has denied a blasting permit under this article, the applicant may appeal the denial to the zoning board of appeals within 30 days of the code enforcement officer's decision by filing a written notice of appeal with the code enforcement officer. (Ord. of 10-3-95)

Sec. 34-22. Conditions.

Upon issuance of any blasting permit, the code enforcement officer may prescribe any reasonable conditions or requirements deemed necessary to minimize adverse effects upon the neighborhood or community. This shall include, but not limited to, the reclaiming for disposal off site of all material that prior to detonation was regulated by NFPA 495 and has been rendered inert, such as blasting caps and detonation cord. (Ord. of 10-3-95)

Sec. 34-23. Penalties.

Any material misstatement or omission of information required by this article or the violation of any condition attached to a permit granted under this article shall constitute a violation and be subject to the fine set forth in the Master Fine Schedule attached hereto as Appendix C. (Ord. of 10-3-05)

Sec. 34-24. Severability.

If any provisions of this ordinance is declared unconstitutional or held invalid, it shall not affect any other section, clause, or provision thereof, but the same shall remain in full force and effect. This ordinance does not restrict the fire chief, fire inspector or other duly authorized fire officer from enforcing any requirements of adopted or referenced NFPA codes in other sections of the Code. (Ord. of 10-3-05)

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September 8, 2016

Maine Department of Environmental Protection
Attn: Ben Viola
312 Canco Road
Portland, ME 04103

RE: Urban Impaired Stream Standard
58 & 80 Main Street, Westbrook, ME
Tax Map 42B, Lots 9, 10, 11 & 14
JBE Project No. 14110

Dear Mr. Viola:

The subject of this letter is the proposed Dirigo Plaza project located at 58 & 80 Main Street in Westbrook, ME and the methodology utilized to determine the project's compliance with the Urban Impaired Stream standards of Chapter 500 & Chapter 501 of the Stormwater Management Law.

The intent of this project is to construct a new shopping center at the location of the existing Pike Industries quarry in Westbrook, ME.

Existing Site:

The existing Pike Industries site contains 81.78 acres. A good portion of the existing site consists of the existing quarry. The remainder of the site has been utilized as material storage (gravel, asphalt, concrete, etc.), paved roadways and parking, concrete plant, and miscellaneous industrial activities and contains portions of woodland throughout. To this end a great deal of the existing site is currently well compacted gravel, paved roadways, and buildings all of which are considered impervious and which receive no stormwater treatment prior to discharge from the site. The area breakdown of which is as follows:

Existing Developed Area (minus the quarry) = 43.46 ac.
Existing impervious area = 34.72 ac.
- Existing roof impervious = 0.56 ac.
- Existing paved road/parking impervious = 3.86 ac.
- Existing compacted gravel =30.30 ac.

Existing vegetation within developed area = 8.74 ac.

Proposed Site:

The intent of this project is to construct a multi-building commercial/retail complex with associated parking, roadways, drainage, and infrastructure. Existing buildings and industrial activities will be removed and full stormwater treatment as required by Chapter 500 of the Stormwater Law will be constructed throughout the site. The existing quarry will be allowed to fill with water and will provide stormwater treatment and detention for the proposed commercial/retail site. Proposed area breakdown is as follows:

Proposed Development Area = 55.41 ac.
Proposed impervious area = 41.63 ac.
    Proposed roof area = 11.49 ac.
    Proposed road/parking area = 30.14 ac.
Proposed landscape area = 13.78 ac.

Urban Impaired Stream Standard:

Per Chapter 500, Section 4, E, (1) of the Stormwater Management Law, the proposed project must meet the urban impaired stream standard as the project is located in the direct watershed of an urban impaired stream and requires a Site Law permit.

Section 4, E, (2) indicates that the applicant must either pay a compensation fee or mitigate project impacts by reducing or eliminating an off-site or on-site predevelopment impervious stormwater source as described in 06-096 CMR 501.

Section 4, E, (3) provides an exception to meeting the urban impaired stream standards. That exception is as follows. *'Any portion of a project in which impervious area that pre-dates the Stormwater Management Law is replaced is not required to meet the urban impaired stream standard for that area provided the Department determines that the new use of the untreated area is not likely to increase stormwater impacts in the proposed project's stormwater runoff beyond the levels already present in the runoff in the accordance with Table 2 of this Chapter.*'

Per Section 4, E, (3) that portion of the existing site that is currently impervious (34.72 ac.) could be replaced with untreated impervious and would not be required to meet the Urban Impaired Stream Standard. The proposed project will treat 96.2% of the proposed impervious including the existing impervious to be replaced and therefore exceeds the requirement of Section 4, E, (3).

Per Section 4, E, (3) this project would be required to provide compensation for the new (not replaced) impervious which totals 6.91 acres. Per Section Chapter 501, Section 3, A, Table 1 the applicant would therefore be responsible for mitigation credits of 1.88 credits or $47,000. (see calculation below)

New non-roof impervious = 30.14 ac. (prop) - 34.72 ac. (ex) = -4.02 ac.
New roof impervious = 11.49 ac. (prop) - 0.56 ac. (ex) = 10.93 ac.
New impervious to be mitigation = 10.93 ac. - 4.02 ac. = 6.91 ac.

New landscape = 13.78 ac. (prop) - 8.74 ac. (ex.) = 5.04 ac.

Mitigation credits = (6.91 ac.) x (0.2 credits/ac.) + (5.04 ac.) x (0.1 credits/ac.) = 1.88 credits

Please note, it is our opinion that the above methodology for calculating the required Urban Impaired Stream mitigation credits is not the most accurate method for determining the required mitigation. As stated in Chapter 500, Section 4, E, (3) the existing impervious can be replaced with untreated impervious and the untreated impervious is not required to meet the Urban Impaired Stream standards. The existing impervious is proposed to be replaced with treated impervious and it is therefore the opinion of the applicant and Jones & Beach Engineers that the more accurate method for determining the required mitigation is by following Chapter 501, Section 3, A, subsections (1) & (3) as follows.

As stated previously, the existing impervious will be replaced with treated impervious and thus it is our opinion that a more accurate calculation of the Urban Impaired Stream mitigation credits would be derived from Chapter 501, Section 3, A.

Per Section 3, A, Table 1, the required mitigation credits for the proposed development are as follows:

Non-Roof impervious mitigation required = (30.14 ac.) x (0.5 credit/ac.) = 15.07 credits
Roof mitigation required = (11.49 ac.) x (0.2 credit/ac.) = 2.30 credits
Landscape mitigation required = (13.78 ac.) x (0.1 credit/ac). = 1.38 credits

Total proposed developments required = 18.75 credits required

As the proposed project is replacing untreated impervious with treated impervious meeting the general standards for required treatment sizing, Per Section 3, A, (3) the proposed project is allowed to earn mitigation credits for the areas of existing untreated impervious retrofitted with treated impervious. The mitigation credits are calculated based upon Section 3, A, (3) Table 2 as follows:

Roof or other imp. area mitigation credit = (34.72 ac.) x (0.6 credit/ac.) = 20.83 credits earned
Landscaping mitigation credit = (8.74 ac.) x (0.3 credit/ac.) = 2.62 credits earned

Total credits earned = 23.45 credits

Therefore, by retrofitting/replacing the existing untreated development areas within the proposed development site with treated areas meeting the general sizing requirements, the applicant earns more mitigation credits than is required by the proposed development.

It is the opinion of the applicant and Jones & Beach Engineers that the mitigation credits method for determining the Urban Impaired Stream requirement is the more accurate method for the following reasons:

1.) The existing site includes large areas of untreated impervious and landscape area that have the potential to be a large pollutant source in the watershed stormwater,
2.) The proposed site removes the existing pollutant sources,

3.) The proposed site provides treatment at the required levels for all areas of the development (96.2% of impervious and 92.5% of the overall development area).

Calculating the compensation fee by this mitigation credit method, which we believe is the better methodology under Chapter 500, the applicant pays no compensation fees.

Therefore, the proposed project meets the Urban Impaired Stream standard by removing the existing potential pollutant source and constructing new development areas meeting the stormwater treatment sizing requirements of Chapter 500.

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Barry W. Gier
Vice President

cc: Dirigo Center Developers, LLC
Jeff Dennis, Maine Department of Environmental Protection
Jennie Franceschi, City of Westbrook
Lauren Swett, PE, Woodward & Curran

JONES&BEACH
ENGINEERS INC.
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June 30, 2016

Portland Planning Board
Attn: Richard Knowland, Senior Planner
389 Congress St., Room 314
Portland, ME 04101

RE: Portland Planning Board Response Letter
80 Main Street & 11 Larrabee Road, Westbrook, ME
Tax Map 42B, Lots 9, 10, 11 & 14
JBE Project No. 14110

Dear Mr. Knowland:

On behalf of our client, J&J Gove Development, LLC, Jones & Beach Engineers, Inc., have received review comments from Mike Farmer, Project Engineer, and Lauren Swett, Development Review Engineer, dated May 17, 2016. Review comments are italicized and we offer the following responses in bold below:

Mike Farmer Comments:

1. *The site drains to Nason's Brook and the wetland complex at Pine Tree Industrial Parkway, both of which are DEP-list impaired waters. In addition, the area near the intersection of Brighton Ave and Riverside St drains to Capisic Brook, another impaired stream. Nason's Brook is subject to the Statewide Impervious Cover TMDL and is on the Impaired Streams Priority List in the Maine Nonpoint Source Management Program Plan 2015-2019 (September 15, 2014).*
   RESPONSE: No response necessary.

2. *The applicant's conceptual designs for post-construction stormwater management (i.e.: Under drained grassed swales, wet ponds, gravel wetlands and sand filters) appear to provide both water quantity and quality controls to help protect Nason's Brook. If the project is required to meet the Urban Impaired Stream Standard under the Chapter 500 stormwater regulations, the City of Portland has an approved Compensation Fee Utilization Plan and dedicated fund for Nason's Brook.*
   RESPONSE: Applicant is reviewing this item.

3. *A construction site erosion & sediment control plan will be an important part of protecting both impaired streams from the potential impacts of construction activity. Best Management Practices should be utilized to prevent construction vehicles from tracking sediment onto roadways which is a potential source of illicit discharges to the MS4 of either community.*

RESPONSE: Detailed Erosion Control plans have been included in the revised plan set.

4. *Regular inspection and maintenance of the stormwater management system is critical for protecting the health of Nason's Brook. A site-specific stormwater management system inspection and maintenance plan, as well as a legal maintenance agreement between the owner/operator and the City of Westbrook, is highly recommended.*
   RESPONSE: A Stormwater Operation & Maintenance has been provided.

5. *In order to protect the integrity of the existing stream channels and floodplains, and to allow for future adaptive management & mitigation under a watershed management plan, stream and wetland setbacks of at least 75' should be preserved. Experience in the Long Creek Watershed has shown that confinement and channelization of a brook can result in significant stream bank destabilization and channel erosion, which can cause property damage and make restoration of the brook more expensive and challenging for both the regulated communities and landowners in the watershed. Culverts or stream crossings should be designed to prevent impediments to stream flow or fish passage.*
   RESPONSE: A 100-foot pavement setback and 75-foot grading setback to Nason's Brook have been maintained to the extent practicable. Existing culvert crossing of Nason's Brook will be replaced with an open bottom culvert to prevent impediment to stream flow or fish passage.

6. *Given the growing regional concern about the impact of using chlorides for winter snow and ice management, has any consideration been given to the potential impacts of winter operations on the streams, wetlands and ground water? One of the few effective BMPs for preventing water quality impacts from chlorides is to minimize their use. See the Maine Environmental Best Management Practices (BMP) Manual for Snow and Ice Control: http://baswg.org/wp/wp-content/uploads/2015/11/Maine-Winter-Mainenance-BMP-Manual-Distributed-at-2015-Roundtable.pdf.*
   RESPONSE: Applicant will review the BMP Manual and incorporate appropriate measures.

7. *Designated snow storage areas should be established on the site with water quality protection in mind. Snow should not be stored in, or on, stormwater water treatment systems, brook channels or wetlands. This should have added benefits in the way of reducing maintenance requirements (e.g.: sediment & trash removal, plow damage, plant replacement, etc.) and prolonging the functional life span of the stormwater infrastructure.*
   RESPONSE: Snow storage has been located away from stormwater treatment features to the extent practicable.

8. *The proposed fueling station appears to be located next to a stormwater treatment unit. If this is the case, the fueling station should be designed to prevent spills from impacting the stormwater treatment system. A Spill Prevention, Control and Countermeasure.*
   RESPONSE: Proposed fueling station has been removed.

Lauren Swett Comments:

1. *As the project's extensive stormwater management system discharges to the City of Portland, we have performed a general review of the stormwater model to verify continuity and consistency*

throughout the model as it impacts the overall model outcome. In general, we are in agreement with the modeling approach. We have the following comments:

a. *The Applicant should clarify the source of the rainfall amounts that were utilized for the modeled storm events. The latest version of the Maine DEP Chapter 500 regulations, identify rainfall for Cumberland County SW with different values than those listed in the application. It is noted that the Applicant has utilized more conservative rainfall amounts than the Maine DEP for all storms except for the 100-year storm.*
RESPONSE: Rainfall events have been updated.

b. *The Applicant has noted that TR-55 methodology was utilized for time of concentration (TC) calculations. TR-55 typically considers a minimum TC of 6 minutes. One of the pre-development subcatchments has a TC of 0, and one pre-development and a number of post-development subcatchments have TC values less than 6 minutes. The applicant should clarify their TC calculation approach.*
RESPONSE: Minimum Tc of 5 minutes have been utilized in the revised model.

c. *The Applicant should evaluate the open channel stream reaches that have been included in the stormwater model. Many of these channels show very large and unrealistic for surrounding topography (i.e. greater than 30') average flow depths in both the existing and proposed condition.*
RESPONSE: Model has been updated as required.

d. *Two reaches located downstream of the quarry could not be found on the drainage plans. Please clarify where reaches 9 and 18 are located.*
RESPONSE: Reaches have been updated on sheet W1-1 as required.

e. *The model identifies that some existing and proposed pipe reaches will be full during the 25-year storm event. The Applicant should clarify that no capacity/flooding issues will result from these full pipes.*
RESPONSE: Pipe sizing has been revised to prevent flooding issues.

2. *The proposed project will result in approximately 10,293 square-feet of new impervious area in the City of Portland and is located within the watershed of an Urban Impaired Stream (Nason's Brook). As such, it would be required to demonstrate compliance with the Basic, General, Urban Impaired Stream, and Flooding Standards of the MaineDEP Chapter 500 Rules in accordance with Section 5 of the City of Portland Technical Manual. We understand that this Subdivision application is for only a portion of the overall project area, and the entire project is being reviewed for stormwater compliance by the City of Westbrook and the Maine DEP. We offer the following comments with regards to the portion of the project that is located in the City of Portland:*

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.*
RESPONSE: See Erosion Control Plans (EC-1 thru EC-6) for notes.

b. *General & Urban Impaired Stream Standards: The Applicant is required to provide stormwater treatment throughout the entire project area and is proposing an extensive network of bioretention cells, underdrained filters, and sand filters throughout the development site. The existing quarry pit will be utilized as a wet pond. This wet pond will provide treatment for the entire new impervious area added in the City of Portland.*
RESPONSE: No response necessary.

c. *Flooding Standard: The Applicant is required to provide flood control throughout the entire project area. Flood control will be provided by stormwater features throughout the site, primarily through the use of the existing quarry pit as a wet pond. Runoff from the portion of the project located in the City of Portland will be managed by the wet pond. The overall project will result in a reduction in peak discharge in all storm events based on the submitted model. The Applicant should consider the general stormwater modeling comments provided previously in this memo, and verify that any changes to the model do not change the flooding results.*
RESPONSE: Model has been updated as suggested.

3. *The pre-development and post-development HydroCAD model nodes for the quarry pond indicate a significant change in the water storage elevation. Based on a review of the model, it appears that pumping contained water in the existing condition at an elevation of -140, but in the proposed condition, groundwater will fill the pond to elevation +60 with stormwater storage above that elevation up to elevation +75. Has the hydrogeological impact of this change in water elevation on the surrounding area been evaluated?*
RESPONSE: The Quarry was used by Blue Rock and Pike Industries to harvest rock, as part of that operation the pit was constantly being dewatered through historic wash ponds. The water elevation is constantly rising since Pike Industries stopped dewatering. The water elevation will go back to its natural elevation within the next few years. This natural elevation will be where it historically started prior to pit excavations. The permanent pond elevation within the proposed quarry will be maintained at an elevation of 67.45. Elevation fluctuation during storm events, up to and including 100-year storm are anticipated at a maximum of 14.5". Therefore, no adverse effects of utilizing the quarry as a wet pond are anticipated.

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Barry W. Gier
Vice President

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603.772.4746 - JonesandBeach.com

September 12, 2016

Woodard & Curran
Attn. Lauren Swett, P.E.
41 Hutchins Drive
Portland, Maine 04102

RE: Response Letter – Stormwater Management Plan
80 Main Street & 11 Larrabee Road, Westbrook, ME
Tax Map 42B, Lots 9, 10, 11 & 14
JBE Project No. 14110

Dear Ms. Swett:

On behalf of our client, Dirigo Center Developers, LLC, Jones & Beach Engineers, Inc., has received review comments from you dated September 5, 2016. Review comments are italicized and we offer the following responses in bold below:

1. *The applicant has provided a cross section of the proposed paved recreation trail. It appears from the large-scale grading plan that the fencing will be installed in areas that have varying grade changes that may transition quickly from steep to shallow. It is noted that the Applicant should consider the constructability of the fencing in these conditions.*
   RESPONSE: The applicant has provided the proposed trail system design and details to Central Maine Power (CMP) for review. After consideration of potential safety issues involved with the trail and the location of the existing power lines and easements, CMP will not allow the proposed trail location and design. Therefore, the proposed trail around the existing quarry in Portland will be removed from future plan sets.
   Security fencing will be provided in the vicinity of the Building "A" parking lot and Building "G" parking lot limiting access to this area. CMP is sending us a letter confirming its denial of our trail proposal and we will provide the City with a copy when we receive it.

2. *Will any gate access be provided along the trail for future maintenance or for safety access? The Applicant should proved additional detail as applicable.*
   RESPONSE: See Response #1.

3. *Portions of the trail and fence are located within an existing Central Maine Power easement for transmission lines. The Applicant should confirm with CMP that pedestrian access will*

be acceptable in these areas. The Applicant should also clarify if additional fencing or other security measures will be required around the transmission lines, utility poles or the adjacent substation.
RESPONSE: See Response #1.

4. *The proposed project will result in approximately 10,293 square-feet of new impervious area in the City of Portland and is located within the watershed of an Urban Impaired Stream (Nason's Brook). As such, it would be required to demonstrate compliance with the Basic, General, Urban Impaired Stream and Flooding Standards of the Maine DEP Chapter 500 Rules in accordance with Section 5 of the City of Portland Technical Manual. We understand that this Subdivision Application is for only a portion of the overall project that is located in the City of Portland.*

    a) *Basic Standard: The applicant has provided plans, notes and details to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices within the development area in Westbrook. The plans should provide additional information on erosion and sedimentation control associated with the trail construction around the pond in Portland. The work will include excavation in areas of steep slopes that could be susceptible to erosion during and after construction. A plan showing erosion and sedimentation control features, or typical sections/details for the trail area should be provided.*
    RESPONSE: See Response #1.

    b) *General Standards: The applicant is required to provide stormwater treatment throughout the entire project area and is proposing an extensive network of bioretention cells, underdrained filters, and sand filters throughout the development site. The existing quarry pit will be utilized as a wet pond. This wet pond will provide treatment for the entire new impervious area added in the City of Portland.*
    RESPONSE: No response necessary.

    c) *Urban Impaired Stream Standards: As noted above, the Applicant is providing extensive stormwater treatment on the site. Due to the project's location within the watershed of the Urban Impaired Stream Nason's Brook, the project will be required to pay a compensation fee to the City of Portland, to contribute to the Compensation Fee Utilization Plan for urban impaired streams in the City.*
    RESPONSE: See Urban Impaired Stream Standard Letter addressed to DEP attached.

    d) *Flooding Standard: The Applicant is required to provide flood control throughout the entire project area. Flood control will be provided by stormwater features throughout the site, primarily through the use of the existing quarry pits as a wet pond. Runoff from the portion of the project located in the City of Portland will be managed by the wet pond. The overall project will result in a reduction in peak discharge in all storm events based on the submitted model. The Applicant has updated their model to address most of the previously expressed concerns. The*

model appears to be very complete and in working order, but we have the following final comments for the Applicant to consider:

- *Reach 16R appears to represent a small stream channel that accepts discharge from the culvert represented by reach 15R. The 16R average flow depth is unrealistically high (31.95' in the 25-year storm), and the stormwater model shows the lead-in culvert reach 15R to be full. This likely will have minimal impact on the overall model, but we recommend that the Applicant look at the model to ensure that there will not be flooding issues.*
  RESPONSE: This reach has been reviewed and revised as necessary. The modifications to the model result in no appreciable change in the hydrology for the site. See attached Pre-Development and Post-Development Summaries and updated Executive Summary.

- *Reaches 23R and 26R both indicate that pipes will be running full in at least the 25-year storm. As with the previous comment, this will not have an impact on the overall model, but we recommend that the Applicant look at the local flooding impact around these culverts.*
  RESPONSE: Both reaches listed are located off-site on private property and are not within the control of the proposed developer.

  Reach 23R is the interior drainage system located within the existing Travelodge property.

  Reach 26R is an existing culvert located under the existing railroad near Larabee Road. Proposed drainage improvements in this area should reduce potential flooding issues. These improvements include the construction of drainage systems upstream of this reach as well as construction of the ditch along Larabee Road.

5. *The Applicant has noted that a Stormwater Pollution Prevention Plan will be completed. A copy should be submitted prior to issuance of a building permit.*
   RESPONSE: A Stormwater Prevention Plan will be completed and submitted prior to issuance of building permit.

6. *The project will be required to comply with the post-construction stormwater management requirements as outlined in Chapter 32 of the City of Portland Code of Ordinances for all stormwater features located in the City of Portland.*
   RESPONSE: Applicant is aware of this issue.

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Barry W. Gier
Vice President

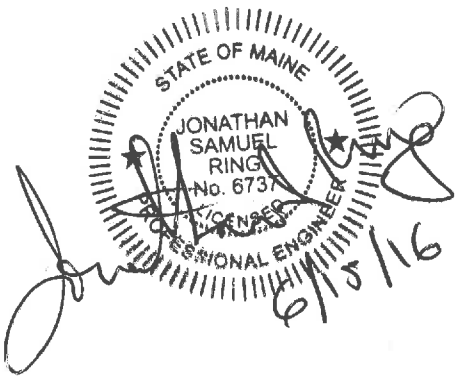
cc: Dirigo Center Developers, LLC
Barbara Barhydt, Portland Planning Department

STORMWATER MANAGEMENT OPERATION AND MAINTENANCE MANUAL

"Dirigo Plaza"
Tax Map 42B, Lots 9, 10, 11 & 14
58 & 80 Main Street
Westbrook, ME

Prepared for:

J&J Gove Development
7 Swain Drive
Hampton Falls, NH 03844



Prepared by:
Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
(603) 772-4746
February 11, 2016
JBE Project No. 14110

Inspection and Maintenance of Facilities and Property

A. Maintenance of Common Facilities or Property

1. The Property Owner (Owner) is responsible for maintenance of all stormwater infrastructure associated with this site. This includes all temporary and permanent stormwater and erosion control facilities both during and after construction.

B. General Inspection and Maintenance Requirements

1. The Owner shall perform all inspections and maintenance with greater than annual frequency as required by this report.

2. Regular maintenance of parking lots, roadways, and pedestrian areas.

3. Permanent stormwater and sediment and erosion control facilities to be maintained on the site include, but are not limited to, the following:

    a. Culverts
    b. Vegetation and landscaping
    c. Catch basins and drain manholes
    d. Riprap inlet and outlet protection aprons
    e. Underdrained Sand Filter
    f. Grassed Underdrained Soil Filter
    g. Gravel Wetlands
    h. Forebays

2. Regular maintenance of parking lots, roadways, and pedestrian areas:

   - Clear accumulations of winter sand in parking lots, along roadways, and in pedestrian areas at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.

3. Maintenance of permanent measures shall follow the following schedule:

   a. **Culverts: Inspection** of culvert inlets and outlets at least **once per month** during the rainy season (March to November). Any debris at the outlet, inlet, or within the conduit is to be removed and disposed of properly. Repair any erosion damage at the culvert's inlet and outlet.

   b. **Erosion: Annual inspection** of the site for erosion, destabilization, settling, and sloughing. Any needed repairs are to be conducted immediately.

   c. **Vegetation and Landscaping: Annual inspection** at a minimum of site's vegetation and landscaping. Inspection early in the growing season or after heavy rains to identify active or potential erosion problems is recommended. Any areas that are bare shall be reseeded and mulched with hay or, if the case is extreme, loamed and seeded or sodded to ensure adequate vegetative cover. Landscape specimens shall be replaced in kind, if they are found to be dead or dying.

   d. **Catch basins and Drain Manholes: Annual inspection** of catch basins and drain manholes to determine if they need to be cleaned. Catch basins are to be cleaned if the depth of deposits is greater than one-third the depth from the basin bottom to the invert of the lowest pipe or opening into or out of the basin. If a catch basin significantly exceeds the one-third depth standard during the inspection, then it should be cleaned more frequently. If woody debris or trash accumulates in a catch basin, then it should be cleaned on a weekly basis. Manholes should be cleaned of any material upon inspection. Catch basins and manholes can be cleaned either manually or by specially designed equipment including, but not limited to, bucket loaders and vacuum pumps. Before any materials can be disposed, it is necessary to perform a detailed chemical analysis to determine if the materials meet the EPA criteria for hazardous waste. This will help determine how the materials should be stored, treated, and disposed.

e. **Riprap**: Rock riprap should be **inspected annually** and after every major storm event in order to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock should be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state. Woody vegetation should not be allowed to become established in riprap areas, and/or any debris removed from the void spaces between the rocks. If the riprap is adjacent to a stream or other waterbody, the water should be kept clear of obstructions, debris, and sediment deposits.

f. **Underdrained Sand Filter**:
First Year Post-Construction: inspection frequency should be semi-annually and following every major storm in the first year following construction.

- Inspect after every major storm in the first few months to ensure proper function.
- Inspect to ensure system is draining with 24 to 36 hours after end of storm.
- Clean isolator rows as needed.

Post-Construction: inspection frequency should be at least every 6 months thereafter, as per USEPA good house-keeping requirements. Inspection frequency can be reduced to annual following 2 years of monitoring that indicates the rate of sediment accumulation is less than the cleaning criteria listed below. Inspections should focus on:

- Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion.
- Removal of debris and sediment accumulated in the isolator rows
- When the average depth of sediment throughout the isolator row exceeds 3 inches, clean-out must be performed.

Debris and sediment buildup within the isolator row fabric shall be removed as needed utilizing a Jet-Vac system.

g. **Grassed Underdrained Soil Filters**:
First Year Post-Construction: inspection frequency should be after every major storm in the first year following construction, with a minimum of every 6 months.
- Debris and sediment buildup shall be removed from the basin and any forebay areas.
- Mowing of a grassed basin can occur semi-annually to a height no less than 6 inches.

- any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched.
- Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.

Post-Construction: inspection frequency should be at least every 6 months to ensure that the basin is draining within 48 hours following a one inch storm or greater.

- Following a storm that fills teh system to overflow, it drains in no less than 36 to 60 hours.
- If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. The removed sediments should be disposed of in an acceptable manner.
- Sediment and plant debris should be removed from the pretreatment structure at least annually.
- If mowing is desired, only hand held string trimmer or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.
- Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.
- Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary. Add new mulch only as necessary for bioretention cell.

h. **Gravel Wetlands**:

First Year Post-Construction: inspection frequency should be after every major storm in the first year following construction, with a minimum of every 6 months.

- Inspect to be certain system drains within 24-72 hrs (within the design period, but also not so quickly as to minimize stormwater treatment).
- Watering plants as necessary during the first growing season.
- Re-vegetating poorly established areas as necessary.
- Treating diseased vegetation as necessary.
- Quarterly inspection of soil and repairing eroded areas, especially on slopes.
- Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion.

Post-Construction: inspection frequency should be at least every 6 months thereafter, as per USEPA good house-keeping requirements. Inspection frequency can be reduced to annual following 2 years of monitoring that indicates the rate of sediment accumulation is less than the cleaning criteria listed below. Inspections should focus on:

- Checking the filter surface for dense, complete, root mat establishment across the wetland surface. Thorough revegetation with grasses, forbs, and shrubs is necessary. Unlike bioretention, where mulch is commonly used, complete surface coverage with vegetation is needed.
- Checking the gravel wetland surface for standing water or other evidence of riser clogging, such as discolored or accumulated sediments.
- Checking the sedimentation chamber or forebay for sediment accumulation, trash, and debris.
- Inspect to be certain the sedimentation forebay drains within 24 to 72 hrs.
- Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion.
- Removal of decaying vegetation, litter, and debris.
- Mow grass areas periodically so that grass does not exceed 4" in height.

Cleaning Criteria for all Sedimentation Forebays: Sediment should be removed from the sedimentation chamber (forebay) when it accumulates to a depth of more than 12 inches (30 cm) or 10 percent of the pretreatment volume. The sedimentation forebay should be cleaned of vegetation if persistent standing water and wetland vegetation becomes dominant. The cleaning interval is once every year. A dry sedimentation forebay is the optimal condition while in practice this condition is rarely achieved. The sedimentation chamber, forebay, and treatment cell outlet devices should be cleaned when drawdown times exceed 60 to 72 hours. Materials can be removed with heavy construction equipment; however this equipment should not track on the wetland surface. Revegetation of disturbed areas as necessary. Removed sediments should be dewatered (if necessary) and disposed of in an acceptable manner.

Cleaning Criteria for Gravel Wetland Treatment Cells: Sediment should be removed from the gravel wetland surface when it accumulates to a depth of several inches (>10 cm) across the wetland surface. Materials should be removed with rakes rather than heavy construction equipment to avoid compaction of the gravel wetland surface. Heavy equipment could be used if the system is designed with dimensions that allow equipment to be located outside the gravel wetland, while a backhoe shovel reaches inside the gravel wetland to remove sediment. Removed sediments should be dewatered (if necessary) and disposed of in an acceptable manner.

Draining and Flushing Gravel Wetland Treatment Cells: For maintenance it may be necessary to drain or flush the treatment cells. The optional drains will permit simpler maintenance of the system if needed. The drains need to be closed during standard operation. Flushing of the risers and horizontal subdrains is most effective with the entire system drained. Flushed water and sediment should be collected and properly disposed.

See attached sample forms as a guideline.

Any inquiries in regards to the design, function, and/or maintenance of any one of the above mentioned facilities or tasks shall be directed to the project engineer:

Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885

T#: (603) 772-4746
F#: (603) 772-0227

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION PERIOD AND CRITERIA

Tax Map 42B, Lots 9, 10, 11, & 14
58 & 80 Main Street
Westbrook, ME 04092

Stormwater Component	Inspection Period	Inspection Criteria/Methods
Culverts	Once per month	Inspect inlet/outlet. Remove debris.
Erosion	Annually	Repair site erosion.
Vegetation	Annually	Repair bare unvegetated areas.
Catch Basins and Drain Manholes	Annually (or more as required)	Remove trash and debris. Inspect for sediment. Remove if sediment greater than 1/3 sump depth.
Riprap	Annually	Relocate displaced rocks, remove woody vegetation and debris
Underdrained Sand Filters	1st year; every storm event/6 months After 2nd year; bi-annually	Inspect for sediment/debris collection, inspect inlets/outlets, inspection for erosion, see item e. Inspect to ensure underdrained sand filter is draining within 24 to 36 hours after a storm event.
Grassed Underdrained Soil Filters	1st year; every storm event/6 months After 2nd year; bi-annually	Inspect for standing water, sediment/debris collection, see item g.
Gravel Wetland	1st year; every storm event/6 months 2nd year; bi-annually 3rd year; annually if meets criteria	Inspect for vegetation, standing water, sediment/debris collection, see item h.

STORM WATER OPERATIONS AND MAINTENANCE PLAN
INSPECTION REPORT

Tax Map 42B, Lots 9, 10, 11, & 14
58 & 80 Main Street
Westbrook, ME 04092

Yearly Inspection Form			
Inspected Component	**Date of Inspection**	**Inspector**	**Issue Detected / Action Taken**
Culverts			
Erosion			
Vegetation			
Catch Basins and Drain Manholes			
Riprap			
Underdrained Soil Filter			
Grassed Underdrained Soil Filters			
Gravel Wetland			

Section 7 - Construction Management Plan

As part of the North Campus Westbrook Development the site contractor will be constructing the proposed recreational trail in Portland. During construction of the recreational trail the site contractor will follow all applicable local and state construction standards and ensure steps are taken to control any potential erosion or sedimentation.

Section 8 - Traffic Study & Transportation Plans

A traffic study and associated reports have been compiled by Vanasse & Associates and provided to the City of Portland for review.

Section 9 - Significant Natural Features

There are no significant natural features present in the project area confirmed by the State of Maine - Department of Agriculture, Conservation & Forestry - Maine Natural Areas Program.

Attachment: Natural Resource Review Letter - Maine Natural Areas Program

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
93 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0093

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

June 1, 2015

VIA ELECTRONIC MAIL

Brendan Quigley
Gove Environmental Services, Inc.
8 Continental Dr, Building 2, Unit H
Exeter, NH 03833

Re: Rare and exemplary botanical features in proximity to: Commercial Redevelopment, Former PIKE Quarry, Westbrook, Maine

Dear Mr. Quigley:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received May 29, 2015 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in Westbrook, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Don Cameron
Ecologist
Maine Natural Areas Program
207-287-8041
don.s.cameron@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: Commercial Development, Former PIKE Quarry, Westbrook, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	T	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry barrens (partly forested, upland)
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
	T	S2	G5	2011-08-15	17	Tidal wetland (non-forested, wetland)
Beach Plum						
	E	S1	G4	1933-05-19	10	Rocky coastal (non-forested, upland)
Bottlebrush Grass						
	SC	S3	G5	1905-09-13	10	Hardwood to mixed forest (forest, upland)
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
Creeping Spike-moss						
	E	S2	G5	1924-08-21	8	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Dioecious Sedge						
	SC	S3	G4	1936-07-14	7	Non-tidal rivershore (non-forested, seasonally wet),Open wetland, not coastal nor rivershore (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Engelmann's Spikerush						
	PE	SH	G4G5Q	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)

Rare and Exemplary Botanical Features within 4 miles of Project: Commercial Development, Former PIKE Quarry, Westbrook, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)
Hollow Joe-pye Weed						
	SC	S2	G5?	2014-06-18	24	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
	SC	S2	G5?	2007-10-22	18	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
	SC	S2	G5	1972-06-13	3	Tidal wetland (non-forested, wetland)
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)
Missouri Rockcress						
	T	S1	G5?Q	1905-06-11	5	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Parker's Pipewort						
	SC	S3	G3	1924-08-20	8	Tidal wetland (non-forested, wetland)
Pitch Pine Woodland						
	<null>	S3	G2	2005-12-08	28	Rocky summits and outcrops (non-forested, upland)
Small Reed-grass						
	SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)
Tidal Marsh Estuary Ecosystem						
	<null>	S3	GNR	2011-08-25	8	Tidal wetland (non-forested, wetland)
Variable Sedge						
	E	S1	G3	1911	8	Dry barrens (partly forested, upland),Hardwood to mixed forest

Rare and Exemplary Botanical Features within 4 miles of
Project: Commercial Development, Former PIKE Quarry, Westbrook, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
	E	S1	G3	1911-06-29	9	(forest, upland) Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Vasey's Pondweed						
	SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)
Water-plantain Spearwort						
	PE	SH	G4	1862-08	3	Open water (non-forested, wetland)
Wild Garlic						
	SC	S2	G5	1918-07-16	6	Forested wetland,Hardwood to mixed forest (forest, upland)

STATE RARITY RANKS

S1	Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2	Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3	Rare in Maine (20-100 occurrences).
S4	Apparently secure in Maine.
S5	Demonstrably secure in Maine.
SU	Under consideration for assigning rarity status; more information needed on threats or distribution.
SNR	Not yet ranked.
SNA	Rank not applicable.
S#?	Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1	Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
G2	Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
G3	Globally rare (20-100 occurrences).
G4	Apparently secure globally.
G5	Demonstrably secure globally.
GNR	Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E	ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
T	THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC	SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
PE	Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

Section 16 - Abutters

Attachment: Abutters List

ABUTTERS LIST (500 FT)
MAIN STREET
WESTBROOK, ME
JBE PROJECT No. 14110
October 29, 2014
Revised January 4, 2016
Revised January 27, 2016
Revised February 15, 2016
Revised March 2, 2016

OWNER OF RECORD/SUBJECT PARCEL:

WESTBROOK TAX MAP 42B LOTS 10, 11 (58 MAIN ST) & 14 (LARRABEE RD)
PIKE INDUSTRIES INC.
3 EASTGATE PARK ROAD
BELMONT, NH 03220
BK 23578/PG 296 (LOT 10& 11)
BK 29536/PG 273 (LOT 14)

PORTLAND TAX MAP 264 LOTS A002001 (1190 BRIGHTON AVE) & A004001 (1176 BRIGHTON AVE)
PORTLAND TAX MAP 265 LOT A003
PIKE INDUSTRIES INC.
95 WARREN AVENUE
FAIRFIELD, ME 04937
BK 23504/PG 113

TAX MAP 42B/LOT 9 (80 MAIN ST)
LL LATHROP INC.
10 MOULTON STREET, SUITE 4
PORTLAND, ME 04101
BK 21632/PG 224

WESTBROOK ABUTTERS:

TAX MAP 9(1) LOT 5 (STROUDWATER ST)
PORTLAND WATER DISTRICT
PO BOX 3553
PORTLAND, ME 04104-3553

TAX MAP 9(1) LOT 6
LLEWELLYN A. RANDALL, JR
681 STROUDWATER STREET
WESTBROOK, ME 04092
BK 31997/PG 76

TAX MAP 9(1) LOT 8B (STROUDWATER ST)
MAINE TURNPIKE AUTHORITY
430 RIVERSIDE STREET
PORTLAND, ME 04103
BK 16036/PG 331

TAX MAP 42A LOT 7 (95 MAIN ST)
MCDONALD'S REAL ESTATE COMPANY
PO BOX 182571
COLUMBUS, OH 43218-2571
BK 24263/PG 155

TAX MAP 42A LOT 8 (91 MAIN ST)
WALLACE E. CAMP, SR., TRUSTEE
CAMP SIBLING TRUST
PO BOX 109
WESTBROOK, ME 04098
BK 30134/PG 136

TAX MAP 42A LOT 10 (MAIN ST)
PORTLAND ASSOCIATES, LLC
C/O WS ASSET MANAGEMENT INC.
33 BOYLSTON STREET, SUITE 3000
CHESTNUT HILL, MA 02467
BK 25490/PG 39

TAX MAP 42A LOT 13 (140 LARRABEE RD)
KENNERSON REALTY ASSOCIATION, LLC
655 ROOSEVELT TRAIL
WINDHAM, ME 04062
BK 12490/PG 139

TAX MAP 42B LOT 5 (120 MAIN ST)
SAMYCADAM CO. LLC
2602 59TH STREET S.
GULFPORT, FL 33707
BK 15390/PG 57

TAX MAP 42B LOT 6 (100 LARRABEE RD)
WE 100 LARRABEE ROAD LLC
C/O WINSTANLEY ENTERPRISES LLC
150 BAKER AVENUE EXT., SUITE 303
CONCORD, MA 01742
BK 26693/PG 280

TAX MAP 42B LOT 7 (95 LARRABEE RD)
MIDAS PROPERTIES, INC.
C/O MARVIN F. POER & COMPANY
PO BOX 52427
ATLANTA, GA 30355
BK 8662/PG 169

TAX MAP 42B LOT 8 (91 LARRABEE RD)
SHOEMAKER LLC
C/O CHARLOTTE SHOEMAKER
5100 SW 111 LANE ROAD
OCALA, FL 34473
BK 20854/PG 0074

TAX MAP 42B LOT 12 (10 TERMINAL ST)
BRENDA L. THORNTON TRUSTEE
JOSEPH H. CYR
683 MAIN ROAD
MILFORD, ME 04461
BK 30281/PG 237

TAX MAP 42B LOT 12B (50 LARRABEE RD)
DAVID B. MOORE REVOC. TRUST
DAVID B. MOORE, TRUSTEE
C/O HARCROS CHEMICAL INC.
5200 SPEAKER ROAD
KANSAS CITY, KS 66106
BK 20960/PG 218

TAX MAP 42B LOT 15 (MAINE CENTRAL RAILROAD)
PORTLAND TERMINAL COMPANY
GUILFORD TRANSPORTATION
IRON HORSE PARK
NORTH BILLERICA, MA 01862-1681
BK 2590/PG 301

TAX MAP 42B LOTS 101 (2 SAUNDERS WAY) & 113 (1 SAUNDERS WAY)
WWS PROPERTIES LLC
C/O BILL DODGE AUTO GROUP INC.
PO BOX 9567
WESTBROOK, ME 04098-5067
BK 30156/PG 199 (LOT 101)
BK 30156/PG 197 (LOT 113)

PORTLAND ABUTTERS:

TAX MAP 243 LOT B001001 (1819 WESTBROOK STREET)
TAX MAP 253 LOT A001 (1819 WESTBROOK STREET)
TAX MAP 254 LOT X001 (0 PINE TREE INDUSTRIAL PARKWAY) (1000 FT)
TAX MAP 269 LOT B001001 (1125 BRIGHTON AVENUE)
CITY OF PORTLAND
389 CONGRESS STREET
PORTLAND, ME 04101

TAX MAP 253 LOT A004 (111 PINE TREE INDUSTRIAL PARKWAY)
MEGCO REALTY II LLC
75 PINE TREE INDUSTRIAL PARKWAY
PORTLAND, ME 04102
BK 14185/PG 146

TAX MAP 264 LOT A001 (1150 BRIGHTON AVENUE)
TAX MAP 265 LOT B002
SAI PRASAD LLC
1150 BRIGHTON AVENUE
PORTLAND, ME 04102
BK 29899/PG 331

TAX MAP 262 LOT A001 (7 RAND ROAD) (1000 FT)
TAX MAP 264 LOT A005 (0 BRIGHTON AVENUE)
TAX MAP 264 LOT B001 (7 RAND ROAD) (1000 FT)
RAND ROAD HOLDINGS LLC
7 RAND ROAD
PORTLAND, ME 04104
BK 31342/PG 191

TAX MAP 265 LOT A001 (1210 BRIGHTON AVENUE)
TAX MAP 265 LOT A008 (1200 BRIGHTON AVENUE)
TAX MAP 265 LOT A009 (1220 BRIGHTON AVENUE)
PORTLAND HOTELS REALTY INC.
1200 BRIGHTON AVENUE
PORTLAND, ME 04102
BK 20821/PG316 (LOT A001) (LOT A009)
BK 26152/PG 307 (LOT A008)

TAX MAP 265 LOT A007 (1188 BRIGHTON AVENUE)
ANTHONY P. DEPALMER ET. AL.
103 GORE ROAD
RAYMOND, ME 04071
BK 32307/PG 021

TAX MAP 265 LOT B004 (1140 BRIGHTON AVENUE)
1140 BRIGHTON AVENUE ASSOCIATES INC.
1140 BRIGHTON AVENUE
PORTLAND, ME 04102
BK 17988/PG 304

TAX MAP 265 LOT B005
PORTLAND INN INC.
1150 BRIGHTON AVENUE
PORTLAND, ME 04102

TAX MAP 266 LOT A001 (1 RIVERSIDE STREET)
G6 HOSPITALITY PROPERTY LLC
PO BOX 117508
CARROLLTON, TX 75011
BK 30055/PG 225

TAX MAP 266 LOT C002 (6 RIVERSIDE STREET)
TAX MAP 266 LOT C004 (18 RIVERSIDE STREET)
TAX MAP 266 LOT C010 (24 RIVERSIDE STREET)
CENTRAL MAINE POWER CO.
LOCAL TAX
70 FARM VIEW DRIVE
NEW GLOUCESTER, ME 04260

SPINNAKER TRUST
ATTN: CHRIS O'NEIL
PO BOX 7160
PORTLAND, ME 04112

MAINE DEPT. OF TRANSPORTATION
REGION 1
51 PLEASANT HILL ROAD
SCARBOROUGH, ME 04070-0358

MAINE DEPT. OF TRANSPORTATION
REGION 3
PO BOX 817
ROUTE 2
DIXFIELD, ME 04224

ADDITIONAL ABUTTERS 1000 FT.

TAX MAP 253 LOT A002 (0 PINE TREE INDUSTRIAL PARKWAY)
TAX MAP 254 LOT A006 (0 PINE TREE INDUSTRIAL PARKWAY)
ALCO PARTNERS
75 PINE TREE INDUSTRIAL PARKWAY
PORTLAND, ME 04102
BK 11925 PG 316

TAX MAP 253 LOT A005 (131 PINE TREE INDUSTRIAL PARKWAY)
TAX MAP 254 LOT A004 (131 PINE TREE INDUSTRIAL PARKWAY)
RYDER TRUCK RENTAL INC.
#0680
PO BOX 025719
MIAMI, FL 33102
BK 9233 PG 310

TAX MAP 254 LOT A003 (106 PINE TREE INDUSTRIAL PARKWAY)
JLTS VIII LLC
73 INDUSTRIAL PARK ROAD
SACO, ME 04072
BK 26448 PG 071

TAX MAP 254 LOT A009
122 PTIP LLC
PO BOX 4894
PORTLAND, ME 04112
BK 24528 PG 078

APPLICANT:

J & J GOVE DEVELOPMENT
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

SURVEYORS/ENGINEERS:

JONES & BEACH ENGINEERS, INC.
ATTN. WAYNE MORRILL
PO BOX 219
STRATHAM, NH 03885

Applicant:	J & J Gove Development, LLC 7 Swain Drive Hampton Falls, NH 03844
Project Location:	Main Street / Larrabee Road / Westbrook Arterial, Westbrook, ME Westbrook Tax Map #32 Lot(s) #46-47
Project:	Commercial Shopping Center
Identification #:	Reg. 01-00185-A-N
Permit Category:	200 Plus PCE
Traffic Engineer:	Vanasse & Associates, Inc. Attn: Jeffery S. Dirk, PE 35 New England Business Center Drive, Suite 140 Andover, MA 01810-1071

Pursuant to the provision of 23 M.R.S.A. § 704-A and Chapter 305 of the MaineDOT's Regulations, the Maine Department of Transportation has considered the application of J & J Gove Development, LLC with supportive data, agency review and other related materials on file.

PROJECT DESCRIPTION

The project consists of 550,000 SF of mixed-use retail development. Access to the site is via four full movement entrances, one signalized entrance on Main Street, one signalized entrance on Larrabee Road, one stop-controlled entrance on Larrabee Road and one signalized entrance on the Westbrook Arterial. The project is estimated to generate xxx trip ends during a typical Saturday peak hour and xxx trips during a typical PM peak hour.

Findings

Based on a review of the files and related information, MaineDOT approves the Traffic Movement Permit Application of J & J Gove Development, LLC subject to the following conditions:

MITIGATION

The mitigation is intended to describe that conceptually shown on the following plans provided by Vanasse & Associates, Inc. and Jones & Beach Engineers, Inc.:

1. "Conceptual Improvement Plan Riverside Street Corridor" Last Rev 6-10-16
2. "Brighton Avenue Corridor Conceptual Improvement Plan" Last Rev 6-10-16
3. "Conceptual Improvement Plan Riverside Street At Larrabee Road and I-95 Exit 48 Ramps" Last Rev 6-10-16
4. "Rand Road At I-95 Exit 47 Ramps Conceptual Improvement Plan" Last Rev 6-10-16
5. "Figure 14 Conceptual Improvement Plan" Sheets 1 thru 5, Last Rev 6-3-16
6. "Stroudwater Street At Forest Street Conceptual Improvement Plan" Last Rev 6-3-16
7. "Cumberland Street At Bridge Street Conceptual Improvement Plan" Last Rev 6-3-16

If the descriptions contained herein conflict with the plans, these descriptions shall take precedence over the plans. Not all of the mitigation discussed herein maybe shown on those or any plan. The following mitigation shall be constructed or implemented to MaineDOT's satisfaction prior to the opening of the facility, unless otherwise approved by MaineDOT.

On-Site Mitigation

Site Entrance / Main Street (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings. All markings shall be supplied, installed/painted and maintained yearly.

Modify raised median to accommodate dedicated left-turn pocket on Main Street to the site entrance with appropriate storage lengths and tapers.

~~Widen Main Street to accommodate five-foot bicycle lanes for both directions of travel.~~

Reconstruct sidewalks to meet ADA requirements.

Install new fully actuated traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Main and Larrabee Rd.

Site Entrance / Larrabee @ Terminal Street (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

Construct a dedicated left-turn pocket into site entrance with appropriate storage lengths and tapers.

Widen Larrabee Road to provide five-foot bicycle lanes for both directions of travel.

Provide six-foot sidewalks along both sides of Larrabee Road.

Install new fully actuated traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. The traffic signal shall be set to flash until MUTCD traffic signal warrants are met. Install a hardwire interconnect to the signal at Main and Larrabee Rd.

Site Entrance / Larrabee @ Saunders Way (Unsignalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have a STOP bar and all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

~~Widen Larrabee Road to provide five-foot bicycle lanes for both directions of travel.~~

Site Entrance / Westbrook Arterial (Signalized)

The site entrance shall consist of one ingress lane and two egress lanes. The entrance shall have all appropriate lane, center line, and directional pavement markings and shall be supplied, installed/painted and maintained yearly.

Construct a dedicated left-turn pocket into site entrance with appropriate storage lengths and tapers.

Install new traffic signal and design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Westbrook Arterial and Larrabee Rd.

General Requirements For All Entrances

A. The entrances shall provide overhead illumination, if not existing, to illuminate the intersections per MaineDOT standards at a minimum. Overhead lighting shall have an average of 0.6 to 1.0 foot candles, with the maximum to minimum lighting ratio of not more than 10:1 and an average to minimum light level of not more than 4:1.

Off-Site Mitigation

Optimize traffic signal timings in the coordinated system on Riverside St / Main St / Brighton Ave.

Riverside Street

~~Provide five-foot bicycle lanes and six-foot sidewalks between the intersections of Larrabee Road and Main Street.~~[ST1]

Intersection of Riverside St / Larrabee Rd (Exit 48)

Construct a second dedicated left-turn lane on the Riverside southbound approach to Exit 48. Restripe the southbound approach to include two dedicated left-turn lanes, a dedicated thru lane and a share thru-right lane. Lane widths shall be a minimum of 11 feet.

Install appropriate overhead lane-usage signs for the Riverside southbound approach.

Construct a second left-turn lane on Larrabee.

Remove channelizing island for the right-turn movements from the Riverside Street northbound approach and the I-95 exit ramp. Construct a right turn lane with appropriate length and Taper

Install sidewalks along both sides of Riverside Street. From where to where.

~~Install bicycle lanes on Riverside Street south of the Exit 48 intersection.~~ Install by widening?

Reconstruct the traffic signal system to accommodate the new geometry and interconnect to the toll plaza. Provide overlap phasing when possible.

Design and implement an optimal traffic signal timing, phasing and coordination plan. Install a hardwire interconnect to the signal at Main and Larrabee Rd.

Intersection of Riverside St / Forest Ave

Construct a second dedicated left-turn lane on the eastbound approach.[ST2]

Design and implement an optimal traffic signal timing, phasing and coordination plan.

~~Intersection of Riverside St / Warren Ave~~

~~Construct a second left-turn lane on the westbound approach.~~

~~Construct a dedicated right-turn lane on the eastbound approach.~~[ST3]

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Intersection of Riverside St / Home Depot

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

Intersection of Riverside St / Brighton Ave / Main St

Design and implement an optimal traffic signal timing, phasing and coordination plan. Ensure there is a hardwire interconnect between adjacent intersections.

~~Main Street~~

~~Widen Main Street to provide five-foot bike lanes between the intersection with Larrabee Road and the Riverside Avenue.~~

Intersection of Main St / Larrabee Rd

Removed existing raised triangular islands from Larrabee approaches to Main Street. Construct dedicated right-turn pockets on the Larrabee approaches to Main Street with appropriate storage lengths and tapers.

~~Widen Main Street approaches to accommodate five-foot bicycle lanes.~~

Provide ADA improvements to the sidewalks and signal equipment.

Upgrade traffic signal equipment, design and implement an optimal traffic signal timing, phasing and coordination plan.

Westbrook Arterial

Intersection of Rand Rd / Westbrook Arterial (Exit 47)

Widen I-95 ramp to provide a second left-turn lane to the Westbrook Arterial.

Install raised medians along Rand Road approaching the intersection.

Upgrade traffic signal equipment, design and implement an optimal traffic signal timing, phasing and coordination plan.

~~**Larrabee Road**~~

~~Construct six-foot sidewalks and five-foot bike lanes between the intersection with Main Street and the Terminal Street entrance~~.

Stroudwater Street

Intersection of Stroudwater Street and Forest Street

Construct a dedicated left-turn pocket on Stroudwater Street to Forest Street with appropriate storage lengths and tapers.[ST4]

~~**Cumberland Street**~~

~~Intersection of Cumberland Street and Bridge Street~~

~~Construct a right-turn pocket on the Cumberland Street westbound approach to Bridge Street with appropriate storage lengths and tapers.~~[ST5]

Overall Requirements

A. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to MaineDOT and/or National standards.

B. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall meet MRSA Title 23, Chapter 21, Section 1914: "On-Premise Signs".

C. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from MaineDOT a decision of what impacts those changes will have on the permit. The applicant will then be required to submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.

By:

_____
Stephen Landry, P.E.
State Traffic Engineer

Date: _____

TRAFFIC IMPACT STUDY EXECUTIVE SUMMARY

DIRIGO PLAZA MIXED-USE COMMERCIAL DEVELOPMENT
WESTBROOK ARTERIAL, LARRABEE ROAD AND MAIN STREET
WESTBROOK, MAINE

Prepared for:

J & J GOVE DEVELOPMENT, LLC
Hampton Falls, New Hampshire

February 2016
Amended May 2016

Prepared by:

VANASSE & ASSOCIATES, INC.
35 New England Business Center Drive
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Andover, MA 01810
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EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Traffic Impact Study (TIS) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a mixed-use commercial development to be known as Dirigo Plaza and located on an assemblage of parcels bounded by Main Street (Route 25B), Westbrook Arterial, and Larrabee Road, in Westbrook, Maine (hereafter referred to as the "Project"). This assessment has been amended to incorporate specific comments received from the City of Westbrook and their independent review consultant, as well as subsequent consultation and meetings with the Maine Department of Transportation (MDOT), the Maine Turnpike Authority (MTA), the City of Portland and the Portland Area Comprehensive Transportation System (PACTS). Specifically, this amended assessment includes an expanded study area; updated traffic counts and safety analyses; revised trip-distribution pattern and trip assignments using the PACTS traffic model; and an expanded transportation improvement program.

This assessment was prepared in consultation with MDOT, the MTA, the Cities of Westbrook and Portland, and PACTS; was performed in accordance with the scoping determination issued by MDOT for the Project and Section 7, Traffic Study Requirements, of MDOT's *Traffic Movement Permit* guidelines, and as amended thereafter based on comments received during the Project review process; and was conducted pursuant to the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports. Based on this amended assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)[1] and applying appropriate adjustments to account for pass-by trips, the Project is predicted to generate approximately 13,366 new vehicle trips on an average weekday and 18,890 new vehicle trips on a Saturday (two-way volume over the operational day of the Project), with 351 new vehicle trips expected during the weekday morning peak-hour, 1,217 new vehicle trips expected during the weekday evening peak-hour and 1,853 new vehicle trips expected during the Saturday midday peak-hour;

2. The Project will not have a significant impact (increase) on motorist delays or vehicle queuing over anticipated future conditions without the Project (No-Build conditions) at the majority of the study intersections;

[1] *Trip Generation*, 9th Edition; Institute of Transportation Engineers; Washington, DC; 2012.

3. At those locations where the Project was shown to have a pronounced impact or where a capacity or safety deficiency was identified, specific improvement measures have been identified to reconcile these conditions or to advance design plans for a future improvement project by others; and

4. Lines of sight to and from the Project site driveway intersections with Main Street, Westbrook Arterial and Larrabee Road were found to exceed the required minimum distance for the intersections to function in a safe and efficient manner based on the appropriate approach speed along the intersecting roadway.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

RECOMMENDATIONS

A detailed and expanded transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

Project Access

Access to the Project site is proposed as follows: two (2) driveways that will intersect Larrabee Road and will align with Terminal Street and Saunders Way, respectively, with the northernmost driveway (opposite Terminal Street) to be placed under traffic signal control (flashing operation until full activation is warranted); an existing driveway that serves the Project site that intersects Main Street opposite the driveway to the Westbrook Crossing shopping center that will be placed under traffic signal control; a right-turn, entrance only driveway that will intersect Main Street approximately 100 feet east of Larrabee Road; and a full access driveway that will intersect Westbrook Arterial approximately 550 feet east of Larrabee Road that will be placed under traffic signal control. As discussed with MDOT, it is proposed that the rights to construct a third full access driveway on Larrabee Road (to be located between the Westbrook Arterial and the railroad tracks) be transferred to Westbrook Arterial in order to allow for the construction of the full access driveway on Westbrook Arterial. The following recommendations are offered with respect to the design and operation of the Project site driveways:

- The Project site driveway intersections with Main Street (full access driveway to be located opposite the driveway to Westbrook Crossing) and Westbrook Arterial should be placed under traffic signal control. The proposed traffic signals should be interconnected and coordinated with the adjacent traffic signals on Main Street and Westbrook Arterial.
- The Main Street approach to the full access Project site driveway should provide a westbound left-turn, while maintaining the eastbound left-turn lane to the Westbrook Crossing shopping center and two (2) through travel lanes in both directions.
- The Westbrook Arterial approaches to the Project site driveway should provide a right-turn lane and two (2) through travel lanes on the westbound approach, and a left-turn lane and two (2) through travel lanes on the eastbound approach.

- The signalized Project site driveways should accommodate two (2) 11 to 12-foot wide exiting travel lanes and a single 14-foot wide (minimum) entering lane separated by a double-yellow centerline or a raised median a minimum of 6-feet in width.
- The north Project site driveway on Larrabee Road (opposite Terminal Street) should be placed under traffic signal control and operated in flashing mode (flashing yellow for Larrabee Road and flashing red for Terminal Street and the Project site driveway) until such time as the required warrants to justify full activation of the traffic control signal are met (see *Traffic Monitoring Program*). Larrabee Road approaching the intersection should be widened to provide a left-turn lane in both the north and southbound directions, with the Project site driveway providing two (2) 11 to 12-foot wide exiting travel lanes and a single 14-foot wide (minimum) entering lane separated by a double-yellow centerline or raised median a minimum of 6-feet in width. Vehicles exiting the Project site driveway and Terminal Street should be placed under STOP-sign control with a marked STOP-line provided until full activation of the traffic control signal.
- The south Project site driveway on Larrabee Road (opposite Saunders Way) should provide two (2) 11 to 12-foot wide exiting travel lanes and a single 14-foot wide (minimum) entering lane separated by a double-yellow centerline or raised median a minimum of 6-feet in width, with vehicles exiting the driveway placed under STOP-sign control with a marked STOP-line provided. In addition, Larrabee Road approaching the intersection should be widened to provide a left-turn lane in both the north and southbound directions.
- All signs and pavement markings to be installed within the Project site shall conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).[2]
- Sidewalks should be provided within the Project site linking the proposed buildings to the sidewalk infrastructure along Main Street.
- Wheelchair ramps should be provided for crossing the Project site driveways where a sidewalk is present and at locations internal to the Project site where pedestrian crossings are proposed.
- Signs and landscaping to be installed internal to the Project site and at the Project site driveway intersections should be designed and maintained so as not to restrict lines of sight.
- Snow windrows along the Project site frontage within the sight triangle areas of the Project site driveways shall be promptly removed where such accumulations would exceed 2.5 feet in height.

Off-Site

The following off-site improvements are proposed to off-set the impact of the Project and improve traffic operations, and will be implemented by the Project proponent prior to the issuance of a Certificate of Occupancy for the Project and subject to receipt of all necessary rights, permits and approvals:

[2] *Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.

Westbrook:

- ***William Clarke Drive Traffic Signal System*** – Design and implement an optimal traffic signal timing, phasing and coordination plan, to include the following intersections:

    1. William Clarke Drive at Mechanic Street
    2. William Clarke Drive at Spring Street
    3. William Clark Drive at Stroudwater Street
    4. William Clarke Drive at Hannaford Drive
    5. William Clarke Drive at Main Street Connector

    The improvements will include the installation of all necessary hardware and appurtenances required to provide a fully functioning, coordinated traffic signal system inclusive of the above intersections.

- ***William Clarke Drive at New Gorham Road and Main Street, and William Clarke Drive at Saco Street*** - Design and implement an optimal traffic signal timing and phasing plan, to include the installation of all necessary hardware and appurtenances to implement the changes. The traffic signal system at these two (2) separate intersections currently operates from a common traffic signal controller. To the extent desired by the City, the traffic signal systems at these intersections will be modified to operate from separate traffic signal controllers, and will be interconnected and coordinated.

- ***Cumberland Street at Bridge Street*** – Design and implement an optimal traffic signal timing and phasing plan, to include the installation of all necessary hardware and appurtenances to implement the changes.

- ***Main Street at Forest Street*** – Convert the Main Street westbound right-turn lane to a through/right-turn lane and design and implement an optimal traffic signal timing and phasing plan, to include the installation of all necessary hardware and appurtenances to implement the changes.

- ***Main Street at Larrabee Road*** – Remove the raised triangular islands on the Larrabee Road approaches to eliminate the right-turn slip-ramps; install crosswalks, wheelchair ramps and pedestrian traffic signal equipment (push buttons, signal indications and phasing); reconstruct/upgrade/replace traffic signal equipment as necessary to accommodate the intersection improvements; and interconnect and coordinate with adjacent traffic signals at the Project site driveway/Westbrook Crossing shopping center and Brighton Avenue/Riverside Street intersections.

- ***Westbrook Arterial at Larrabee Road*** – Design and implement an optimal traffic signal timing and phasing plan, and interconnect and coordinate with the proposed traffic control signal to be installed at the Project site driveway. These improvements include the installation of all necessary hardware and appurtenances to implement the changes.

- ***Cumberland Street at Park Road*** – Perform a detailed Traffic Signal Warrants Analysis (TSWA) in accordance with the methodology established in the MUTCD, to include conducting a 12-hour (7:00 AM to 7:00 PM) manual turning movement count on an average weekday. The results of the TSWA will be summarized in a memorandum provided to the City and will include a conceptual improvement plan depicting the recommended intersection improvements.

- ***Stroudwater Street at Forest Street*** - Perform a detailed TSWA in accordance with the methodology established in the MUTCD, to include conducting a 12-hour (7:00 AM to 7:00 PM) manual turning movement count on an average weekday. The results of the TSWA will be summarized in a memorandum provided to the City and will include a conceptual improvement plan depicting the recommended intersection improvements.

Portland:

- ***Brighton Avenue Traffic Signal System*** – Design and implement an optimal traffic signal timing, phasing and coordination plan, to include the following intersections:

    1. Brighton Avenue at Riverside Street
    2. Brighton Avenue at City Hospital Drive
    3. Brighton Avenue at Taft Avenue
    4. Brighton Avenue at Rand Road and Cabot Street
    5. Brighton Avenue at Rowe Avenue and Warwick Street
    6. Brighton Avenue at Capisic Street, Kent Street and Hillcrest Avenue
    7. Brighton Avenue at Woodford Street, Colonial Road and Columbia Road
    8. Brighton Avenue at Stevens Avenue
    9. Brighton Avenue at St. John Street and Devonshire Street

    The improvements will include the installation of all necessary hardware and appurtenances required to provide a fully functioning, coordinated traffic signal system inclusive of the above intersections.

- ***Riverside Street Traffic Signal System*** – Design and implement an optimal traffic signal timing, phasing and coordination plan, to include the following intersections:

    1. Riverside Street at Warren Avenue
    2. Riverside Street at Home Depot Drive
    3. Riverside Street at Larrabee Road
    4. Riverside Street at Westbrook Crossing Drive
    5. Riverside Street at Brighton Avenue

    The improvements will include the installation of all necessary hardware and appurtenances required to provide a fully functioning, coordinated traffic signal system inclusive of the above intersections.

- ***Westbrook Arterial at Rand Road and the I-95 Ramps*** – Design and implement an optimal traffic signal timing and phasing plan, to include the installation of all necessary hardware and appurtenances to implement the changes.

- ***Capisic Street at Frost Street*** - Perform a detailed TSWA in accordance with the methodology established in the MUTCD, to include conducting a 12-hour (7:00 AM to 7:00 PM) manual turning movement count on an average weekday. The results of the TSWA will be summarized in a memorandum provided to the City and will include a conceptual improvement plan depicting the recommended intersection improvements.

Safety Improvements

The following safety-related improvements will be completed in conjunction with the Project and will be implemented by the Project proponent prior to the issuance of a Certificate of Occupancy for the Project and subject to receipt of all necessary rights, permits and approvals:

Westbrook:

- ***Main Street at Larrabee Road***

  i.) Review and upgrade the existing traffic signal system to meet current design standards which may include: signal indications; vehicle detection system to include bicycle detection; controller and cabinet; emergency vehicle detection system (OPTICOM™); and all necessary appurtenances to provide a fully functional traffic signal system;

  ii.) Design and implement an optimal traffic signal timing and phasing plan to include vehicle clearance times developed in accordance with current MUTCD, City and MDOT standards; and

  iii.) Review, upgrade and replace existing signs and pavement markings as may be necessary.

- ***Main Street at Cumberland Street, Warren Avenue and Harnois Avenue*** – The City of Westbrook will be implementing specific improvements at these intersections that includes the installation of traffic control signals to enhance safety and facilitate pedestrian and bicycle access. No additional improvements are required at this time.

Portland:

- ***Riverside Street at Larrabee Road and the I-95 Ramps***

  i.) Design and construct geometric and traffic control improvements at the intersection to include the elimination of the channelized right-turn slip-ramp on the Riverside Street northbound approach; realignment of the Larrabee Road eastbound approach and the accompanying departure as it approaches the toll plaza; and the addition of a right-turn lane on the Larrabee Road westbound exit from the toll plaza area and elimination of the existing channelized right-turn slip-ramp;

  ii.) Review and upgrade the existing traffic signal system to meet current design standards which will include: signal indications; pedestrian pushbuttons and indications; vehicle detection system to include bicycle detection; controller and cabinet; emergency vehicle detection system (OPTICOM™); and all necessary appurtenances to provide a fully functional traffic signal system;

  iii.) Design and implement an optimal traffic signal timing and phasing plan to include vehicle clearance times developed in accordance with current MUTCD, City and MDOT standards; and

  iv.) Review, upgrade and replace existing signs and pavement markings as may be necessary.

- ***Riverside Street at Warren Avenue***

  i.) Review and upgrade the existing traffic signal system to meet current design standards which may include: signal indications; pedestrian pushbuttons and indications; vehicle detection system to include bicycle detection; controller and cabinet; emergency vehicle detection system (OPTICOM™); and all necessary appurtenances to provide a fully functional traffic signal system;

  ii.) Design and implement an optimal traffic signal timing and phasing plan to include vehicle clearance times developed in accordance with current MUTCD, City and MDOT standards; and

  iii.) Review, upgrade and replace existing signs and pavement markings as may be necessary.

- ***Brighton Avenue at Stevens Avenue***

  i.) Review and upgrade the existing traffic signal system to meet current design standards which may include: signal indications; pedestrian pushbuttons and indications; vehicle detection system to include bicycle detection; controller and cabinet; emergency vehicle detection system (OPTICOM™); and all necessary appurtenances to provide a fully functional traffic signal system;

  ii.) Design and implement an optimal traffic signal timing and phasing plan to include vehicle clearance times developed in accordance with current MUTCD, City and MDOT standards; and

  iii.) Review, upgrade and replace existing signs and pavement markings as may be necessary.

- ***Capisic Street at Frost Street***

  i.) Selective trimming of vegetation along Capisic Street to improve sight lines;

  ii.) Install an "Intersection Ahead" (graphic symbol) warning sign on Capisic Street west of the intersection;

  iii.) Install a "Stop Sign Ahead" (graphic symbol) warning sign on Frost Street approaching the intersection; and

  iv.) Review, upgrade and replace existing signs and pavement markings as may be necessary.

Transportation Demand Management

The Project site is ideally situated to take advantage of available public transportation resources in the area, including the METRO bus service operated by the Greater Portland Transit District. In an effort to encourage use of alternative modes of transportation to single-occupant vehicles, the following Transportation Demand Management (TDM) measures will be implemented as a part of the Project:

- Information regarding public transportation services, maps, schedules and fare information will be made available to employees of the Project and posted in a central location within each building;

- A packet will be provided to new employees of the Project detailing available public transportation services, bicycle and walking alternatives, and commuter options;
- Pedestrian accommodations will be incorporated within the Project site and extending to Main Street;
- The planned improvements to Main Street, Westbrook Arterial and Larrabee Road that will be completed as a part of the Project will incorporate bicycle lanes and/or widened shoulders to accommodate bicycle travel to the extent that public right-of-way is available for such accommodations.
- A METRO bus stop will be provided along Main Street or at an appropriate location determined in consultation with Greater Portland Transit District; and
- Secure bicycle parking will be provided, including both exterior bicycle racks and weather protected bicycle parking in a secure area where such accommodations can be made.

Traffic Monitoring Program

The Project proponent will conduct a post-development traffic monitoring program in order to validate the trip projections for the Project and to determine if and when the installation of a traffic control signal may be justified at the Larrabee Road/Project site Driveway/Terminal Street intersection. The monitoring program will include:

i) Obtaining traffic volume information over a continuous seven day, weeklong period at the driveways serving the Project site;

ii) Performing a continuous 12-hour (7:00 AM to 7:00 PM) manual turning movement and vehicle classification count on an average weekday at the Project site driveway intersection with Larrabee Road and Terminal Street; and

iii) Completing a detailed TSWA at the Larrabee Road/Project site Driveway/Terminal Street intersection in accordance with the methodology established in the MUTCD.

The monitoring program will commence six (6) months after issuance of the first Certificate of Occupancy for the Project and will continue on an annual basis thereafter for a period not to exceed 2-years after Project completion and occupancy. The results of the monitoring program will be summarized in a report to be provided to the City of Westbrook within 2-months after the completion of the data collection effort. When full activation of the traffic control signal is found to be warranted at the Larrabee Road/Project site Driveway/Terminal Street intersection, the Project proponent will undertake the required actions and obtain all necessary approvals to transition the traffic signal system from flashing operation to full operation.

Loading and Deliveries

The Project has been designed to accommodate all loading and delivery functions on-site in a safe and efficient manner. Designated loading areas will be provided on-site to accommodate deliveries. Refuse/recycling will be accommodated in centralized areas for each building. Truck routes and hours of deliveries will be coordinated to minimize truck activity during the commuter peak hours. Reasonable efforts will be made to use service vendors currently delivering in the vicinity of the Project site in an effort to reduce the overall number of new trucks in the area.

With implementation of the above recommendations, safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing and improved transportation system.

DIRIGO PLAZA
TRANSPORTATION IMPROVEMENT PROGRAM SUMMARY - WESTBROOK

Intersection	Improvement Measure	Responsible Party
William Clarke Drive Traffic Signal System (5 intersections)	– Design and implement an optimal traffic signal timing, phasing and coordination plan	J&J Gove Development LLC
William Clarke Drive/ New Gorham Road/Main Street and William Clarke Drive/ Saco Street	– Design and implement an optimal traffic signal timing and phasing plan – If requested by City, modify traffic signals to operate on separate traffic signal controllers (vs. current single controller operation) and interconnect and coordinate two signals	J&J Gove Development LLC
Cumberland Street/Bridge Street	– Design and implement an optimal traffic signal timing and phasing plan	J&J Gove Development LLC
Main Street/Forest Street	– Convert Main Street westbound right-turn lane to a through/right-turn lane – Design and implement an optimal traffic signal timing and phasing plan	J&J Gove Development LLC
Main Street/Larrabee Road	– Remove raised triangular islands from Larrabee Road approaches – Install crosswalks and pedestrian traffic signal equipment – Upgrade/replace traffic signal equipment – Review/upgrade/replace signs and pavement markings – Coordinate with adjacent traffic signals – Design and implement an optimal traffic signal timing, phasing and coordination plan	J&J Gove Development LLC
Westbrook Arterial/ Larrabee Road	– Design and implement an optimal traffic signal timing and phasing plan – Coordinate with adjacent traffic signal	J&J Gove Development LLC
Cumberland Street/Park Road	– Perform Traffic Signal Warrants Analysis – Prepare Conceptual Improvement Plans	J&J Gove Development LLC
Stroudwater Street/Forest Street	– Perform Traffic Signal Warrants Analysis – Prepare Conceptual Improvement Plans	J&J Gove Development LLC

DIRIGO PLAZA
TRANSPORTATION IMPROVEMENT PROGRAM SUMMARY - PORTLAND

Intersection	Improvement Measure	Responsible Party
Brighton Avenue Traffic Signal System (9 intersections)	– Design and implement an optimal traffic signal timing, phasing and coordination plan	J&J Gove Development LLC
Riverside Street Traffic Signal System (5 intersections)	– Design and implement an optimal traffic signal timing, phasing and coordination plan	J&J Gove Development LLC
Westbrook Arterial/Rand Road/ I-95 Ramps	– Design and implement an optimal traffic signal timing and phasing plan	J&J Gove Development LLC
Capisic Street/Frost Street	– Perform Traffic Signal Warrants Analysis – Prepare Conceptual Improvement Plans – Trim vegetation along Capisic Street – Install "Intersection Ahead" warning signs on Capisic Street – Install "Stop Sign Ahead" warning sign on Frost Street – Review/upgrade/replace signs and pavement markings	J&J Gove Development LLC
Riverside Street/Larrabee Road	– Design and construct intersection geometric improvements – Upgrade/replace traffic signal equipment – Review/upgrade/replace signs and pavement markings – Design and implement an optimal traffic signal timing and phasing plan	J&J Gove Development LLC
Riverside Street/ Warren Avenue	– Upgrade/replace traffic signal equipment – Review/upgrade/replace signs and pavement markings – Design and implement an optimal traffic signal timing and phasing plan	J&J Gove Development LLC
Brighton Avenue/ Stevens Avenue	– Upgrade/replace traffic signal equipment – Review/upgrade/replace signs and pavement markings – Design and implement an optimal traffic signal timing and phasing plan	J&J Gove Development LLC

MEMORANDUM

TO: Mr. Timothy Soucie, P.E.
Region Traffic Engineer
MaineDOT - Region 1
P.O. Box 358
Scarborough, ME 04070

FROM: Mr. Jeffrey S. Dirk, P.E., PTOE, FITE
Principal
Vanasse & Associates, Inc.
35 New England Business Center Drive
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Andover, MA 01810-1066
(978) 474-8800, ext. 830
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DATE: June 3, 2016

RE: 6846

SUBJECT: Response to Comments on Comments on Amended Traffic Impact Study
Dirigo Plaza - Westbrook Arterial, Larrabee Road and Main Street (Route 25B)
Westbrook, Maine

Vanasse & Associates, Inc. (VAI) is providing supplemental information and analyses in support of the May 6, 2016 Amended *Traffic Impact Study* prepared for the Dirigo Plaza mixed-use commercial development to be located on an assemblage of parcels bounded by Main Street (Route 25B), Westbrook Arterial, and Larrabee Road, in Westbrook, Maine (hereafter referred to as the "Project"). Specifically, this memorandum focuses on the May 20, 2016 consolidated comments that were provided by MDOT and focuses on the intersections and roadways located in the City of Westbrook. We will be providing similar information, plans and analyses to address the comments related to the intersections and roadways in the City of Portland, including improvements to the Maine Turnpike interchanges with Rand Road (Exit 47) and Riverside Street (Exit 48), improvements to Brighton Avenue and Riverside Street, and an assessment of 2015 motor vehicle crash data and associated recommendations for improvements at all high crash locations. This information will be provided in a subsequent memorandum.

The following details our responses to the May 20, 2016 consolidated comments.

TRAFFIC IMPACT STUDY – GENERAL

Comment: *Intersections with LOS below D: Please provide additional review of intersections with a failing LOS below D and provide mitigation recommendations.*

Response: This memorandum provides specific recommendations for those intersections located within the City of Westbrook where one or more movements or lane groups were identified to be operating below LOS D. Similar recommendations will be provided in a subsequent memorandum for those intersections located within the City of Portland that were also found to be operating below LOS D.

Comment: *High-crash Locations (HCLs): Please provide additional review of intersections and segments deemed a HCL and provide mitigation recommendations.*

Response: An additional review of high crash locations based on 2015 motor vehicle crash data provided by MDOT is underway and will be provided in a subsequent memorandum along with specific recommendations for improvements.

Comment: *Traffic volume adjustments, Page 14: The seasonal adjustments were based on Maine DOT adjustment factors, which typically indicate greater seasonal fluctuation than the City has observed, albeit anecdotally. As such, the predevelopment volumes, if anything, are conservative.*

Response: We agree with this observation and acknowledge that the adjusted traffic volumes are likely conservative (high).

Comment: *Background Growth, Page 20: A one percent background growth in addition to the other development should have more documentation as to why it is needed. From Portland's perspective, many locations have seen flat or declining peak hour volumes, particularly weekdays.*

Response: The use of a 1.0 percent per year compounded annual background traffic growth rate was confirmed by the City of Westbrook and PACTS for the development of the future condition traffic volume projections in addition to the incorporation of the identified development projects by others. We acknowledge that this approach may result in conservative (high) traffic volumes at specific locations.

Comment: *Trip generation, Pages 21-23: I generally concur with the idea of utilizing the appropriate LUC 820 for a development of this nature. However, the fueling facility, while utilizing the appropriate LUC, suggests no internal capture between uses, which one would expect to be a not insignificant percentage. In addition, there is no use of diverted trips in this study, which in my previous experience with a number of large retail developments is a major component in trip distribution and assignment. A cursory review of the ITE Trip generation Handbook indicates that diverted trips may compose as much as a third to 40 percent of total trips, particularly on a Saturday.*

Response: We agree that inclusion of diverted linked trips and application of an internal capture rate to the traffic volume projections for the fueling facility would result in lower overall traffic volumes for the Project. This approach was weighed vs. developing the traffic characteristics of each of the individual land uses proposed within the Project site, applying an internal capture rate to respective uses where appropriate, and then adjusting to account for pass-by trips and diverted linked trips. After careful review of these two approaches by MDOT, it was determined that considering the entirety of the Project excepting the fueling facility as a shopping center (LUC 820) and applying appropriate adjustments to account for pass-by trips would result in a reasonable and balanced approach to determining the potential impact of the Project on the transportation infrastructure.

MAINE TURNPIKE

Comment: *Exit 48/Riverside Street: This intersection needs additional review of both safety and mobility needs. Please provide additional analysis of the existing conditions as well as of the proposed mitigation discussed at the May 10th meeting.*

Response: VAI has developed a comprehensive improvement plan for the Riverside Street corridor extending to and including the Exit 48/Riverside Street intersection that is based on the concept plan provided by the City of Portland. This information and the supporting analysis will be provided in a subsequent memorandum.

Comment: *Exit 47/Rand Road: The study shows the I-95 Off-Ramp NB LT as a LOS F under 2021 build conditions. Please review and provide mitigation suggestions. Possible mitigation may include the construction of an additional lane exiting the turnpike to provide dual left turn lanes and a right turn lane.*

Response: VAI has developed a comprehensive improvement plan for the Exit 47/Rand Road intersection that includes the addition of a second left-turn lane approaching Rand Road from the toll plaza as well as the associated reconstruction of the traffic signal system to accommodate the proposed geometry. This information and the supporting analysis will be provided in a subsequent memorandum.

RIVERSIDE STREET

Comment: *Please review the existing pedestrian facilities on Riverside between Exit 48 and Brighton Avenue and provide recommendations for improvements.*

Response: VAI has developed a comprehensive improvement plan for the Riverside Street corridor extending from Brighton Avenue to a point north of the Exit 48/Riverside Street intersection that includes the addition of pedestrian and bicycle accommodations. A portion of these improvements are shown on the revised improvement plan for the Brighton Avenue/Riverside Street intersection that is included herein (Figure 14, Sheet 5 of 5). The Riverside Street improvement plans will be provided in a subsequent memorandum.

BRIGHTON AVENUE

Comment: *The section of Brighton Avenue from Nason's Corner was identified as an area to be reviewed for improvements (bike/ped, signal improvements). Additional comments will be provided at a later date.*

Response: VAI has developed a conceptual improvement plan for the Brighton Avenue corridor extending from Riverside Street to Nason's Corner that includes pedestrian and bicycle focused improvements. A portion of these improvements are shown on the revised improvement plan for the Brighton Avenue/Riverside Street intersection that is included herein (Figure 14, Sheet 5 of 5). The Brighton Avenue improvement plans will be provided in a subsequent memorandum. In addition, we will be coordinating with the City of Portland to define those locations that require traffic signal equipment upgrades.

MAIN STREET

Comment: *There is a need for coordination along Main Street at Larrabee Road, Main Entrance & Riverside Street. For coordination, fiber will need to be installed between the three intersections.*

Response: The Applicant will design and construct an interconnected and coordinated traffic signal system along the Main Street corridor using fiber optic cable for communications. The traffic signal system will include the following intersections: Main Street/Larrabee Road, Main Street/Westbrook Crossing/Dirigo Plaza, and Brighton Avenue/Riverside Street.

Comment: *There are concerns regarding the proximity of a slip lane on Main Street to the Larrabee Road intersection.*

Response: The Main Street right-turn entrance only driveway to the Project site that was to be located east of Larrabee Road has been eliminated and is reflected on the revised improvement plans that are included herein (Figure 14, Sheet 4 of 5).

Comment: *Is pedestrian equipment to be provided at the Main Street/Kohl's intersection?*

Response: Pedestrian traffic signal equipment and phasing will be provided at the Main Street/Westbrook Crossing (Kohl's)/Dirigo Plaza intersection. In addition, as discussed with the Westbrook Planning Board, the crosswalk across Main Street has been relocated to the east side of the intersection so as to align with the sidewalk within the Project site (see Figure 14, Sheet 4 of 5)

Sheets 4 and 5 of Figure 14 included herein have been revised in their entirety to incorporate the following enhancements to the improvement program for the Project:

1. Bicycle lanes have been added along both sides of Main Street between Larrabee Road and the Brighton Avenue bridge over the Maine Turnpike (discussion of Brighton Avenue improvements will be provided in a separate memorandum).
2. Bicycle boxes have been added on the Main Street approaches to Larrabee Road (east leg), Westbrook Crossing (Kohl's)/Dirigo Plaza (both legs) and Riverside Street (both legs) to assist bicyclists in turning movements at the intersections.
3. Bicycle accommodations (5-foot shoulders, minimum) have been added to Larrabee Road (discussion follows) and Riverside Street (additional details and plans to be provided in a subsequent memorandum).
4. Raised medians have been increased in width to a minimum of 8-feet to allow for the installation of landscaping.
5. Trees, plantings and street furniture will be added along both sides of Main Street between Larrabee Road and Riverside Street subject to the availability of public right-of-way and the ability to obtain all necessary rights, permits and approvals.

In addition, a METRO bus stop will be provided along the Project side of Main Street at a location to be determined in consultation with the Greater Portland Transit District. With the planned improvements to the Main Street corridor and inclusive of the Main Street/Larrabee Road and Main Street/ Westbrook Crossing (Kohl's)/Dirigo Plaza intersections, all movements at the subject intersections are predicted to operate at LOS D or better during the peak hours (see Table 1).

Comment: *Main Street/Forest Street – Main Street westbound left-turn/through movement is predicted to operate at LOS E during the weekday evening peak-hour.*

Response: In order to improve operating conditions at this intersection, it is recommended that the Main Street right-turn lane be converted to a through/right-turn lane and that an optimal traffic signal timing and phasing plan be implemented. With these improvements, all movements at the intersection are predicted to operate at LOS C or better during the peak hours (see Table 1).

WESTBROOK ARTERIAL

Comment: *Concerns regarding speed on the Westbrook Arterial and the impact of an additional traffic signal.*

Response: MDOT will review the posted speed limit along the Westbrook Arterial as a part of the formal review of the design plans for the proposed traffic signal that is to be installed at the driveway that will serve the Project.

LARRABEE ROAD

Comment: *Can a pedestrian crosswalk be installed at Larrabee Road?*

Response: A sidewalk has been added along both sides of Larrabee Road between Main Street and Terminal Street, with crosswalks provided for crossing Terminal Street and the Larrabee Road north leg of the Larrabee Road/Terminal Street intersection (see Figure 14, Sheets 3 and 4 of 5). The traffic signal system that is to be installed at the Larrabee Road/Terminal Street intersection will include pedestrian traffic signal equipment and phasing, and will be active prior to full activation of the traffic signal system (i.e., if the signal system is placed into flashing operation on an interim basis, the pedestrian phase will be available upon push button actuation).

In addition to the incorporation of sidewalks for Larrabee Road, bicycle accommodations have been provided for the entirety of the corridor by way of 5-foot (minimum) shoulders between Westbrook Arterial and Main Street, and extending to the north of the Main Street/Larrabee Road intersection.

CUMBERLAND STREET

Comment: *Cumberland Street/Bridge Street – we would want the upgrade of the signal equipment included*

Response: The Project proponent will replace the traffic signal system at the Cumberland Street/Bridge Street intersection (complete). In addition, in order to improve operating conditions at the intersection (overall LOS E predicted during the weekday evening peak-hour), a right-turn lane will be added to the Cumberland Street westbound approach (see enclosed conceptual improvement plan).

Comment: *Cumberland Street/Park Road – we would want the warrant analysis done, and if it doesn't meet warrants, what improvements would you suggest?*

Response: A detailed traffic signal warrants analysis has been completed for the Cumberland Street/Park Road intersection (attached) in accordance with the methodology and procedures outlined in the Manual on Uniform Traffic Control Devices (MUTCD)[1] and using traffic counts conducted in May 2016 over a continuous 12-hour period (7 AM to 7 PM) on an average weekday. Based on this analysis, the subject intersection was found to meet the necessary warrants (MUTCD Warrants 1, 2 and 4) to justify the installation of a traffic control signal. As such and subject to receipt of all necessary rights, permits and approvals, the Project proponent will design and construct a traffic signal at the Cumberland Street/Park Road intersection to include the addition of a right-turn lane on the Cumberland Street westbound approach (see enclosed conceptual improvement plan). With the installation of a traffic control signal and the associated geometric improvements at the subject intersection, all movements are predicted to operate at LOS D or better during the peak hours (see Table 1).

FOREST STREET

Comment: *Forest Street and Stroudwater Street – we would want the warrant analysis done, and if it doesn't meet warrants, what improvements would you suggest?*

Response: A detailed traffic signal warrants analysis has been completed for the Forest Street/Stroudwater Street intersection (attached) in accordance with the methodology and procedures outlined in the MUTCD and using traffic counts conducted in May 2016 over a continuous 12-hour period (7 AM to 7 PM) on an average weekday. Based on this analysis, the subject intersection was found to meet the necessary warrants (MUTCD Warrants 1, 2 and 4) to justify the installation of a traffic control signal. As such and subject to receipt of all necessary rights, permits and approvals, the Project proponent will design and construct a traffic signal at the Forest Street/Stroudwater Street intersection to include the addition of a right-turn lane on the Stroudwater Street westbound approach (see enclosed conceptual improvement plan). With the installation of a traffic control signal and the associated geometric improvements at the subject intersection, all movements are predicted to operate at LOS C or better during the peak hours (see Table 1).

Comment: *Concern with the significant delay being shown in the model and the potential queue length from the Forest Street off ramp towards the arterial, as well as the delay at Forest Street at Stroudwater Street.*

Response: With the proposed installation of a traffic control signal and associated geometric improvements at the Forest Street/Stroudwater Street intersection, motorist delays will be reduced at the intersection and vehicle queues on Forest Street and the off-ramp from the Westbrook Arterial will be reduced such that the off-ramp queue will not extend onto the Westbrook Arterial (see Table 1).

[1] *Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.

WESTBROOK STREET

Comment: *Quantify the impacts to Westbrook Street.*

Response: As discussed in the May 2016 Amended *Traffic Impact Study*, the trip distribution pattern for the Project was developed using the PACTS traffic model and was then refined based on existing traffic patterns within the study area. Based on this approach and as depicted on Figures 10 and 11 of the May 2016 Amended *Traffic Impact Study*, the Project is predicted to result in between 45 and 75 vehicles traveling on Stroudwater Street east Forest Street and toward Westbrook Street during the peak traffic volume hours.

WILLIAM CLARKE DRIVE

Comment: *William Clarke Drive/New Gorham Road and William Clarke Drive/Saco Street – Intersections operate from one controller which limits ability to improve operations; Saco Street left-turn movement is predicted to operate at LOS F under No-Build conditions with vehicle queues that extend to 340 feet.*

Response: In order to improve operating conditions at these intersections, it is recommended that the traffic signal systems at these intersections be modified to operate from separate traffic signal controllers and that the controllers be interconnected and coordinated. In addition, it is recommended that the William Clarke Drive northbound approach be widened to accommodate a second through travel lane. With these improvements and the implementation of an optimal traffic signal timing, phasing and coordination plan, all movements at these intersections are predicted to operate at LOS D or better during the peak hours (see Table 1).

Comment: *William Clarke Drive/Mechanic Street – With the addition of Project-related traffic the left-turn and through movements on the William Clarke Drive westbound approach were shown to operate at LOS E/F during the weekday evening peak-hour.*

Response: In order to improve operating conditions at this intersection, it is recommended that an optimal traffic signal timing, phasing and coordination plan be developed. With these improvements, all movements at this intersection are predicted to operate at LOS D or better during the peak hours (see Table 1).

OTHER

Comment: *The number of curb cuts at Walmart parking section along main access drive should be reduced to limit conflicts.*

Response: The Site Plans for the Project will be revised accordingly and submitted by others under separate cover.

Comment: *An internal signage package is necessary to show how traffic will be directed through the site.*

Response: The Site Plans for the Project will be revised accordingly and submitted by others under separate cover.

Comment: *Sidewalk system in South campus will need to be incorporated.*

Response: The Site Plans for the Project will be revised accordingly and submitted by others under separate cover.

SUMMARY

VAI has prepared supplemental information and analyses in support of the May 6, 2016 Amended *Traffic Impact Study* prepared for the Dirigo Plaza mixed-use commercial development to be located on an assemblage of parcels bounded by Main Street (Route 25B), Westbrook Arterial, and Larrabee Road, in Westbrook, Maine. This information is responsive to the May 20, 2016 consolidated comments that were provided by MDOT and focuses on the intersections and roadways located in the City of Westbrook. A similar filing is being prepared to address the comments related to the intersections and roadways in the City of Portland, including those associated with the Maine Turnpike interchanges with Rand Road (Exit 47) and Riverside Street (Exit 48), and the Brighton Avenue and Riverside Street corridors, and will also include an assessment of 2015 motor vehicle crash data.

cc: J. Franceschi, P.E., CPESC – City of Westbrook, Director of Planning and Code Enforcement
J. Adams, P.E., PTOE - Milone & Macbroom
J. Levine – City of Portland, Planning & Urban Development Director
B. Hyman – City of Portland, Transportation Program Manager
J. Bartlett, P.E., PTOE – City of Portland DPW, Transportation System Engineer
T. Errico, P.E. - T.Y. Lin International
J. Gove – J&J Gove Development, LLC
W. Morrill – Jones & Beach Engineers, Inc.
BG, File

Table 1
MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE SUMMARY

Signalized Intersection/ Peak Hour/Movement	Storage[a] Length	2021 No-Build Delay[b]	LOS[c]	Queue[d] Avg/95th	2021 Build With Mitigation Delay	LOS	Queue Avg/95th
Westbrook Intersections							
Cumberland Street at Bridge Street							
Weekday Evening:							
Cumberland Street EB LT/TH/RT	480	51.1	D	154/341	50.0	D	206/288
Cumberland Street WB LT/TH/RT	610	55.6	E	455/920	--	--	--
Cumberland Street WB LT/TH	610	--	--	--	37.4	D	338/499
Cumberland Street WB RT	200	--	--	--	5.0	A	79/182
Bridge Street NB LT/TH/RT	425	84.0	F	318/520	38.1	D	174/255
Bridge Street SB LT/TH/RT	375	96.3	F	309/429	37.3	D	233/350
Overall	--	**70.0**	**E**	--	**37.7**	**D**	--
Saturday Midday:							
Cumberland Street EB LT/TH/RT	480	11.4	B	106/184	16.1	B	145/264
Cumberland Street WB LT/TH/RT	610	18.8	B	157/306	--	--	--
Cumberland Street WB LT/TH	610	--	--	--	26.9	C	204/423
Cumberland Street WB RT	200	--	--	--	4.3	A	26/59
Bridge Street NB LT/TH/RT	425	17.3	B	95/160	18.8	B	111/190
Bridge Street SB LT/TH/RT	375	17.3	B	102/170	24.4	C	120/213
Overall	--	**16.2**	**B**	--	**20.7**	**C**	--
Main Street at Forest Street							
Weekday Evening:							
Main Street EB LT/TH	170	13.1	B	115/234	12.2	B	103/146
Main Street EB RT	100	5.3	A	13/36	5.0	A	4/18
Main Street WB LT/TH	225	60.8	E	641/1156	15.8	B	179/223
Main Street WB TH/RT	225	--	--	--	9.9	A	118/187
Main Street WB RT	225	1.3	A	7/52	--	--	--
Forest Street NB LT/TH/RT	360	22.3	C	147/236	16.5	B	122/242
Forest Street SB LT/TH/RT	235	11.6	B	3/18	13.9	B	8/30
Overall	--	**39.2**	**D**	--	**13.0**	**B**	--
Saturday Midday:							
Main Street EB LT/TH	170	8.2	A	89/170	9.9	A	118/248
Main Street EB RT	100	6.0	A	10/32	6.7	A	12/34
Main Street WB LT/TH	225	31.2	C	275/617	26.5	C	187/357
Main Street WB TH/RT	225	--	--	--	5.3	A	118/306
Main Street WB RT	225	1.4	A	37/132	--	--	--
Forest Street NB LT/TH/RT	360	16.3	B	50/94	15.9	B	46/84
Forest Street SB LT/TH/RT	235	13.2	B	12/38	10.3	B	14/40
Overall	--	**19.1**	**B**	--	**14.7**	**B**	--

See notes at end of table.

Table 1 (Continued)
MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE SUMMARY

Signalized Intersection/ Peak Hour/Movement	Storage[a] Length	2021 No-Build Delay[b]	2021 No-Build LOS[c]	2021 No-Build Queue[d] Avg/95th	2021 Build With Mitigation Delay	2021 Build With Mitigation LOS	2021 Build With Mitigation Queue Avg/95th
Main Street at Larrabee Road							
Weekday Evening:							
Main Street EB LT	175	51.5	D	175/271	47.7	D	195/298
Main Street EB TH	550	38.6	D	186/291	46.0	D	221/355
Main Street EB TH/RT	550	29.5	C	147/246	37.1	C	191/300
Main Street WB LT	300	48.0	D	147/241	44.7	D	162/302
Main Street WB TH	1,300	34.8	C	190/284	30.9	C	221/321
Main Street WB TH/RT	1,300	41.3	D	208/306	34.3	C	228/364
Larrabee Road NB LT/TH	885	50.0	D	169/258	51.9	D	237/326
Larrabee Road NB TH/RT	885	27.5	C	151/241	32.9	C	212/267
Larrabee Road SB LT/TH	1,280	48.9	D	130/199	44.6	D	159/253
Larrabee Road SB TH	1,280	53.1	D	122/186	48.0	D	166/275
Larrabee Road SB RT	300	4.2	A	51/138	9.1	A	74/150
Overall	--	**37.7**	**D**	--	**38.8**	**D**	--
Saturday Midday:							
Main Street EB LT	175	43.2	D	129/213	35.0	D	124/183
Main Street EB TH	550	29.6	C	135/243	27.0	C	158/249
Main Street EB TH/RT	550	31.1	C	190/295	27.2	C	164/265
Main Street WB LT	300	43.6	D	94/163	51.3	D	93/129
Main Street WB TH	1.300	26.6	C	123/207	23.5	C	126/191
Main Street WB TH/RT	1,300	31.5	C	139/217	28.0	C	154/220
Larrabee Road NB LT/TH	885	32.3	C	123/208	45.4	D	178/244
Larrabee Road NB TH/RT	885	26.0	C	87/158	42.0	D	160/237
Larrabee Road SB LT/TH	1,280	29.3	C	46/89	32.5	C	103/182
Larrabee Road SB TH	1,280	32.2	C	47/92	29.0	C	96/180
Larrabee Road SB RT	300	2.2	A	25/80	6.6	A	47/102
Overall	--	**29.4**	**C**	--	**31.1**	**C**	--

See notes at end of table.

Table 1 (Continued)
MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE SUMMARY

Signalized Intersection/ Peak Hour/Movement	Storage[a] Length	2021 No-Build Delay[b]	LOS[c]	Queue[d] Avg/95th	2021 Build With Mitigation Delay	LOS	Queue Avg/95th
New Gorham Road at William Clarke Drive							
Weekday Evening:							
William Clarke Drive EB LT	150	32.8	C	80/140	35.9	D	94/167
William Clarke Drive EB TH	360	17.1	B	88/158	15.9	B	89/159
William Clarke Drive EB TH/RT	360	15.4	B	69/130	13.8	B	67/119
William Clark Drive WB LT	320	35.7	D	121/210	36.6	D	114/187
William Clark Drive WB TH	320	--	--	--	12.1	B	96/140
William Clark Drive WB TH/RT	320	22.2	C	211/285	16.0	B	100/141
New Gorham Road NB LT/TH	390	34.0	C	69/130	31.1	C	65/119
New Gorham Road NB RT	390	4.9	A	24/50	4.9	A	24/50
New Gorham Road SB LT/TH	325	42.2	D	128/215	33.3	C	101/177
New Gorham Road SB RT	325	6.7	A	70/153	1.4	A	11/47
Overall	--	**22.7**	**C**	--	**18.3**	**C**	--
Saturday Midday:							
William Clarke Drive EB LT	150	33.2	C	77/142	30.1	C	87/149
William Clarke Drive EB TH	360	14.9	B	96/168	18.9	B	113/186
William Clarke Drive EB TH/RT	360	13.5	B	74/137	17.5	B	93/159
William Clarke Drive WB LT	320	39.1	D	61/114	35.5	D	56/109
William Clark Drive WB TH	320	--	--	--	10.3	B	47/85
William Clarke Drive WB TH/RT	320	8.8	A	78/140	12.2	B	48/80
New Gorham Road NB LT/TH	390	34.2	C	105/175	27.6	C	94/165
New Gorham Road NB RT	390	6.0	A	34/68	6.1	A	33/71
New Gorham Road SB LT/TH	325	35.4	D	92/159	26.6	C	66/129
New Gorham Road SB RT	325	2.3	A	28/86	0.9	A	6/30
Overall	--	**17.0**	**B**	--	**16.6**	**B**	--
William Clarke Drive at Saco Street							
Weekday Evening:							
William Clarke Drive EB TH	320	8.4	A	46/94	7.2	A	45/90
William Clarke Drive EB TH/RT	320	9.6	A	57/101	9.1	A	56/105
William Clarke Drive WB LT	650	34.3	C	238/527	42.6	D	268/543
William Clarke Drive WB TH	650	48.4	D	427/664	40.8	D	376/677
Saco Street NB LT	340	92.9	F	283/554	49.2	D	189/352
Saco Street NB RT	175	8.4	A	126/283	6.6	A	88/216
Overall	--	**37.7**	**D**	--	**30.1**	**C**	--
Saturday Midday:							
William Clarke Drive EB TH	320	7.4	A	56/108	9.2	A	65/120
William Clarke Drive EB TH/RT	320	9.6	A	71/129	11.7	B	78/137
William Clarke Drive WB LT	650	33.2	C	90/164	33.6	C	111/234
William Clarke Drive WB TH	650	18.9	B	188/345	32.4	C	282/470
Saco Street NB LT	340	28.9	C	48/96	25.1	C	44/83
Saco Street NB RT	175	6.6	A	45/74	7.1	A	49/87
Overall	--	**15.1**	**B**	--	**20.5**	**C**	--

See notes at end of table.

Table 1 (Continued)
MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE SUMMARY

Signalized Intersection/ Peak Hour/Movement	Storage[a] Length	2021 No-Build Delay[b]	LOS[c]	Queue[d] Avg/95th	2021 Build With Mitigation Delay	LOS	Queue Avg/95th
William Clarke Drive at Mechanic Street							
Weekday Evening:							
William Clarke Drive EB LT	100	35.8	D	72/125	39.2	D	69/124
William Clarke Drive EB TH	625	9.3	A	77/163	12.8	B	91/201
William Clarke Drive EB TH/RT	625	8.0	A	72/160	11.0	B	86/198
William Clarke Drive WB LT	100	47.7	D	23/79	35.9	D	30/106
William Clarke Drive WB TH	200	19.0	B	141/420	30.9	C	286/521
William Clarke Drive WB TH/RT	200	25.4	C	192/472	36.1	D	337/553
Mechanic Street NB LT/TH/RT	120	32.6	C	75/131	36.2	D	75/150
Mechanic Street SB LT/TH	240	40.9	D	58/111	43.6	D	62/124
Mechanic Street SB RT	100	20.7	C	25/58	17.9	B	26/68
Overall	--	**20.5**	**C**	--	**27.4**	**C**	--
Saturday Midday:							
William Clarke Drive EB LT	100	21.9	C	46/92	22.0	C	47/89
William Clarke Drive EB TH	625	7.4	A	57/125	8.0	A	65/140
William Clarke Drive EB TH/RT	625	6.7	A	63/128	7.1	A	70/145
William Clarke Drive WB LT	100	27.9	C	13/39	27.1	C	12/51
William Clarke Drive WB TH	200	14.6	B	72/165	15.7	B	92/205
William Clarke Drive WB TH/RT	200	14.1	B	133/237	16.1	B	142/262
Mechanic Street NB LT/TH/RT	120	13.7	B	27/56	14.4	B	27/59
Mechanic Street SB LT/TH	240	18.7	B	46/84	22.8	C	51/94
Mechanic Street SB RT	100	6.8	A	29/51	6.9	A	30/56
Overall	--	**11.7**	**B**	--	**12.8**	**B**	--
Main Street at the Westbrook Crossing Driveway and the Project Site Driveway							
Weekday Evening:							
Main Street EB LT	100	10.5	B	48/95	46.7	D	84/141
Main Street EB TH	1,300	4.6	A	1/18	13.1	B	50/125
Main Street EB TH	1,300	4.1	A	0/0	--	--	--
Main Street EB TH/RT	1,300	--	--	--	12.9	B	62/119
Main Street WB LT	125	--	--	--	35.3	D	136/230
Main Street WB TH	450	1.9	A	1/12	24.1	C	187/297
Main Street WB TH/RT	450	3.4	A	2/14	24.2	C	134/236
Project Site Driveway NB LT/TH	200	--	--	--	37.0	D	106/162
Project Site Driveway NB RT	200	--	--	--	8.0	A	46/76
Westbrook Crossing SB LT	100	25.3	D	30/59	--	--	--
Westbrook Crossing SB LT/TH	100	--	--	--	31.6	D	43/103
Westbrook Crossing SB RT	100	6.6	A	52/94	11.3	B	77/119
Overall	--	**4.8**	**A**	--	**22.2**	**C**	--
Saturday Midday:							
Main Street EB LT	100	10.2	B	44/104	29.3	C	98/163
Main Street EB TH	1,300	2.2	A	0/0	39.5	D	128/194
Main Street EB TH	1,300	3.6	A	0/0	--	--	--
Main Street EB TH/RT	1,300	--	--	--	37.3	D	124/176
Main Street WB LT	125	--	--	--	26.8	C	13/191
Main Street WB TH	450	3.0	A	0/0	14.8	B	47/158
Main Street WB TH/RT	450	4.7	A	3/19	9.5	A	33/73
Project Site Driveway NB LT/TH	200	--	--	--	35.7	D	120/180
Project Site Driveway NB RT	200	--	--	--	8.7	A	58/101
Westbrook Crossing SB LT	100	21.5	C	43/86	--	--	--
Westbrook Crossing SB LT/TH	100	--	--	--	34.2	C	55/129
Westbrook Crossing SB RT	100	5.3	A	46/75	6.6	A	53/80
Overall	--	**5.4**	**A**	--	**22.4**	**C**	--

See notes at end of table.

Table 1 (Continued)
MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE SUMMARY

Signalized Intersection/ Peak Hour/Movement	Storage[a] Length	2021 No-Build Delay[b]	LOS[c]	Queue[d] Avg/95th	2021 Build With Mitigation Delay	LOS	Queue Avg/95th
Cumberland Street at Park Road							
Weekday Evening:							
Cumberland Street EB LT/TH	1,110	8.0	A	58/182	11.2	A	105/147
Cumberland Street WB TH/RT	530	10.4	B	46/445	--	--	--
Cumberland Street WB TH	530	--		--	12.1	B	115/178
Cumberland Street WB RT	150	--		--	0.5	A	59/147
Park Road SB LT/RT	1,000	91.9	F	108/239	20.7	C	26/46
Overall		**15.2**	**C**	--	**10.6**	**B**	--
Saturday Midday:							
Cumberland Street EB LT/TH	1,110	2.6	A	13/60	9.1	A	106/197
Cumberland Street WB TH/RT	530	5.5	A	0/0	--	--	--
Cumberland Street WB TH	530	--		--	11.9	B	102/190
Cumberland Street WB RT	150	--		--	0.5	A	22/88
Park Road SB LT/RT	1,000	17.7	C	62/104	16.5	D	69/119
Overall	--	**6.0**	**A**	--	**10.2**	**B**	--
Stroudwater Street at Forest Street							
Weekday Evening:							
Stroudwater Street EB LT/TH	1,050	16.8	C	127/245	43.4	C	216/379
Stroudwater Street WB TH/RT	1,525	3.1	A	8/28	--	--	--
Stroudwater Street WB TH	1,525	--	--	--	12.5	B	138/255
Stroudwater Street WB RT	150	--	--	--	0.8	A	54/142
Forest Street SB LT/RT	190	123.1	F	209/276	20.8	C	110/195
Overall		**26.3**	**C**	--	**11.6**	**B**	--
Saturday Midday:							
Stroudwater Street EB LT/TH	1,050	2.6	A	27/69	10.1	A	79/122
Stroudwater Street WB TH/RT	1,525	1.1	A	1/8	--	--	
Stroudwater Street WB TH	1,525	--	--	--	6.4	A	39/72
Stroudwater Street WB RT	150	--	--	--	0.6	A	21/42
Forest Street SB LT/RT	190	7.7	A	51/89	7.1	A	50/91
Overall	--	**3.3**	**A**	--	**6.7**	**A**	--

[a]Storage length in feet.
[b]Percentile delay per vehicle (seconds).
[c]Level-of-Service.
[d]Queue length in feet.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; NWB = northwestbound; SWB = southwestbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

REFER TO SITE PLANS PREPARED BY
JONES & BEACH ENGINEERS, INC.

PORTLAND
WESTBROOK

PROPOSED SITE DRIVEWAY

R4-7
R3-7R
R3-7R
R4-7
R3-7R

12' 12' 12' 12'
6'
CNC CNC

WIDEN TO PROVIDE TWO APPROACH LANES AND RIGHT-TURN LANE

2'
12' 12' 12' 1' 1' 12' 12' 8'
NT

WESTBROOK ARTERIAL (ROUTE 25)
SPEED LIMIT 35 MPH
MAINE STATE HIGHWAY COMMISSION PLAN 3-189

R3-7R
R4-7

LARRABEE ROAD
R3-7L
LIMIT OF WORK
MEET EXISTING

8' 12' 12' 1' 1' 11' 12' 12' 8'
6'
NT
R3-7L
R4-7
R4-7

WIDEN TO PROVIDE
LEFT TURN LANE

PROPOSED TRAFFIC SIGNAL
TO BE INTERCONNECTED AND
COORDINATED WITH
ADJACENT TRAFFIC SIGNAL
(WESTBROOK ARTERIAL AT
LARRABEE ROAD)

LIMIT OF WORK
MEET EXISTING

SIGN LEGEND	
R3–7R	RIGHT LANE MUST TURN RIGHT
R3–7L	LEFT LANE MUST TURN LEFT
R4–7	

40 0 40 80
SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM JONES & BEACH ENGINEERS, INC.

FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	ADDED SITE PLAN REFERENCE	6/3/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY:	BG	DATE:	5/5/16
DRAWN BY:	JTG	SCALE:	1" = 40'
CHECKED BY:	JSD	SHEET	1 OF 5

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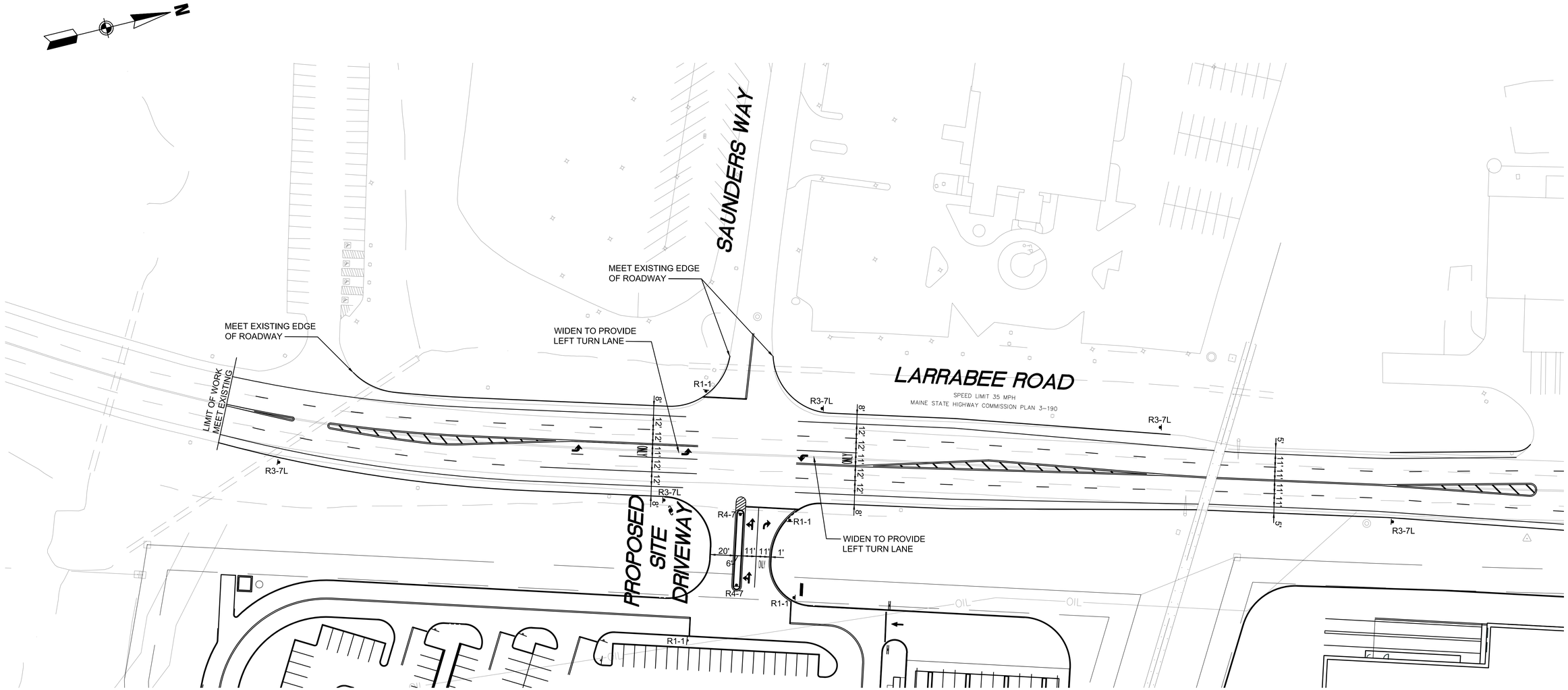

REFER TO SITE PLANS PREPARED BY JONES & BEACH ENGINEERS, INC.

SIGN LEGEND	
R1–1	STOP
R4–7	

40 0 40 80
SCALE IN FEET

NOTES:
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FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	INCREASED SHOULDER WIDTH TO 5' MINIMUM.	6/3/16

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY:	BG	DATE:	5/5/16
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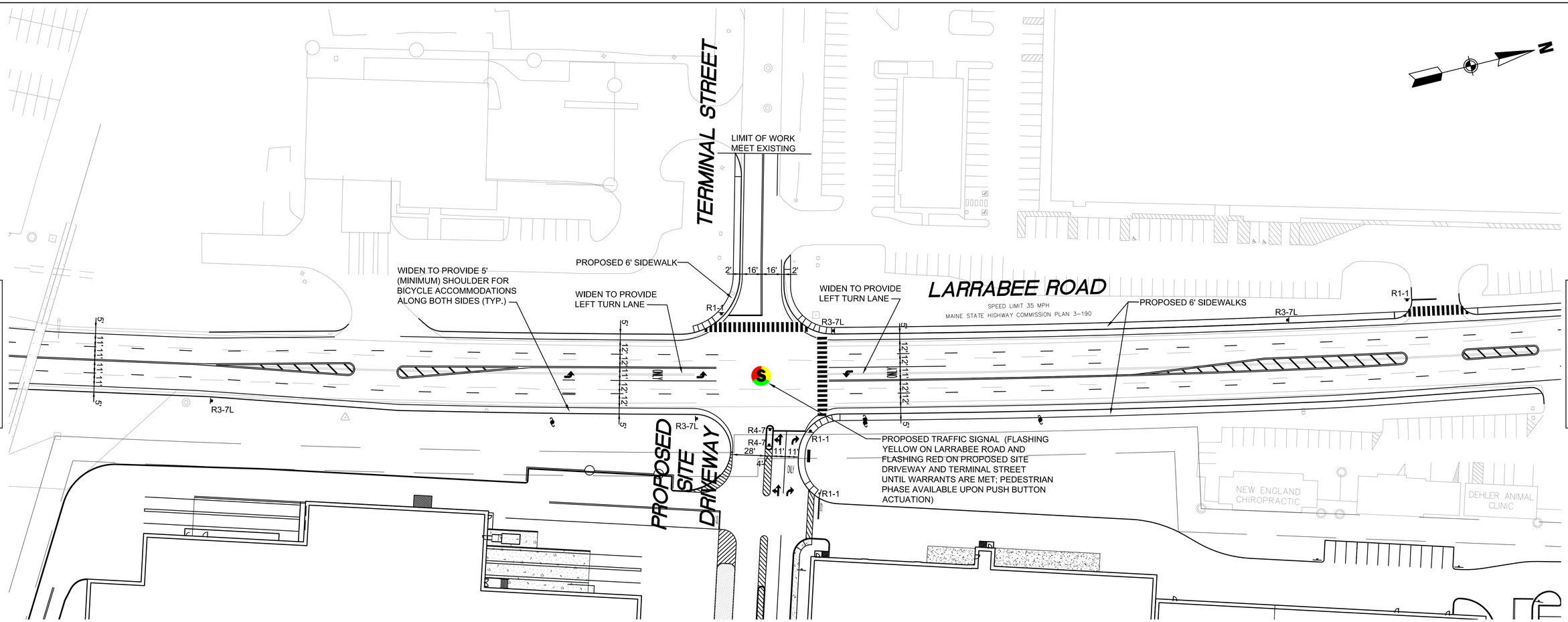

REFER TO SITE PLANS PREPARED BY JONES & BEACH ENGINEERS, INC.

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FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	ADDED SIDEWALKS AND INCREASED SHOULDER WIDTHS TO 5' MINIMUM.	6/3/16

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Transportation Engineers & Planners
35 New England Business Center Drive
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Andover, MA 01810
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FAX (978) 688-6508

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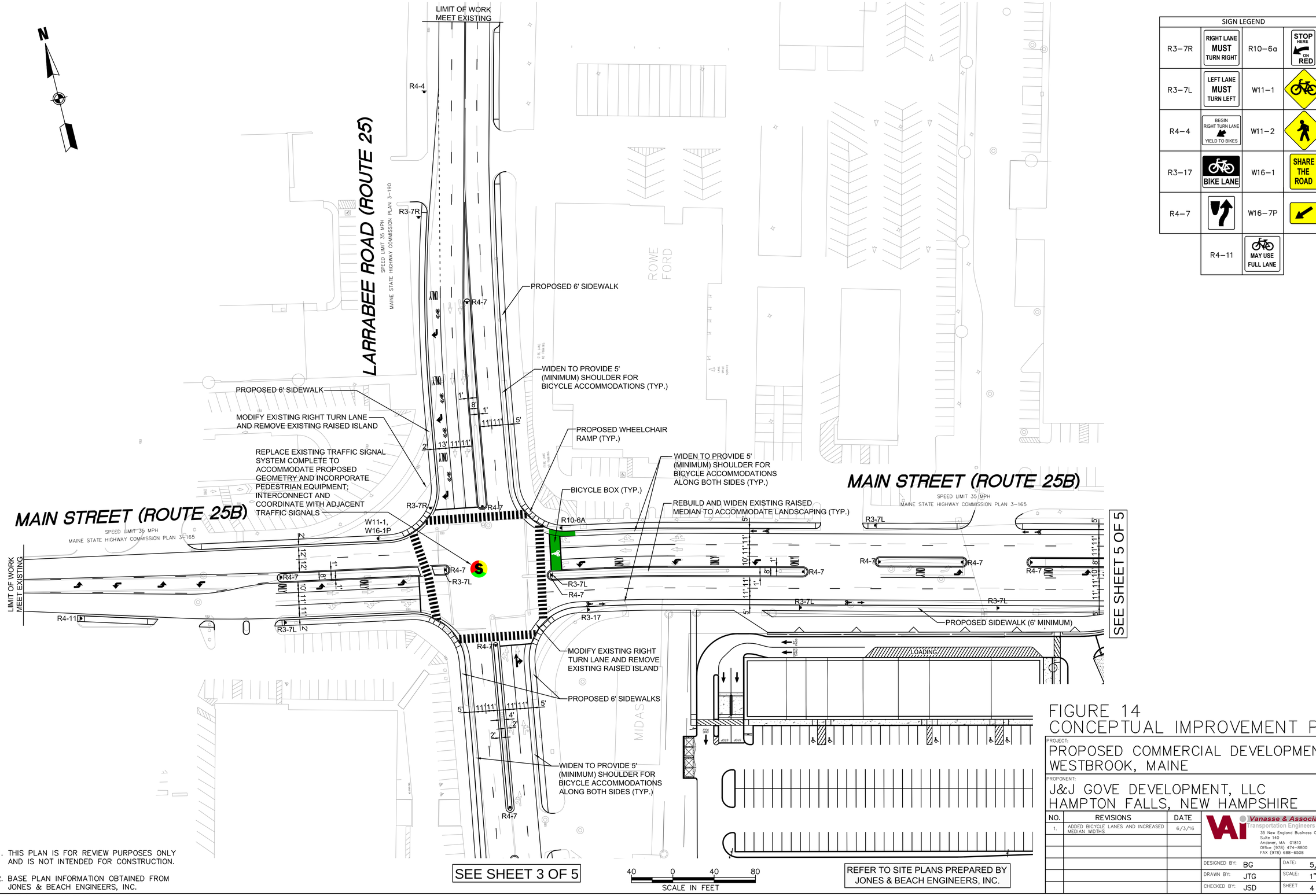

SIGN LEGEND			
R3-7R	RIGHT LANE MUST TURN RIGHT	R10-6a	STOP HERE ON RED
R3-7L	LEFT LANE MUST TURN LEFT	W11-1	
R4-4	BEGIN RIGHT TURN LANE YIELD TO BIKES	W11-2	
R3-17	BIKE LANE	W16-1	SHARE THE ROAD
R4-7		W16-7P	
	R4-11 MAY USE FULL LANE		

NOTES: 1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.

2. BASE PLAN INFORMATION OBTAINED FROM JONES & BEACH ENGINEERS, INC.

FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	ADDED BICYCLE LANES AND INCREASED MEDIAN WIDTHS	6/3/16

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Andover, MA 01810
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FAX (978) 688-6508

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CHECKED BY: JSD	SHEET 4 OF 5

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SIGN LEGEND			
R1–2	YIELD	R10–6a	STOP HERE ON RED
R3–7R	RIGHT LANE MUST TURN RIGHT	W11–1	
R3–7L	LEFT LANE MUST TURN LEFT	W11–2	
R3–17	BIKE LANE	W16–1	SHARE THE ROAD
R4–4	BEGIN RIGHT TURN LANE YIELD TO BIKES	W16–7P	
R4–7		R4–11	MAY USE FULL LANE

SEE SHEET 4 OF 5

SEE RIVERSIDE STREET CORRIDOR IMPROVEMENT PLAN

N

RIVERSIDE STREET

WIDEN TO PROVIDE 5' (MINIMUM) SHOULDER FOR BICYCLE ACCOMMODATIONS ALONG BOTH SIDES (TYP.)

5' 11' 11' 6' 11' 11' 5'

PROPOSED 6' SIDEWALK

R3-17

R4-4

W11-1

R4-7

R1-2

PROPOSED WHEELCHAIR RAMP (TYP.)

W11-2, W16-7P

5' 11' 11' 2'

R10-6A

W11-2, W16-7P

BRIGHTON AVENUE (ROUTE 25/25B)

R3-7R

R4-4

R3-7L

R4-7

10' 11' 11'

5'

LIMIT OF WORK MEET EXISTING

W11-1, W16-1P

MODIFY EXISTING TRAFFIC SIGNAL AND INTERCONNECT AND COORDINATE WITH ADJACENT TRAFFIC SIGNALS

PROPOSED 6' SIDEWALK

BICYCLE BOX (TYP.)

MOTEL 6

DENNY'S

NAPA

CHIPOTLE

MAIN STREET (ROUTE 25B)

SPEED LIMIT 35 MPH
MAINE STATE HIGHWAY COMMISSION PLAN 3–165

PROPOSED 6' SIDEWALK

MODIFY EXISTING RAISED MEDIAN TO PROVIDE A NORTHBOUND LEFT TURN LANE

R10-6A

R3-17

W11-1

R1-2

R3-7L

R4-7

5' 10' 11' 11' 1' 8'

WIDEN TO PROVIDE 5' (MINIMUM) SHOULDER FOR BICYCLE ACCOMMODATIONS ALONG BOTH SIDES (TYP.)

PROPOSED SIDEWALK (6' MINIMUM)

PROPOSED 6' SIDEWALK

PROPOSED TRAFFIC SIGNAL TO BE COORDINATED WITH ADJACENT TRAFFIC SIGNALS

REBUILD EXISTING RAISED MEDIAN AND EXTEND LEFT-TURN LANE STORAGE

TE 25B)

.K (6' MINIMUM)

R10-6A

R4-7

R3-7R

20' 12' 12'

ONLY

PROPOSED SITE DRIVEWAY

WESTBROOK PORTLAND

REFER TO SITE PLANS PREPARED BY JONES & BEACH ENGINEERS, INC.

40 0 40 80
SCALE IN FEET

NOTES:
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FIGURE 14
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE
1.	ADDED BICYCLE LANES AND INCREASED MEDIAN WIDTHS	6/3/16

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Transportation Engineers & Planners
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Andover, MA 01810
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NOTES:
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2. BASE PLAN INFORMATION OBTAINED FROM GOOGLE EARTH.

CUMBERLAND STREET AT BRIDGE STREET CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE

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Transportation Engineers & Planners
35 New England Business Center Drive
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Andover, MA 01810
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FAX (978) 688-6508

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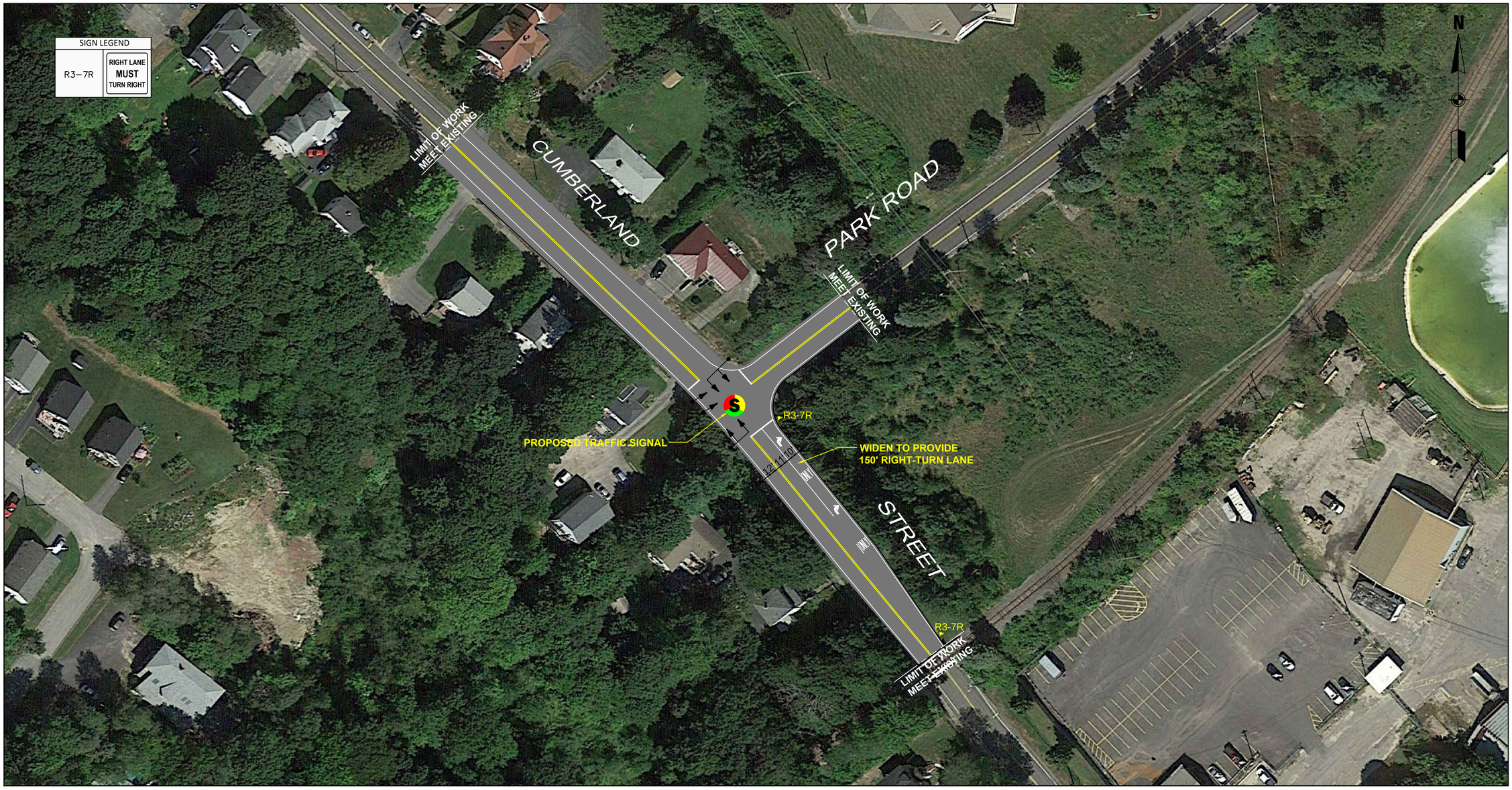

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SCALE IN FEET

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2. BASE PLAN INFORMATION OBTAINED FROM GOOGLE EARTH.

CUMBERLAND STREET AT PARK ROAD
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE

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Transportation Engineers & Planners
35 New England Business Center Drive
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Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

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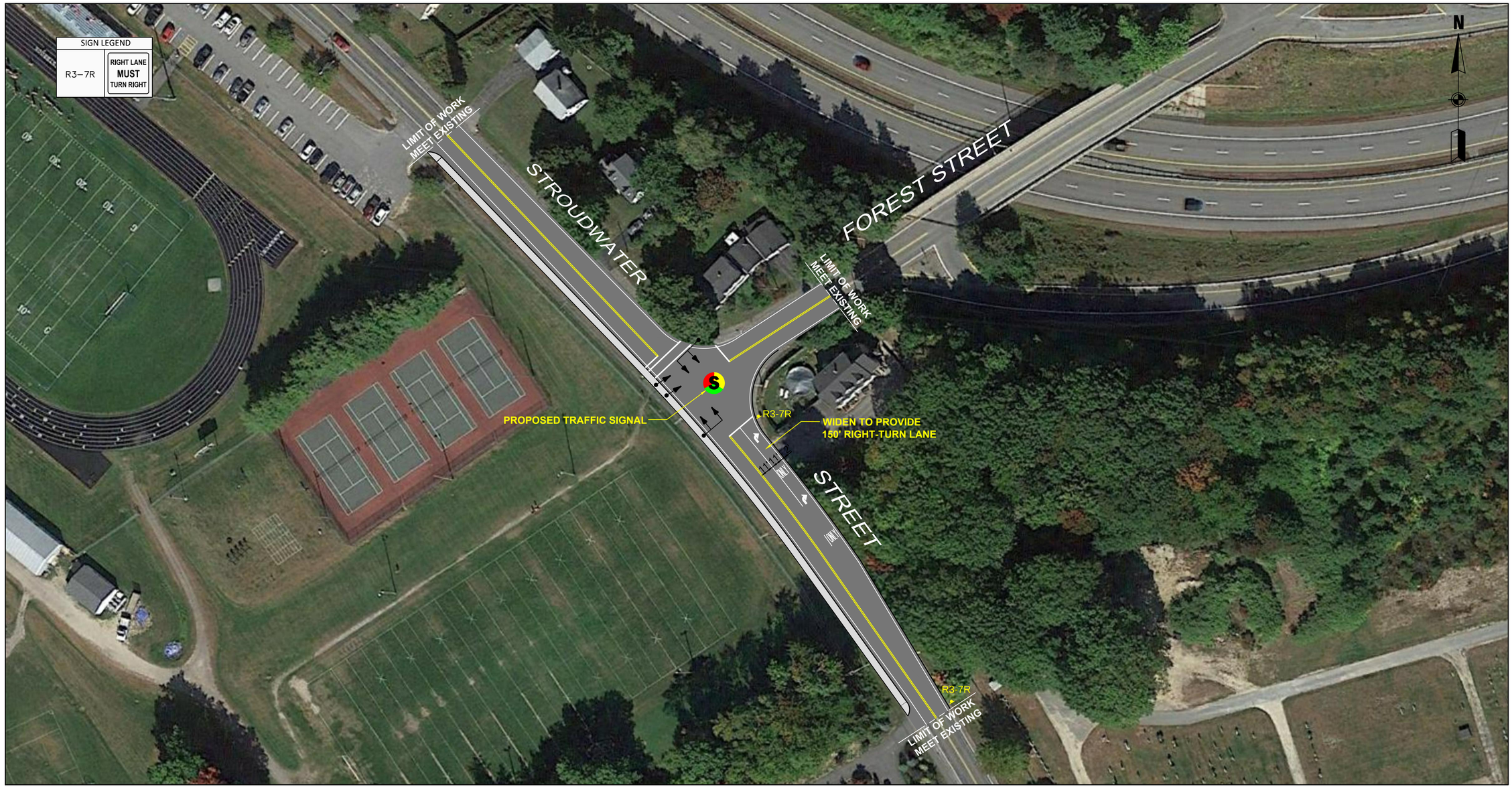

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SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM GOOGLE EARTH.

STROUDWATER STREET AT FOREST STREET
CONCEPTUAL IMPROVEMENT PLAN

PROJECT:
PROPOSED COMMERCIAL DEVELOPMENT
WESTBROOK, MAINE

PROPONENT:
J&J GOVE DEVELOPMENT, LLC
HAMPTON FALLS, NEW HAMPSHIRE

NO.	REVISIONS	DATE

Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810
Office (978) 474-8800
FAX (978) 688-6508

DESIGNED BY:	BG	DATE:	6/3/16
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APPENDIX

SILTRAFFIC CAPACITY ANALYSIS WORKSHEETS
TRAFFIC SIGNAL WARRANT ANALYSIS

SIMTRAFFIC CAPACITY ANALYSIS WORKSHEETS

1: New Gorham Road & Route 25/William Clarke Boul. Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NE	NE	SW	SW	All
Movements Served	L	T	TR	L	T	TR	LT	R	LT	R	
Denied Del/Veh (s)											1.1
Total Del/Veh (s)	35.9	15.9	13.8	36.6	12.1	16.0	31.0	4.9	33.3	1.4	18.3

2: Saco Street & William Clarke Boul. Performance by lane

Lane	EB	EB	WB	WB	NB	NB	All
Movements Served	T	TR	L	T	L	R	
Denied Del/Veh (s)							0.4
Total Del/Veh (s)	7.2	9.1	42.6	40.8	49.2	6.6	30.1

3: Mechanic Street & William Clarke Boul. Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	LTR	LT	R	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	39.2	12.8	11.0	35.9	30.9	36.1	36.2	43.6	17.9	27.4

4: Spring Street & William Clarke Boul. Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	L	T	R	L	TR	
Denied Del/Veh (s)												0.8
Total Del/Veh (s)	49.5	40.6	44.8	36.7	24.0	26.1	40.6	38.4	8.4	41.0	36.2	32.6

5: Stroudwater Street & William Clarke Boul. Performance by lane

Lane	EB	EB	EB	WB	WB	WB	SE	SE	NW	NW	All
Movements Served	L	T	TR	L	T	TR	L	TR	L	LTR	
Denied Del/Veh (s)											0.4
Total Del/Veh (s)	48.3	17.4	20.3	47.1	17.8	20.3	39.3	26.3	35.9	33.2	23.4

6: Hannaford Drive & William Clarke Boul. Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	All
Movements Served	T	TR	L	T	T	L	LR	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	13.2	14.0	42.0	5.9	5.8	33.1	16.2	13.6

7: William Clarke Boul. & Westbrook Arterial Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	T	TR	L	R	
Denied Del/Veh (s)								0.1
Total Del/Veh (s)	33.4	13.1	6.8	21.3	17.3	32.1	34.8	20.3

8: Westbrook Arterial & Main Street Performance by lane

Lane	EB	EB	WB	WB	NB	NB	All
Movements Served	T	R	L	T	L	R	
Denied Del/Veh (s)							1.1
Total Del/Veh (s)	16.7	11.9	18.8	6.8	18.1	18.4	13.9

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	65.3

Intersection: 1: New Gorham Road & Route 25/William Clarke Boul.

Movement	EB	EB	EB	WB	WB	WB	NE	NE	SW	SW
Directions Served	L	T	TR	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	196	188	135	202	147	147	131	65	203	81
Average Queue (ft)	94	89	67	114	96	100	65	24	101	11
95th Queue (ft)	167	159	119	187	140	141	119	50	177	47
Link Distance (ft)		464	464	218	218	218	459		356	
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				2						
Storage Bay Dist (ft)	150							390		325
Storage Blk Time (%)	2	1								
Queuing Penalty (veh)	5	1								

Intersection: 2: Saco Street & William Clarke Boul.

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	TR	L	T	L	R
Maximum Queue (ft)	112	112	529	569	469	250
Average Queue (ft)	45	56	268	376	189	88
95th Queue (ft)	90	105	543	687	352	216
Link Distance (ft)	218	218	552	552	672	
Upstream Blk Time (%)			2	6		
Queuing Penalty (veh)			12	35		
Storage Bay Dist (ft)						175
Storage Blk Time (%)					15	
Queuing Penalty (veh)					34	

Intersection: 3: Mechanic Street & William Clarke Boul.

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	139	248	259	153	507	536	190	146	88
Average Queue (ft)	69	91	86	30	286	337	75	62	26
95th Queue (ft)	124	201	198	106	521	553	150	124	68
Link Distance (ft)		552	552		1642	1642	729	297	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	70			100					100
Storage Blk Time (%)	16	10			22			3	0
Queuing Penalty (veh)	59	11			4			1	0

Intersection: 4: Spring Street & William Clarke Boul.

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	154	371	389	237	305	289	224	387	205	149	248
Average Queue (ft)	53	220	241	96	167	175	119	178	87	42	125
95th Queue (ft)	145	347	367	186	276	277	208	319	195	100	209
Link Distance (ft)		1642	1642		644	644		431			306
Upstream Blk Time (%)								0			0
Queuing Penalty (veh)								0			0
Storage Bay Dist (ft)	80			240			150		130	75	
Storage Blk Time (%)	1	44		0	3		3	18	1	3	30
Queuing Penalty (veh)	3	15		1	5		19	72	4	7	17

Intersection: 5: Stroudwater Street & William Clarke Boul.

Movement	EB	EB	EB	WB	WB	WB	SE	SE	NW	NW
Directions Served	L	T	TR	L	T	TR	L	TR	L	LTR
Maximum Queue (ft)	65	264	271	149	268	290	233	221	61	123
Average Queue (ft)	11	93	106	33	125	138	164	90	20	62
95th Queue (ft)	40	211	225	100	230	248	256	169	48	112
Link Distance (ft)		644	644		1029	1029	216	216	415	
Upstream Blk Time (%)							6	0		
Queuing Penalty (veh)							0	0		
Storage Bay Dist (ft)	80			110						260
Storage Blk Time (%)		14		0	8					
Queuing Penalty (veh)		3		1	4					

Intersection: 6: Hannaford Drive & William Clarke Boul.

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	LR
Maximum Queue (ft)	277	297	176	148	129	166	156
Average Queue (ft)	145	152	93	49	60	88	67
95th Queue (ft)	246	261	154	107	109	141	121
Link Distance (ft)	1029	1029		485	485	191	191
Upstream Blk Time (%)						0	0
Queuing Penalty (veh)						0	0
Storage Bay Dist (ft)			165				
Storage Blk Time (%)			1	0			
Queuing Penalty (veh)			5	0			

Intersection: 7: William Clarke Boul. & Westbrook Arterial

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	220	342	273	282	251	190	212
Average Queue (ft)	151	72	76	185	161	80	102
95th Queue (ft)	225	208	162	265	242	151	176
Link Distance (ft)		485	485	1282	1282	431	431
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	145						
Storage Blk Time (%)	14	0					
Queuing Penalty (veh)	44	0					

Intersection: 8: Westbrook Arterial & Main Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (ft)	235	95	163	209	97	240
Average Queue (ft)	119	43	84	92	38	111
95th Queue (ft)	192	81	135	168	77	200
Link Distance (ft)	654			513	431	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		275	375			200
Storage Blk Time (%)	0					1
Queuing Penalty (veh)	0					1

Network Summary

Network wide Queuing Penalty: 367

1: New Gorham Road & Route 25/William Clarke Boul. Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NE	NE	SW	SW	All
Movements Served	L	T	TR	L	T	TR	LT	R	LT	R	
Denied Del/Veh (s)											1.2
Total Del/Veh (s)	30.1	18.9	17.5	35.5	10.3	12.2	27.6	6.1	26.6	0.9	16.6

2: Saco Street & William Clarke Boul. Performance by lane

Lane	EB	EB	WB	WB	NB	NB	All
Movements Served	T	TR	L	T	L	R	
Denied Del/Veh (s)							0.4
Total Del/Veh (s)	9.2	11.7	33.6	32.4	25.1	7.1	20.5

3: Mechanic Street & William Clarke Boul. Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	LTR	LT	R	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	22.0	8.0	7.1	27.1	15.7	16.1	14.4	22.8	6.9	12.8

4: Spring Street & William Clarke Boul. Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	L	T	R	L	TR	
Denied Del/Veh (s)												0.7
Total Del/Veh (s)	47.7	39.3	45.6	36.6	18.9	19.0	35.3	26.1	7.4	39.0	30.3	30.2

5: Stroudwater Street & William Clarke Boul. Performance by lane

Lane	EB	EB	EB	WB	WB	WB	SE	SE	NW	NW	All
Movements Served	L	T	TR	L	T	TR	L	TR	L	LTR	
Denied Del/Veh (s)											0.3
Total Del/Veh (s)	30.7	24.2	28.6	27.9	10.0	10.2	22.1	16.9	27.5	23.2	20.0

6: Hannaford Drive & William Clarke Boul. Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	All
Movements Served	T	TR	L	T	T	L	LR	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	13.4	13.9	22.0	8.1	6.3	19.9	8.3	12.0

7: William Clarke Boul. & Westbrook Arterial Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	T	TR	L	R	
Denied Del/Veh (s)								0.1
Total Del/Veh (s)	21.6	10.3	7.6	17.1	11.5	21.8	24.6	14.7

8: Westbrook Arterial & Main Street Performance by lane

Lane	EB	EB	WB	WB	NB	NB	All
Movements Served	T	R	L	T	L	R	
Denied Del/Veh (s)							1.2
Total Del/Veh (s)	16.4	12.5	21.0	7.7	20.9	19.7	14.0

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	49.2

Intersection: 1: New Gorham Road & Route 25/William Clarke Boul.

Movement	EB	EB	EB	WB	WB	WB	NE	NE	SW	SW
Directions Served	L	T	TR	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	182	207	186	124	104	85	182	91	163	58
Average Queue (ft)	87	113	93	56	47	48	94	33	66	6
95th Queue (ft)	149	186	159	109	85	80	165	71	129	30
Link Distance (ft)		464	464	218	218	218	459		356	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150							390		325
Storage Blk Time (%)	1	3								
Queuing Penalty (veh)	2	6								

Intersection: 2: Saco Street & William Clarke Boul.

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	TR	L	T	L	R
Maximum Queue (ft)	156	182	352	522	97	110
Average Queue (ft)	65	78	111	282	44	49
95th Queue (ft)	120	137	234	470	83	87
Link Distance (ft)	218	218	552	552	672	
Upstream Blk Time (%)	0	0	0	0		
Queuing Penalty (veh)	0	1	0	1		
Storage Bay Dist (ft)					175	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Mechanic Street & William Clarke Boul.

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	110	183	173	96	250	286	70	109	60
Average Queue (ft)	47	65	70	12	92	142	27	51	30
95th Queue (ft)	89	140	145	51	205	262	59	94	56
Link Distance (ft)		552	552		1642	1642	729	297	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	70			100					100
Storage Blk Time (%)	5	4			4			1	
Queuing Penalty (veh)	19	4			1			1	

Intersection: 4: Spring Street & William Clarke Boul.

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	TR
Maximum Queue (ft)	154	455	472	204	253	276	132	154	127	149	276
Average Queue (ft)	47	229	253	102	123	134	64	76	53	44	139
95th Queue (ft)	134	377	401	172	215	225	114	134	96	112	230
Link Distance (ft)		1642	1642		644	644		431			306
Upstream Blk Time (%)											0
Queuing Penalty (veh)											0
Storage Bay Dist (ft)	80			240			150		130	75	
Storage Blk Time (%)	1	46		0	0		0	1	0	1	33
Queuing Penalty (veh)	3	18		0	0		0	4	1	3	14

Intersection: 5: Stroudwater Street & William Clarke Boul.

Movement	EB	EB	EB	WB	WB	WB	SE	SE	NW	NW
Directions Served	L	T	TR	L	T	TR	L	TR	L	LTR
Maximum Queue (ft)	131	276	298	82	136	144	150	118	62	123
Average Queue (ft)	20	154	177	21	50	56	61	58	17	58
95th Queue (ft)	84	267	291	58	105	114	115	102	43	107
Link Distance (ft)		644	644		1029	1029	216	216	415	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80			110						260
Storage Blk Time (%)	0	24			1					
Queuing Penalty (veh)	0	7			0					

Intersection: 6: Hannaford Drive & William Clarke Boul.

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	LR
Maximum Queue (ft)	220	236	145	136	142	134	102
Average Queue (ft)	113	118	68	52	68	60	47
95th Queue (ft)	203	215	114	108	122	107	82
Link Distance (ft)	1029	1029		485	485	191	191
Upstream Blk Time (%)						0	
Queuing Penalty (veh)						0	
Storage Bay Dist (ft)			165				
Storage Blk Time (%)			0	0			
Queuing Penalty (veh)			0	0			

Intersection: 7: William Clarke Boul. & Westbrook Arterial

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	189	152	155	221	184	127	179
Average Queue (ft)	105	57	76	130	93	56	88
95th Queue (ft)	165	129	142	194	164	106	147
Link Distance (ft)		485	485	1282	1282	431	431
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	145						
Storage Blk Time (%)	2	0					
Queuing Penalty (veh)	9	0					

Intersection: 8: Westbrook Arterial & Main Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	R
Maximum Queue (ft)	260	92	161	269	80	179
Average Queue (ft)	134	41	83	119	28	98
95th Queue (ft)	218	79	136	206	63	164
Link Distance (ft)	654			513	431	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		275	375			200
Storage Blk Time (%)	0			0		0
Queuing Penalty (veh)	0			0		0

Network Summary

Network wide Queuing Penalty: 92

3: Bridge Street & Cumberland Street Performance by lane

Lane	EB	WB	WB	NB	SB	All
Movements Served	LTR	LT	R	LTR	LTR	
Denied Del/Veh (s)						0.5
Total Del/Veh (s)	50.0	37.1	5.0	38.1	37.3	37.7

6: Cumberland Street & Park Road Performance by lane

Lane	EB	WB	WB	SB	All
Movements Served	LT	T	R	LR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	11.2	12.1	0.5	20.7	10.6

8: Harnois Avenue & Cumberland Street/Main Street Performance by lane

Lane	EB	EB	WB	WB	WB	WB	All
Movements Served	R	R	L	L	T	T	
Denied Del/Veh (s)							0.1
Total Del/Veh (s)	19.9	10.5	1.0	2.6	6.0	5.9	7.3

9: Main Street & warren Avenue Performance by lane

Lane	WB	WB	WB	SB	SB	All
Movements Served	T	T	TR	R	R	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	3.1	3.7	3.9	27.4	17.1	5.5

10: Connector & Main Street/Main Street Performance by lane

Lane	WB	WB	NE	NE	NE	All
Movements Served	T	T	L	R	R	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	13.4	11.2	27.3	0.5	0.2	11.3

11: Main Street/Harnois Avenue & Connector Performance by lane

Lane	NB	NB	SB	SB	SB	All
Movements Served	R	R	L	L	T	
Denied Del/Veh (s)						0.1
Total Del/Veh (s)	9.7	4.7	2.3	4.9	0.5	4.2

13: Forest Street & Main Street Performance by lane

Lane	EB	EB	WB	WB	NB	SB	All
Movements Served	LT	R	LT	TR	LTR	LTR	
Denied Del/Veh (s)							0.1
Total Del/Veh (s)	12.2	5.0	15.8	7.9	16.5	13.9	13.0

Total Network Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	46.3

Intersection: 3: Bridge Street & Cumberland Street

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (ft)	357	448	150	350	326
Average Queue (ft)	206	338	79	174	233
95th Queue (ft)	288	499	182	255	350
Link Distance (ft)	349	1059		413	322
Upstream Blk Time (%)	6				1
Queuing Penalty (veh)	0				0
Storage Bay Dist (ft)			125		
Storage Blk Time (%)		37	0		
Queuing Penalty (veh)		59	0		

Intersection: 6: Cumberland Street & Park Road

Movement	EB	WB	WB	SB
Directions Served	LT	T	R	LR
Maximum Queue (ft)	246	200	125	66
Average Queue (ft)	105	115	59	26
95th Queue (ft)	252	178	147	46
Link Distance (ft)	1059	2611		298
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)		5	0	
Queuing Penalty (veh)		14	1	

Intersection: 8: Harnois Avenue & Cumberland Street/Main Street

Movement	EB	EB	WB	WB	WB	WB
Directions Served	R	R	L	L	T	T
Maximum Queue (ft)	101	132	31	95	131	124
Average Queue (ft)	78	99	9	34	68	76
95th Queue (ft)	113	129	32	85	124	143
Link Distance (ft)	2611				266	266
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		200	200	200		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Main Street & warren Avenue

Movement	WB	WB	WB	SB	SB
Directions Served	T	T	TR	R	R
Maximum Queue (ft)	94	74	77	115	47
Average Queue (ft)	50	48	50	71	14
95th Queue (ft)	100	75	73	114	42
Link Distance (ft)	341	341	341	226	226
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 10: Connector & Main Street/Main Street

Movement	WB	WB	NE
Directions Served	T	T	L
Maximum Queue (ft)	302	237	260
Average Queue (ft)	156	146	172
95th Queue (ft)	236	237	247
Link Distance (ft)	593	593	269
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Main Street/Harnois Avenue & Connector

Movement	NB	NB	SB	SB
Directions Served	R	R	L	L
Maximum Queue (ft)	147	54	32	72
Average Queue (ft)	90	37	17	38
95th Queue (ft)	134	53	43	54
Link Distance (ft)	922	922	344	344
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Forest Street & Main Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	R	LT	TR	LTR	LTR
Maximum Queue (ft)	138	25	218	173	238	30
Average Queue (ft)	109	4	179	118	122	8
95th Queue (ft)	146	18	223	187	242	30
Link Distance (ft)	593	593	977	977	716	411
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 75

3: Bridge Street & Cumberland Street Performance by lane

Lane	EB	WB	WB	NB	SB	All
Movements Served	LTR	LT	R	LTR	LTR	
Denied Del/Veh (s)						0.5
Total Del/Veh (s)	16.1	26.9	4.3	18.8	24.4	20.7

6: Cumberland Street & Park Road Performance by lane

Lane	EB	WB	WB	SB	All
Movements Served	LT	T	R	LR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	9.1	11.9	0.5	16.5	10.2

8: Harnois Avenue & Cumberland Street/Main Street Performance by lane

Lane	EB	EB	WB	WB	WB	WB	All
Movements Served	R	R	L	L	T	T	
Denied Del/Veh (s)							0.1
Total Del/Veh (s)	32.4	14.1	3.2	7.8	4.6	2.2	10.5

9: Main Street & warren Avenue Performance by lane

Lane	WB	WB	WB	SB	SB	All
Movements Served	T	T	TR	R	R	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	3.6	2.9	2.6	23.5	8.7	5.4

10: Connector & Main Street/Main Street Performance by lane

Lane	WB	WB	NE	NE	NE	All
Movements Served	T	T	L	R	R	
Denied Del/Veh (s)						0.2
Total Del/Veh (s)	12.2	9.8	39.0	0.9	0.2	13.6

11: Main Street/Harnois Avenue & Connector Performance by lane

Lane	NB	NB	SB	SB	SB	All
Movements Served	R	R	L	L	T	
Denied Del/Veh (s)						0.1
Total Del/Veh (s)	15.9	4.9	4.9	8.0	0.7	6.2

13: Forest Street & Main Street Performance by lane

Lane	EB	EB	WB	WB	NB	SB	All
Movements Served	LT	R	LT	TR	LTR	LTR	
Denied Del/Veh (s)							0.1
Total Del/Veh (s)	9.9	6.7	26.5	5.3	15.9	10.3	14.7

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	45.1

Intersection: 3: Bridge Street & Cumberland Street

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (ft)	307	488	72	227	263
Average Queue (ft)	145	204	26	111	120
95th Queue (ft)	267	423	59	190	213
Link Distance (ft)	349	1059	1059	413	323
Upstream Blk Time (%)	1				0
Queuing Penalty (veh)	0				0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Cumberland Street & Park Road

Movement	EB	WB	WB	SB
Directions Served	LT	T	R	LR
Maximum Queue (ft)	250	249	128	141
Average Queue (ft)	106	102	22	69
95th Queue (ft)	197	190	88	119
Link Distance (ft)	1059	2610		300
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			125	
Storage Blk Time (%)		2	0	
Queuing Penalty (veh)		4	0	

Intersection: 8: Harnois Avenue & Cumberland Street/Main Street

Movement	EB	EB	WB	WB	WB	WB
Directions Served	R	R	L	L	T	T
Maximum Queue (ft)	368	216	200	211	126	83
Average Queue (ft)	137	145	43	102	15	20
95th Queue (ft)	285	228	124	185	66	59
Link Distance (ft)	2610				266	266
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)		200	200	200		
Storage Blk Time (%)	1	3	0	1		
Queuing Penalty (veh)	2	12	0	2		

Intersection: 9: Main Street & warren Avenue

Movement	WB	WB	WB	SB	SB
Directions Served	T	T	TR	R	R
Maximum Queue (ft)	163	84	82	149	55
Average Queue (ft)	56	32	25	77	7
95th Queue (ft)	131	75	69	132	31
Link Distance (ft)	341	341	341	226	226
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 10: Connector & Main Street/Main Street

Movement	WB	WB	NE	NE	NE	B12	B12	B12
Directions Served	T	T	L	R	R	T	T	T
Maximum Queue (ft)	265	198	350	43	22	160	96	94
Average Queue (ft)	136	97	239	4	1	24	16	11
95th Queue (ft)	221	167	358	25	11	161	148	110
Link Distance (ft)	593	593	269	269	269	440	440	440
Upstream Blk Time (%)			12			0	0	0
Queuing Penalty (veh)			49			1	1	0
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 11: Main Street/Harnois Avenue & Connector

Movement	NB	NB	SB	SB
Directions Served	R	R	L	L
Maximum Queue (ft)	266	210	146	171
Average Queue (ft)	137	69	46	71
95th Queue (ft)	228	164	100	137
Link Distance (ft)	922	922	344	344
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Forest Street & Main Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	R	LT	TR	LTR	LTR
Maximum Queue (ft)	335	37	426	408	108	39
Average Queue (ft)	118	12	187	118	46	14
95th Queue (ft)	248	34	357	306	84	40
Link Distance (ft)	593	593	977	977	716	411
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 72

18: Forest Street & Libby Avenue/Route 25 Off-Ramp Performance by lane

Lane	EB	WB	WB	NB	SB	All
Movements Served	LTR	LT	R	LTR	LTR	
Denied Del/Veh (s)						0.1
Total Del/Veh (s)	4.5	9.2	1.5	0.7	0.3	2.7

19: Forest Street & Route 25 On-Ramp Performance by lane

Lane	NB	SB	All
Movements Served	TR	LT	
Denied Del/Veh (s)			0.0
Total Del/Veh (s)	1.1	1.3	1.2

20: Stroudwater Street & Forest Street Performance by lane

Lane	EB	WB	WB	SB	All
Movements Served	LT	T	R	LR	
Denied Del/Veh (s)					1.1
Total Del/Veh (s)	43.3	12.5	0.8	20.8	19.6

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	20.8

Intersection: 18: Forest Street & Libby Avenue/Route 25 Off-Ramp

Movement	EB	WB	WB	NB
Directions Served	LTR	LT	R	LTR
Maximum Queue (ft)	28	95	56	51
Average Queue (ft)	13	50	13	5
95th Queue (ft)	36	76	51	26
Link Distance (ft)	129	215	215	213
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 19: Forest Street & Route 25 On-Ramp

Movement	SB
Directions Served	LT
Maximum Queue (ft)	75
Average Queue (ft)	12
95th Queue (ft)	45
Link Distance (ft)	213
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Stroudwater Street & Forest Street

Movement	EB	WB	WB	SB
Directions Served	LT	T	R	LR
Maximum Queue (ft)	424	257	150	217
Average Queue (ft)	216	138	54	110
95th Queue (ft)	379	255	142	195
Link Distance (ft)	1272	633		206
Upstream Blk Time (%)				1
Queuing Penalty (veh)				2
Storage Bay Dist (ft)			125	
Storage Blk Time (%)		7	0	
Queuing Penalty (veh)		20	0	

Network Summary

Network wide Queuing Penalty: 22

18: Forest Street & Libby Avenue/Route 25 Off-Ramp Performance by lane

Lane	EB	WB	WB	NB	SB	All
Movements Served	LTR	LT	R	LT	TR	
Denied Del/Veh (s)						0.1
Total Del/Veh (s)	3.9	5.5	1.0	0.7	0.2	2.0

19: Forest Street & Route 25 On-Ramp Performance by lane

Lane	NB	SB	All
Movements Served	TR	LT	
Denied Del/Veh (s)			0.0
Total Del/Veh (s)	0.8	0.8	0.8

20: Stroudwater Street & Forest Street Performance by lane

Lane	EB	WB	WB	SB	All
Movements Served	LT	T	R	LR	
Denied Del/Veh (s)					0.9
Total Del/Veh (s)	10.1	6.4	0.6	7.1	6.7

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	8.6

Intersection: 18: Forest Street & Libby Avenue/Route 25 Off-Ramp

Movement	EB	WB	NB
Directions Served	LTR	LT	LT
Maximum Queue (ft)	28	56	24
Average Queue (ft)	14	34	3
95th Queue (ft)	37	53	16
Link Distance (ft)	128	215	213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: Forest Street & Route 25 On-Ramp

Movement	NB	SB
Directions Served	TR	LT
Maximum Queue (ft)	22	53
Average Queue (ft)	1	7
95th Queue (ft)	7	30
Link Distance (ft)	206	213
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Stroudwater Street & Forest Street

Movement	EB	WB	WB	SB
Directions Served	LT	T	R	LR
Maximum Queue (ft)	141	120	53	126
Average Queue (ft)	79	39	21	50
95th Queue (ft)	122	77	42	91
Link Distance (ft)	1272	633		206
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			125	
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Network Summary

Network wide Queuing Penalty: 0

2: I-95 Ramps & Rand Road Performance by lane

Lane	EB	EB	WB	WB	NB	NB	NB	All
Movements Served	T	R	L	T	L	L	R	
Denied Del/Veh (s)								2.2
Total Del/Veh (s)	27.3	6.0	20.9	11.8	23.0	15.2	5.4	15.7

6: Larrabee Road & Saunders Way/South Site Drive Performance by lane

Lane	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	LTR	LT	R	LT	TR	LT	TR	
Denied Del/Veh (s)								0.2
Total Del/Veh (s)	11.7	22.1	3.7	1.1	1.3	1.6	0.6	2.3

9: Westbrook Arterial & Site Drive Performance by lane

Lane	EB	EB	EB	WB	WB	WB	SB	SB	All
Movements Served	L	T	T	T	T	R	L	R	
Denied Del/Veh (s)									2.2
Total Del/Veh (s)	35.9	5.2	28.1	4.2	4.6	1.3	32.3	6.0	7.8

11: Rand Road Performance by lane

Lane	EB	WB	WB	All
Movements Served	T	T	T	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.5	0.7	0.8	0.6

24: Wesrbrook Arterial/Westbrook Arterial & Larrabee Road Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	T	TR	L	R	
Denied Del/Veh (s)								0.4
Total Del/Veh (s)	27.7	10.8	10.6	21.5	25.9	42.7	14.1	20.9

Total Network Performance

Denied Del/Veh (s)	2.1
Total Del/Veh (s)	22.2

Intersection: 2: I-95 Ramps & Rand Road

Movement	EB	EB	WB	WB	NB	NB	NB
Directions Served	T	R	L	T	L	L	R
Maximum Queue (ft)	167	148	252	165	262	224	126
Average Queue (ft)	141	108	101	99	170	119	31
95th Queue (ft)	168	172	177	164	238	222	76
Link Distance (ft)				859	384	384	384
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		250	325				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Larrabee Road & Saunders Way/South Site Drive

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LT	LT
Maximum Queue (ft)	74	92	50	31	93
Average Queue (ft)	23	42	28	3	10
95th Queue (ft)	56	82	46	18	44
Link Distance (ft)	236	266	266	805	738
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 9: Westbrook Arterial & Site Drive

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	128	139	46	65	53	138	138
Average Queue (ft)	66	74	45	46	25	82	46
95th Queue (ft)	110	141	52	56	55	135	98
Link Distance (ft)		578				122	122
Upstream Blk Time (%)			1	2	0	2	1
Queuing Penalty (veh)			0	0	0	0	0
Storage Bay Dist (ft)	150						
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Intersection: 11: Rand Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 24: Wesrbrook Arterial/Westbrook Arterial & Larrabee Road

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	174	334	298	488	485	282	254
Average Queue (ft)	138	136	44	168	192	150	155
95th Queue (ft)	198	279	165	342	391	242	247
Link Distance (ft)		1070	1070	578	578	805	805
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150						
Storage Blk Time (%)	10	1					
Queuing Penalty (veh)	31	2					

Network Summary

Network wide Queuing Penalty: 33

2: I-95 Ramps & Rand Road Performance by lane

Lane	EB	EB	WB	WB	NB	NB	NB	All
Movements Served	T	R	L	T	L	L	R	
Denied Del/Veh (s)								0.8
Total Del/Veh (s)	18.2	3.0	14.4	10.5	16.9	12.0	3.6	11.1

6: Larrabee Road & Saunders Way/South Site Drive Performance by lane

Lane	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	LTR	LT	R	LT	TR	LT	TR	
Denied Del/Veh (s)								0.1
Total Del/Veh (s)	6.8	17.2	4.3	1.1	1.6	2.2	0.4	2.6

9: Westbrook Arterial & Site Drive Performance by lane

Lane	EB	EB	EB	WB	WB	WB	SB	SB	All
Movements Served	L	T	T	T	T	R	L	R	
Denied Del/Veh (s)									2.4
Total Del/Veh (s)	36.4	5.6	28.4	5.6	5.8	1.5	28.3	4.8	10.0

11: Rand Road Performance by lane

Lane	EB	WB	WB	All
Movements Served	T	T	T	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.4	0.7	0.8	0.6

24: Wesrbrook Arterial/Westbrook Arterial & Larrabee Road Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	T	T	TR	L	R	
Denied Del/Veh (s)								0.6
Total Del/Veh (s)	24.0	12.6	10.3	12.8	15.0	32.8	6.2	15.6

Total Network Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	17.7

Intersection: 2: I-95 Ramps & Rand Road

Movement	EB	EB	WB	WB	NB	NB	NB
Directions Served	T	R	L	T	L	L	R
Maximum Queue (ft)	132	136	108	152	198	186	59
Average Queue (ft)	113	71	53	76	129	61	24
95th Queue (ft)	153	125	91	130	197	146	53
Link Distance (ft)				859	384	384	384
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		250	325				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Larrabee Road & Saunders Way/South Site Drive

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	LT	R	LT	TR	LT
Maximum Queue (ft)	35	100	66	29	17	61
Average Queue (ft)	9	44	35	2	1	17
95th Queue (ft)	32	80	57	15	11	48
Link Distance (ft)	208	239	239	810	810	776
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Westbrook Arterial & Site Drive

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	157	183	62	57	47	114	103
Average Queue (ft)	96	68	36	36	29	87	36
95th Queue (ft)	147	137	53	49	51	121	72
Link Distance (ft)		590				87	87
Upstream Blk Time (%)			8	8	1	16	0
Queuing Penalty (veh)			0	0	0	0	0
Storage Bay Dist (ft)	150						
Storage Blk Time (%)	1	0					
Queuing Penalty (veh)	3	1					

Intersection: 11: Rand Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 24: Wesrbrook Arterial/Westbrook Arterial & Larrabee Road

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	174	392	310	242	269	183	144
Average Queue (ft)	150	156	44	94	116	103	69
95th Queue (ft)	193	329	187	179	205	165	114
Link Distance (ft)		1070	1070	590	590	810	810
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150						
Storage Blk Time (%)	13	0					
Queuing Penalty (veh)	37	1					

Network Summary

Network wide Queuing Penalty: 41

103: Riverside St & Westbrook Crossing/Citgo/VIP Performance by lane

Lane	EB	EB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LT	R	LTR	L	T	TR	L	T	TR	
Denied Del/Veh (s)										0.3
Total Del/Veh (s)	50.5	4.4	22.0	52.0	6.7	7.2	45.0	3.1	5.1	11.8

104: Travelodge Dr/Riverside St & Main St/Brighton Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB	SB	All
Movements Served	L	T	TR	L	T	T	R	LTR	L	LT	R	
Denied Del/Veh (s)												0.1
Total Del/Veh (s)	47.0	15.8	12.6	99.7	15.7	20.4	1.8	43.4	34.9	41.3	1.3	19.0

105: Site Drive/Westbrook Crossing Drive & Main St Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	LT	R	LT	R	
Denied Del/Veh (s)										0.2	
Total Del/Veh (s)	46.7	13.1	12.9	35.3	24.1	24.2	37.0	8.0	31.6	11.3	22.2

106: Larrabee Road/Larrabee Rd & Main St Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	LT	TR	LT	T	R	
Denied Del/Veh (s)												0.3
Total Del/Veh (s)	47.7	46.0	37.1	44.7	30.9	34.3	51.9	32.9	44.6	48.0	9.1	38.8

107: Larrabee Road & Terminal Street Performance by lane

Lane	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LT	R	L	T	TR	L	T	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	22.4	23.0	4.7	5.5	0.4	0.6	7.1	2.0	1.9	5.7

108: Right-In Drive & Main St Performance by lane

Lane	EB	EB	WB	WB	All
Movements Served	T	TR	T	T	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	2.9	2.3	2.8	2.6	2.6

Intersection: 103: Riverside St & Westbrook Crossing/Citgo/VIP

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	163	148	97	71	67	134	48	70	180
Average Queue (ft)	122	74	33	43	23	57	14	16	58
95th Queue (ft)	200	167	82	76	60	131	38	51	134
Link Distance (ft)	148		125		492	492		586	586
Upstream Blk Time (%)	8	0							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (ft)		90		195			125		
Storage Blk Time (%)	29								
Queuing Penalty (veh)	26								

Intersection: 104: Travelodge Dr/Riverside St & Main St/Brighton Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	T	R	LTR	L	LT	R
Maximum Queue (ft)	158	189	202	28	241	244	200	49	213	226	160
Average Queue (ft)	74	69	94	9	120	120	37	15	107	124	32
95th Queue (ft)	143	158	179	29	208	207	158	42	184	198	136
Link Distance (ft)		719	719		328	328		229	492	492	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	160			110			100				60
Storage Blk Time (%)	0	0			7	8				25	
Queuing Penalty (veh)	1	0			1	43				31	

Intersection: 105: Site Drive/Westbrook Crossing Drive & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	147	164	128	224	355	263	148	76	110	112
Average Queue (ft)	84	50	62	136	183	134	106	46	43	77
95th Queue (ft)	141	125	119	230	297	236	162	76	103	119
Link Distance (ft)		160	160		719	719	133	133	97	97
Upstream Blk Time (%)	1	1					4		1	6
Queuing Penalty (veh)	0	4					0		0	0
Storage Bay Dist (ft)	75			150						
Storage Blk Time (%)	24	0		13	4					
Queuing Penalty (veh)	53	0		49	9					

103: Riverside St & Westbrook Crossing/Citgo/VIP Performance by lane

Lane	EB	EB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LT	R	LTR	L	T	TR	L	T	TR	
Denied Del/Veh (s)										0.3
Total Del/Veh (s)	37.5	6.5	42.6	42.6	6.7	7.7	41.5	6.9	8.3	12.9

104: Travelodge Dr/Riverside St & Main St/Brighton Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB	SB	All
Movements Served	L	T	TR	L	T	T	R	LTR	L	LT	R	
Denied Del/Veh (s)												0.0
Total Del/Veh (s)	47.5	20.0	15.1	31.9	22.9	20.6	1.5	30.8	28.4	34.2	1.3	19.9

105: Site Drive/Westbrook Crossing Drive & Main St Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	LT	R	LT	R	
Denied Del/Veh (s)										0.1	
Total Del/Veh (s)	29.3	39.5	37.3	26.8	14.8	9.5	35.7	8.7	34.2	6.6	22.4

106: Larrabee Road/Larrabee Rd & Main St Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	LT	TR	LT	T	R	
Denied Del/Veh (s)												0.4
Total Del/Veh (s)	35.0	27.0	27.2	51.3	23.5	28.0	45.4	42.0	32.5	29.0	6.6	31.1

107: Larrabee Road & Terminal Street Performance by lane

Lane	EB	WB	WB	NB	NB	NB	SB	SB	SB	All
Movements Served	LTR	LT	R	L	T	TR	L	T	TR	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	13.9	38.1	6.1	1.9	0.5	1.3	8.3	2.5	1.3	8.0

108: Right-In Drive & Main St Performance by lane

Lane	EB	EB	WB	WB	All
Movements Served	T	TR	T	T	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	3.2	5.2	0.9	1.0	2.5

Intersection: 103: Riverside St & Westbrook Crossing/Citgo/VIP

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	163	148	93	70	69	90	27	166	202
Average Queue (ft)	113	70	35	28	28	57	5	47	97
95th Queue (ft)	173	159	84	59	68	107	23	123	190
Link Distance (ft)	148		125		500	500		586	586
Upstream Blk Time (%)	4	0							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (ft)		90		195			125		
Storage Blk Time (%)	22	0						0	
Queuing Penalty (veh)	24	0						0	

Intersection: 104: Travelodge Dr/Riverside St & Main St/Brighton Ave

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	T	LTR	L	LT	R
Maximum Queue (ft)	165	140	159	50	198	149	51	192	220	160
Average Queue (ft)	109	87	103	11	129	84	20	109	131	42
95th Queue (ft)	165	136	147	37	197	141	55	177	206	157
Link Distance (ft)		677	677		328	328	229	500	500	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	160			110						60
Storage Blk Time (%)	2	0			11	3			31	
Queuing Penalty (veh)	6	0			1	14			46	

Intersection: 105: Site Drive/Westbrook Crossing Drive & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LT	R
Maximum Queue (ft)	165	209	194	197	230	83	181	142	164	75
Average Queue (ft)	98	128	124	123	47	33	120	58	55	53
95th Queue (ft)	163	194	176	191	158	73	180	101	129	80
Link Distance (ft)		166	166		677	677	206	206	253	253
Upstream Blk Time (%)	1	4	4							
Queuing Penalty (veh)	0	13	14							
Storage Bay Dist (ft)	100			125						
Storage Blk Time (%)	7	25		15						
Queuing Penalty (veh)	14	43		36						

TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic Signal Warrant Analysis Summary - Stroudwater Street at Forest Street
2016 Existing Conditions - Average Month Conditions

Time	Stroudwater Street Volume (Major Street)[a]	Forest Street Volume (Minor Street)[b]	Warrant 1 Condition A[c]	Warrant 1 Condition B[d]	Warrant 2[e]	Warrant 3[f]
7:00	964	297	Yes	Yes	Yes	Yes
8:00	600	198	Yes	No	No	No
9:00	501	166	Yes	No	No	No
10:00	490	149	No	No	No	No
11:00	502	128	No	No	No	No
12:00	519	135	No	No	No	No
1:00	547	126	No	No	No	No
2:00	737	172	Yes	No	No	No
3:00	749	201	Yes	No	Yes	No
4:00	837	206	Yes	Yes	Yes	No
5:00	825	190	Yes	Yes	Yes	No
6:00	513	209	Yes	Yes	No	No
Warrant Satisfied?			Yes	No	Yes	Yes

[a]Based on 12-hour manual turning movement counts conducted on Thursday, May 26, 2016. Volume includes total of both approaches.

[b]Based on 12-hour manual turning movement counts conducted on Thursday, May 26, 2016. Includes total Forest Street southbound approach volume.

[c]Warrant 1 Condition A - Eight Hour Vehicular Volume, Minimum Vehicular Volume - satisfied when major street volume > 500 and minor street volume > 150.

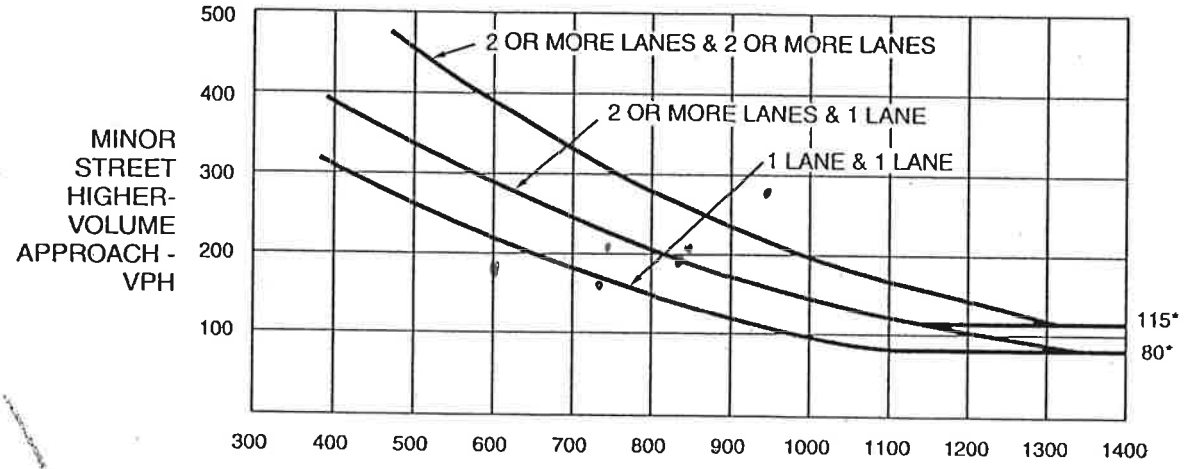
[d]Warrant 1 Condition B - Eight Hour Vehicular Volume, Interruption of Continuous Traffic - satisfied when major street volume > 750 and minor street volume >75.

[e]Warrant 2 - Four Hour Vehicular Volume - see Figure 4C-1.

[f]Warrant 3 - Peak Hour Vehicular Volume - see Figure 4C-3.

Strandwater Street/Forest Street Intersection
2016 Existing Average-Month Conditions

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

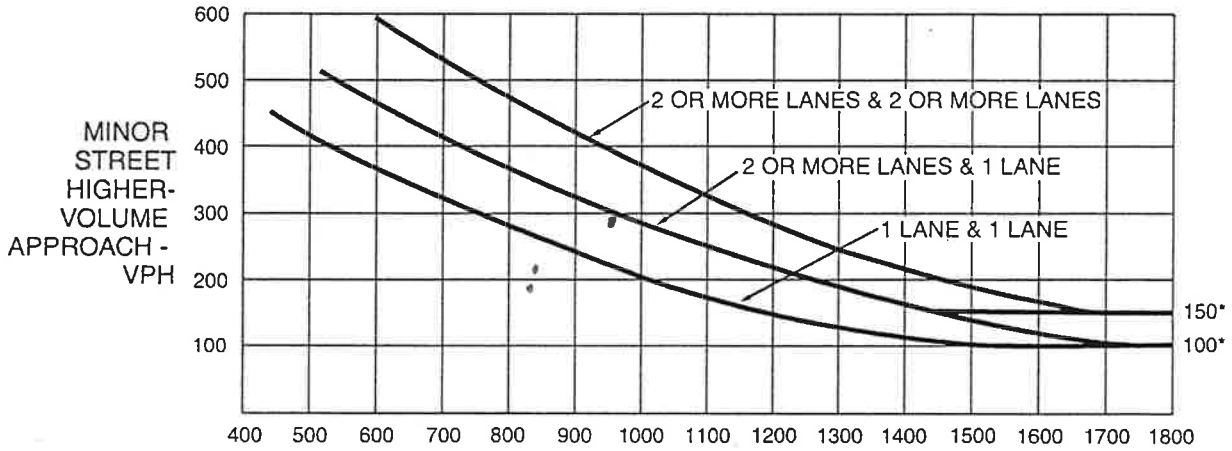


*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Meets Warrant 2

Strandwater Street/Forest Street Intersection
2016 Existing Average-Month Conditions

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Accurate Counts

978-664-2565

N/S Street : Stroudwater Street
E/W Street : Forest Street
City/State : Westbrook, ME
Weather : Clear

File Name : 68460002
Site Code : 68460002
Start Date : 5/26/2016
Page No : 1

Groups Printed- Cars - Trucks

	Stroudwater St From North		Forest St From East		Stroudwater St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	11	120	57	36	34	17	275
07:15 AM	35	143	53	48	47	18	344
07:30 AM	41	185	47	33	74	43	423
07:45 AM	55	140	33	19	64	33	344
Total	142	588	190	136	219	111	1386
08:00 AM	25	93	30	22	28	21	219
08:15 AM	20	86	25	28	51	11	221
08:30 AM	32	97	38	23	33	17	240
08:45 AM	11	58	36	16	47	29	197
Total	88	334	129	89	159	78	877
09:00 AM	24	78	29	29	42	15	217
09:15 AM	16	63	28	18	40	20	185
09:30 AM	16	55	25	18	28	16	158
09:45 AM	17	53	15	20	40	28	173
Total	73	249	97	85	150	79	733
10:00 AM	34	59	20	13	42	13	181
10:15 AM	27	43	18	21	33	18	160
10:30 AM	24	59	22	24	33	18	180
10:45 AM	20	53	22	24	49	13	181
Total	105	214	82	82	157	62	702
11:00 AM	22	41	20	9	45	15	152
11:15 AM	17	43	20	16	29	19	144
11:30 AM	20	43	24	17	73	27	204
11:45 AM	20	65	22	13	52	21	193
Total	79	192	86	55	199	82	693

Accurate Counts
978-664-2565

N/S Street : Stroudwater Street
E/W Street : Forest Street
City/State : Westbrook, ME
Weather : Clear

File Name : 68460002
Site Code : 68460002
Start Date : 5/26/2016
Page No : 2

Groups Printed- Cars - Trucks

	Stroudwater St From North		Forest St From East		Stroudwater St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
12:00 PM	10	39	13	26	53	30	171
12:15 PM	25	45	20	20	45	28	183
12:30 PM	22	50	16	19	57	19	183
12:45 PM	28	63	18	16	34	22	181
Total	85	197	67	81	189	99	718
01:00 PM	33	51	21	20	52	19	196
01:15 PM	16	51	16	13	52	23	171
01:30 PM	24	59	14	16	51	27	191
01:45 PM	25	46	28	11	45	27	182
Total	98	207	79	60	200	96	740
02:00 PM	21	57	24	18	52	19	191
02:15 PM	11	75	22	33	64	22	227
02:30 PM	55	68	24	30	76	48	301
02:45 PM	44	60	27	34	93	45	303
Total	131	260	97	115	285	134	1022
03:00 PM	35	52	22	42	72	39	262
03:15 PM	42	60	28	17	65	44	256
03:30 PM	24	60	28	31	69	38	250
03:45 PM	45	69	27	26	68	41	276
Total	146	241	105	116	274	162	1044
04:00 PM	38	46	28	26	98	47	283
04:15 PM	46	44	23	35	91	49	288
04:30 PM	60	43	12	41	90	57	303
04:45 PM	29	43	21	40	88	51	272
Total	173	176	84	142	367	204	1146

Accurate Counts
978-664-2565

N/S Street : Stroudwater Street
E/W Street : Forest Street
City/State : Westbrook, ME
Weather : Clear

File Name : 68460002
Site Code : 68460002
Start Date : 5/26/2016
Page No : 3

Groups Printed- Cars - Trucks

	Stroudwater St From North		Forest St From East		Stroudwater St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
05:00 PM	48	38	27	48	99	55	315
05:15 PM	41	47	20	39	125	63	335
05:30 PM	36	31	15	24	71	58	235
05:45 PM	24	31	12	24	93	47	231
Total	149	147	74	135	388	223	1116
06:00 PM	16	34	19	34	57	42	202
06:15 PM	16	40	18	39	59	34	206
06:30 PM	39	43	21	41	56	29	229
06:45 PM	23	22	14	44	38	16	157
Total	94	139	72	158	210	121	794
Grand Total	1363	2944	1162	1254	2797	1451	10971
Apprch %	31.6	68.4	48.1	51.9	65.8	34.2	
Total %	12.4	26.8	10.6	11.4	25.5	13.2	
Cars	1328	2850	1136	1224	2698	1424	10660
% Cars	97.4	96.8	97.8	97.6	96.5	98.1	97.2
Trucks	35	94	26	30	99	27	311
% Trucks	2.6	3.2	2.2	2.4	3.5	1.9	2.8

Traffic Signal Warrant Analysis Summary - Cumberland Street at Park Road
2016 Existing Conditions - Average Month Conditions

Time	Cumberland Street Volume (Major Street)[a]	Park Road Volume (Minor Street)[b]	Warrant 1 Condition A[c]	Warrant 1 Condition B[d]	Warrant 1 Combination Condition	Warrant 2[e]	Warrant 3[f]
7:00	907	190	Yes	Yes	Yes	Yes	No
8:00	846	167	Yes	Yes	Yes	Yes	No
9:00	679	166	Yes	No	Yes	No	No
10:00	680	126	No	No	Yes	No	No
11:00	697	128	No	No	Yes	No	No
12:00	723	139	No	No	Yes	No	No
1:00	727	145	No	No	Yes	No	No
2:00	862	145	No	Yes	Yes	Yes	No
3:00	1012	172	Yes	Yes	Yes	Yes	No
4:00	1263	148	No	Yes	Yes	Yes	Yes
5:00	1225	125	No	Yes	Yes	Yes	No
6:00	875	123	No	Yes	Yes	No	No
Warrant Satisfied?			No	No	Yes	Yes	Yes

[a]Based on 12-hour manual turning movement counts conducted on Thursday, May 26, 2016. Volume includes total of both approaches.

[b]Based on 12-hour manual turning movement counts conducted on Thursday, May 26, 2016. Includes total Forest Street southbound approach volume.

[c]Warrant 1 Condition A - Eight Hour Vehicular Volume, Minimum Vehicular Volume - satisfied when major street volume > 500 and minor street volume > 150.

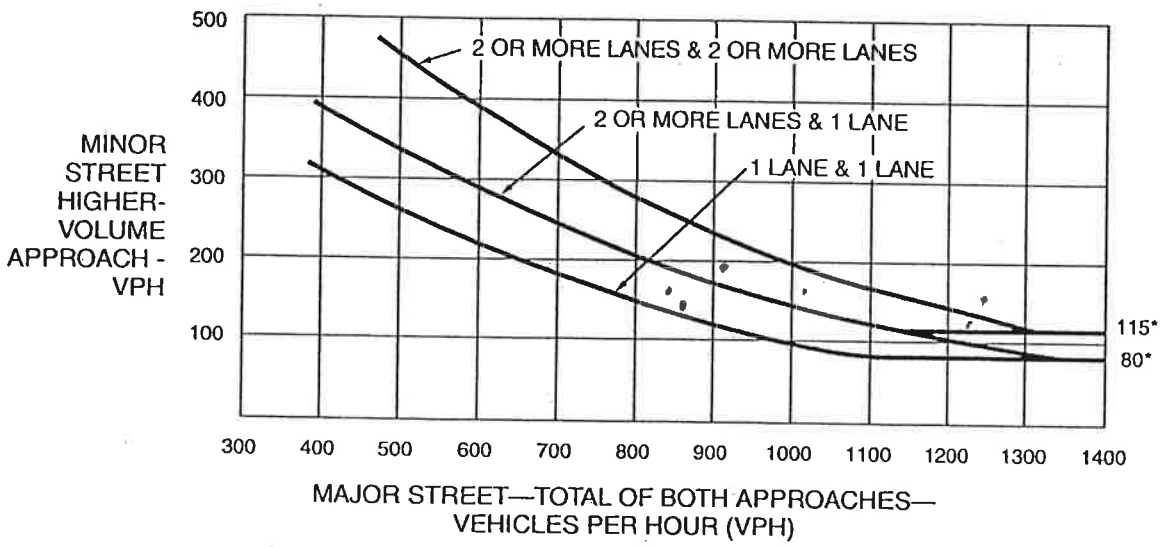
[d]Warrant 1 Condition B - Eight Hour Vehicular Volume, Interruption of Continuous Traffic - satisfied when major street volume > 750 and minor street volume >75.

[e]Warrant 2 - Four Hour Vehicular Volume - see Figure 4C-1.

[f]Warrant 3 - Peak Hour Vehicular Volume - see Figure 4C-3.

Cumberland Street/Park Road
2016 Average-Month Conditions

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

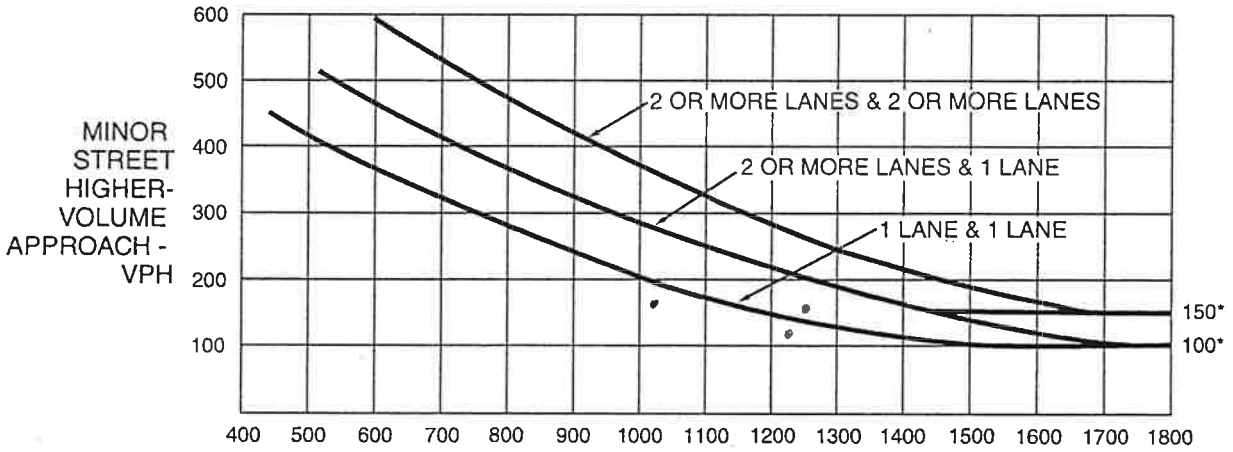


*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Meets Warrant 2

 Cumberland Street/Park Road
2016 Existing Average-Month Conditions

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Meets Warrant 3

Accurate Counts

978-664-2565

N/S Street : Park Rad
E/W Street : Cumberland Street
City/State : Westbrook, ME
Weather : Clear

File Name : 68460001
Site Code : 68460001
Start Date : 5/26/2016
Page No : 1

Groups Printed- Cars - Trucks

	Park Rd From North		Cumberland St From East		Cumberland St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM	66	0	38	13	4	182	303
07:15 AM	49	2	58	28	15	185	337
07:30 AM	49	0	41	27	4	129	250
07:45 AM	34	9	76	51	10	136	316
Total	198	11	213	119	33	632	1206
08:00 AM	41	1	70	27	12	137	288
08:15 AM	46	2	61	27	12	137	285
08:30 AM	36	0	53	28	9	138	264
08:45 AM	55	2	56	30	8	125	276
Total	178	5	240	112	41	537	1113
09:00 AM	46	7	66	39	6	85	249
09:15 AM	48	0	57	35	3	92	235
09:30 AM	41	2	49	40	11	88	231
09:45 AM	36	2	60	28	1	86	213
Total	171	11	232	142	21	351	928
10:00 AM	30	2	68	22	4	83	209
10:15 AM	39	0	65	26	6	85	221
10:30 AM	33	0	75	22	5	107	242
10:45 AM	33	2	71	34	4	70	214
Total	135	4	279	104	19	345	886
11:00 AM	36	3	69	20	4	71	203
11:15 AM	30	5	93	29	6	80	243
11:30 AM	37	0	77	43	5	88	250
11:45 AM	25	5	64	40	7	70	211
Total	128	13	303	132	22	309	907

Accurate Counts

978-664-2565

N/S Street : Park Rad
E/W Street : Cumberland Street
City/State : Westbrook, ME
Weather : Clear

File Name : 68460001
Site Code : 68460001
Start Date : 5/26/2016
Page No : 2

Groups Printed- Cars - Trucks

	Park Rd From North		Cumberland St From East		Cumberland St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
12:00 PM	33	4	79	40	0	78	234
12:15 PM	34	2	82	35	2	80	235
12:30 PM	42	1	92	29	2	72	238
12:45 PM	34	3	86	30	2	85	240
Total	143	10	339	134	6	315	947
01:00 PM	23	3	83	43	5	68	225
01:15 PM	31	8	90	33	5	69	236
01:30 PM	51	4	90	29	1	72	247
01:45 PM	36	0	95	36	2	78	247
Total	141	15	358	141	13	287	955
02:00 PM	31	2	108	31	0	76	248
02:15 PM	39	2	99	51	3	68	262
02:30 PM	42	3	100	39	6	81	271
02:45 PM	36	1	128	60	8	90	323
Total	148	8	435	181	17	315	1104
03:00 PM	44	2	145	41	4	74	310
03:15 PM	43	5	128	52	7	71	306
03:30 PM	36	2	154	53	9	107	361
03:45 PM	49	8	130	45	5	87	324
Total	172	17	557	191	25	339	1301
04:00 PM	39	5	178	63	5	87	377
04:15 PM	36	3	184	53	11	89	376
04:30 PM	40	2	180	80	7	77	386
04:45 PM	37	1	196	60	12	106	412
Total	152	11	738	256	35	359	1551

Accurate Counts
978-664-2565

N/S Street : Park Rad
E/W Street : Cumberland Street
City/State : Westbrook, ME
Weather : Clear

File Name : 68460001
Site Code : 68460001
Start Date : 5/26/2016
Page No : 3

Groups Printed- Cars - Trucks

	Park Rd From North		Cumberland St From East		Cumberland St From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
05:00 PM	36	5	193	55	7	82	378
05:15 PM	42	1	181	80	4	76	384
05:30 PM	18	4	205	67	2	88	384
05:45 PM	25	6	180	58	2	66	337
Total	121	16	759	260	15	312	1483
06:00 PM	31	7	136	46	4	91	315
06:15 PM	38	5	113	33	2	89	280
06:30 PM	29	3	116	28	10	82	268
06:45 PM	22	0	106	34	0	72	234
Total	120	15	471	141	16	334	1097
Grand Total	1807	136	4924	1913	263	4435	13478
Apprch %	93	7	72	28	5.6	94.4	
Total %	13.4	1	36.5	14.2	2	32.9	
Cars	1783	132	4845	1889	257	4374	13280
% Cars	98.7	97.1	98.4	98.7	97.7	98.6	98.5
Trucks	24	4	79	24	6	61	198
% Trucks	1.3	2.9	1.6	1.3	2.3	1.4	1.5

MEMORANDUM

TO: Mr. Timothy Soucie, P.E.
Region Traffic Engineer
MaineDOT - Region 1
P.O. Box 358
Scarborough, ME 04070

FROM: Mr. Jeffrey S. Dirk, P.E., PTOE, FITE
Principal
Vanasse & Associates, Inc.
35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066
(978) 474-8800, ext. 830
jdirk@rdva.com

DATE: July 6, 2016

RE: 6846

SUBJECT: Motor Vehicle Crash Analysis
Dirigo Plaza - Westbrook Arterial, Larrabee Road and Main Street (Route 25B)
Westbrook, Maine

Attached please find the review of the intersections and roadway segments within the study area of the May 6, 2016 Amended *Traffic Impact Study* prepared for the Dirigo Plaza mixed-use commercial development to be located in Westbrook, Maine, that were deemed High-crash Locations (HCLs). This submission completes our responses to the May 20, 2016 consolidated comments that were provided by MDOT in reference to the May 6, 2016 Amended *Traffic Impact Study*.

cc: J. Franceschi, P.E., CPESC – City of Westbrook, Director of Planning and Code Enforcement
J. Adams, P.E., PTOE - Milone & Macbroom
J. Levine – City of Portland, Planning & Urban Development Director
B. Hyman – City of Portland, Transportation Program Manager
J. Bartlett, P.E., PTOE – City of Portland DPW, Transportation System Engineer
T. Errico, P.E. - T.Y. Lin International
J. Gove – J&J Gove Development, LLC
W. Morrill – Jones & Beach Engineers, Inc.
BG, File

ATTACHMENTS

CITY OF WESTBROOK HIGH CRASH LOCATION SUMMARIES AND COLLISION DIAGRAMS

CITY OF PORTLAND HIGH CRASH LOCATION SUMMARIES AND COLLISION DIAGRAMS

CITY OF WESTBROOK HIGH CRASH LOCATION SUMMARIES AND COLLISION DIAGRAMS

City of Westbrook

2013/2015 Roadway Safety Summary Report

Main Street @ Larrabee Road

(Node # 18670)

[36 Crashes – 1.23 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Twenty-one (21) of the 36 vehicle crashes reported for the intersection were "*rear-end*" crashes with 10 of these accidents occurring in the through/left-turn travel lanes on the east approach of Main Street. Seven of the remaining 11 "*rear-end*" crashes occurred in either of the two channelized right-turn lanes located on Larrabee Road. Interestingly, the majority of the "*rear-end*" accidents occurred during non-peak hour time periods. Two other lesser crash patterns included four "*angle*" crashes and three "*turning movement*" crashes reported with five of the collisions occurring as a result of a motorist entering the intersection on a red signal indication.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Remove channelized right-turn islands from both Larrabee Road approaches. Add replacement exclusive right-turn lanes on both approaches.
- Roadway pavement markings on all approaches should be upgraded and replaced annually.
- Overhead lane signage should be added throughout the intersection.
- Optimize traffic signal phasing and timing at intersection.

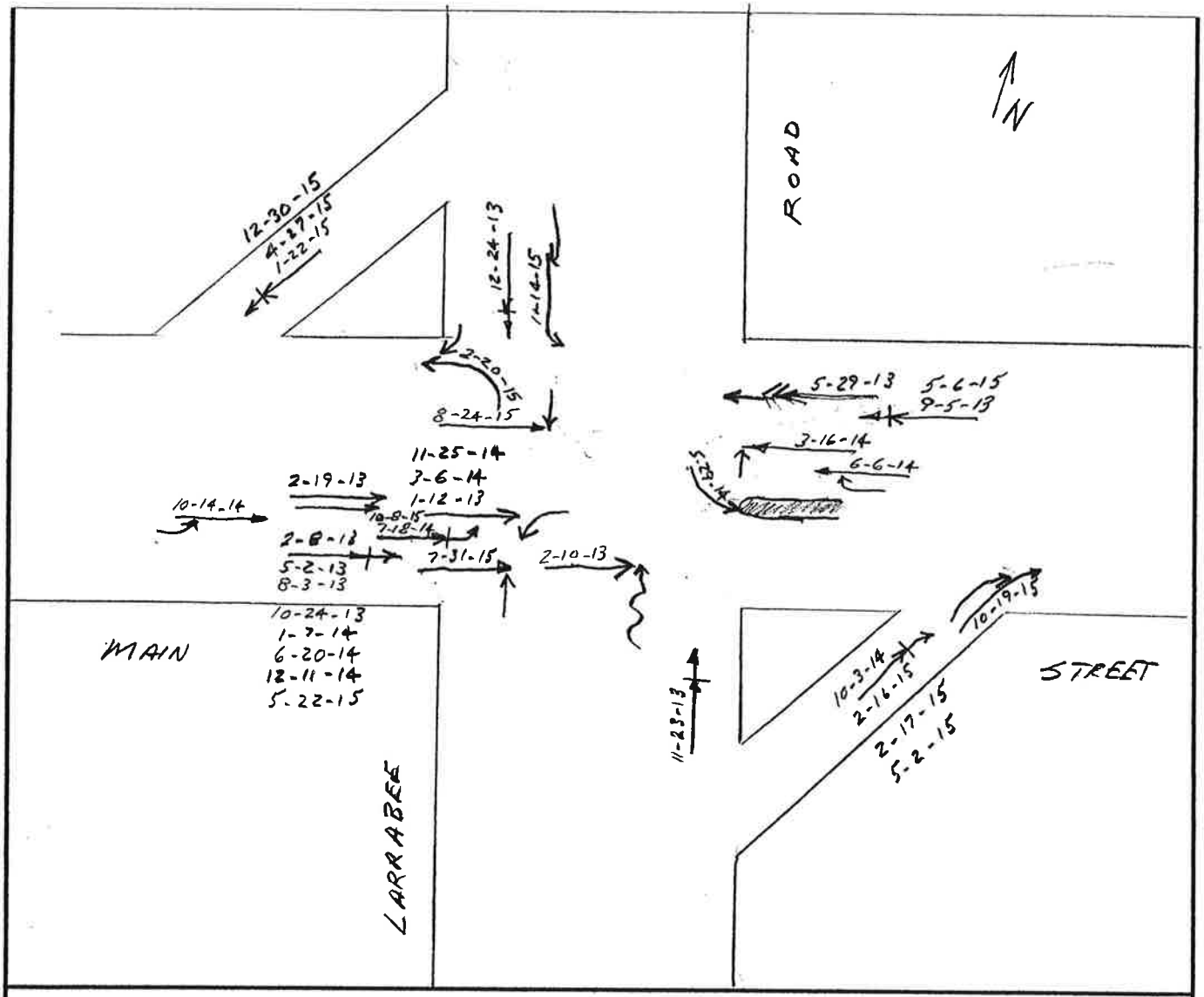
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION MAIN ST. @ LARRABEE RD.

TOWN WESTBROOK NODE NO(S) 18670

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016



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
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:\SHEETS\COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

LOCATION MAIN ST. @ LARRABEE RD.

T 'N WESTBROOK NODE NO(S) 18670

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-21	1-12-13	12:44					2	1	5	RAN RED LIGHT
13-69	2-8-13	9:44					2	SNOW	4	
13-76	2-10-13	9:00			1		2	SLUSH	TOO FAST FOR CONDITIONS	
13-95	2-19-13	14:25				1	2	1	OUI	
13-210	5-2-13	6:56				1	2	1	4	
13-268	5-29-13	8:00					2	2	11	
13-376	8-3-13	12:59					2	1	4	
13-435	9-5-13	13:09					2	1	4	
13-511	10-24-13	17:18				1	3	1	4	
13-544	11-23-13	9:56				3	2	1	14	
13-629	12-24-13	9:58				1	2	2	4	
14-21	1-7-14	15:19					2	1	Pulled out in angular ace	to allow thru
14-139	3-6-14	17:13					2	1		Ran Red Light
14-156	3-16-14	15:56					2	1	Hit & Run	Ran Red Light
14-269	5-29-14	19:43					2	1	10	
14-286	6-6-14	00:25					4	1	8	
14-334	6-20-14	18:47				2	2	1	4	
383	7-18-14	17:19					2	1	14	
14-493	10-3-14	15:41					2	1	4	
14-515	10-14-14	10:48					2	1	8	
14-594	11-25-14	19:57					4	1	5	Ran Red Light
14-633	12-11-14	6:50					2	1	51	
15-31	1-14-15	7:56					2	1	8	
15-47	1-22-15	10:19					2	1	4	
15-138	2-16-15	11:50				2	2	1	4, 14	
15-144	2-17-15	14:45					2	2	14	
15-152	2-20-15	14:37					2	2	2	
15-277	4-27-15	15:42					2	1	4	
15-286	5-2-15	10:16					2	1	14	
15-297	5-6-15	17:26					2	1	41 ?	
15-324	5-22-15	18:18					2	1	4	
15-438	7-31-15	15:05					2	1	CMP in area flash & drive	Light went to back
15-485	8-24-15	6:44			1		2	1	14	Ran Red Light
15-559	10-8-15	14:37					2	1	4	
15-583	10-19-15	17:21					2	1	?	Hit & Run
15-725	12-30-15	7:36					2	SLUSH	4 Poor	Road Cond. Ice

Google earth

feet 600

meters 200

City of Westbrook

2013/2015 Roadway Safety Summary Report

Cumberland Street, Main Street and Warren Avenue

(Node # 15093)

[56 Crashes – 7.20 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Each of the 56 total vehicle crashes reported for the intersection were "*rear-end*" crashes involving a motorist attempting to enter Cumberland Street from Warren Avenue being stuck from behind by a second motor vehicle. The greater majority (approximately 60%) of the vehicle crashes reported occurred during non-peak travel periods. The principal contributing factor leading to the vehicle crash involved the second motorist "*following too close*" and/or being distracted for a number of varying reasons.

Recommended Intersection Mitigation Measures

The Maine Department of Transportation has appropriated project funding for the design and construction of sequenced traffic signals at this location. The project is currently being designed with construction scheduled for 2018.

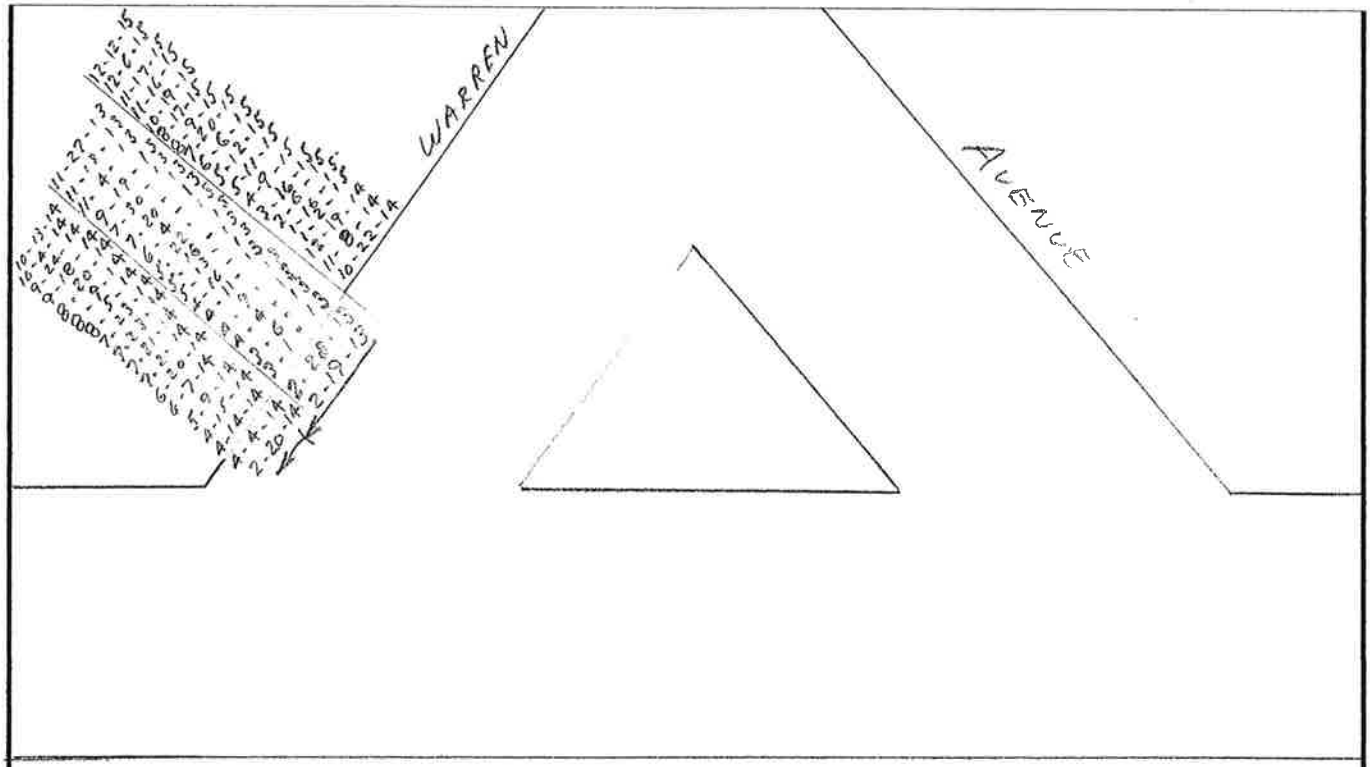
COLLISION DIAGRAM

SHEET 1 OF 3

LOCATION CUMBERLAND ST. @ WARREN AVE.

TOWN WESTBROOK NODE NO(S) 15093

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-21-2016



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

LOCATION CUMBERLAND ST. @ WARREN AVE.

TOWN WESTBROOK NODE NO(S) 15093

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-21-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-96	2-19-13	15:55					2	1	51	
13-111	2-29-13	13:34				1	2	2	4	
13-113	3-1-13	11:55					2	1	4	
13-122	3-6-13	8:19					2	1		Reckless Op.
13-169	4-4-13	12:18					2	1	4	
13-177	4-9-13	11:20					2	1	4	
13-180	4-11-13	8:45					2	1	51	
13-192	4-16-13	15:46					2	1	4	
13-229	5-13-13	13:26					2	1	4	
13-236	5-16-13	15:26					2	1	4, 14	
13-247	5-22-13	14:46					4	?	30	
13-263	5-28-13	14:24					2	1		
13-281	6-4-13	14:57					2	1	4, 14	
13-359	7-20-13	17:01					2	1	4	
13-368	7-30-13	14:16					2	1	4	
13-456	9-19-13	12:00					2	1	4	
13-524	11-4-13	17:11					4	1	4	
-534	11-13-13	12:23					2	1	4	
13-566	11-27-13	12:22					2	1	4, 14	
14-107	2-20-14	7:01					2	Ice / Frost	4	
14-187	4-4-14	12:19				1	2	1	4	
14-199	4-4-14	10:35					2	1	4	
14-201	4-15-14	11:23					2	1	4	
14-237	5-9-14	13:15					2	1	4	
14-319	6-17-14	10:35					2	1	51	
14-333	6-20-14	18:24					2	1	4, 14	
14-353	7-2-14	16:46					2	2	4	
14-388	7-21-14	13:22					2	1	4	
14-392	7-23-14	15:11					2	1	4, 14	
14-393	7-23-14	16:32					2	1	4, 14	
14-413	8-5-14	15:17					2	1	4	
14-417	8-9-14	20:11			1		4	1	4	
14-436	8-20-14	14:26					2	1	4	
14-473	9-18-14	17:23					2	1	4	
14-485	9-24-14	17:09					2	1	14	
14-496	10-4-14	10:59			1		2	1	4	
14-514	10-13-14	14:03					2	1	4	
14-530	10-22-14	14:58					2	2	4, 14	
-560	11-8-14	10:22					2	1	4	
14-647	12-19-14	10:14					2	1	4	
15-1	1-2-15	9:51					2	1	4	
15-36	1-16-15	7:02				1	3	2	51	
15-102	2-6-15	10:47			1		2	2	51	
15-203	3-16-15	16:43					2	1	4	

COLLISION DIAGRAM

LOCATION CUMBERLAND ST. @ WARREN AVE

TOWN WESTBROOK NODE NO(S) 15093

YEARS REVIEWED 2013-2015 DATE PREPARED 6-21-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
15-242	4-9-15	9:02	—	—	—	—	2	1	4	
15-307	5-11-15	14:12	—	—	—		2	1	4	
15-309	5-12-15	18:06	—	—	—		2	2	4	
15-347	6-6-15	16:31				1	2	1	4, 14	
15-414	7-20-15	17:52	—	—	—	—	2	1	4	
15-458	8-9-15	14:59	—	—	—	—	2	1	4, 14	
15-475	8-17-15	17:18	—	—	—	—	2	1	4	
15-582	10-19-15	12:17				2	2	1	4	
15-634	11-16-15	14:40	—	—	—	—	2	1	4, 14	
15-637	11-17-15	17:42	—	—	—		4	1	4	
15-672	12-6-15	21:21	—	—	—	—	4	1	4	
15-688	12-12-15	11:56	—	—	—	—	2	1	4	

City of Westbrook

2013/2015 Roadway Safety Summary Report

Main Street @ Stroudwater Street

(Node # 17182)

[8 Crashes – 1.11 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The safety analysis concludes that the traffic crashes occur randomly within the intersection with varying collision patterns.

Recommended Intersection Mitigation Measures

Mitigation is not recommended for this location.

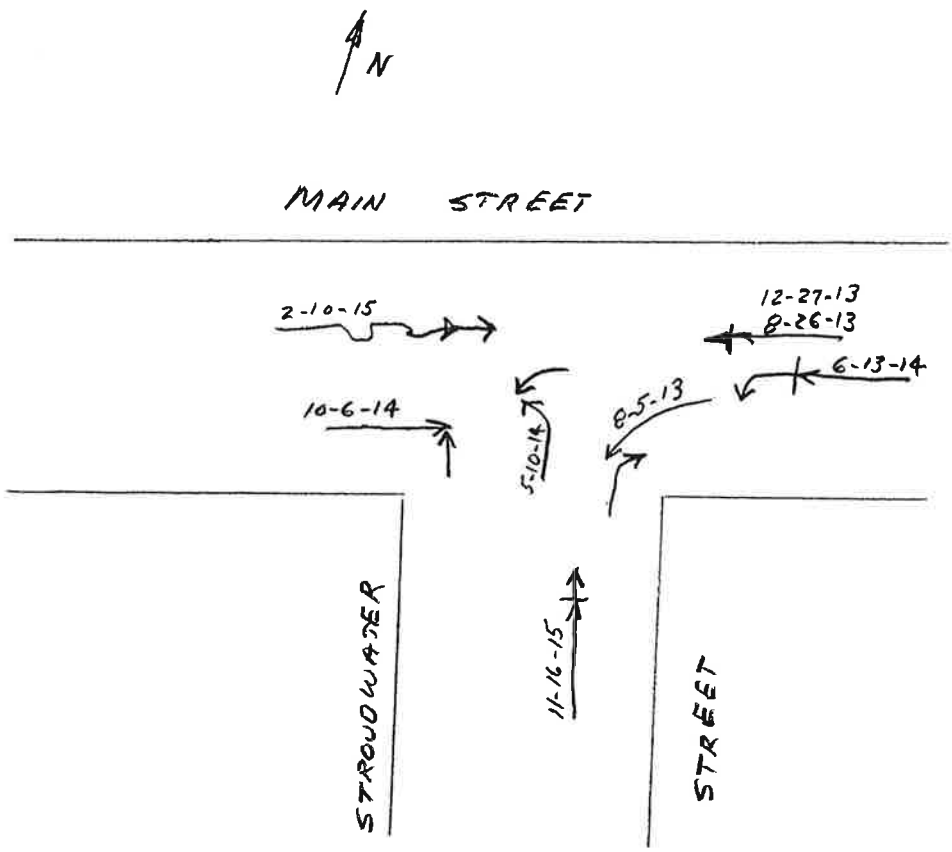
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION MAIN St. & STROUDWATER ST.

TOWN WESTBROOK NODE NO(S) 17182

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-16-2016



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

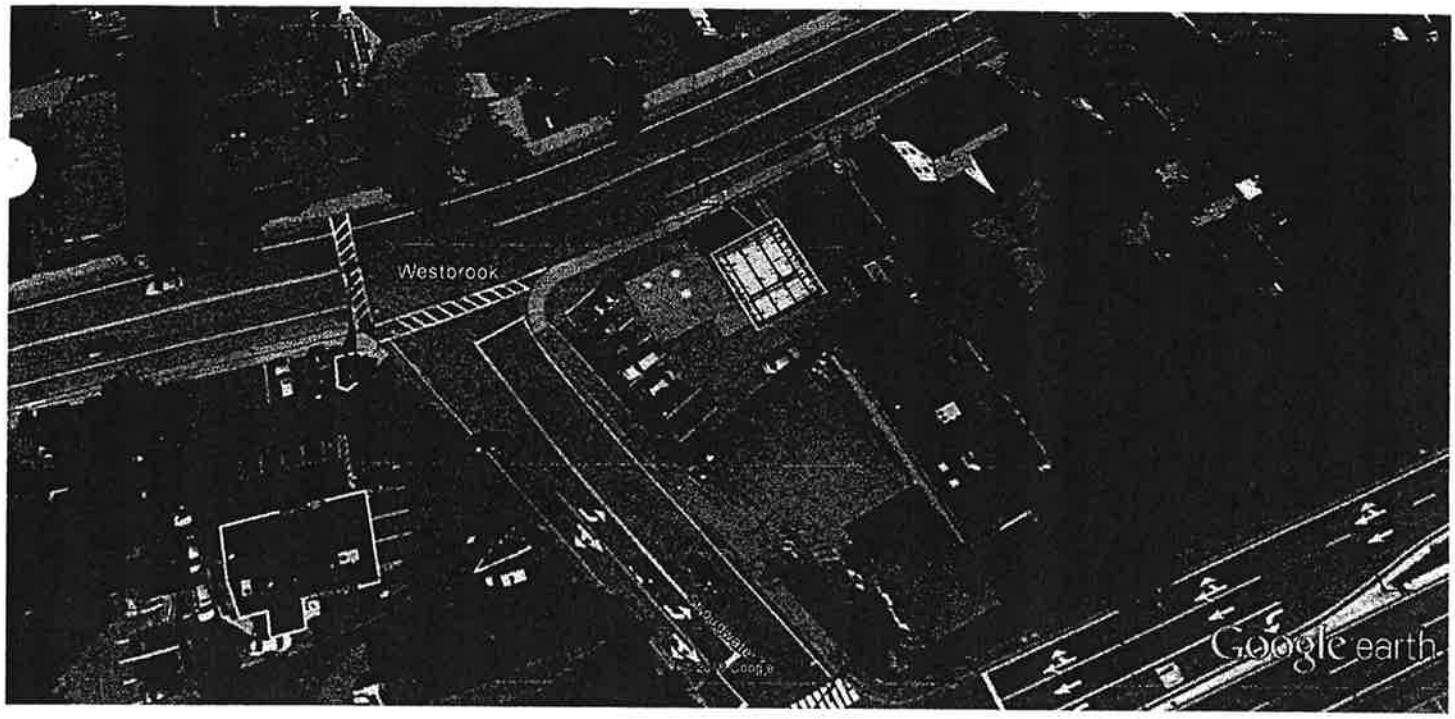
LOCATION MAIN ST. & STROUDWATER ST.

TOWN WESTBROOK NODE NO(S) 17182

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-16-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-381	8-5-13	16:43	—	—	—	—	2	1	14	
13-423	8-26-13	9:48			1		2	1	4	
13-643	12-27-13	11:57	—	—	—	—	2	1	H:T: Run	
14-239	5-10-14	14:00	—	—	—	—	2	1	2	
14-308	6-13-14	13:52	—	—	—	—	2	1	4	
14-497	10-6-14	8:09				1	2	2	51	
15-118	2-10-15	7:00	—	—	—	—	2	Slush	To Fast for	Cond. Hms
15-636	11-16-15	19:05	—	—	—	—	4	1	4	

N.



Google earth

feet 200
meters 80

City of Westbrook

2013/2015 Roadway Safety Summary Report

Main Street @ Mechanic Street

(Node # 17173)

[8 Crashes – 1.33 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Six (6) of the 8 reported crashes at the Main Street/Mechanic Street intersection were "*rear-end*" crashes occurring on either of the two Main Street approaches. Three of the eight crashes occurred with the leading vehicle stopped for a pedestrian crossing the street and the second vehicle striking the stopped motor vehicle.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location to augment sidewalk improvements currently under construction at the intersection:

- Install RRFB (*Rectangular Rapid Flash Beacon*) system for the Main Street pedestrian crossing.
- Install high-visibility pedestrian crosswalks with "*piano key*" pattern on both crosswalk locations.

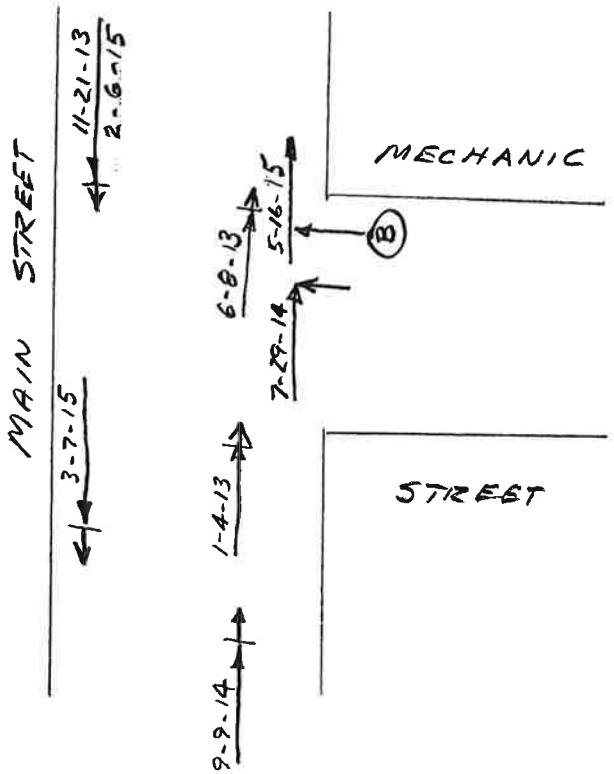
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION MAIN ST. @ MECHANIC ST.

TOWN WESTBROOK NODE NO(S) 17173

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-13-2016



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 MAIN ST. @ MECHANIC ST.

T N WESTBROOK NODE NO(S) 17173

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6 - 13 - 2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-6	1-4-13	6:01	—	—	—	—	4	ICE / FROST	3	
13-291	6-8-13	15:41	—	—	—	—	2	1	FOOT SLIPPED	Ped in xwalk
13-552	11-21-13	19:06	—	—	—	—	4	1	4	
14-403	7-29-14	11:29	—	—	—	—	2	1	2	
14-461	9-9-14	12:34	—	—	—	—	2	1	4	Ped in xwalk
15-101	2-6-15	10:39				1	2	2	4	
15-183	3-7-15	10:03	—	—	—	—	2	1	4	Ped was X'ing
15-319	5-16-15	17:21				1	2	1	Bicyist Trav'ng to Fast	

City of Westbrook

2013/2015 Roadway Safety Summary Report

Cumberland Street @ Park Road

(Node # 15097)

[8 Crashes – 1.49 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Five (5) of the 8 reported crashes at the Cumberland Street/Park Road intersection were "*angle*" collisions involving a vehicle entering the intersection from the Park Road approach being stuck by a through vehicle traveling on Cumberland Street. Four of the (5) reported "*angle*" crashes occurred during the peak commuter hours of 7:00 to 9:00 AM.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Conduct a traffic signal warrant study for the intersection; if traffic signals are determined to be warranted consideration should be given to their installation.
- Re-grade Cumberland Street embankment in the easterly quadrant of the intersection improving vehicle sightlines.
- Trim two evergreen trees located immediately left of the intersection, improving sight distance from the Park Road approach.
- Install 24" painted stop bar on Park Road approach.
- Install new Stop Sign with BlinkerSign LED boarder lighting on Park Road.

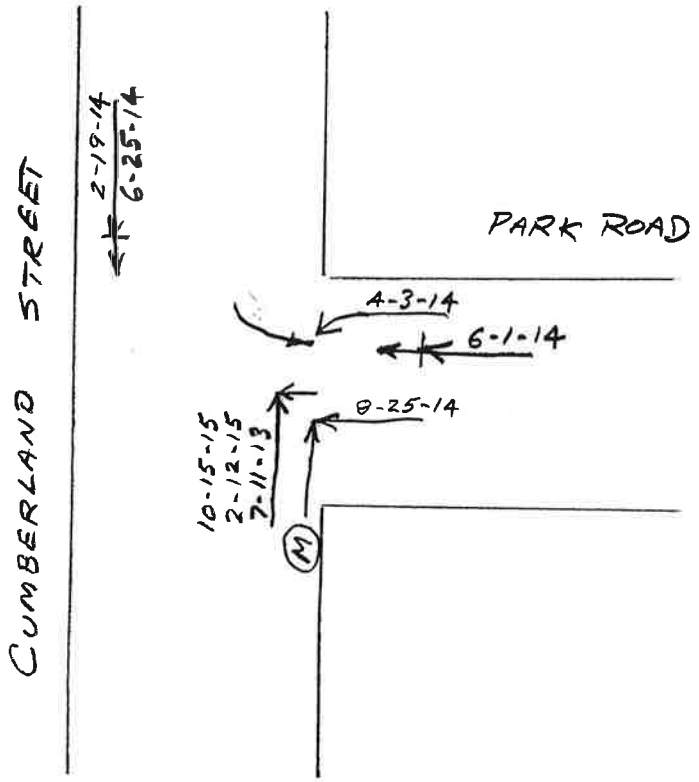
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CUMBERLAND ST. @ PARK RD.

TOWN WESTBROOK NODE NO(S) 15097

YEARS REVIEWED 2013-2015 DATE PREPARED 6-13-2016



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:/PROJECTS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

LOCATION CUMBERLAND ST. @ PARK RD.

TOWN WESTBROOK NODE NO(S) 15097

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-13-2016

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
13-343	7-11-13	8:30	—	—	—	—	2	1	2	
14-100	2-19-14	15:50	—	—	—	—	2	SNOW	3	
14-183	4-3-14	8:44			1		2	1	2	
14-274	6-1-14	15:56			1		2	1	14	
14-339	6-25-14	12:55				1	2	1	4	
14-442	8-25-14	13:14		1			2	1	2	
15-126	2-12-15	8:16	—	—	—	—	2	2	2	
15-572	10-15-15	7:16	—	—	—	—	2	1	2	

City of Westbrook

2013/2015 Roadway Safety Summary Report

William Clark Drive @ Brackett Street

(Node # 18546)

[11 Crashes – 1.61 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Five (5) of the 11 reported crashes for this intersection are "*rear-end*" crashes occurring on either of the two William Clark Drive approaches. Two of the five crashes involved pedestrians crossing William Clark Drive in the painted crosswalk. The other crash pattern (3 crashes total) worthy of note, involved a motor vehicle collision with a bicycle or pedestrian.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Install supplemental pedestrian lighting system compatible with the existing pedestrian light system in the center traffic island to enhance visibility.
- Add advance pedestrian (W11-1 signs) on both approaches of William Clark Drive with BlinkerSign LED boarder lighting.
- Re-stripe crosswalk markings in intersection maintaining the high visibility "*piano-key*" design pattern.

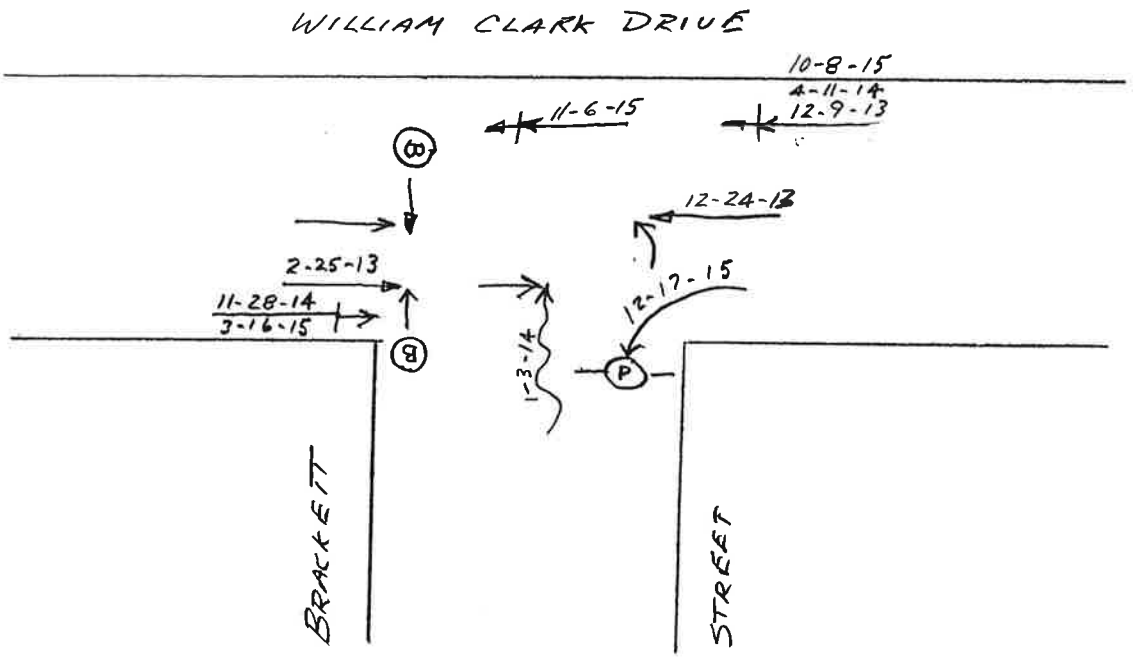
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION WILLIAM CLARK DR & BRACKETT

TOWN WESTBROOK NODE NO(S) 18546

YEARS REVIEWED 2013-2015 DATE PREPARED 6-16-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 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
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:\SHEETS\COLLISION DIAGRAM.DWG

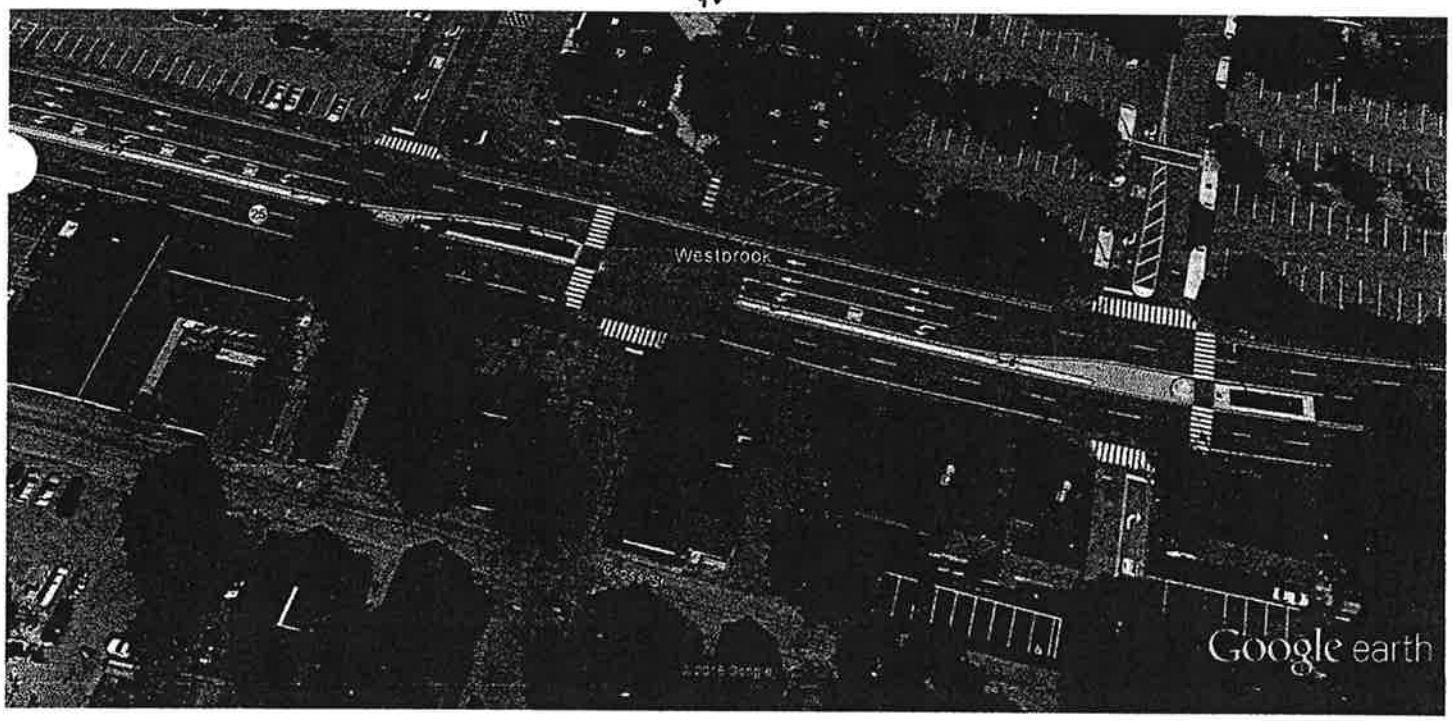
COLLISION DIAGRAM

LOCATION William Clark Dr. & Brackett St.

TOWN Westbrook NODE NO(S) 18546

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-16-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-109	2-25-13	23:40				1	4	1	Bicyclist didn't stop at int.	
13-501	10-17-13	16:41			1		2	1	14 (DRIVER of VEH.)	
13-590	12-9-13	14:23	—	—	—	—	2	SLUSH	4	
13-630	12-24-13	10:28	—	—	—	—	2	1	2	
14-5	1-3-14	9:54	—	—	—	—	2	SNOW	Too Fast For Conditions	
14-194	4-11-14	13:07	—	—	—	—	2	1	4	
14-601	11-28-14	12:59	—	—	—	—	2	1	Pedestrian	ran across St.
15-202	3-6-15	16:00	—	—	—	—	2	1	4	
15-557	10-8-15	13:07	—	—	—	—	2	1	Pedestrian	in x-walk
15-620	11-6-15	18:05	—	—	—	—	3	1	Pedestrian	in x-walk
15-704	12-17-15	18:02				1	4	2	2 (Struck Pedestrian)	



Google earth

feet 300
meters 90

City of Westbrook

2013/2015 Roadway Safety Summary Report

William Clark Drive @ Church Street

(Node # 18547)

[8 Crashes – 1.18 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Seven (7) of the 8 reported crashes for this intersection are "*rear-end*" crashes occurring on either of the two William Clark Drive approaches. Further detailed review shows that four of the 7 crashes occurred as a result of the first driver stopping for a pedestrian crossing William Clark Drive with the second vehicle striking the first vehicle.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Install supplemental pedestrian lighting system compatible with existing pedestrian system in the center traffic island to enhance visibility.
- Add advance pedestrian (W11-1 signs) on both approaches of William Clark Drive with BlinkerSign LED boarder lighting.
- Re-stripe crosswalk markings in intersection maintaining the high visibility "*piano-key*" design pattern.

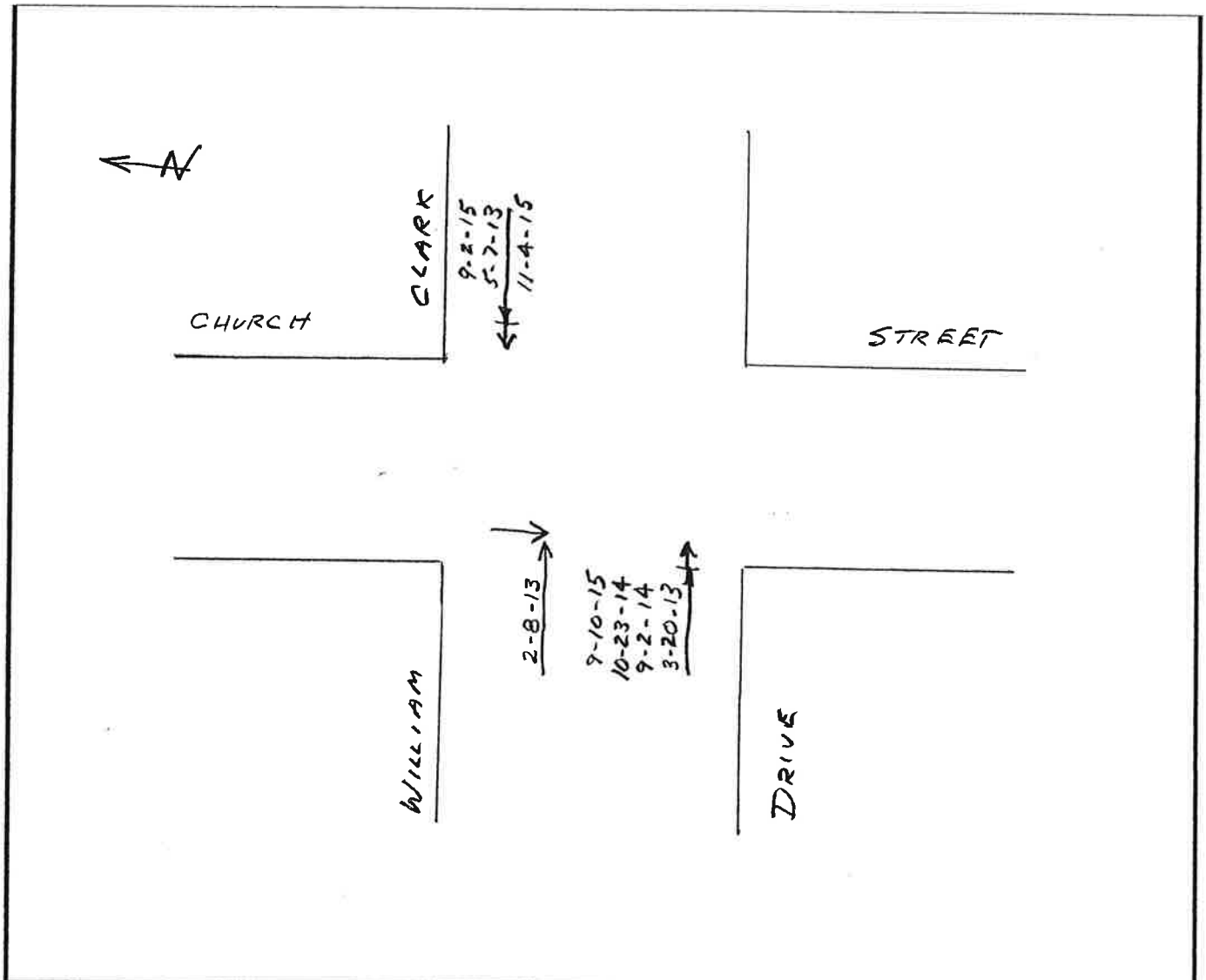
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION WILLIAM CLARK DR. @ CHURCH ST.

TOWN WESTBROOK NODE NO(S) 18547

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-15-2016



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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

LOCATION William Clark Dr. @ Church St.

TOWN Westbrook NODE NO(S) 18547

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-15-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-71	2-8-13	14:02	—	—	—	—	2	SNOW	2	
13-147	3-20-13	8:45	—	—	—	—	2	1	4	
13-217	5-7-13	10:17	—	—	—	—	2	1	4	Ped in X-walk
14-449	9-2-14	9:59	—	—	—	—	2	1	4	Ped in x-walk
14-532	10-23-14	15:52	—	—	—	—	2	2	4	
15-501	9-2-15	11:00				1	2	1	4	Ped in x-walk
15-515	9-10-15	17:12	—	—	—	—	2	1	4	Ped in x-walk
15-617	11-4-15	17:27				1	4	1	4	

City of Westbrook

2013/2015 Roadway Safety Summary Report

William Clark Drive @ Saco Street

(Node #18543)

[30 Crashes – 1.18 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The intersection safety audit completed for this signalized intersection identified three (3) clear crash patterns for the intersection. The highest frequency of crashes involved a total of 16 "*rear-end*" crashes occurring on the three intersection approaches. Further review into the actual recorded timing of each "*rear-end*" traffic accident shows that only three of the traffic incidents occurred during the typical peak travel periods, suggesting that the driver speed and/or inattention may have contributed to the higher than expected frequency of off-peak crashes. The second pattern of accidents identified for the intersection involved a total of six (6) "*lane change*" accidents occurring on the westbound approach of William Clark Drive. This crash pattern has historically existed at the intersection and is directly related to the through lane drop that occurs on the westbound approach of William Clark Drive. The remaining note worthy crash pattern included a total of 4 "*angle*" crashes that resulted with a motorist illegally entering the intersection on a red signal indication.

Recommended Intersection Mitigation Measures

The following ***near-term*** mitigation measures expand upon recommendations previously included in a recently approved development project located on William Clark Drive:

- Optimize traffic signal timing at intersection.
- Adjust, as necessary, vehicle extension and clearance interval timings on all approaches.
- Increase the number and re-stripe left-turn markings in designated westbound lane on William Clark Drive.
- Add a post-mounted mid-block supplemental sign in median on William Clark Drive to advise motorists that only left-turn movements are permitted from the left travel lane.
- Add pavement markings on Saco Street approach for both the left and right-turn lanes.
- Add overhead lane-use signs on Saco Street mast arm structure.
- Replace all intersection 8 inch traffic signals with 12 inch housings throughout intersection.
- Replace all existing pedestrian signal equipment throughout intersection.

The ***long-term*** solution proposes the addition of a second through lane on the westbound approach of William Clark Drive, which eliminates the existing "*lane entrapment*" condition that prevails in the westbound lanes on William Clark Drive.

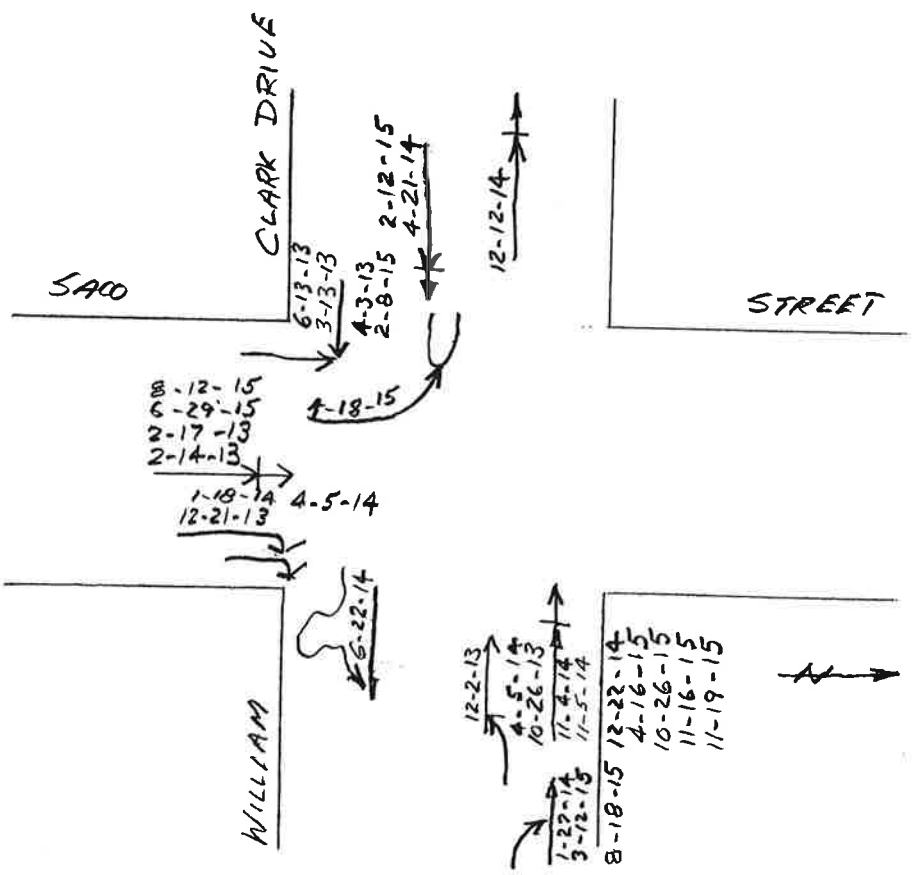
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION WILLIAM CLARK DR. @ SACO ST.

TOWN WESTBROOK NODE NO(S) 18543

YEARS REVIEWED 2013-2015 DATE PREPARED 6-13-2016



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7. OTHER

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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
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4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE
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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

DIAGRAM KEY/COLLISION DIAGRAM/STEPS

COLLISION DIAGRAM

SHEET 2 OF 2

LOCATION William Clark Dr. @ Saco St.

TOWN Westbrook NODE NO(S) 18543

YEARS REVIEWED 2013-2015 DATE PREPARED 6-13-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-85	2-14-13	14:06					2	1	14	
13-93	2-17-13	15:16					2	SNOW	4	
13-133	3-13-13	11:07					2	1	5	Ran Red Light
13-168	4-3-13	12:41				1	2	1	5	Ran Red Light
13-297	6-13-13	15:44				2	2	1	5	Ran Red Light
13-513	10-26-13	19:42					4	1	4	
13-573	12-2-13	10:15					2	2	8	
13-622	12-21-13	9:33					2	2	8	
14-46	1-18-14	16:34					2	SNOW	8	
14-60	1-27-14	17:41					4	1	8	
14-190	4-5-14	17:43					2	1	8	
14-188	4-5-14	10:13					2	1	4	
14-210	4-21-14	19:19					2	1	4/14	
14-337	6-22-14	16:56					2	1	3	
14-550	11-14-14	16:00					2	1	4	
14-553	11-5-14	9:32					2	2	4, 14	
14-637	12-12-14	5:56					1	2	4	
14-651	12-22-14	14:20				1	2	1	4	
15-112	2-8-15	18:57					4	SNOW		Ran Red Light
15-128	2-12-15	13:32					2	1	4, 14	
15-193	3-12-15	9:48					2	2	8	
15-260	4-16-15	11:01					2	1	4	
15-265	4-18-15	22:06					4	1	10	turned into isl.
15-386	6-29-15	15:41					2	1	4	
15-468	8-12-15	18:13				1	2	1	14	
15-478	8-18-15	17:58					2	1	8	
15-603	10-26-15	10:14					2	1	8	
15-619	11-6-15	12:04					3	1	4	
15-640	11-19-15	10:30				1	2	1	4	

City of Westbrook

2013/2015 Roadway Safety Summary Report

Spring Street @ Eisenhower Drive

(Node #15047)

[19 Crashes – 2.57 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The safety analysis shows two distinct crash patterns reported for this intersection. The first pattern, a total of 7 "*rear-end*" accidents occurring on the Eisenhower Drive approach and the second pattern, a total of eight "*angle*" crashes with through traffic on Spring Street colliding with vehicles turning left from the Eisenhower Drive approach.

Recommended Intersection Mitigation Measures

The City of Westbrook is currently developing intersection improvement plans for this intersection that include: installing sequenced traffic signals, extending the length of the dedicated left-turn lane on the north approach of Spring Street and, lengthening the dedicated right-turn lane on Eisenhower Drive. Completion of this project should have a very positive result in reducing the frequency of traffic crashes occurring at this location.

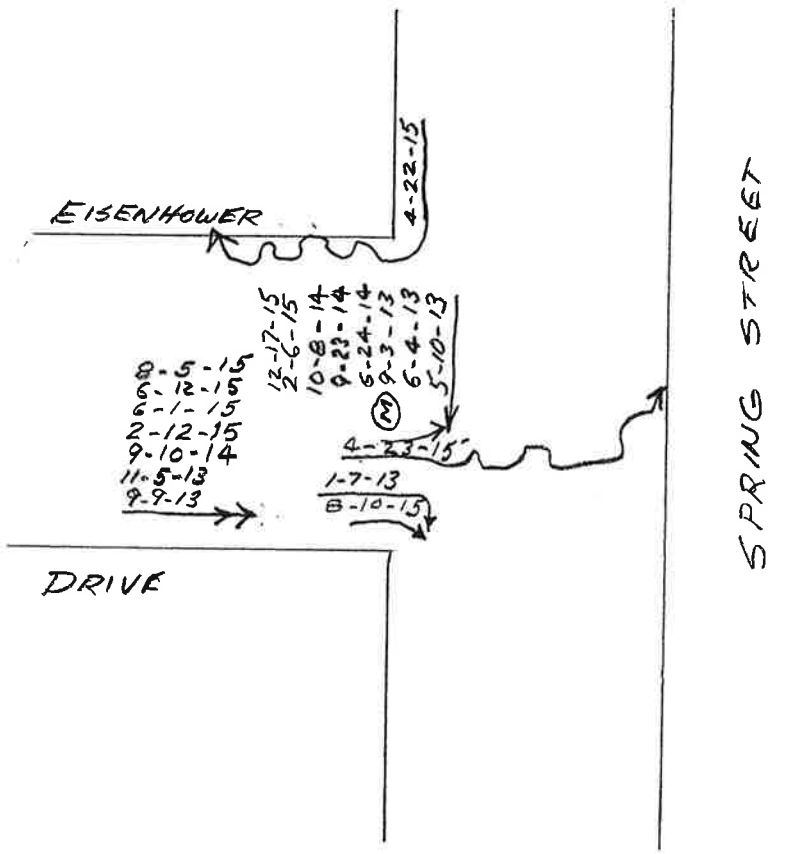
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION SPRING ST. @ EISENHOWER DR.

TOWN WEST HARTFORD NODE NO(S) 15047

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-14-2016



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LIGHT
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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
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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

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C = CLEAR F = FOG R = RAIN
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S:\SHEETS\COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

LOCATION SPRING ST. @ EISENHOWER DR.

TOWN WESTBROOK NODE NO(S) 15047

YEARS REVIEWED 2013-2015 DATE PREPARED 6-14-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-11	1-7-13	14:35	—	—	—	—	2	1	WIDE TURNING TRUCK	
13-226	5-10-13	15:22				1	2	1	2	
13-282	6-4-13	17:10			2		2	1	2	
13-432	9-3-13	16:15				1	2	1	2	
13-439	9-9-13	7:30	—	—	—	—	2	1	4	
13-525	11-5-13	7:16	—	—	—	—	2	1	4	
14-338	6-24-14	11:40	—	—	—	—	2	1	2	
14-465	9-10-14	7:38				1	2	1	4	
14-481	9-23-14	16:23	—	—	—	—	2	1	2	
14-506	10-8-14	15:46	—	—	—	—	2	1	2	
15-100	2-6-15	7:56		—	—	—	2	2	2	
15-130	2-12-15	15:38		—	—	—	3	2	14	
15-272	4-22-15	13:10		—	—	—	2	1	30	
15-273	4-23-15	22:46	—	—	—	—	4	1	3	
15-337	6-1-15	16:39	—	—	—	—	2	2	14	
15-360	6-12-15	17:06				1	2	1	4	
15-453	8-5-15	18:21	—	—	—	—	2	1	4	
460	8-10-15	14:49	—	—	—	—	2	1	WIDE TURNING TRUCK	
703	12-17-15	14:34				1	2	2	2	

City of Westbrook

2013/2015 Roadway Safety Summary Report

Main Street – Liz Harmon Drive to Larrabee Road

(Nodes # 60986 to 18447)

[15 Crashes – 2.26 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The traffic safety audit completed for this location identified a singular crash pattern for the very short roadway segment. Eleven (11) of the 15 reported vehicle crashes were either "*angle*" or "*turning movement*" collisions occurring at the driveway intersections of Amato's (four crashes) and McDonald's (seven crashes). The majority of the driveway accidents occurred during non-peak travel times with the vehicle driver not yielding to opposing or conflicting traffic.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Explore access management improvements throughout road section; eliminating duplicate driveways where possible, create driveway connectivity options where possible and, explore vehicle storage and on-site circulation improvements at fast-food restaurant site.
- Increase the number of turning arrows in the center two-way left-turn lane.
- Add lane reduction arrows to westbound Main Street indicating travel lane reduction.
- Extend the length of the broken lane line markings on the westbound approach of Main Street.
- Long-term the City, working with MaineDOT, may want to explore the advantages / disadvantages of installing a raised center island throughout the section to mitigate the high frequency of crashes occurring in the section.

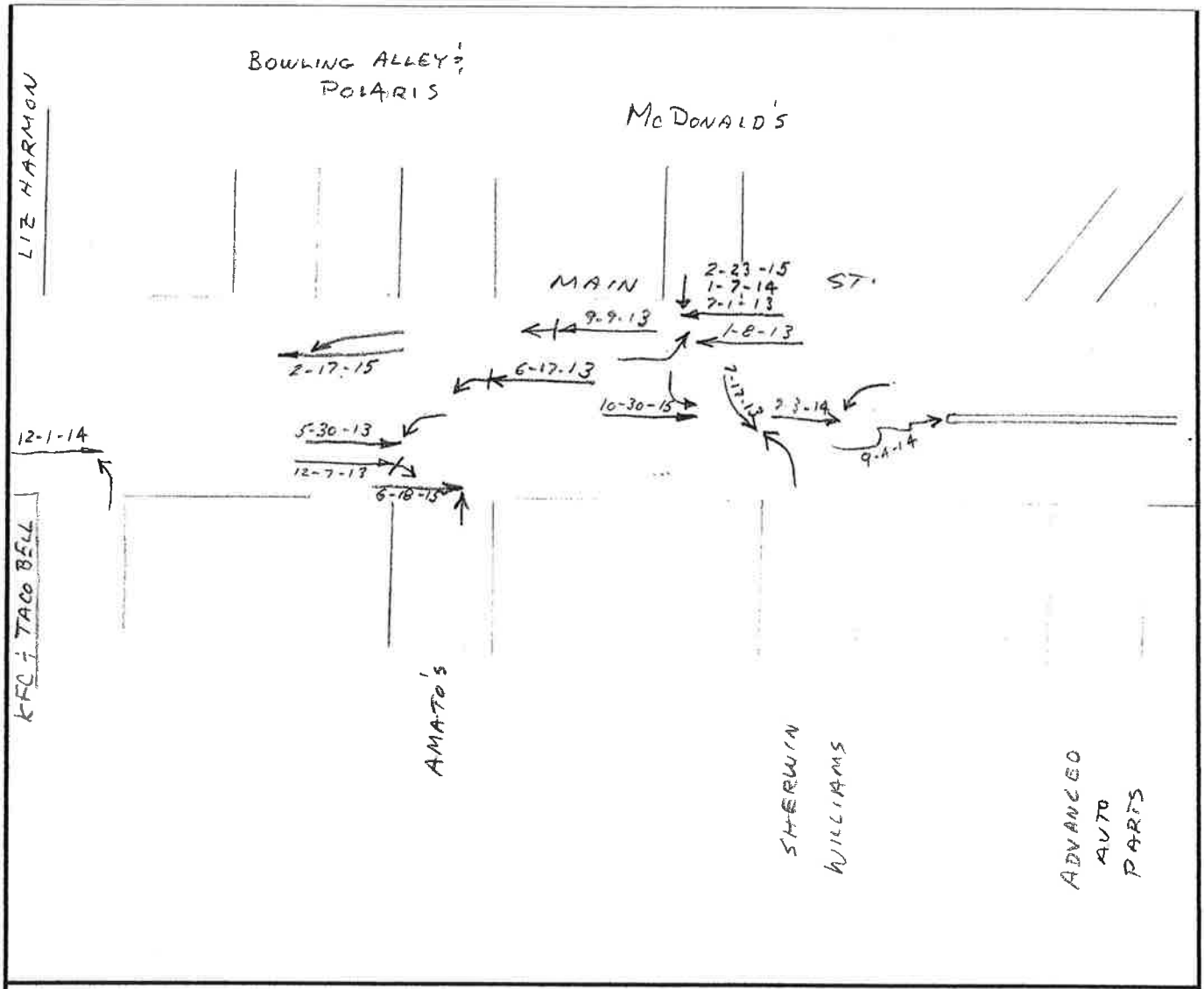
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION MAIN ST. - [END TRAFFIC ISLAND TO LIZ HARMON]

TOWN WESTBROOK NODE NO(S) 60986 - 18447

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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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, ANIMAL, SLED

WEATHER
C = CLEAR
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

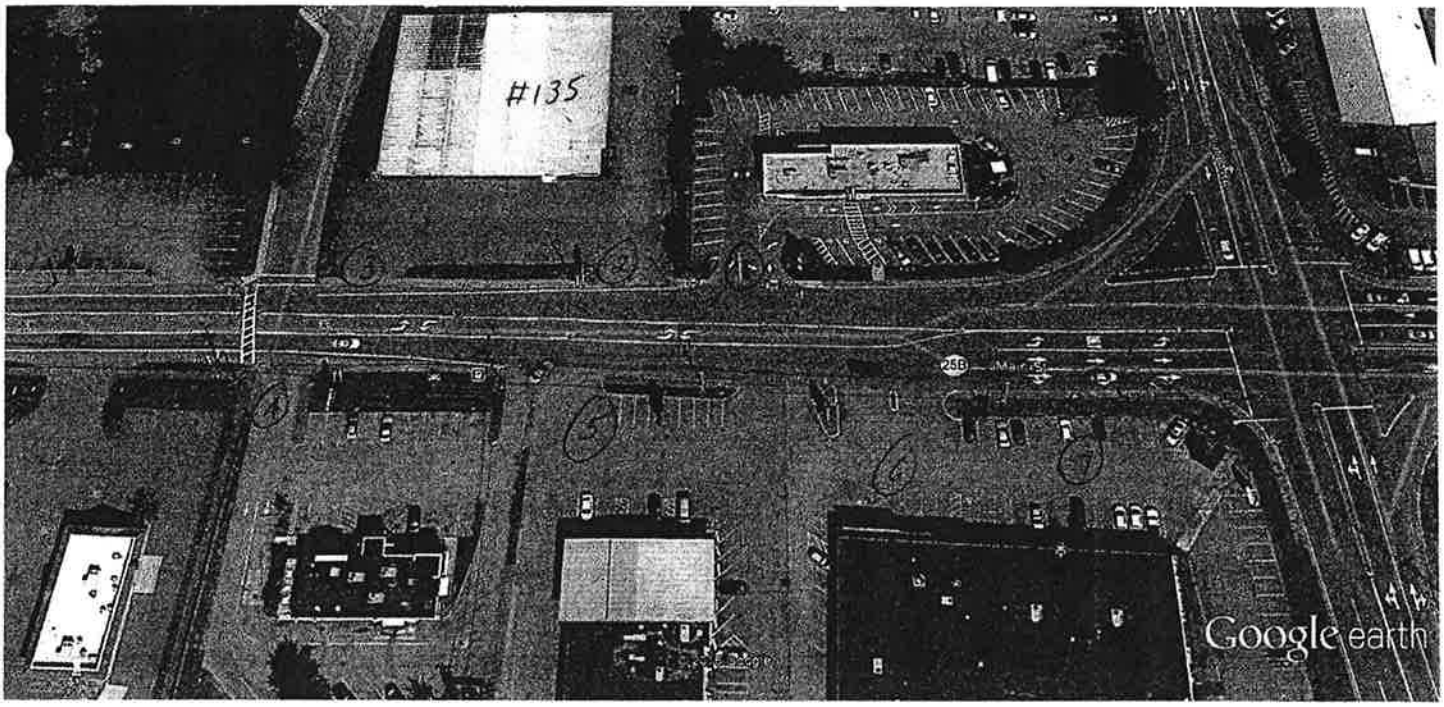
COLLISION DIAGRAM

LOCATION MAIN ST. - [END TRAFFIC ISLAND TO LIE HARMON]

TOWN WESTBROOK NODE NO(S) 60986 - 18447

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016

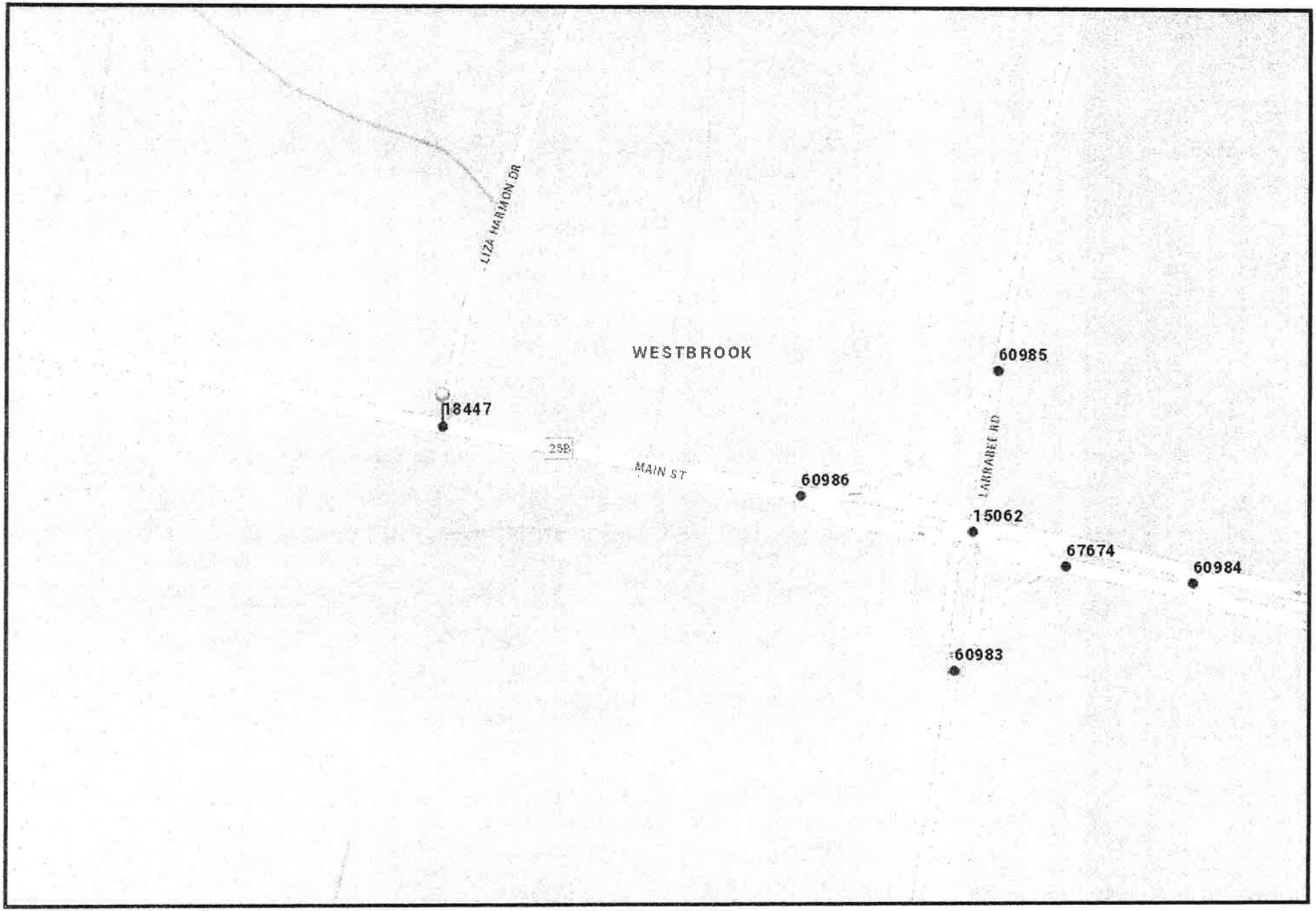
REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-15	1-8-13	20:46		—	—	—	4	2	2	
13-269	5-30-13	15:57		1			2	1	2	
13-302	6-17-13	10:49			1		2	1	4	
13-328	7-1-13	12:43		1	1		2	2	2	
13-353	7-17-13	8:23		—	—	—	2	1	51	
13-442	9-9-13	11:54		1	1		2	1	4, POSSIBLE OUT	
13-586	12-7-13	18:55		—	—	—	4	2	4	
14-20	1-7-14	7:43				1	2	1	2	
14-355	7-3-14	13:06		—	—	—	2	1	2	
14-453	9-4-14	9:17		—	—		2	1	51	
14-606	12-1-14	10:55				1	2	2	2	
15-143	2-17-15	14:10		—	—	—	2	SANDED	2	
15-157	2-23-15	14:17		—	—	—	2	1	2	
15-370	6-18-15	12:28		—	—	—	2	1	2	
15-608	10-30-15	8:39		—	—	—	2	1	2	



Google earth feet 300 meters 100

1. MacDonald's
2. Bowling Alley & Polaris
3. Bowling Alley
4. KFC, Taco Bell
5. Amato's
6. Sherwin Williams
7. Advance Auto Parts

311_789



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0.05 Miles

1 inch = 0.04 miles

Date: 6/14/2016
Time: 12:18:52 PM

City of Westbrook

2013/2015 Roadway Safety Summary Report

Main Street – Marrett Street to Deer Hill Avenue

(Nodes # 15064 to 15065)

[11Crashes – 2.27 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The traffic safety audit completed for this location identified a singular crash pattern for the very short roadway segment of 0.05 miles. Eight (8) of the 11 reported vehicle crashes were "*rear-end*" collisions occurring within either the east or westbound travel lanes on Main Street. Six of the 8 "*rear-end*" collisions occurred during the evening peak commuter hours; driver frustration during this time frame may be a contributing factor in the higher than expected level of vehicle accidents reported for this short roadway section.

Recommended Intersection Mitigation Measures

Improvements are not recommended for this location.

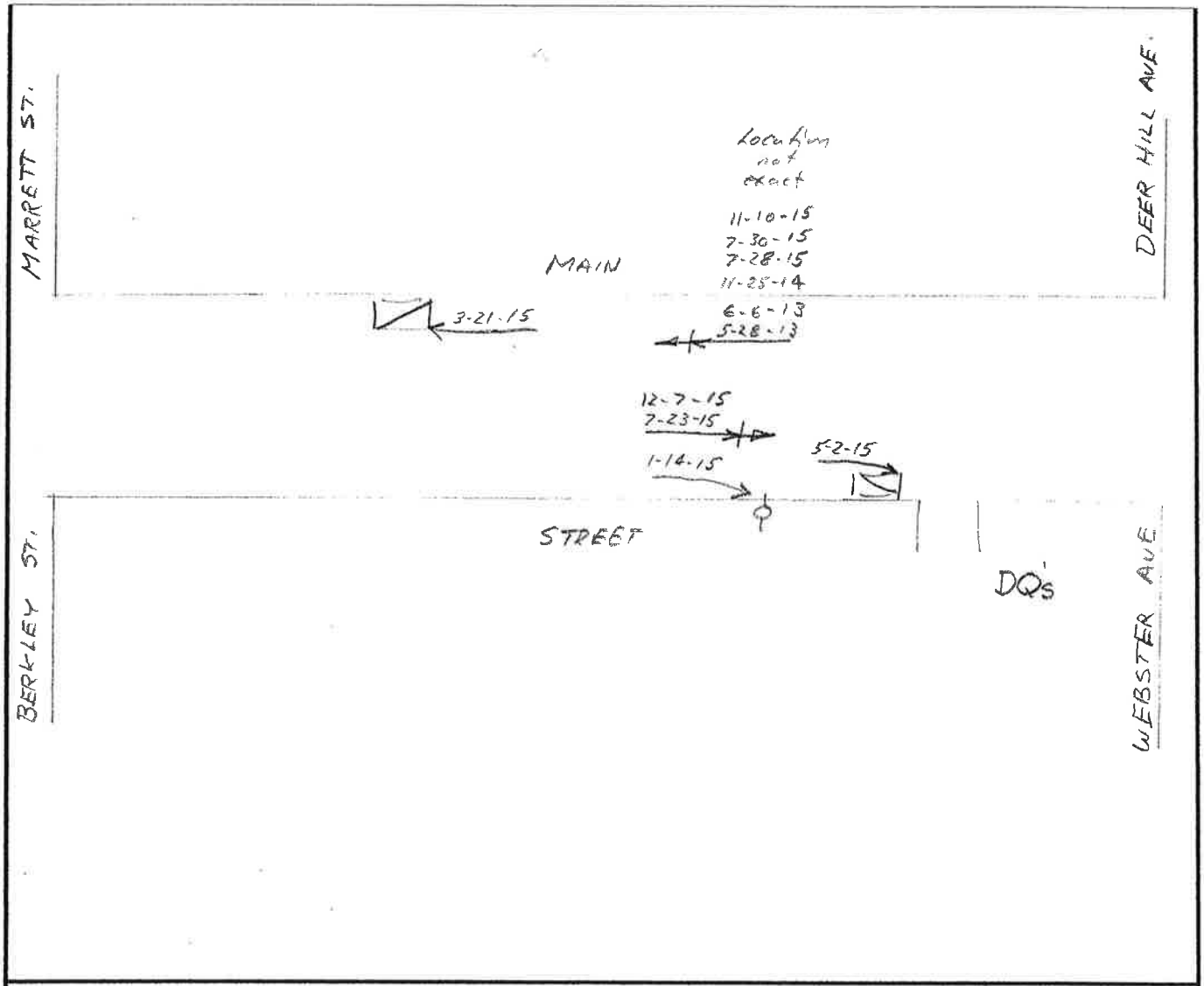
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION MAIN ST. [MARRETT ST. TO DEER HILL AVE.]

TOWN WESTBROOK NODE NO(S) 15064 - 15065

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 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, ANIMAL, SLED

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

© SHEETS/COLLISION DIAGRAM.DWG

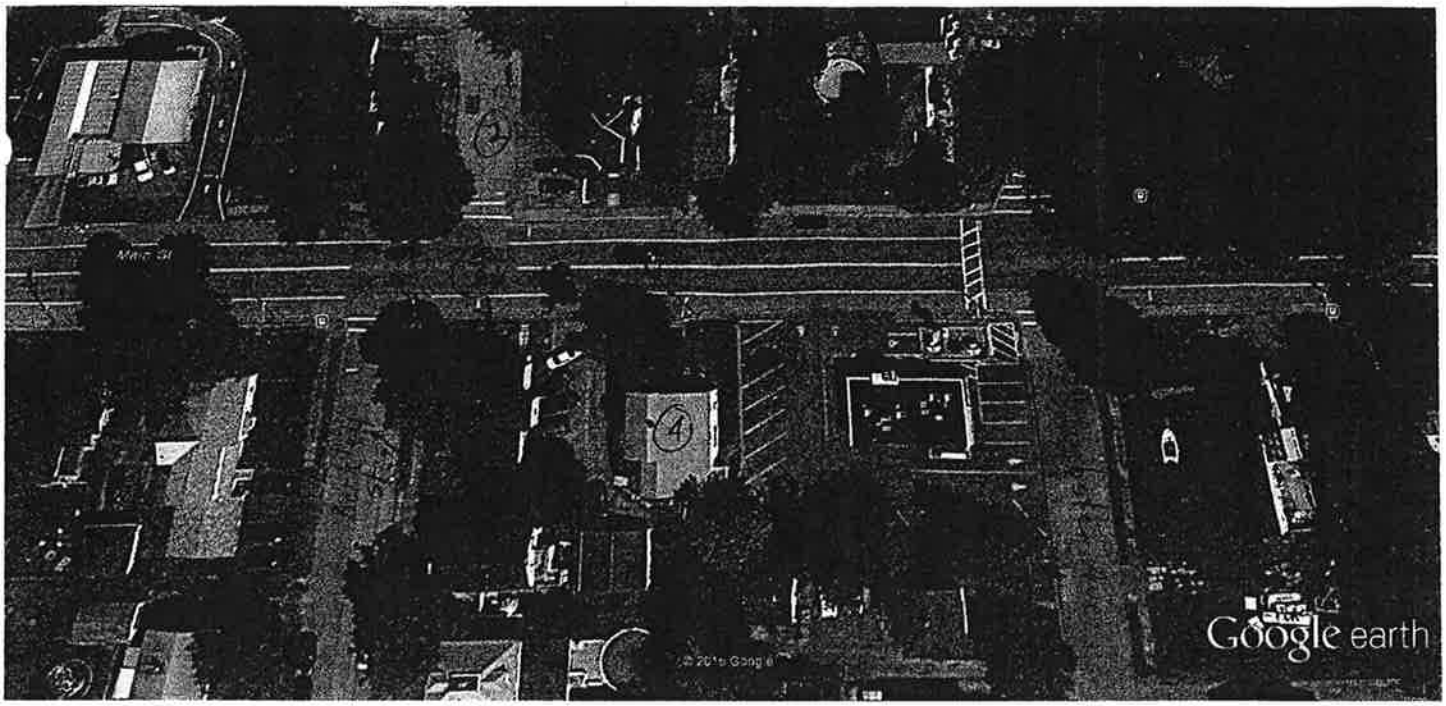
COLLISION DIAGRAM

LOCATION MAIN ST. - [MARRETT ST. TO DEER HILL AVE.]

TOWN WESTBROOK NODE NO(S) 15064 - 15065

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016

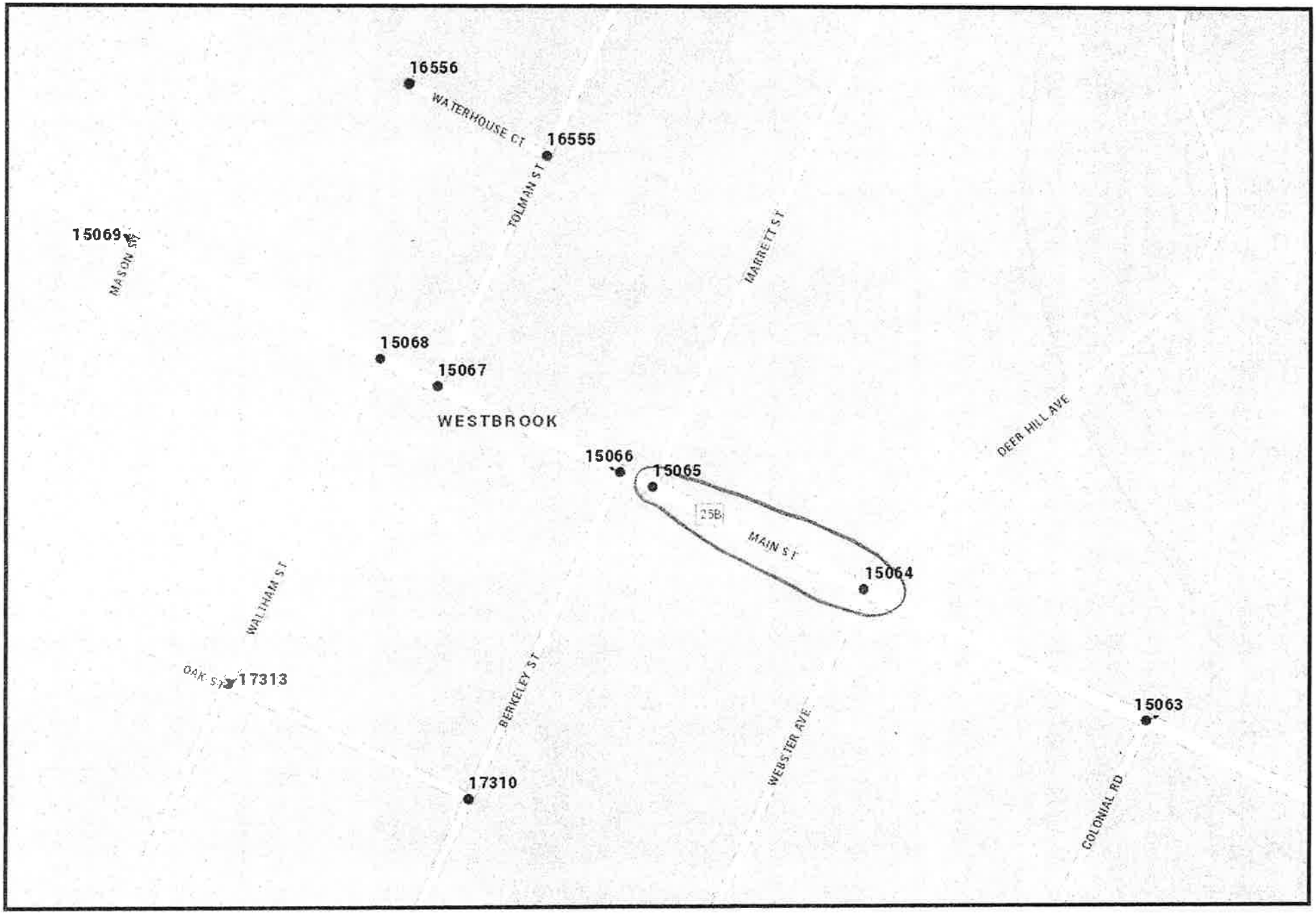
REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-265	5-28-13	17:12	—	—	—	—	2	1	4	
13-285	6-6-13	17:35	—	—	—		2	1	4, 14	
14-593	11-25-14	16:44				1	4	2	14	reckless operator
15-33	1-14-15	17:09	—	—	—	—	4	1	14	
15-212	3-21-15	22:55	—	—	—	—	4	1	31	
15-288	5-2-15	13:40	—	—	—	—	2	1	10	
15-424	7-23-15	14:46	—	—	—	—	2	1	4	
15-431	7-28-15	20:42				1	4	1	4, 14	
15-434	7-30-15	16:57	—	—	—	—	2	1	4, 14	
15-627	11-10-15	17:09	—	—	—	—	3	1	4	
15-674	12-7-15	16:38	—	—	—	—	2	1	4	



Google earth feet 200 meters 80

(1) DQ's
(2) #251 Home
(3) #264
(4) #250

312-687



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0.05 Miles

1 inch = 0.04 miles

Date: 6/14/2016
Time: 12:17:14 PM

City of Westbrook

2013/2015 Roadway Safety Summary Report

Main Street – Stroudwater Street to Dunn Street

(Nodes # 17182 – 17183)

[8 Crashes – 1.03 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Three (3) of the 8 vehicle crashes reported for this street segment involved a moving vehicle striking a parked vehicle. The remaining 5 vehicle accidents included three "*rear-end*" crashes and two driveway accidents, each occurring in separate locations within the street segment.

Recommended Intersection Mitigation Measures

Mitigation improvements are not recommended for this location.

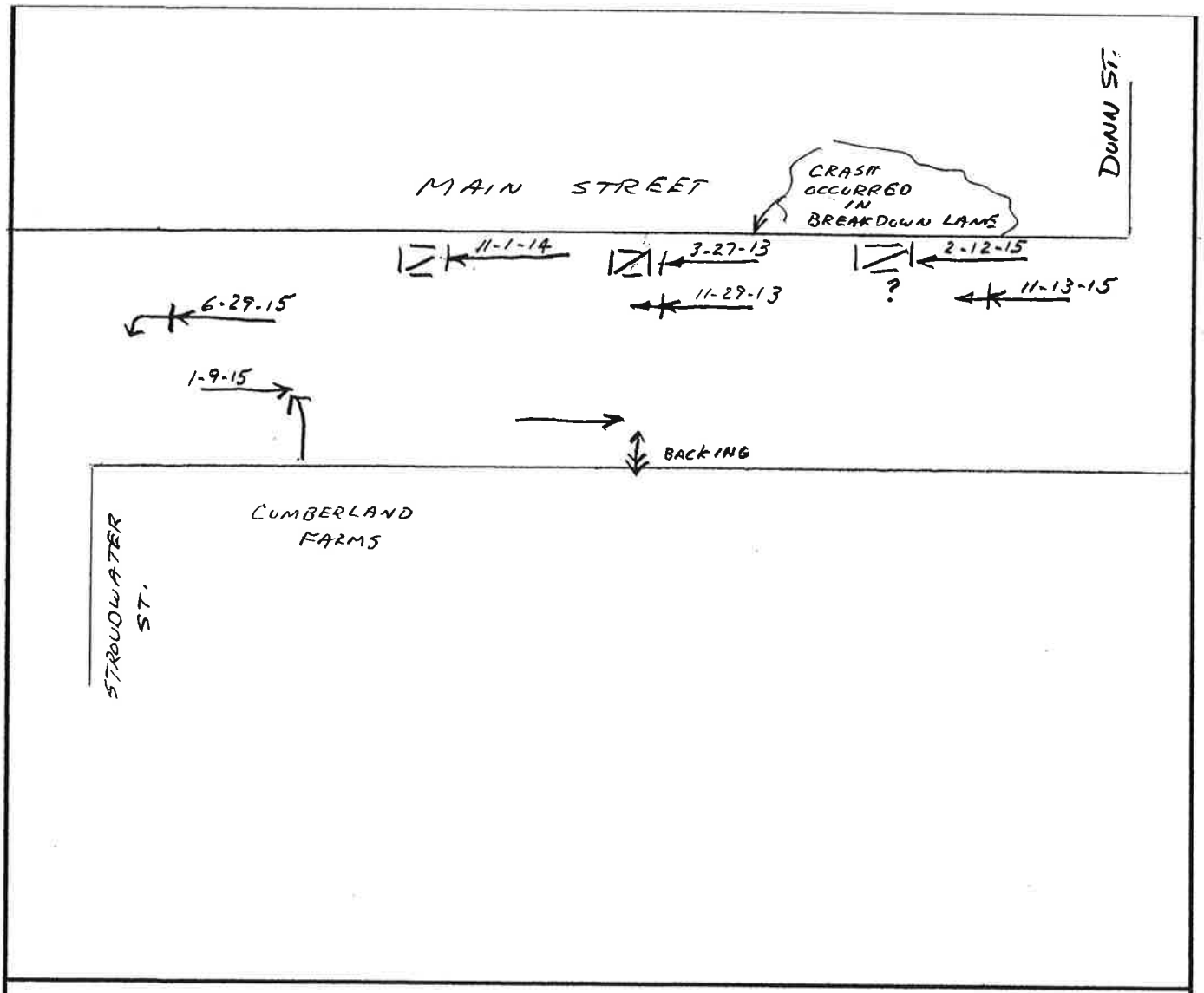
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION MAIN ST. [STROUDWATER ST. TO DUNN ST.]

TOWN WESTBROOK NODE NO(S) 17182 - 17183

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 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:\DWGS\COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

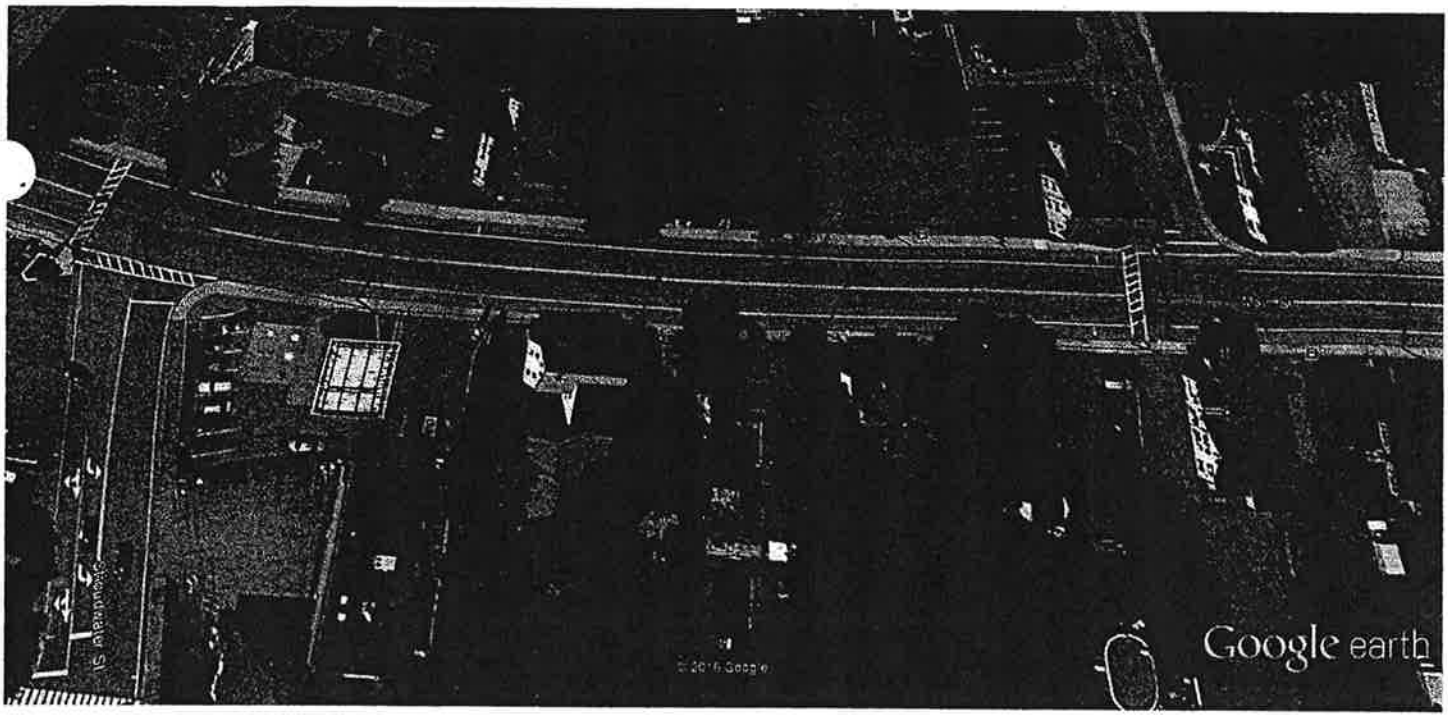
LOCATION MAIN ST. [STROUDWATER ST. TO DUNN ST.]

TOWN WESTBROOK NODE NO(S) 17182 - 17183

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-160	3-27-13	14:40					2	1	51	
13-570	11-29-13	13:48					2	1	14	
14-544	11-1-14	6:56					1	2	14	
15-17	1-9-15	15:47					2	1	2	
15-121	2-11-15	6:37					2	1	BACKING FROM DRIVEWAY	
15-127	2-12-15	12:08					2	?	UNOCCUPIED VEHICE	PARKED STRUCK
15-382	6-29-15	10:39					2	1	4, 14	
15-631	11-13-15	16:51					4	1	4	

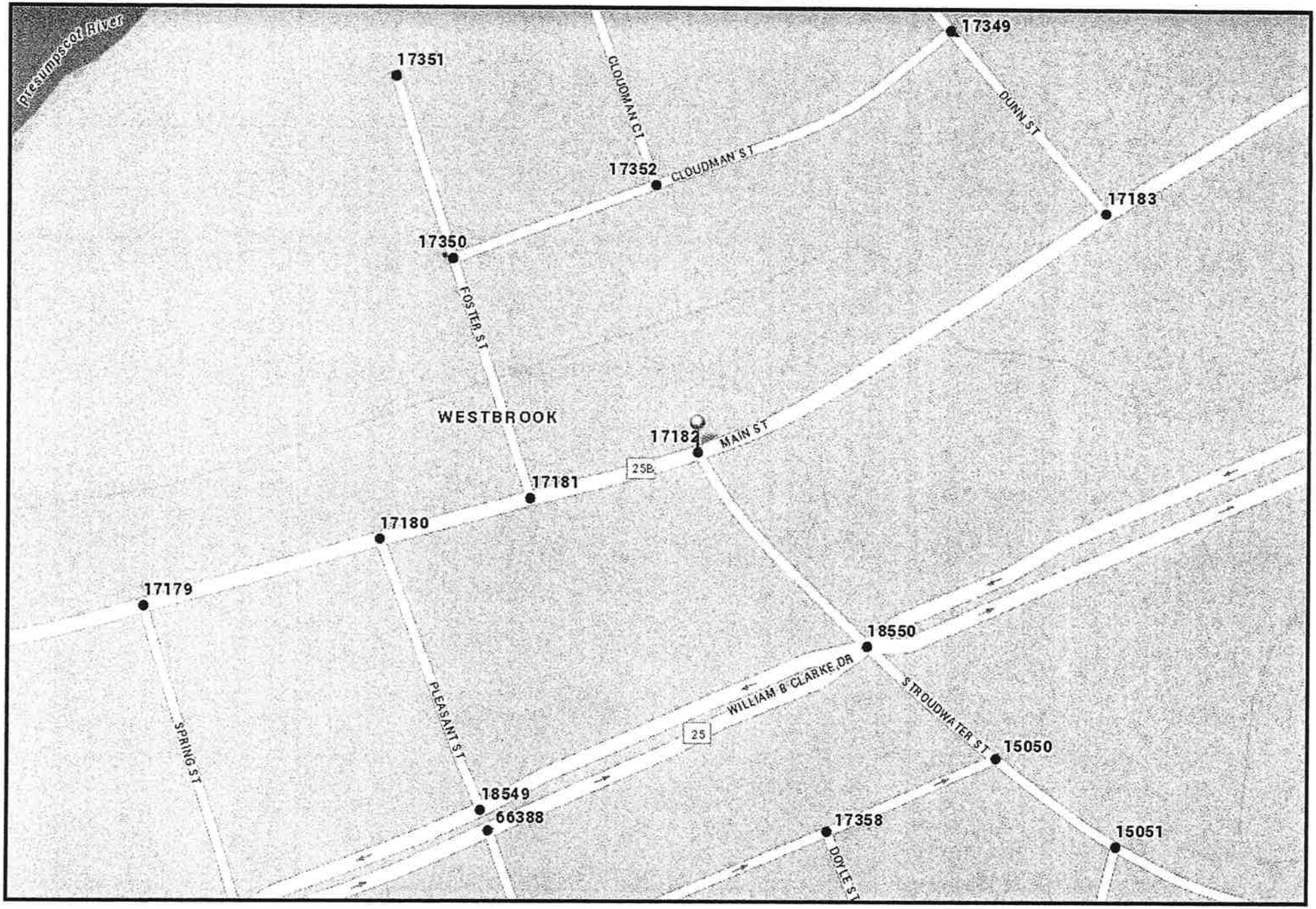
Dunn



Google earth

feet 300
meters 90

17182 & 3119265



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0.05 Miles

1 inch = 0.04 miles

Date: 6/14/2016
Time: 12:11:34 PM

City of Westbrook

2013/2015 Roadway Safety Summary Report

Main Street – Dana Street to Mill Lane

(Nodes # 15086 – 15087)

[10 Crashes – 2.02 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Six (6) of the 10 vehicle crashes reported for this street segment occurred at or near the parking lot driveways serving the Friendly Discount Store located at 922 Main Street. Two of the (6) vehicle collisions involved a motorist exiting the parking lot being struck by a through vehicle traveling eastbound on Main Street. Each of the remaining four crashes were isolated, singular incidents occurring in the general area of the parking lot entrance/exit driveways to the noted store at Main Street. The remaining four vehicle accidents include two "*rear-end*" collisions occurring in the westbound Main Street travel lane and the final crash was a driveway "*backing*" incident occurring near the Mill Lane intersection.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Install appropriate "*Do-Not Enter*" signs to the exit driveway of the Friendly Discount Store to appropriately denote the existing parking lot circulation pattern. Add a larger, more visible, "*ENTER-ONLY*" sign to the entry drive replacing the existing sign.
- Prohibit on-street parking between driveways serving the Friendly Discount Store to improve sightlines for entering and exiting traffic.

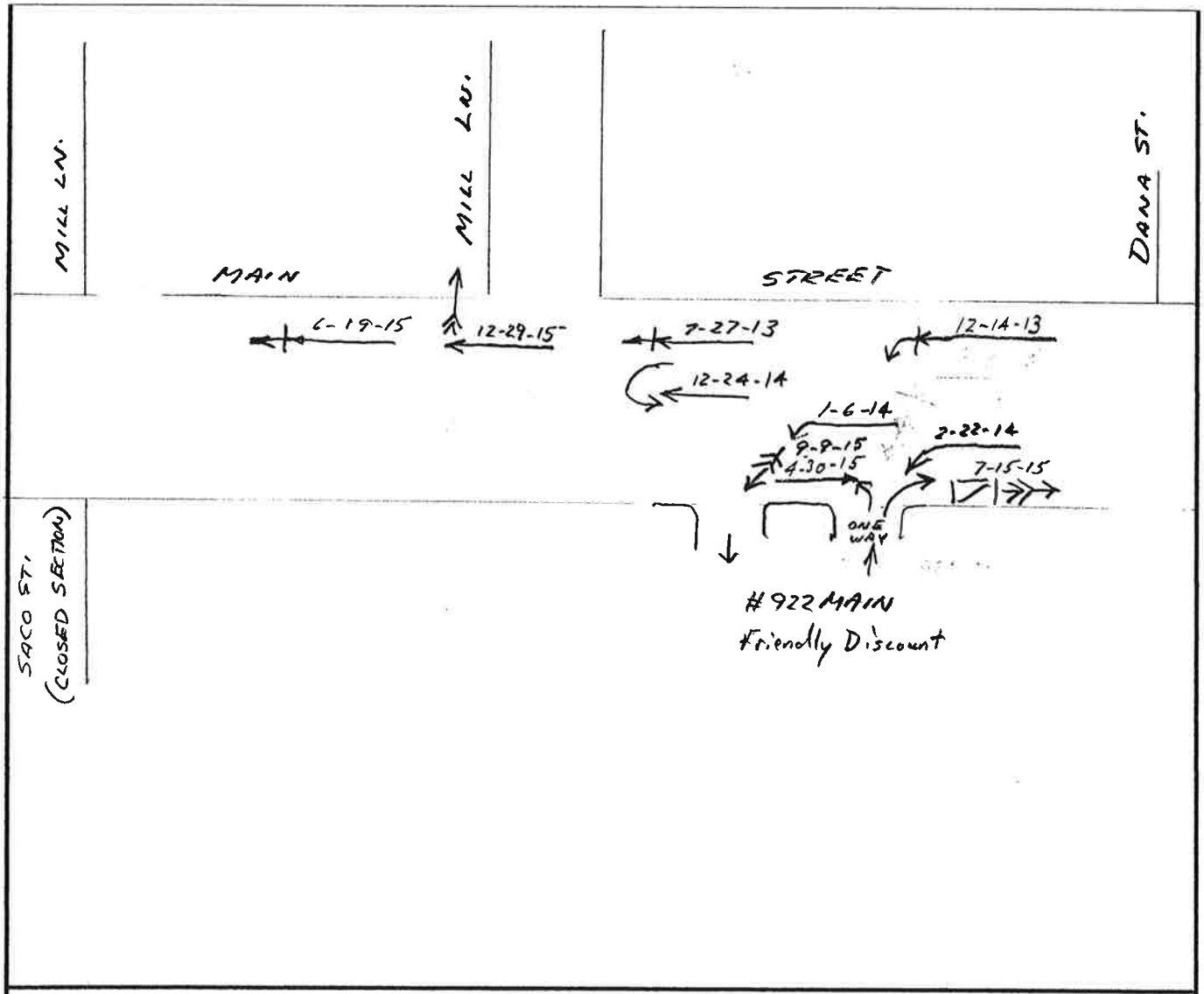
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION MAIN ST. [DANA ST. to MILL LN.]

TOWN WESTBROOK NODE NO(S) 15086 - 15087

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6 - 17 - 2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 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:/DWG/TC/COLLISION DIAGRAM.DWG

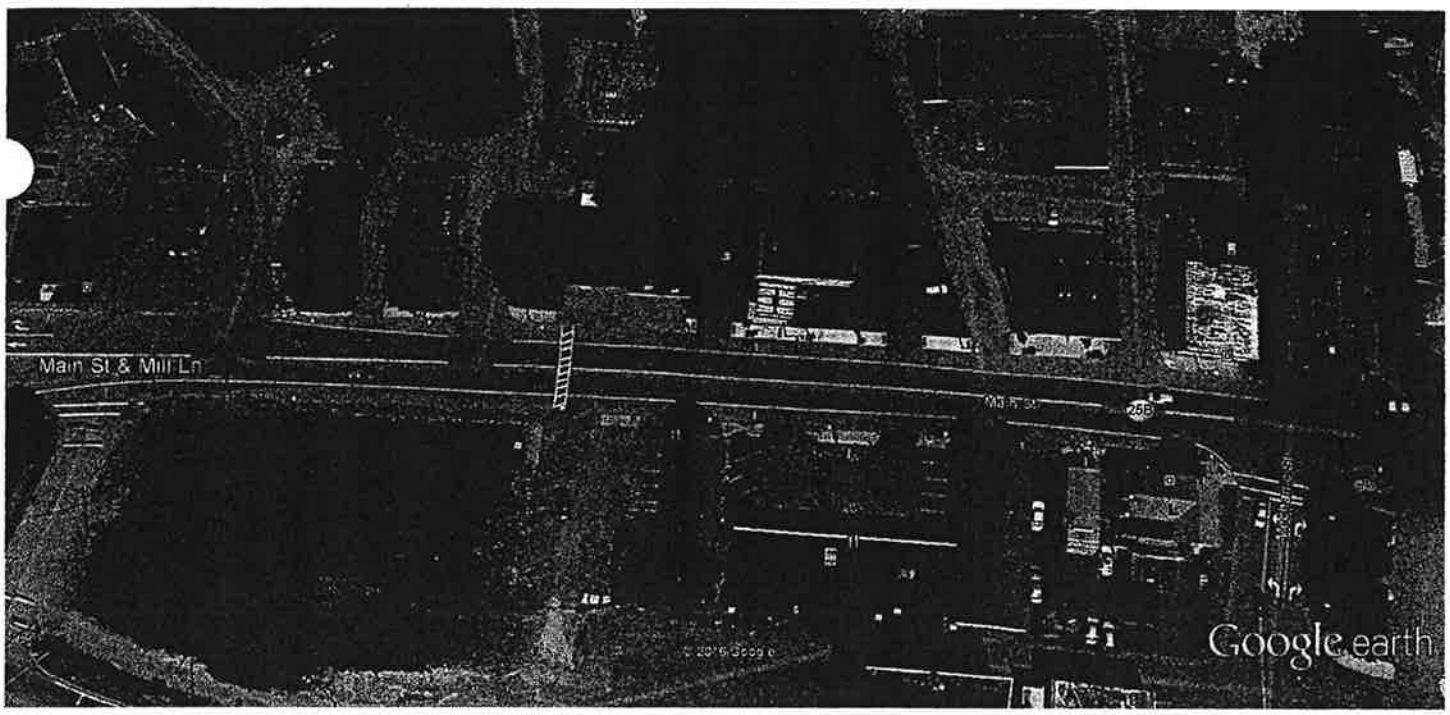
COLLISION DIAGRAM

LOCATION MAIN ST. [DANA ST. TO MILL LN.]

TOWN WESTBROOK NODE NO(S) 15086 - 15087

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016

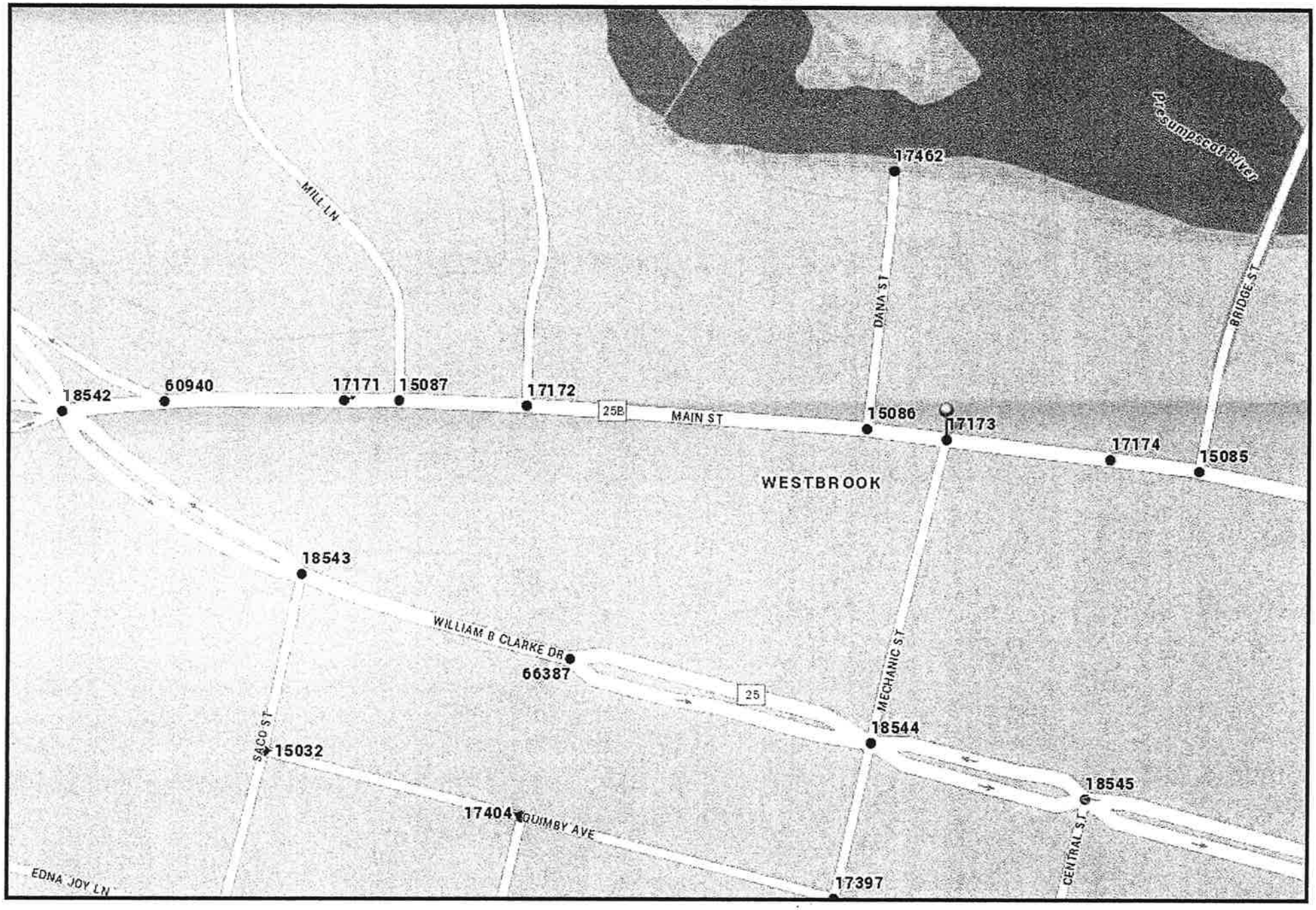
REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-366	7-27-13	12:51				1	2	1	14	PED. IN WALK
13-606	12-14-13	17:29	—	—	—	—	4	1	14	#922 MAIN
14-18	1-6-14	12:49	—	—	—	—	2	2	11	#922 MAIN
14-114	2-22-14	17:43	—	—	—	—	3	1	10	
14-657	12-24-14	5:29	—	—	—	—	4	2	10	
15-280	4-30-15	17:30	—	—	—	—	2	1	2	
15-374	6-19-15	16:35	—	—	—	—	2	1	14	
15-410	7-15-15	18:32	—	—	—	—	2	1	11	
15-514	9-9-15	17:05	—	—	—	—	2	1	2	
15-723	12-29-15	6:30	—	—	—	—	4	SNOW	11	



Google earth

feet 300
meters 100

17173 (190519



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0.05 Miles

1 inch = 0.04 miles

Date: 6/14/2016
Time: 12:09:22 PM

CITY OF PORTLAND HIGH CRASH LOCATION SUMMARIES AND COLLISION DIAGRAMS

City of Portland

2013/2015 Roadway Safety Summary Report

Riverside Street/Larrabee Road/MTA Exit 48

(Node# 18670)

[73 Crashes – 1.93 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Twenty-six (26) or approximately thirty-five percent of the 73 reported vehicle crashes at this intersection are "*lane-change*" accidents occurring on the southbound approach of Riverside Street involving motorists in the far left-turn lane. Motorist in the far left-turn lane are attempting to continue straight on Riverside Street southerly colliding with vehicles in the middle (combination left-turn-straight lane). The reporting police officer cited in a number of incidents that motorists were unaware of the lane change on the southbound approach of Riverside Street and/or expressed confusion with the limited destination information provided in advance of the intersection.

The remaining (47) vehicle crashes appear to be more randomly occurring within the intersection.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- The southbound approach of Riverside Street should be reconstructed providing an additional and exclusive left-turn lane, thereby, eliminating the "*lane entrapment*" condition that appears to be the principal contributing factor in the very high number of "*lane-change*" collisions occurring in the southbound travel lanes.
- Add overhead lane use traffic signs both in advance and at the intersection on the southbound intersection approach.
- Add overhead destination signing on the southbound intersection approach in advance of the intersection.
- Add both overhead lane use signs on remaining intersection approaches.
- Install roadway lane use and symbol markings in all travel lanes on each intersection approach.

2013

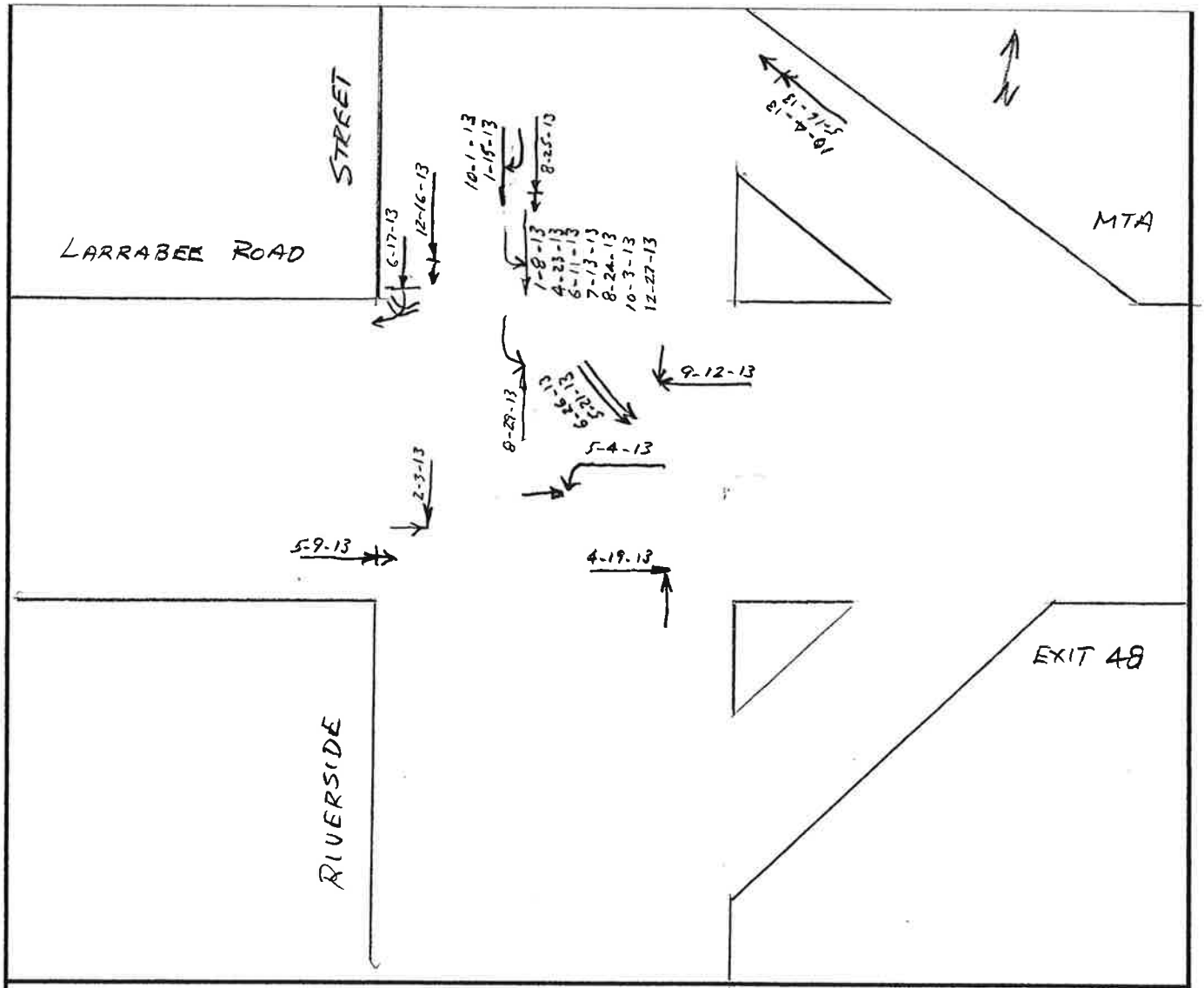
COLLISION DIAGRAM

SHEET 1 OF 5

LOCATION RIVERSIDE ST. / MTA EXIT 48 / LARRABEE RD.

TOWN PORTLAND NODE NO(S) 18670

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016



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
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:\EXCETS\COLLISION DIAGRAM.DWG

2014

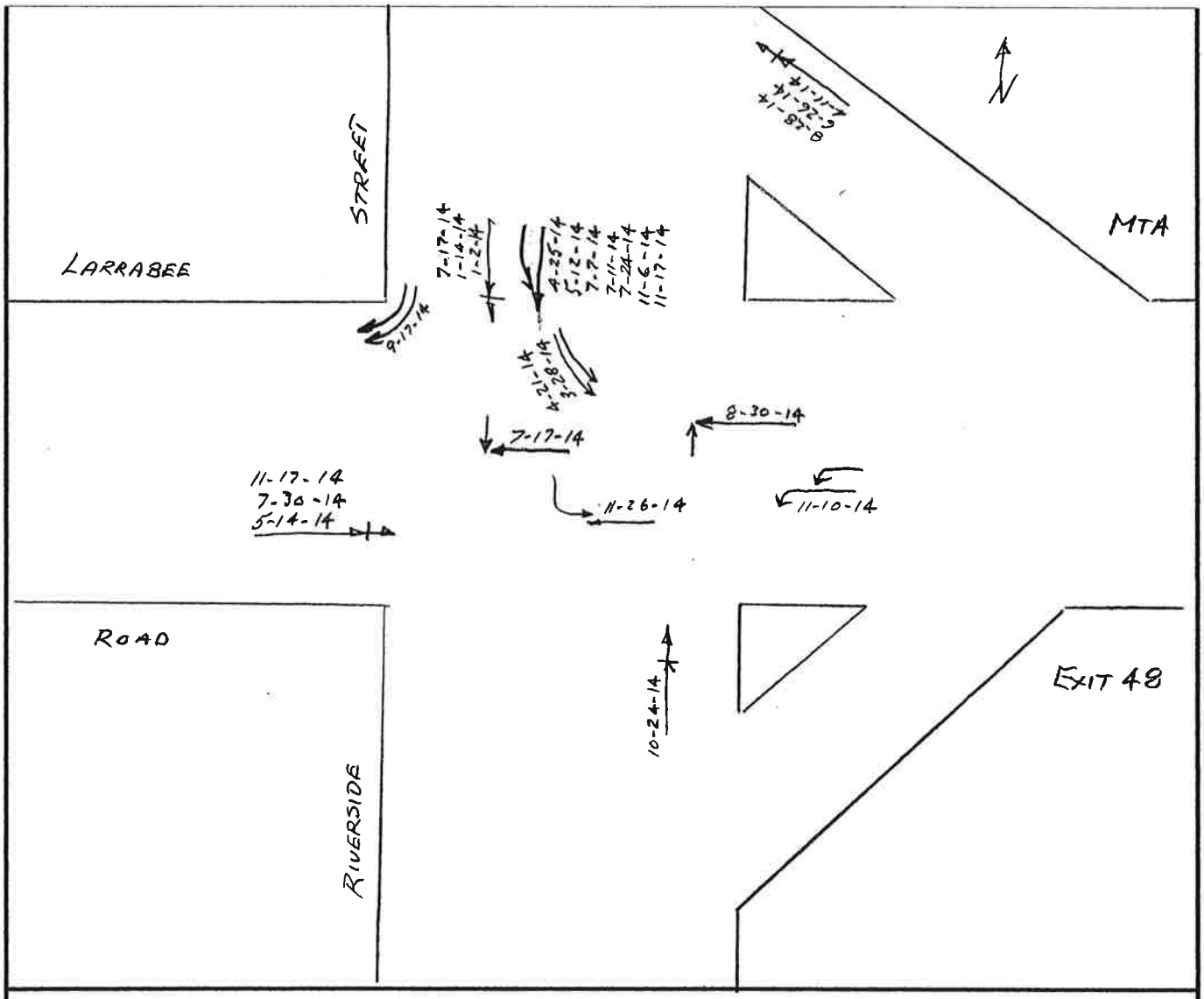
COLLISION DIAGRAM

SHEET 2 OF 5

LOCATION RIVERSIDE ST. / MTA EXIT 48 / LARRABEE RD.

TOWN PORTLAND NODE NO(S) 18670

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016



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, FATAL ACCIDENT
BACKING, REAR END
FIXED OBJECT, SIDE SWIPE, VEHICLE (MOVING)
HEAD ON, TURNING MOVE, BICYCLE
OVERTURN, CHANGE LANE, ANIMAL
PARKED VEHICLE, OUT OF CONTROL, SLED

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

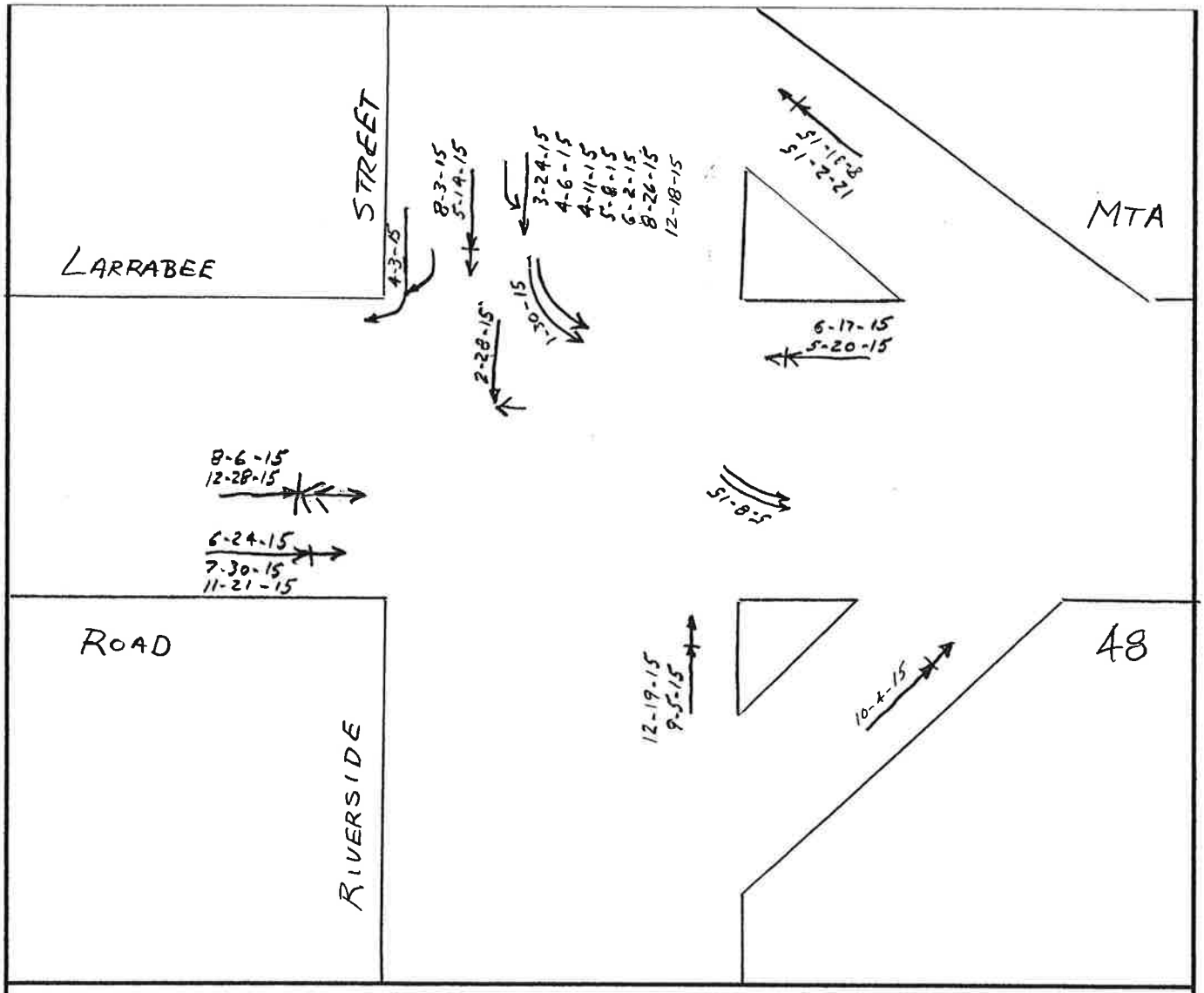
2015

COLLISION DIAGRAM

LOCATION RIVERSIDE ST / MTA EXIT 48 / LARRABEE RD

TOWN PORTLAND NODE NO(S) 18670

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016



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
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41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
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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, ANIMAL, SLED

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 RIVERSIDE ST./MTA EXIT 48/LARRABEE RD

TOWN PORTLAND NODE NO(S) 18670

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-102	1-8-13	12:00					2	1	10	went straight in left only lane
13-177	1-15-13	11:39					2	1	8	
13-412	2-3-13	1:26				1	4	1	5	Ran Red Light
13-1222	4-19-13	13:40					2	1	5	Ran Red Light
13-1234	4-23-13	12:30					2	1	8	Straight in left-lane
13-1337	5-4-13	12:06				2	2	1	2	CHECK LIGHT SEQ
13-222	5-9-13	12:53					2	1	4	
13-1435	5-16-13	21:33				1	4	1	14	
13-1478	5-21-13	16:48					2	1	14	
13-43026	6-11-13	8:50					2	2	8	Straight in left-lane
13-1733	6-17-13	19:58					2	1	11	
13-47141	6-26-13	7:08					2	1	8	
13-1989	7-13-13	17:30				1	2	1	8	Straight in left-lane
13-2406	8-24-13	18:45					4	1	8	Straight in left-lane
13-63723	8-25-13	9:57					2	1	4	
13-2459	8-29-13	20:47					4	1		Ran Red Light
13-2586	9-12-13	14:23					2	2		Ran Red Light
2762	10-1-13	13:45					2	1	4, 8	
2803	10-3-13	17:17					2	1	8	Straight in left-lane
13-73982	10-4-13	17:13					2	1	14	
13-3652	12-16-13	10:46					2	SLUSH	4	
13-3812	12-27-13	13:17					2	2	8	Straight in left lane
		2014								
14-7	1-2-14	8:36					2	SNOW	4	
14-196	1-14-14	13:05					2	2	4	
14-1063	3-28-14	10:58					2	2	14, 8	
14-1190	4-11-14	20:02					4	1	4	
14-1257	4-21-14	12:38					2	1	8	
14-1296	4-25-14	13:38			1		2	1	8	Straight in left lane
14-1465	5-12-14	10:48					2	1	8	Straight in left lane
14-246	5-14-14	8:57					2	1	4, 41	
14-1846	6-26-14	13:07				1	2	1	4, 14	
14-58432	7-7-14	8:03					2	1	8	Straight in left lane
14-1983	7-9-14	8:30					2	1	8	Straight in left lane
14-2021	7-11-14	18:16					2	1	8, 14	Straight in left lane
14-2073	7-17-14	6:40				1	2	1	5	Ran Red Light
14-2243	7-17-14	16:30					-	-	4	
14-2154	7-24-14	14:11					2	1	8	Straight in left lane
14-2220	7-30-14	16:40					2	1	4, 14	
2548	8-28-14	20:15					4	1	4, 14	
14-2565	8-30-14	13:16					2	1		Ran Red Light
14-2764	9-17-14	15:48					2	1	8	
14-3146	10-24-14	10:28					2	2	4	
14-3280	11-6-14	14:20					2	1	8	Straight in left lane

COLLISION DIAGRAM

SHEET 5 OF 5

LOCATION RIVERSIDE ST. / MTA EXIT 48 / LARRABEE RD.

TOWN PORTLAND NODE NO(S) 18670

YEARS REVIEWED 2013-2014 DATE PREPARED 6-17-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER	
14-3314	11-10-14	9:04					2	1	2,8		
14-3383	11-17-14	8:42					2	2	8	Straight in left lane	x
14-3384	11-17-14	10:30					2	2	4		
14-3504	11-26-14	18:38					4	SNOW		Ran Red Light	
					2015						
15-410	1-30-15	17:44					4	SLUSH	31		
15-1004	2-28-15	00:25					4	2		Ran Red Light	
15-1011	2-28-15	15:38					4	2	11		
15-1275	3-24-15	17:55					2	1	8	Straight in left lane	x
15-1369	4-3-15	15:00					2	1	8		
15-1391	4-6-15	7:29					2	1	8	Straight in left lane	x
15-1448	4-11-15	14:25					2	1	8	"	x
15-1687	5-8-15	12:41					2	1	8	"	x
15-37520	5-8-15	8:02					2	1	10		
15-1744	5-14-15	8:02				1	2	1	4		
15-041654	5-20-15	15:38					2	1	4		
15-1931	6-2-15	6:44					1	2	8	Straight in left lane	x
2080	6-17-15	6:50					2	1	4		
2167	6-24-15	10:40			1	1	2	1	51		
15-2567	7-30-15	13:20					2	1	4		
15-448	8-3-15	17:13					2	1	4		
15-2844	8-6-15	18:45					2	1	14		
15-2896	8-26-15	18:27					2	1	8	Straight in left lane	x
15-2941	8-31-15	18:06					2	1	4		
15-3004	9-5-15	11:14			1		2	1	4,14		
15-3346	10-4-15	20:26					4	1	4		
15-3895	11-21-15	15:13					2	1	4		
15-4005	12-2-15	11:43					2	2	4,14		
15-4240	12-18-15	16:40					4	2	8	Straight in left lane	x
15-4252	12-19-15	14:35					2	1	4		
15-4288	12-22-15	15:10					2	2	8	Straight in left lane	x

City of Portland

2013/2015 Roadway Safety Summary Report

Riverside Street @ Warren Avenue (Node# 15893)

[51 Crashes – 1.32 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Twenty-two (22) of the 51 vehicle crashes are "*rear-end*" accidents occurring on the four intersection approaches with the greatest majority of crashes (10) reported for the Warren Avenue westbound approach. Thirteen (13) additional crashes are "*angle*" crashes involving motorist entering the intersection on a "*red*" signal indication. Six (6) of the eight "*angle*" crashes involved motorists on the westbound approach of Warren Avenue colliding with motorists departing the southbound approach of Riverside Street. The remaining 16 vehicle crashes occurred more randomly throughout the intersection.

Traffic congestion prevails at this location through-out the day with very long vehicle queues on both Warren Avenue and the southbound Riverside Street approaches of the intersection routinely during each signal cycle.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Provide physical improvements increasing the capacity of the intersection, specifically on both Warren Avenue approaches.
- Update and optimize traffic signal phasing and timing at the intersection with proposed improvements.
- Replace all overhead lane use signing throughout the intersection.
- Paint as necessary roadway turn arrows and symbols throughout the intersection.

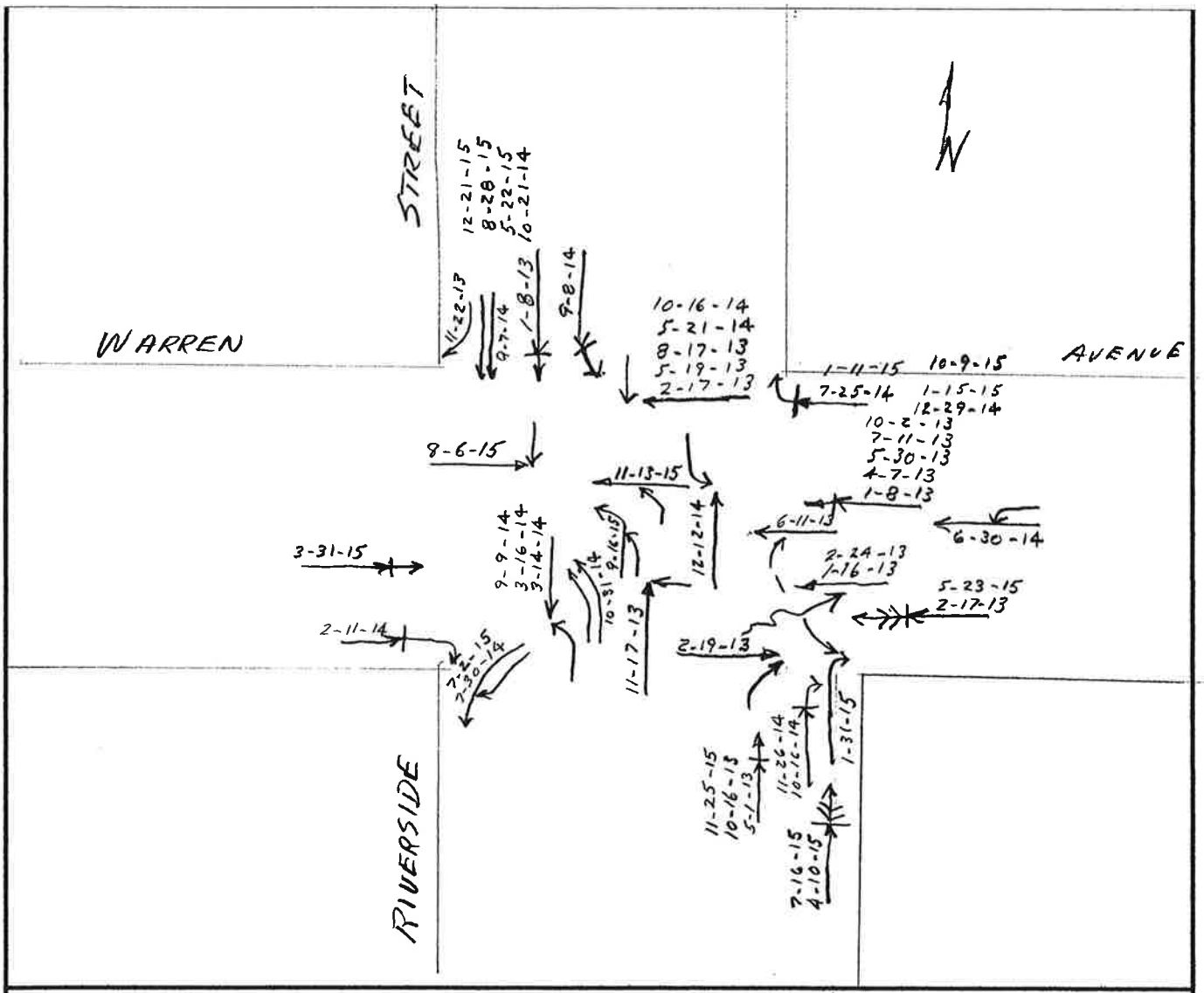
COLLISION DIAGRAM

SHEET 1 OF 3

LOCATION RIVERSIDE ST. @ WARREN AVE.

TOWN PORTLAND NODE NO(S) 15893

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-18-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS

ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE
PEDESTRIAN (P), 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 RIVERSIDE ST. @ WARREN AVE.

TOWN PORTLAND NODE NO(S) 15893

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-18-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-110	1-8-13	14:18				1	2	1	4, 14	
13-110	1-8-13	17:45	—	—	—	—	4	2	4	
13-194	1-16-13	8:28	—	—	—	—	2	SNOW	3, road	conditions
13-595	2-17-13	18:00	—	—	—	—	4	SLUSH	11	
13-590	2-17-13	12:18				1	2	SNOW	2	ran red light
13-626	2-19-13	17:05	—	—	—	—	4	2	2	RTOR MOV.
13-687	2-24-13	15:25	—	—	—	—	2	SLUSH		road conditions
13-1148	4-7-13	15:10				1	2	1	4	
13-1313	5-1-13	13:50				1	2	1	3,	
13-1457	5-19-13	14:30				1	2	1	5	ran red light
13-1564	5-30-13	10:39				1	2	1	4, 14	
13-1681	6-11-13	15:05	—	—	—	—	2	2	51	
13-1964	7-11-13	11:22	—	—	—	—	2	2	4, 14	
13-2333	8-17-13	18:56				3	2	1	5	ran red light
13-2790	10-2-13	20:10	—	—	—	—	4	1	51	
13-2936	10-16-13	10:13	—	—	—	—	2	1	4	
13-3267	11-17-13	00:20				1	4	1	5	ran red light
13-3331	11-22-13	18:15	—	—	—	—	4	2	31	
14-509	2-11-14	8:18	—	—	—	—	2	1	4,	
14-944	3-14-14	21:35	—	—	—	—	4	1	2	? check light
14-961	3-16-14	16:08	—	—	—	—	2	1	2	? " "
14-1537	5-21-14	18:52	—	—	—	—	2	1	5	ran red light
14-1886	6-30-14	14:35	—	—	—	—	2	1	8	straight in left lane
14-2167	7-25-14	15:04	—	—	—	—	2	1	10	
14-2211	7-30-14	11:37	—	—	—	—	2	1	8, 10	
14-2666	9-8-14	13:58	—	—	—	—	2	1	4	
14-2690	9-9-14	21:10	—	—	—	—	4	1	51	? check light
14-2755	9-17-14	6:53	—	—	—	—	2	1	2, 14	
14-3053	10-16-14	10:32				2	2	2	4	
14-3047	10-16-14	7:24	—	—	—	—	2	1	5	ran red light
14-3101	10-21-14	11:15	—	—	—	—	2	1	4	
14-3233	10-31-14	11:08	—	—	—	—	2	1	8, 10	
14-3499	11-26-14	17:34				1	4	SNOW	51	
14-3674	12-12-14	17:18				1	4	1	5	ran red light
14-3840	12-29-14	15:20				3	2	1	4, 14	
15-128	1-11-15	12:20				2	2	1	4	
15-211	1-15-15	17:07	—	—	—	—	4	2	4	
15-428	1-31-15	13:59	—	—	—	—	2	2	10	RTOR
15-1335	3-31-15	6:55	—	—	—	—	2	1	4, 14	
15-28510	4-10-15	14:40	—	—	—	—	2	2	11	
15-1819	5-22-15	14:44	—	—	—	—	2	1	4, 14	
15-1827	5-23-15	9:25				1	2	1	11	
15-2269	7-2-15	8:28	—	—	—	—	2	1	8, 14	
15-2427	7-16-15	12:33	—	—	—	—	2	1	11	

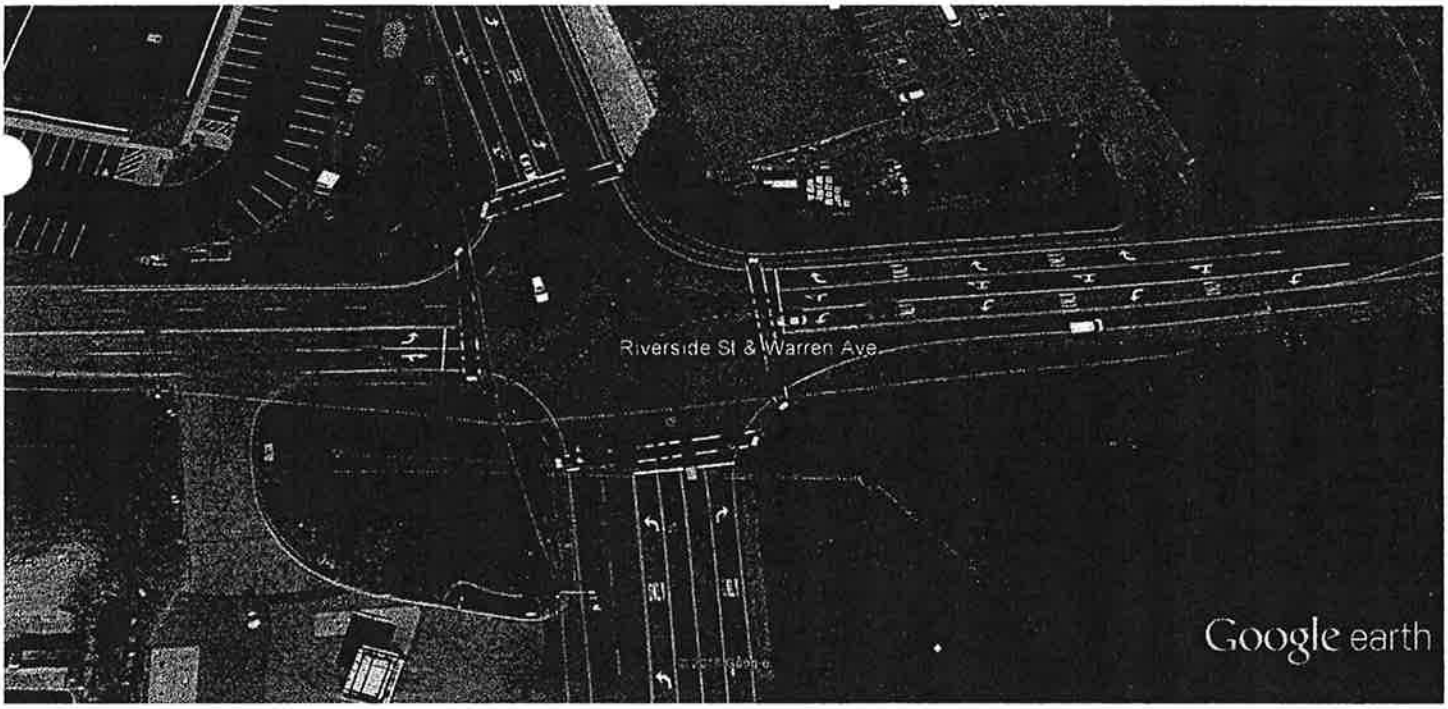
COLLISION DIAGRAM

LOCATION RIVERSIDE ST. @ WARREN AVE.

TOWN PORTLAND NODE NO(S) 15893

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-18-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
15-2629	8-6-15	9:26		—	—	—	2	1	5, 14	Ran Red Light
15-2920	8-28-15	12:48		—	—	—	2	1	3, 14	
15-3136	9-16-15	7:45		—	—	—	2	1	10	
15-3404	10-9-15	11:41		—	—	—	2	2	4	
15-3793	11-13-15	10:17		—	—	—	2	1	5, 14	Ran Red Light
15-3938	11-25-15	11:14		—	—	—	2	1	4, 14	Reckless Manner
15-4267	12-21-15	11:04		—	—	—	2	1	4	



Google earth

feet 300
meters 90

City of Portland

2013/2015 Roadway Safety Summary Report

Riverside Street @ Forest Avenue

(Node# 16892)

[37 Crashes – 1.11 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Thirty (30) of the total 37 crashes reported for this intersection are "*rear-end*" accidents occurring on the four intersection approaches. Approximately half of the 30 "*rear-end*" crashes occurred during either the morning or afternoon peak commuter travel periods. This trend certainly reflects the level of traffic congestion prevalent at this highly traveled regionally significant signalized intersection.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Optimize signal timing with time of day programming.
- Replace missing overhead traffic control signing throughout the intersection.
- Paint left-turn arrows and symbols appropriately throughout the intersection.
- Construct a second left-turn lane on the northbound Riverside Street approach.

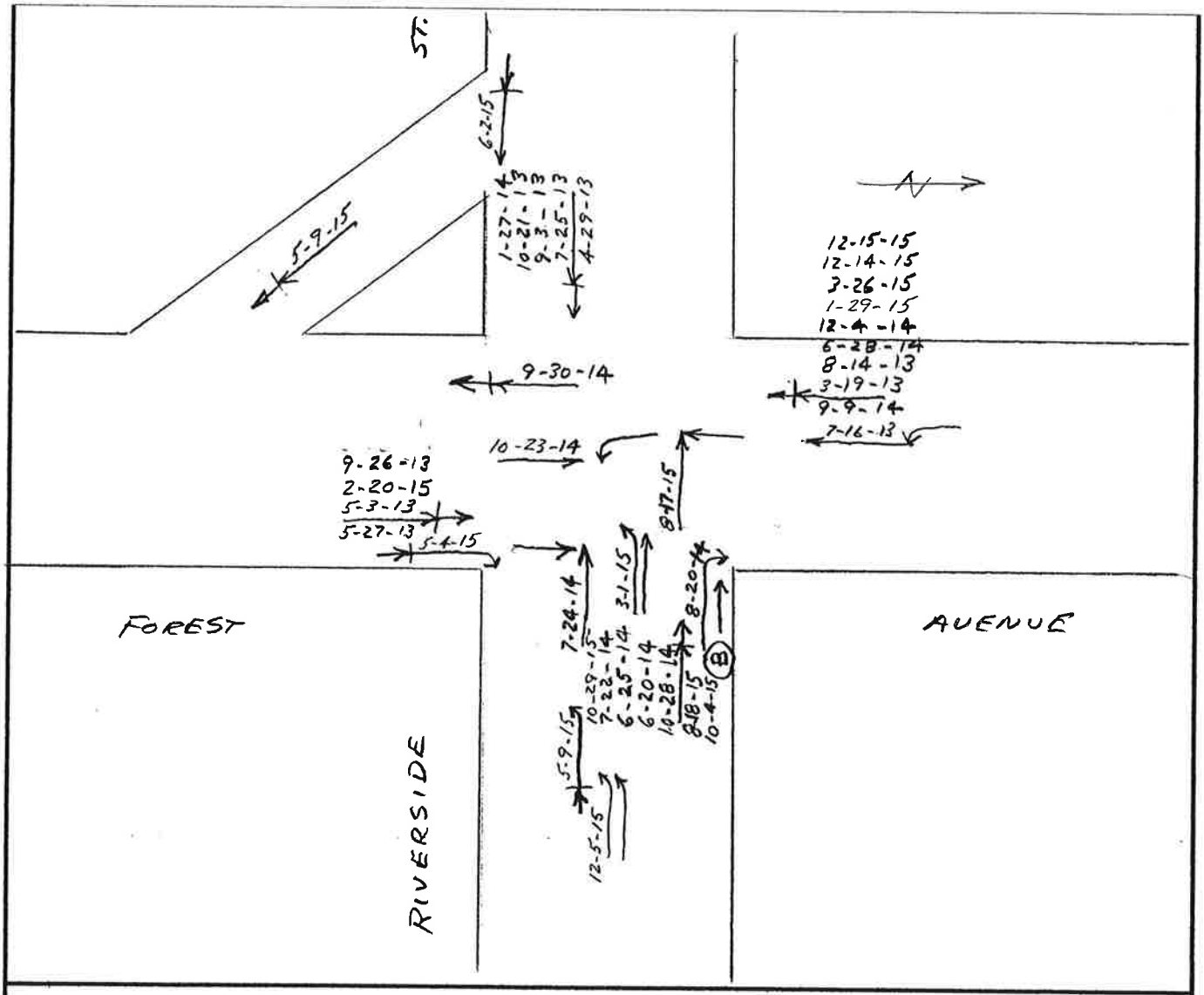
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION FOREST AVE. @ RIVERSIDE ST.

TOWN PORTLAND NODE NO(S) 16892

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-16-2016



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:/STREETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

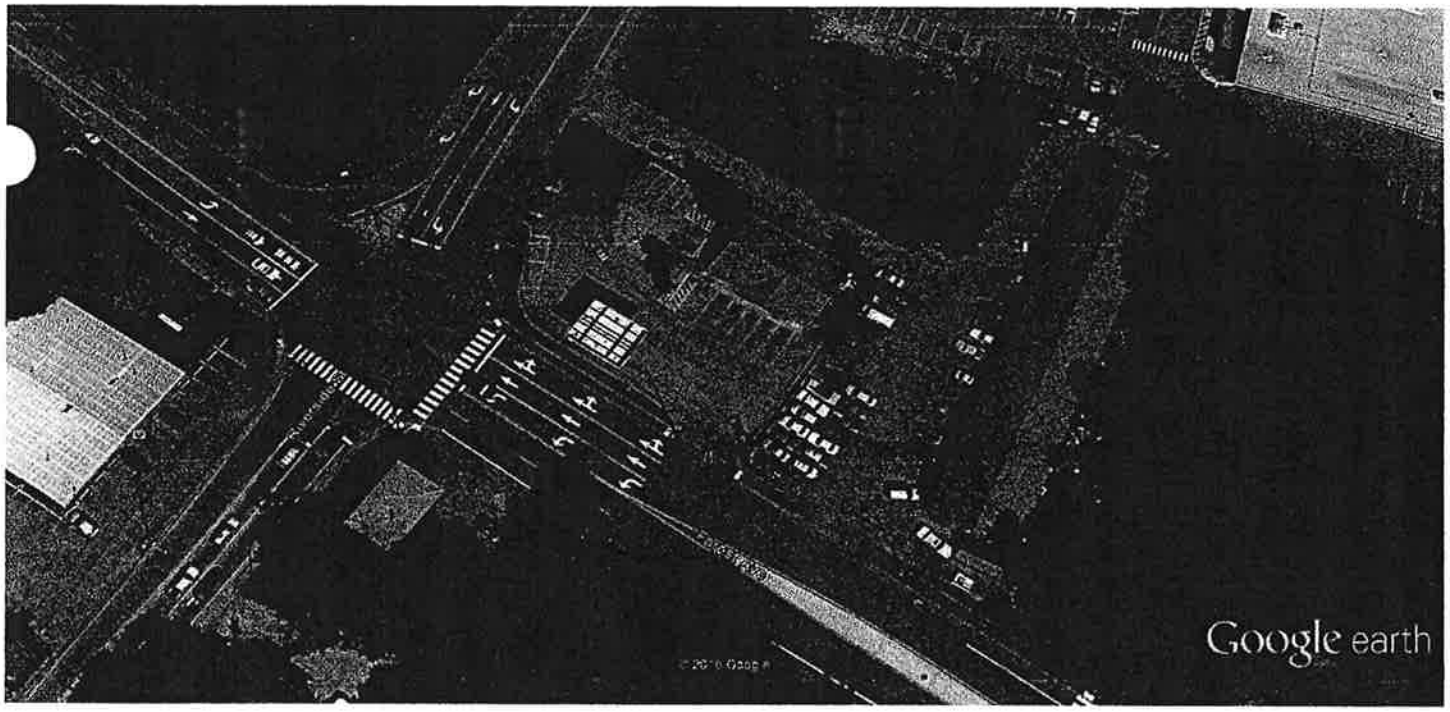
LOCATION FOREST AVE. @ RIVERSIDE ST.

TOWN PORTLAND NODE NO(S) 16892

YEARS REVIEWED 2013 - 2015 DATE PREPARED 5-16-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-945	3-19-13	6:50	—	—	—	—	2	SNOW	TO FAST FOR CONDITIONS	
13-1289	4-29-13	8:12	—	—	—	—	2	1	50	
13-1326	5-3-13	8:42	—	—	—	—	2	1	4	
13-1535	5-27-13	13:08	—	—	—	—	2	1	51	
13-2010	7-16-13	7:26	—	—	—	—	2	1	8	
13-2099	7-25-13	12:22	—	—	—	—	2	1	4	
13-2300	8-14-13	17:10	—	—	—	—	2	1	14	
13-2494	9-3-13	18:04	—	—	—		3	1	4	
13-2724	9-26-13	15:13	—	—	—		2	1	4	
13-2973	10-21-13	12:01	—	—	—		2	1	4	
14-333	1-27-14	14:29	—	—	—	—	2	2	4, 14	
14-1795	6-20-14	13:18				1	2	1	14	
14-1834	6-25-14	15:38				1	2	1	4	
14-1866	6-28-14	8:24			1		2	1	4	
14-2122	7-22-14	13:00	—	—	—	—	2	1	4	
14-2148	7-24-14	9:19	—	—	—	—	2	1	2	Ran Red Light
14-2677	9-9-14	8:50	—	—	—	—	2	1	4	
14-2888	9-30-14	17:35				1	2	1	hit & run	
14-3131	10-23-14	10:40			1		2	2		
14-2440	8-20-14	11:40	—	—	—	—	2	1	41	WRONG SIDE of Road
14-3190	10-28-14	17:22				1	3	1	4	
14-3574	12-4-14	10:54	—	—	—	—	2	1	4, 14	
15-367	1-29-15	7:47			1		2	1	4,	
15-874	2-20-15	8:30	—	—	—	—	2	Ice/Frost		
15-1021	3-1-15	15:05	—	—	—	—	2	1	FAILED TO	STAY IN LANE
15-1289	3-26-15	10:40			1		2	1	4	
15-1636	5-4-15	7:35	—	—	—	—	2	1	4	
15-1694	5-9-15	13:56	—	—	—	—	2	1	4	
15-1697	5-9-15	16:52				2	2	1	4, 14	
15-1941	6-2-15	14:28	—	—	—	—	2	2	Hit & Run	
15-2760	8-17-15	10:54			1	1	2	1		Ran Red Light
15-2773	8-18-15	13:15	—	—	—	—	2	1	4	
15-3344	10-4-15	18:00	—	—	—	—	3	1	Reckless operation of vehicle	
15-3624	10-29-15	11:47	—	—	—	—	2	2	14	
15-4061	12-5-15	11:05	—	—	—	—	2	1	Ambulance	scraped 2nd vehicle
15-4172	12-14-15	16:08				1	4	2	4	
15-4184	12-15-15	8:40				1	2	2	4	

N



Google earth

feet 300
meters 90

City of Portland

2013/2015 Roadway Safety Summary Report

Capisic Street @ Frost Street

(Node# 13040)

[9 Crashes – 1.77 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The vehicle crash review for this location only identified a total of 8 vehicle collisions vs. the reported 9 crashes. The conducted safety review established a singular vehicle crash pattern involving winter road conditions. Four of the eight reported vehicle crashes occurred during periods of icy or slippery road conditions. Slippery and potentially hazardous road conditions have been a perennial winter maintenance issue at this location for a number of years.

Recommended Intersection Mitigation Measures

Improvements are not recommended for this location.

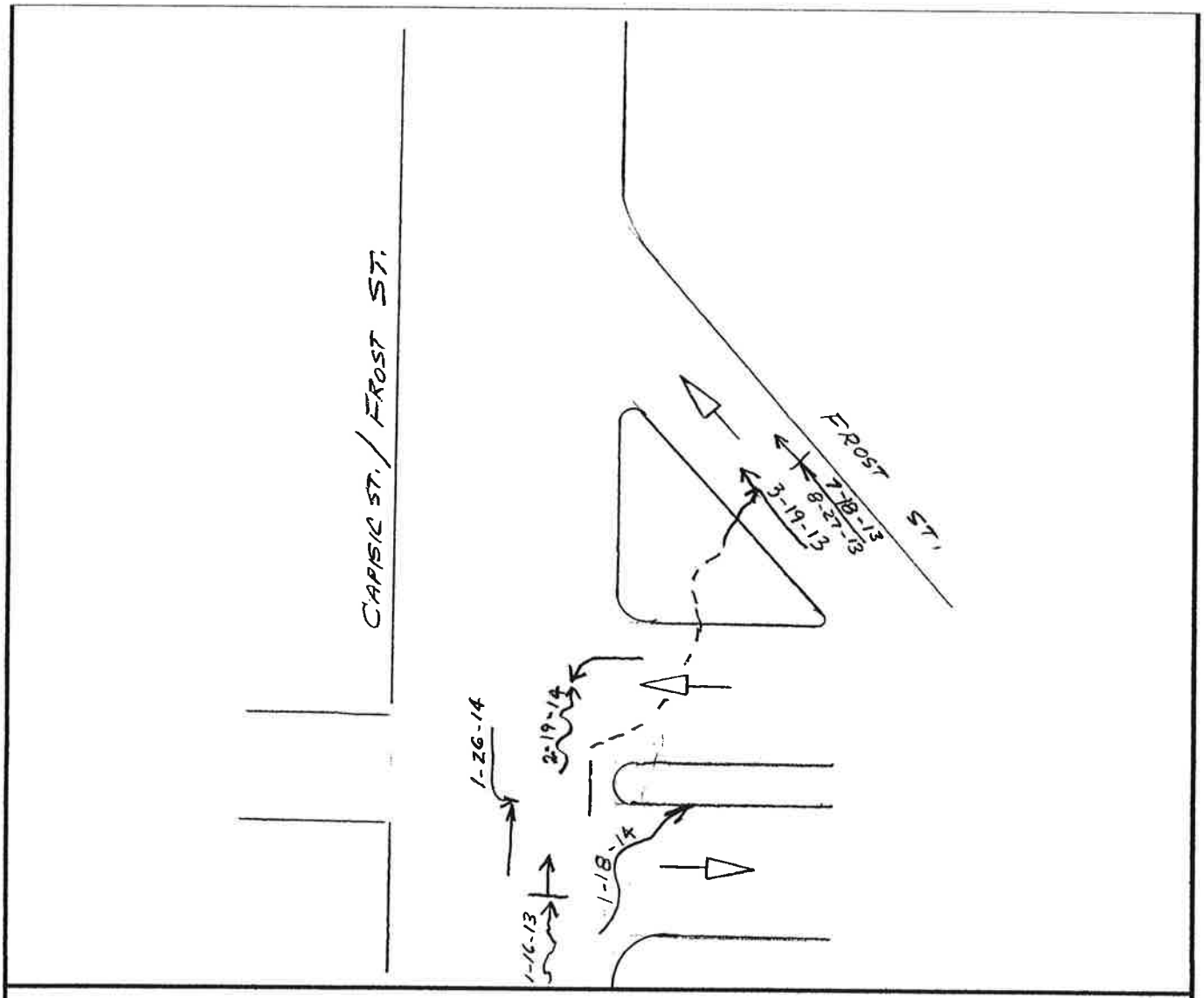
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION CAPISIC ST. @ FROST ST.

TOWN PORTLAND NODE NO(S) 13040

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-16-2016



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 (P), REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL, FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER

C = CLEAR
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:\SHEETS\COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

LOCATION CAPISIC ST. @ FROST ST.

T N PORTLAND NODE NO(S) 13040

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-16-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-190	1-16-2013	7:53				1	2	SNOW	4	
13-948	3-19-2013	8:04	—	—	—	—	2	SNOW	ROAD CONDITIONS	
13-2047	7-18-2013	18:57	—	—	—	—	3	1	4	
13-2435	8-27-2013	18:20	—	—	—	—	2	1	Mechanical Problems	
14-259	1-18-2014	18:50	—	—	—	—	4	SLUSH	ROAD CONDITIONS TO FAST	
14-327	1-26-2014	16:28	—	—	—	—	3	1	2	
14-671	2-19-2014	16:24	—	—	—	—	2	Ice/Frost		
14-1277	4-23-2014	15:57	—	—	—	—	2	1	4	

City of Portland

2013/2015 Roadway Safety Summary Report

Brighton Avenue @ Stevens Avenue

(Node# 12928)

[44 Crashes – 1.37 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

Three very clear crash patterns are identified for this heavily traveled signalized intersection. Eighteen (18) crashes are categorized as "*rear-end*" crashes occurring primarily (11) on either of the two Stevens Avenue approaches. The second pattern identified were 11 "*angle*" crashes involving a motorist entering the intersection on a red signal display. Seven of these accidents occurred on the west or outbound approach of Brighton Avenue. The third crash pattern with a total of (8) vehicle collisions were "*turning movement*" crashes primarily (six of the 8 crashes) involving motorist tuning left from the eastbound approach of Brighton Avenue being struck by a vehicle traveling through westbound on Brighton Avenue.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Modify left-turn phasing on all approaches to a "*protected*" only phase.
- Extend as necessary the length of the dedicated left –turn lanes on all approaches. (During peak travel periods motorists routinely cross the centerline to reach the dedicated left-turn lane especially on the westbound Brighton Avenue approach.)
- Optimize traffic signal timing at the intersection.
- Add overhead lane use signs with required left-turn signal signing.
- Paint left-turn roadway symbols on all approaches

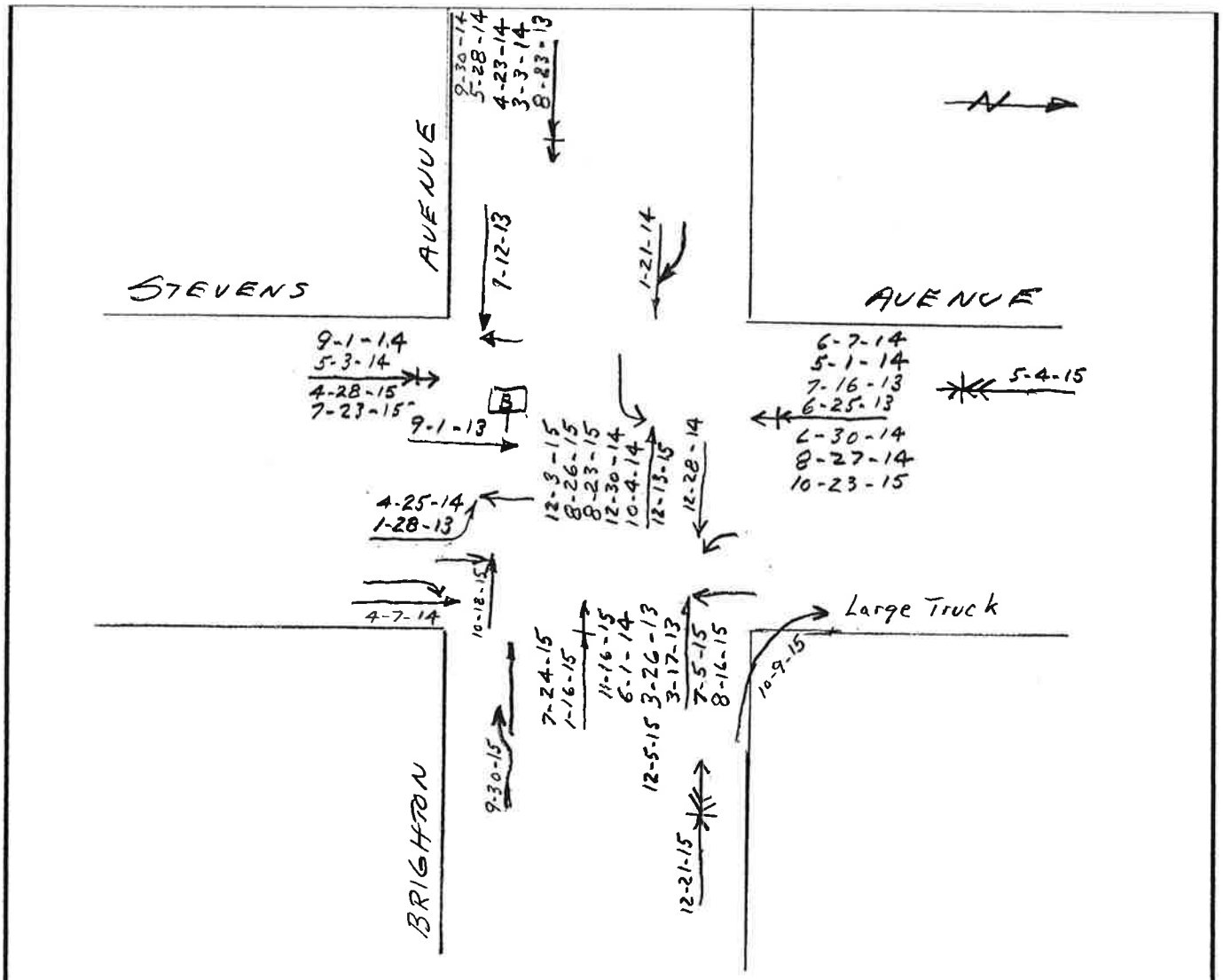
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION BRIGHTON AVE. @ STEVENS AVE.

TOWN PORTLAND NODE NO(S) 12928

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-15-2016



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 BRIGHTON AVE. @ STEVENS AVE.

TOWN PORTLAND NODE NO(S) 12928

YEARS REVIEWED 2013-2015 DATE PREPARED 6-15-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-153	1-12-13	17:45					4	2		Ran Red Light
13-337	1-28-13	15:59					2	SNOW	2	
13-929	3-17-13	12:05					2	1		Ran Red Light
13-1021	3-26-13	12:36					2	1		Ran Red Light
13-1811	6-25-13	15:56					2	1		
13-2025	7-16-13	18:11					2	1	4	
13-2396	8-23-13	16:50			1		2	1	4	
13-2477	9-1-13	17:00				1	2	1		BICYCLIST RAN RED LIGHT
14-286	1-21-14	11:22					2	1		Failed to Stay in proper lane
14-823	3-3-14	12:21				1	2	1	4	
14-1159	4-7-14	23:27					4	2	8	
14-1270	4-23-14	8:14				1	2	1	4	
14-1292	4-25-14	11:15				2	2	1	2	
14-1352	5-1-14	16:34					2	1	14	
14-1373	5-3-14	12:10				1	2	1	4	
14-1582	5-28-14	12:43				1	2	2	4, 14	
14-1613	6-1-14	12:56					2	2		Ran Red Light
1682	6-7-14	18:00				1	2	1	4, 14	
1893	6-30-14	17:55				1	2	1	14	
14-2526	8-27-14	7:17					2	1	14	
14-2584	9-1-14	11:44				1	2	1	41	
14-2883	9-30-14	17:30					2	1	4	
14-2928	10-4-14	15:42					2	2	2	
14-3832	12-28-14	12:42					2	1		Ran Red Light
14-3854	12-30-14	21:00					2	1	2	
15-240	1-16-15	16:30					3	Ice / Frost	4	
15-1579	4-28-15	8:46					2	1	4	
15-1635	5-4-15	6:47					2	1	11	
15-2303	7-5-15	16:20				1	2	1		Ran Red Light
15-2507	7-23-15	21:30				1	4	1	Reckless & aggressive driver	
15-2509	7-24-15	13:55				1	2	1	4	
15-2746	8-16-15	9:23					2	1		Ran Red Light
15-2853	8-23-15	14:11					2	2	2	
15-2894	8-26-15	16:29				1	2	1	2	
15-3292	9-30-15	16:30					2	2	7	
15-3402	10-9-15	8:20					2	1	Large Truck	over-steering
15-3497	10-18-15	9:32					2	1		Ran Red Light
15-3564	10-23-15	16:48					2	1	4	
15-3826	11-16-15	15:06					2	1		Ran Red Light
4019	12-3-15	7:09					2	2	2	
15-4062	12-5-15	11:14					2	1		Ran Red Light
15-4157	12-13-15	11:51					2	1	2	
15-4276	12-21-15	18:34					4	1	11	

City of Portland

2013/2015 Roadway Safety Summary Report

Maine Turnpike Authority Toll Plaza –Riverside Street/Larrabee Road Intersection to I-95 Ramp Junction

(Nodes# 18673 to 65549)

[10 Crashes – 3.02 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The vehicle accident review completed for the Maine Turnpike Authority's Exit 48 Toll Plaza link shows a total of 10 roadway crashes have been reported for the study years of 2013 to 2015. Eight (8) of the reported 10 crashes occurred on the entry side of the Toll Plaza as either a "*lane change*" or "*side-swipe*" collision. Crash report details provided by the reporting police officer identified that construction activity occurring at the Toll Booths may have potentially contributed to at least two of the 8 vehicle accidents.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Remove channelized right-turn island on northbound Riverside Street approach and replace with a dedicated right-turn lane. Prohibit "*right-turn on red*" movements from the right-turn lane to the Toll Plaza.

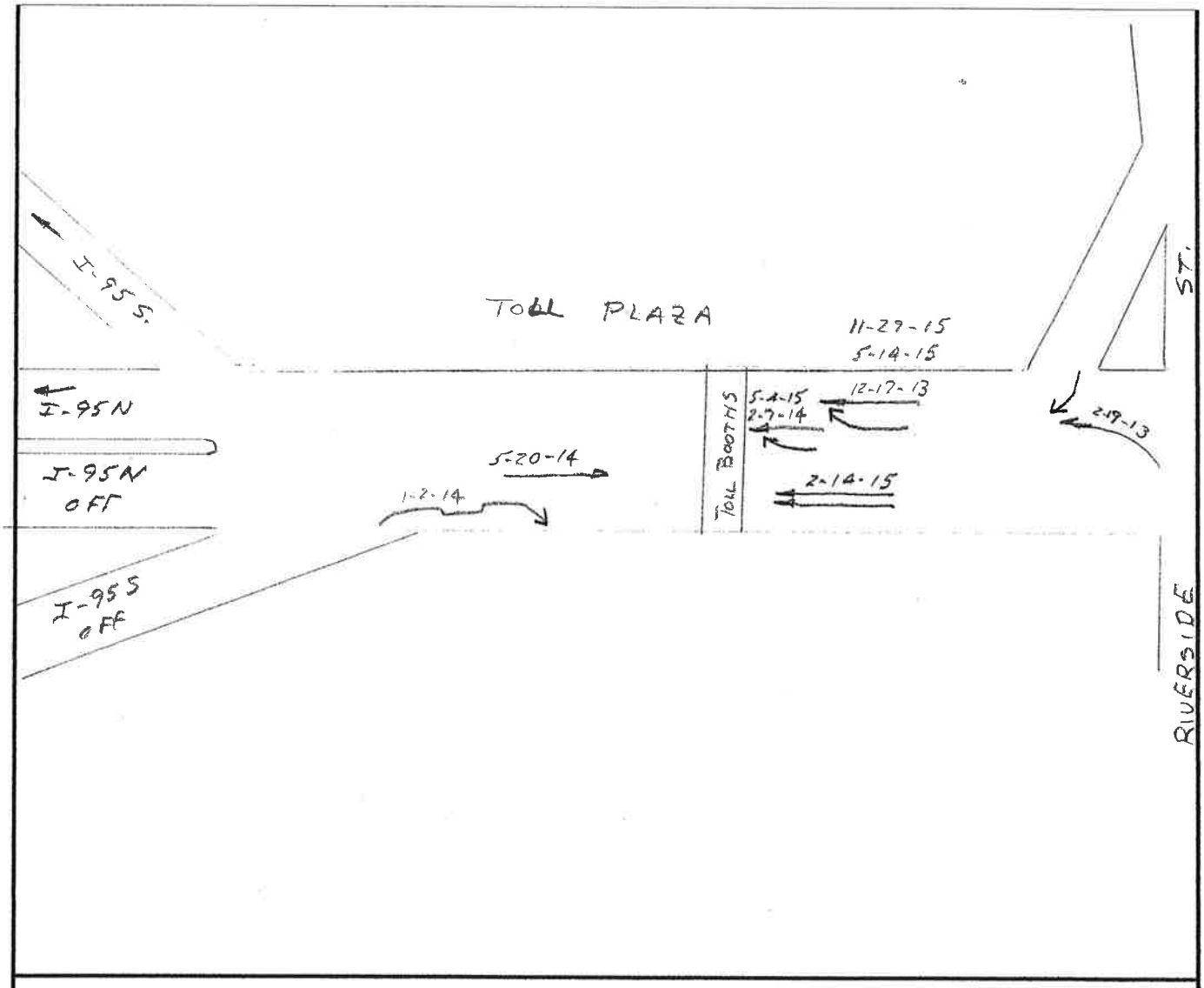
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION I-95 RAMPS @ PLAZA

TOWN PORTLAND NODE NO(S) 18673-65549

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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
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- VEHICULAR
41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS
44. DEFECTIVE SUSPENSION 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT OR FACTOR
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, ANIMAL, SLED

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

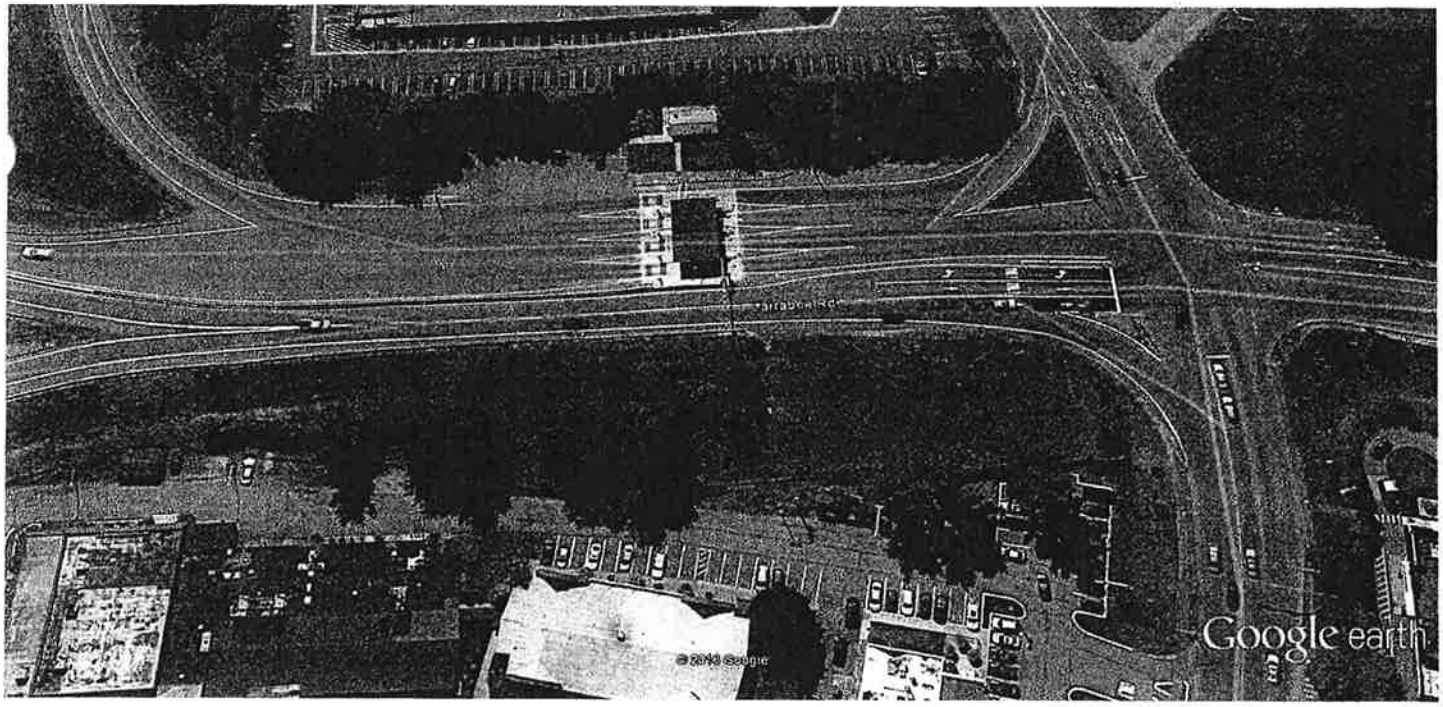
COLLISION DIAGRAM

LOCATION I-95 RAMP & PLAZA

TOWN PORTLAND NODE NO(S) 18673 - 65549

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-16621	2-19-13	22:13					4	2	IMPROPER MERGE	
13-3679	12-17-13	10:33					2	1	2	
14-14	1-2-14	10:15					2	SNOW	3	
14-10894	2-7-14	12:35					2	1	8	
14-041550	5-20-14	7:28					2	1	LOAD SHIFT	
15-012977	2-14-15	13:42					2	1	14 Lane Shift	
15-018206	3-5-15	10:42					2	1	Temp. sign fell on vehicle	
15-1639	5-4-15	10:05					2	1	8	
15-1750	5-14-15	13:58					2	1	8 TOLL BOOTH CONST.	
15-8098	11-29-15	13:58					2	1	2 (Lane Change)	



Google earth

feet 300
meters 100

City of Portland

2013/2015 Roadway Safety Summary Report

Riverside Street – Kohl's Shopping Plaza to Exit 48/Larrabee Intersection

(Nodes# 63966 to 65550)

[8 Crashes – 1.10 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The vehicle crash audit shows that a total of 8 vehicle crashes have been reported for this very short roadway section of 0.12 miles. Five (5) of the accidents were "*angle*" crashes occurring either at the driveway entrance to the Firestone Inn or at the vacant gas station located on the opposite side of Riverside Street. An additional single "*turning movement*" crash also occurred at the driveway entrance to the Firestone Inn entrance.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Widen Riverside Street as necessary to provide a continuous "*center two-way left-turn lane*" connecting to the existing dedicated left-turn lanes at both ending signalized intersections.
- Establish and construct future driveway access to vacant gas station.

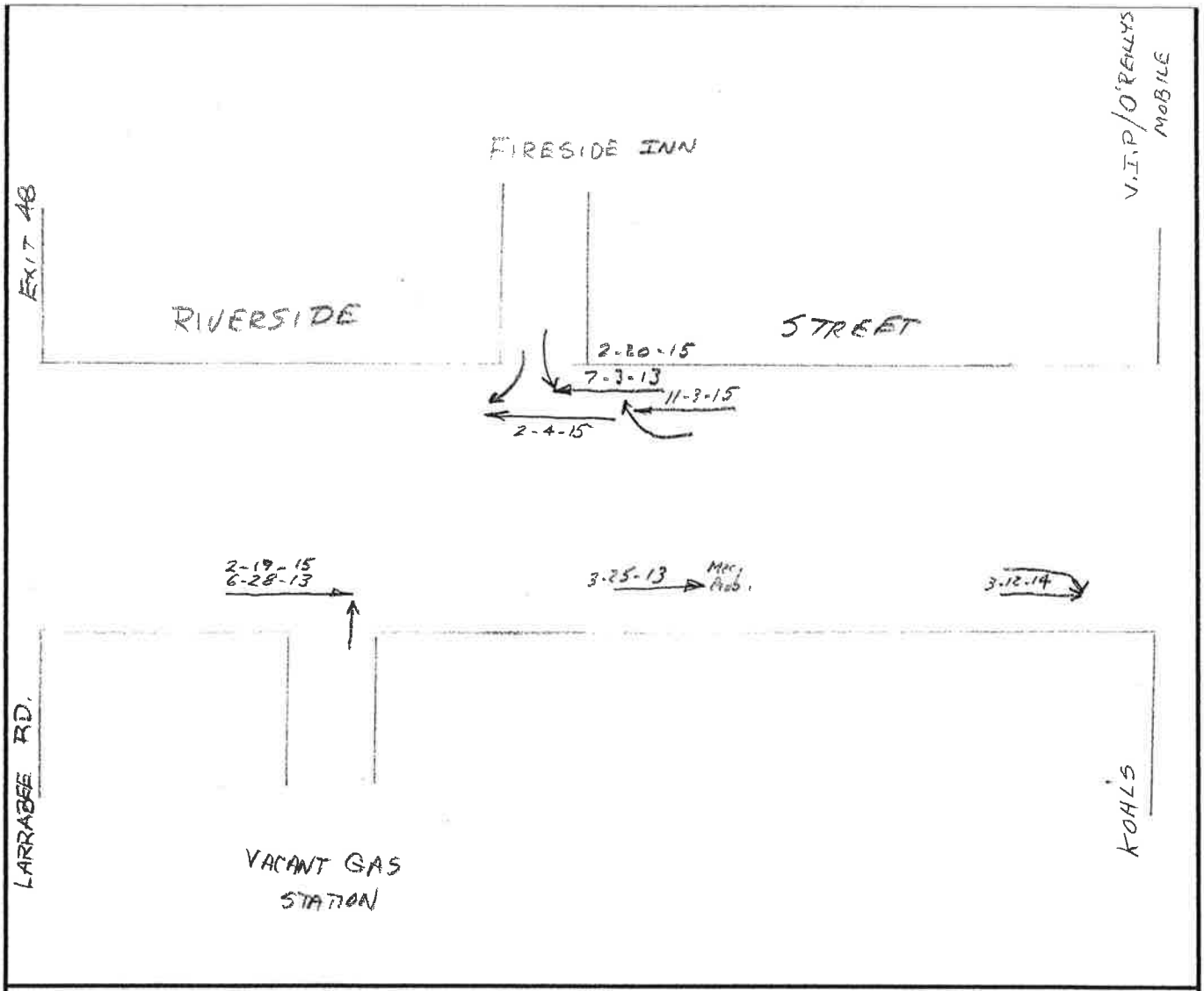
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION RIVERSIDE ST. [KOHL'S to EXIT 48]

TOWN PORTLAND NODE NO(S) 63966 - 65550

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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

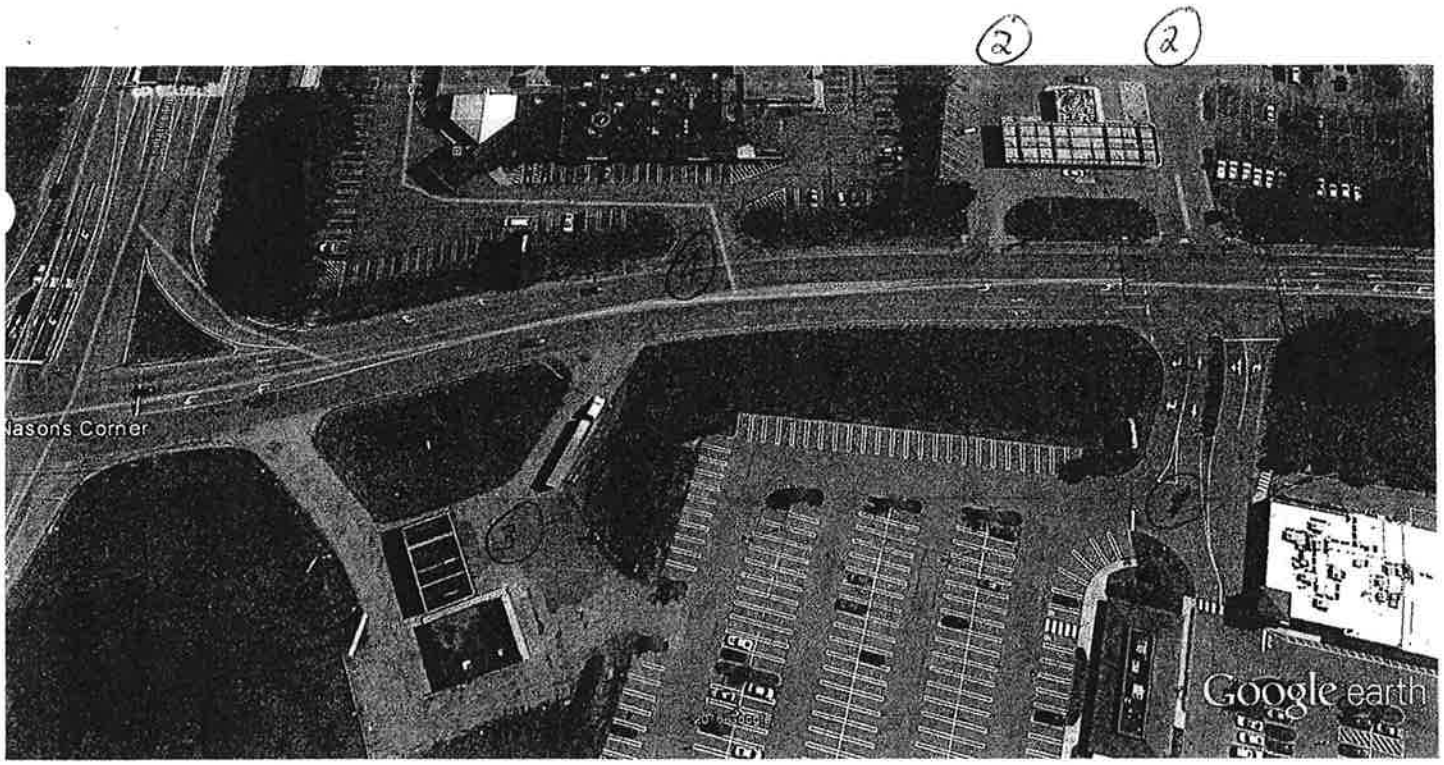
COLLISION DIAGRAM

LOCATION RIVERSIDE ST [KOHL'S to EXIT 48]

TWN PORTLAND NODE NO(S) 63966 - 65550

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-1010	3-25-13	7:37	—	—	—	—	2	1	42	
13-1844	6-28-13	17:35	—	—	—		2	2	2	
13-1892	7-3-13	14:34				1	2	1	2, 14	
14-911	3-12-14	14:24	—	—	—	—	2	2	2, 14	
15-537	2-4-15	14:06	—	—	—		2	1	2, 14	
15-867	2-19-15	19:00				1	5	SNOW	2, 14	
15-893	2-20-15	21:07		—	—	—	4	SLUSH	2, 14	
15-3677	11-3-15	7:00		—	—	—	2	1	7	



Google earth feet 400 meters 100

1. Kohl's / Shaws Shopping Ctr.
2. VIP / O'Reily's + Gas Station (Mobile)
3. Vacant gas station
4. Fireside Inn

City of Portland

2013/2015 Roadway Safety Summary Report

Riverside Street –Larrabee Road/Exit 48 to Riverside Court

(Nodes# 15890 to 65548)

[24 Crashes – 1.59 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The vehicle accident review completed for this 0.15 mile section of Riverside Street shows a total of 24 roadway crashes reported for the study years of 2013 through 2015. Ten (10) of the crashes were driveway access collisions involving motorist either entering or exiting one of the numerous businesses located in the road section. An additional seven (7) crashes were "*rear-end*" accidents occurring in either direction of travel, within the road link. A final and secondary crash pattern identified for the road section was (5) "*lane-change*" or "*side-swipe*" incidents.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- The City may want to study and evaluate the effectiveness of implementing access management improvements within the road section. These access controls could include: driveway connectivity opportunities, combining driveways, turn restrictions, and or driveway closures.

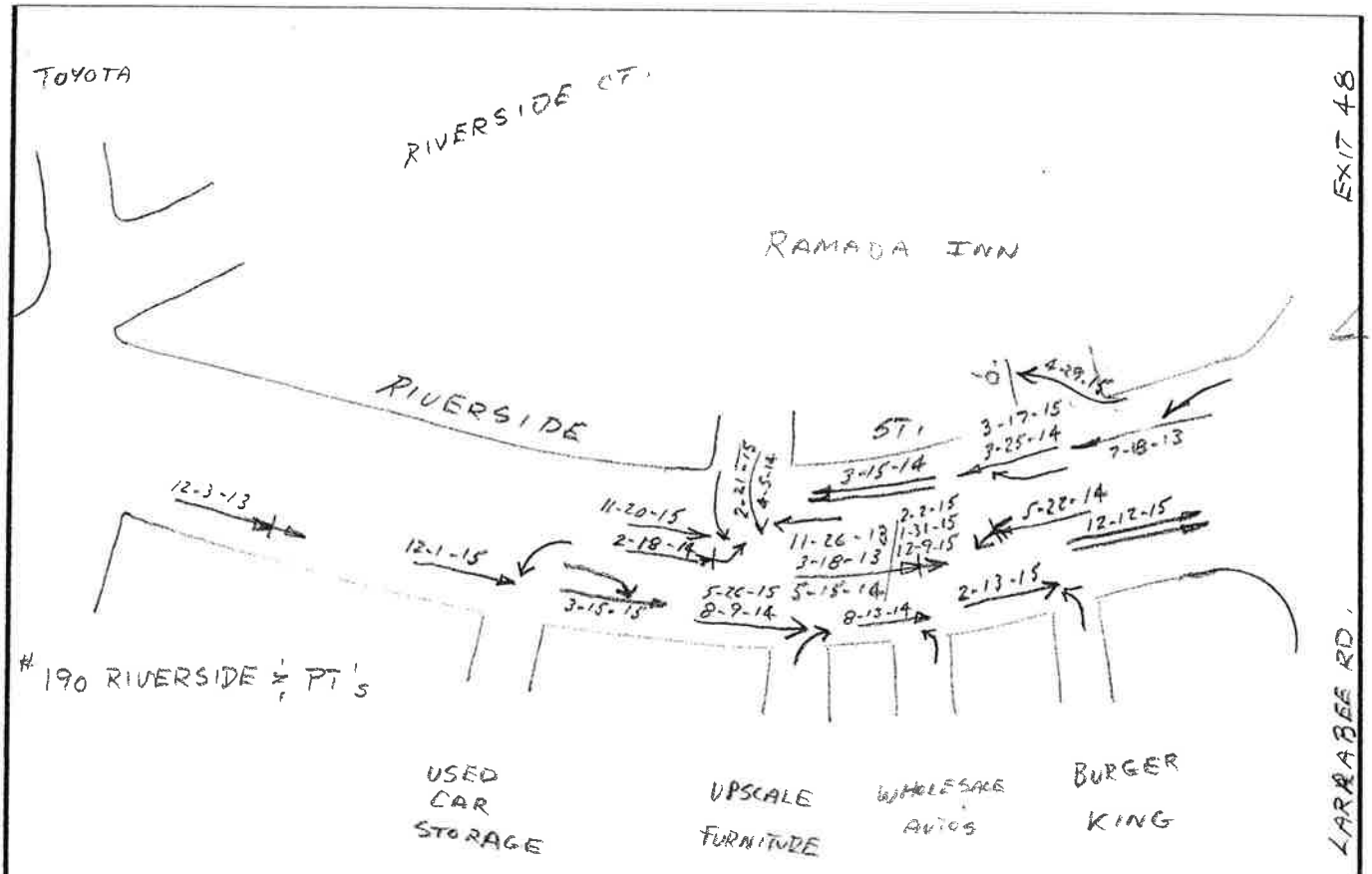
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION RIVERSIDE ST. [LARRABEE RD to RIVERSIDE CT.]

TOWN PORTLAND NODE NO(S) 65548 - 15890

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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 SL = SLEET F = FOG S = SNOW R = RAIN CL = CLOUDY XW = CROSS WINDS

INJURIES
K = FATAL A = INCAPACITATING B = NON-INCAPACITATING C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

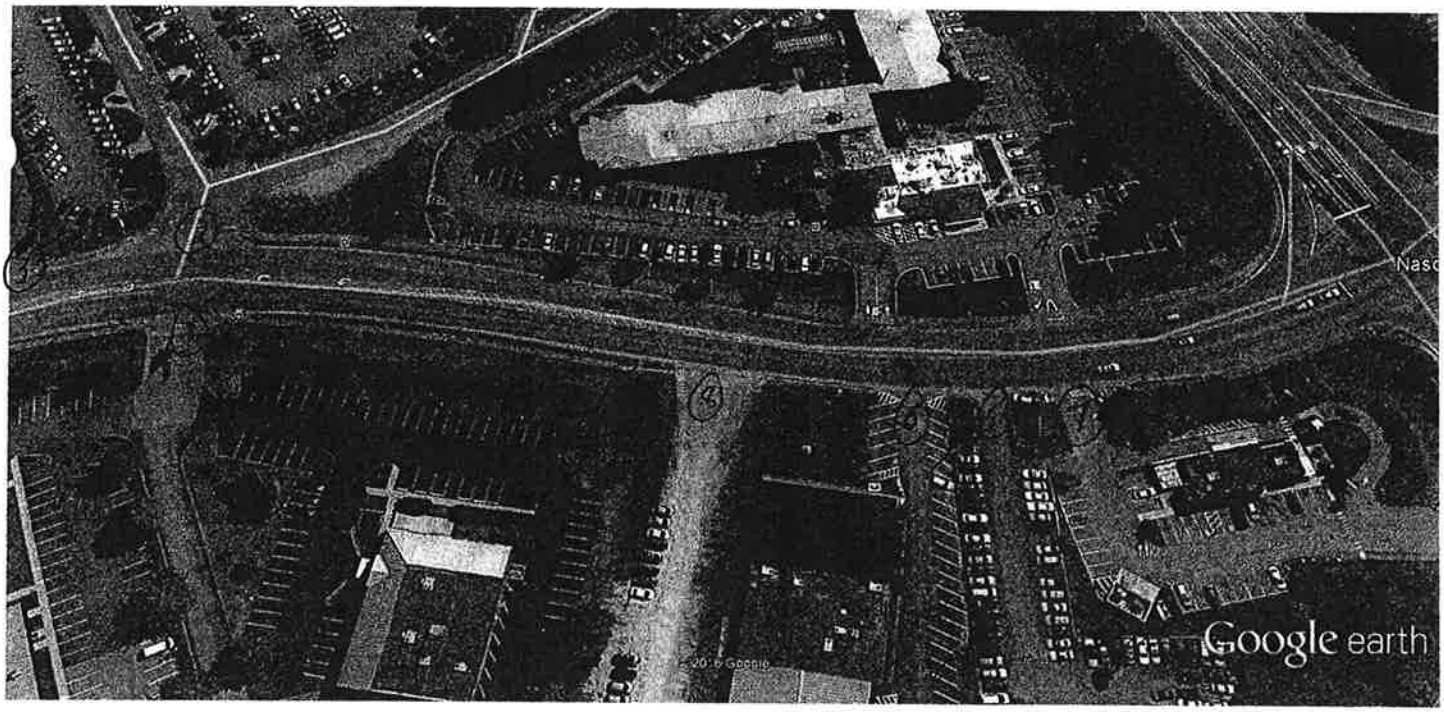
SHEET 2 OF 2

LOCATION RIVERSIDE ST. [RIVERSIDE CT. TO LAREABEE RD.]

TOWN PORTLAND NODE NO(S) 65548 - 15890

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-932	3-18-13	2:45					4	1	4	
13-2041	7-18-13	14:28					2	1	4, 14	
13-3422	11-26-13	13:19					2	2	4	
13-3482	12-3-13	17:15					4	1	4	
14-638	2-18-14	15:57					3	SNOW	3	
14-952	3-15-14	13:10					2	1	FAILED TO STAY IN LANE	
14-1040	3-25-14	7:34					2	1	8	
14-1153	4-5-14	13:30					2	1	2	
14-1492	5-15-14	16:51					2	1	4	
14-1543	5-22-14	16:08					2	1	4	
14-2326	8-9-14	11:50					2	1	2	
14-2351	8-13-14	13:29					2	2	2, 14	
15-422	1-31-15	12:00					2	SLUSH	4	
15-453	2-2-15	12:14			1		2	SNOW	4	
15-778	2-13-15	11:44				2	2	ICE/FROST	2	
15-899	2-21-15	11:27					2	2	2	
15-1185	3-15-15	17:31					2	2	8	
-1210	3-17-15	17:00					2	1	14	
-1593	4-29-15	15:01					2	1	14	
15-1852	5-26-15	12:30					2	1	2	
15-3878	11-20-15	9:26					2	2	2, 14	
15-3987	12-1-15	9:55					2	1	2	
15-4107	12-9-15	15:06					2	1	51	
15-4150	12-12-15	8:45					2	1	FAILED TO STAY IN LANE	



Google earth feet 400 meters 100

(1) 190 Riverside (Commercial offices, etc.)
190 Riverside
P.T's

(2) Toyota

(3) Tire warehouse

(4) Ramada Inn + Egg & I + Seasons Grille

(5) Wholesale Cars + Trucks

(6) Upscale Furniture + Consignment

(7) Burger King

(8) Used Car Storage

City of Portland

2013/2015 Roadway Safety Summary Report

Riverside Street – Home Depot to Warren Avenue

(Nodes# 63963 to 15893)

[13 Crashes – 1.40 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

A total of thirteen crashes occurred within the defined limits of this very short (less than one tenth of mile) roadway segment during the most recent three-year study period. Six (6) of the crashes were either "*angle*" or "*turning movement*" crashes involving motorists turning from either the Irving Gas Station (total of 4 crashes) or the adjacent Jiffy Lube (2 crashes) business. The remaining seven (7) accidents occurred throughout the road section for a number of varying reasons.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Either close or construct a raised center traffic island in Riverside Street that prohibits left-turn movements to/from the most northerly driveway entrance to the Irving Gas Station.
- Examine the feasibility of driveway connectivity options; whereby egress from the Jiffy Lube business is accommodated through the Lockard Collision/Wall Board Supply approach which is controlled by a sequenced traffic signal at Home Depot and Riverside Street.

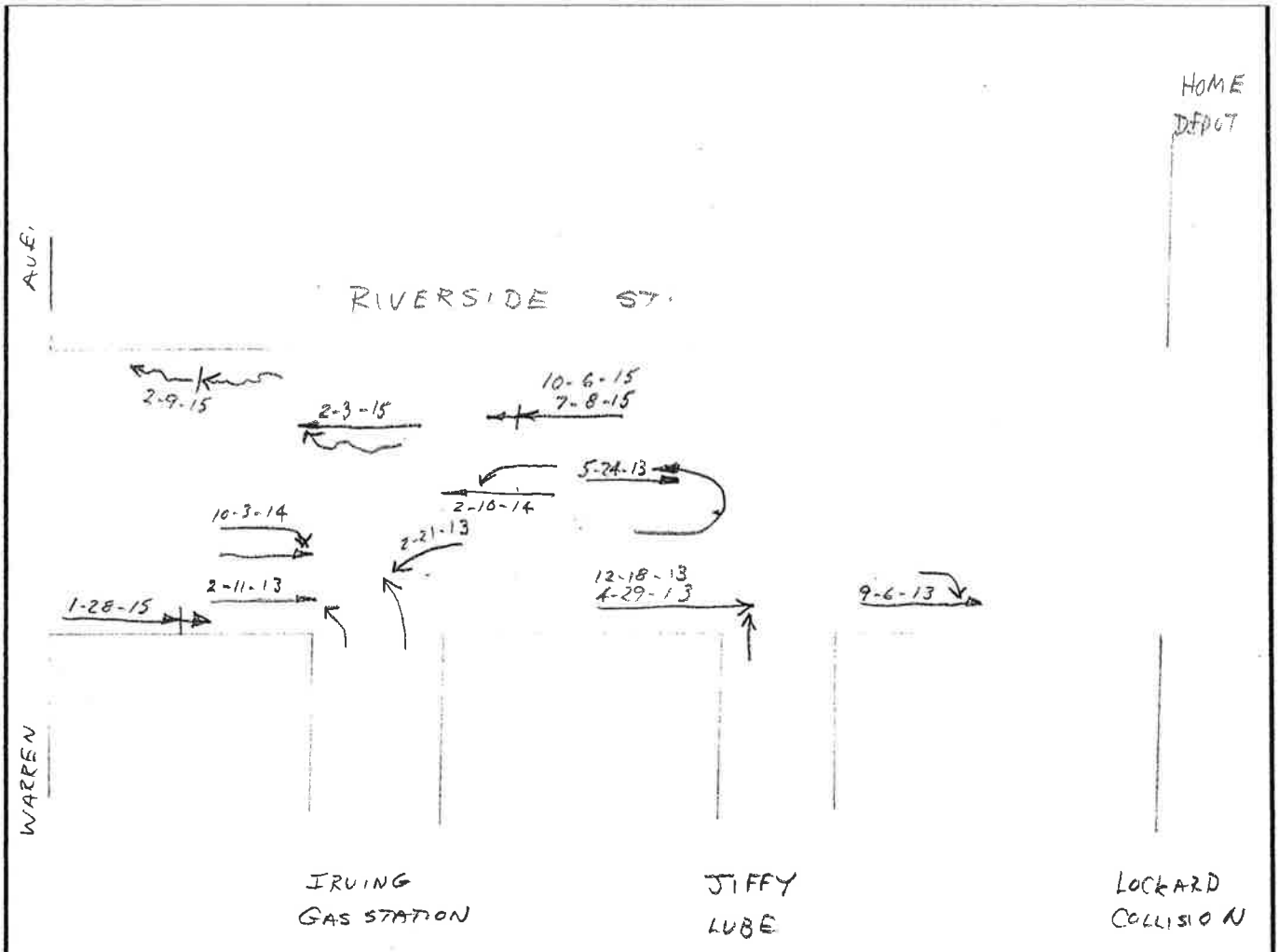
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION RIVERSIDE ST. [HOME DEPOT TO WARREN AVE.]

TOWN PORTLAND NODE NO(S) 63963 - 15893

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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	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

© ZSHEETS/COLLISION DIAGRAM.DWG

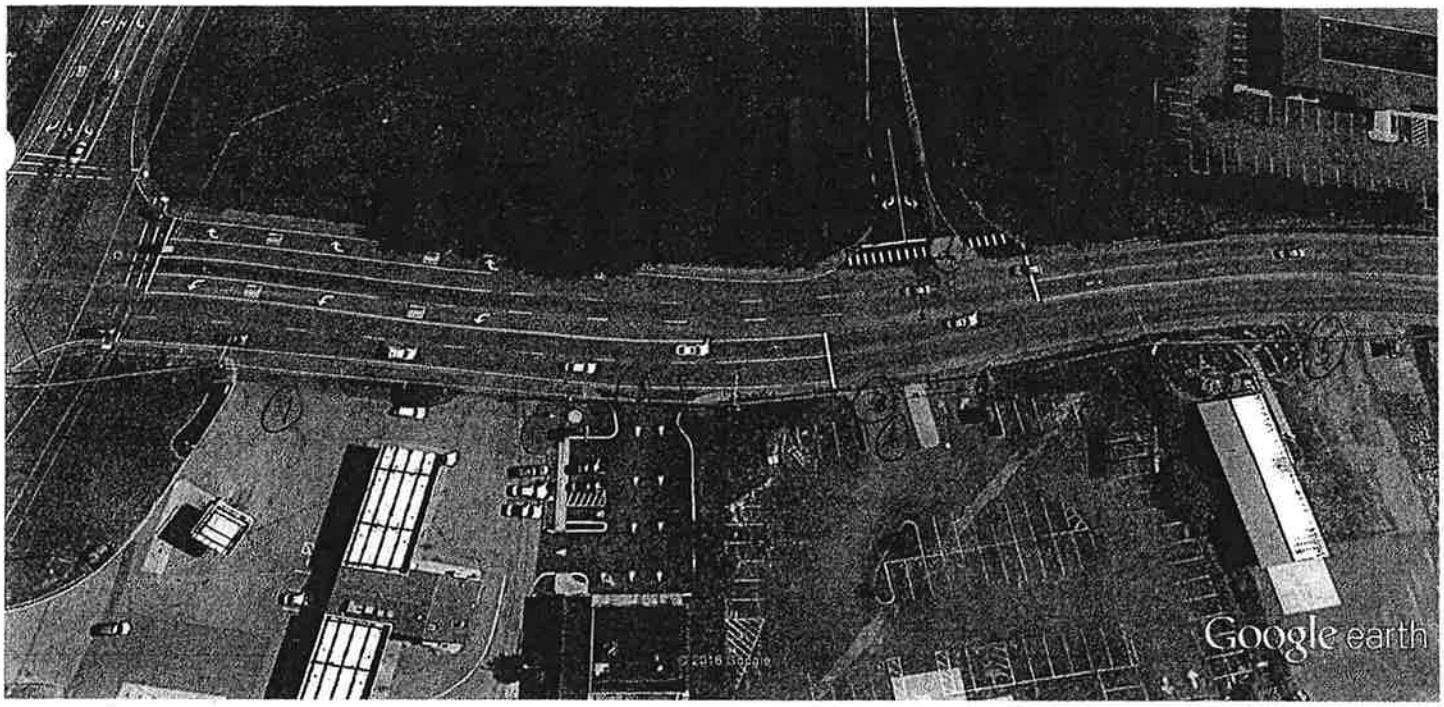
COLLISION DIAGRAM

LOCATION RIVERSIDE ST. [HOME DEPOT TO WARREN AVE]

TOWN PORTLAND NODE NO(S) 63763-15893

YEARS REVIEWED 2013-2015 DATE PREPARED 6-25-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-496	2-11-13	7:27	—	—	—	—	2	ICE / FROST	2	
13-640	2-21-13	8:09	—	—	—	—	2	1	2, 14	
13-1295	4-29-13	12:45				1	2	1	41	
13-1502	5-24-13	11:54	—	—	—	—	2	2	ATTempted ½ U TURN	
13-2518	9-6-13	11:18		—	—	—	2	1	8, 14	
13-3699	12-18-13	15:43		—	—	—	2	2	2, 14	
14-488	2-10-14	9:02		—	—	—	2	SNOW	7	
14-2920	10-3-14	13:42		—	—	—	2	1	8, 14	
15-351	1-28-15	14:44		—	—	—	2	2	4	
15-490	2-3-15	11:37		—	—	—	2	SNOW	31	
15-858	2-19-15	7:46				2	2	SLUSH		
15-2342	7-8-15	17:30		—	—	—	2	1	4, OUI	
15-3362	10-6-15	12:24		—	—	—	2	1	4	



Google earth feet 300 meters 90

(1) ~~Irving~~ Gas Station & Circle Store
(2) Home Depot
(3) ~~Jiffy Lube~~ Jiffy Lube
(4) Lockard Collision # 238-242
& wallboard supply
(5) Portland Trap

City of Portland

2013/2015 Roadway Safety Summary Report

Warren Avenue –Riverside Street to Newcomb Street

(Nodes# 15895 to 15893)

[47 Crashes – 1.01 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The vehicle accident review completed for this 0.81 mile long road segment shows a total of 46 roadway crashes have been reported for this section of Warren Avenue (The remaining crash report was miss-coded) . The road section, as a result of the single miss-coded crash, falls below MaineDOT's threshold criteria as a high crash location. A vehicle collision report was prepared for the section regardless and that process identified two crash patterns that should be appropriately addressed. The first traffic crash pattern of significant concern is located at the driveway entrance to the Restore/Urban Garden Center site at #659 Warren Avenue. A total of seven vehicle accidents, each an "*angle*" collision have occurred at this driveway intersection during the three-year study period. Vehicle queues on the Warren Avenue westbound approach to the Riverside Street signalized intersection extend beyond the driveway entrance routinely throughout the day. Motorists, either turning into or exiting from the driveway approach must cross multi lanes of traffic to complete the desired turning movement.

The second higher than anticipated crash problem, identified within the road segment occurs at the entrance to BJ"s Membership Club Store, where a total of five "*angle*" collisions were reported. Large gas pricing signs located within the public R.O.W. at the driveway entrance restrict motorist sightlines in a westerly direction.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Access management improvements should be considered to address the high frequency of traffic crashes reported for the #659 Warren Property. Potential options could include a center traffic island on Warren Avenue and/or a "*delta*" traffic island in the driveway approach limiting traffic movements to right turns only.
- Relocate gas pricing signs at BJ's Membership Club entrance.
- Install Stop Sign on BJ's driveway approach.
- Re-fresh driveway pavement markings including lane line and pavement arrows and symbols within the BJ's driveway approach.

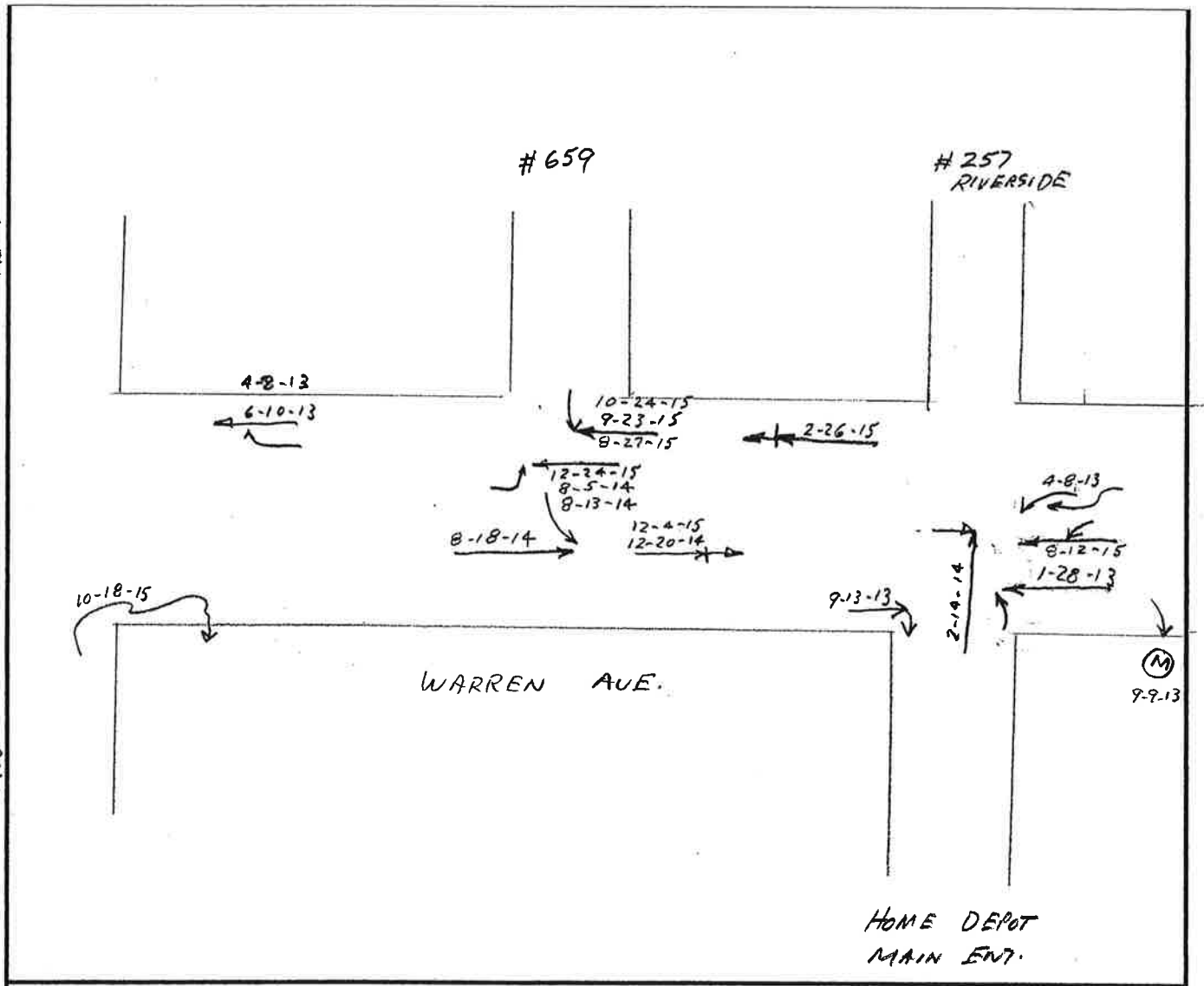
COLLISION DIAGRAM

SHEET 1 OF 5

LOCATION WARREN AVE. SECTION #1 [RIVERSIDE TO HANDYMAN DRIVE]

TOWN PORTLAND NODE NO(S) 15893 . 15895 -

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 51. UNKNOWN

SYMBOLS
ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE
PEDESTRIAN (P), 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

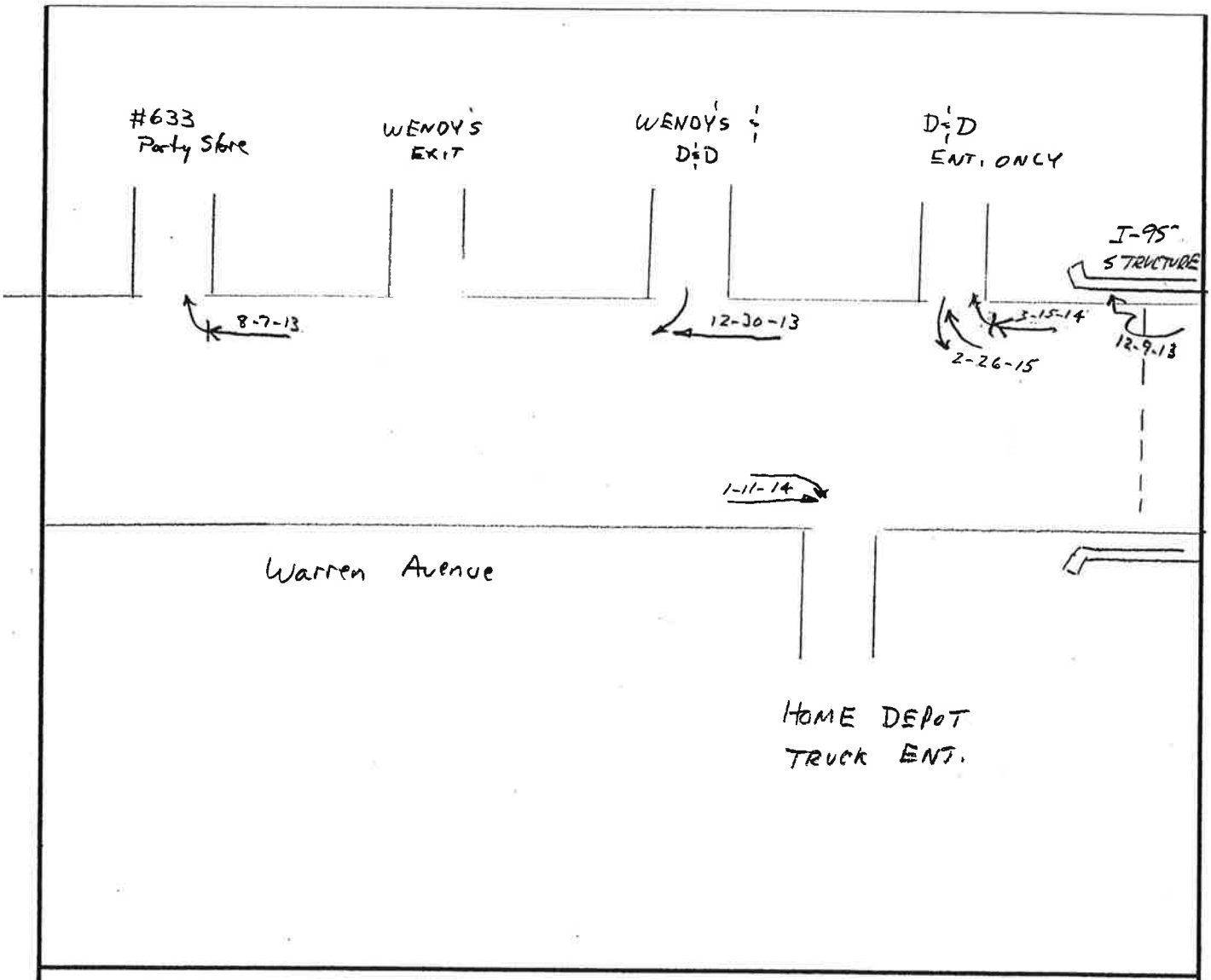
COLLISION DIAGRAM

SHEET 2 OF 5

LOCATION WARREN AVE - SECTION # 2 [#633 (Party Store to I-95 BRIDGE]

TOWN PORTLAND NODE NO(S) 15893 - 15895

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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 Y.D. 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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 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
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES

K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:/SHEETS/COLLISION DIAGRAM.DWG

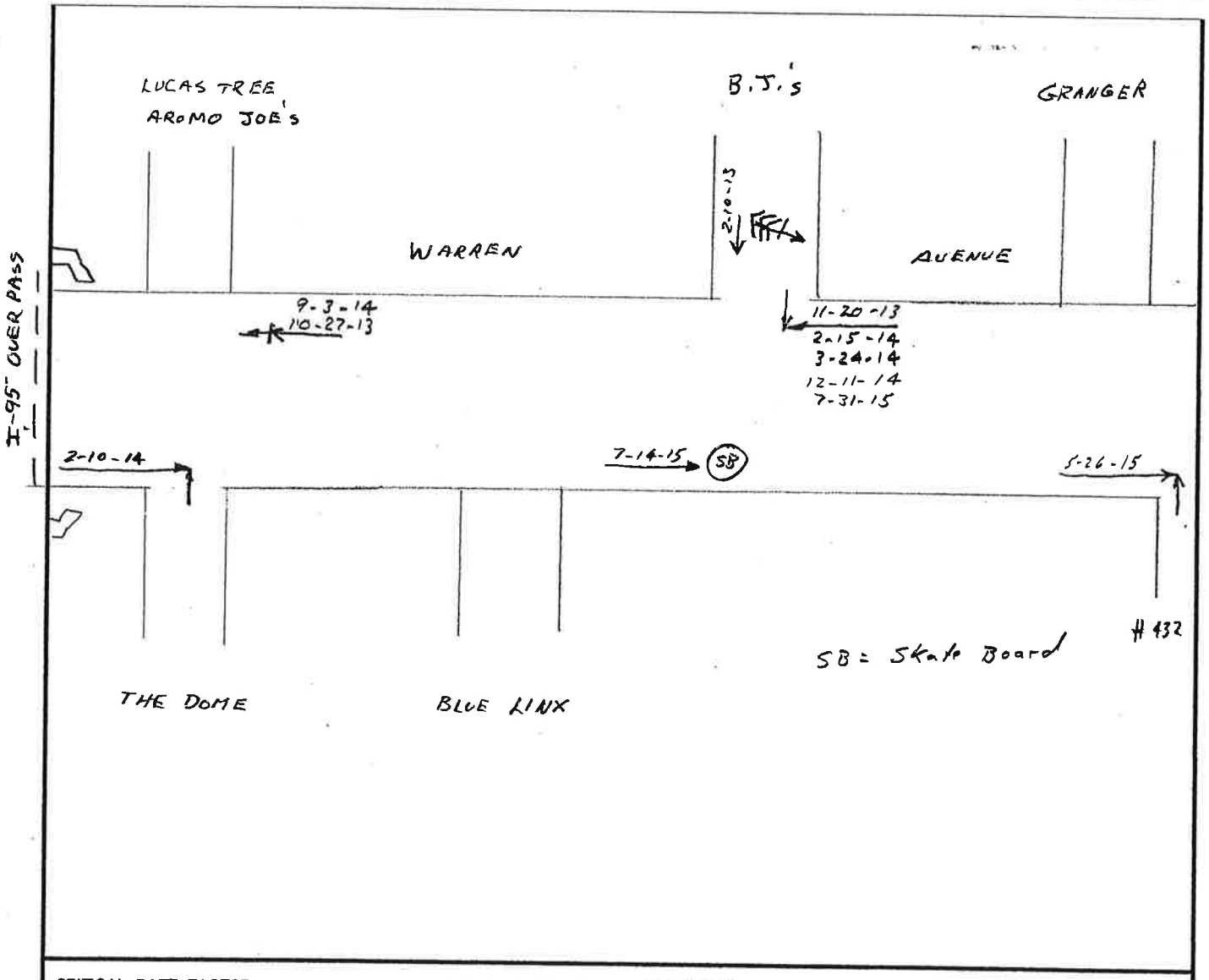
COLLISION DIAGRAM

SHEET 3 OF 5

LOCATION WARREN AVE. – SECTION #3 [I-95 BRIDGE EAST TO GRANGERS]

TOWN PORTLAND NODE NO(S) 15893 - 15895

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-26-2016



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, ANIMAL, SLED

WEATHER
C = CLEAR
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL
A = INCAPACITATING
B = NON–INCAPACITATING
C = POSSIBLE INJURY

S:\SHEETS\COLLISION DIAGRAM.DWG

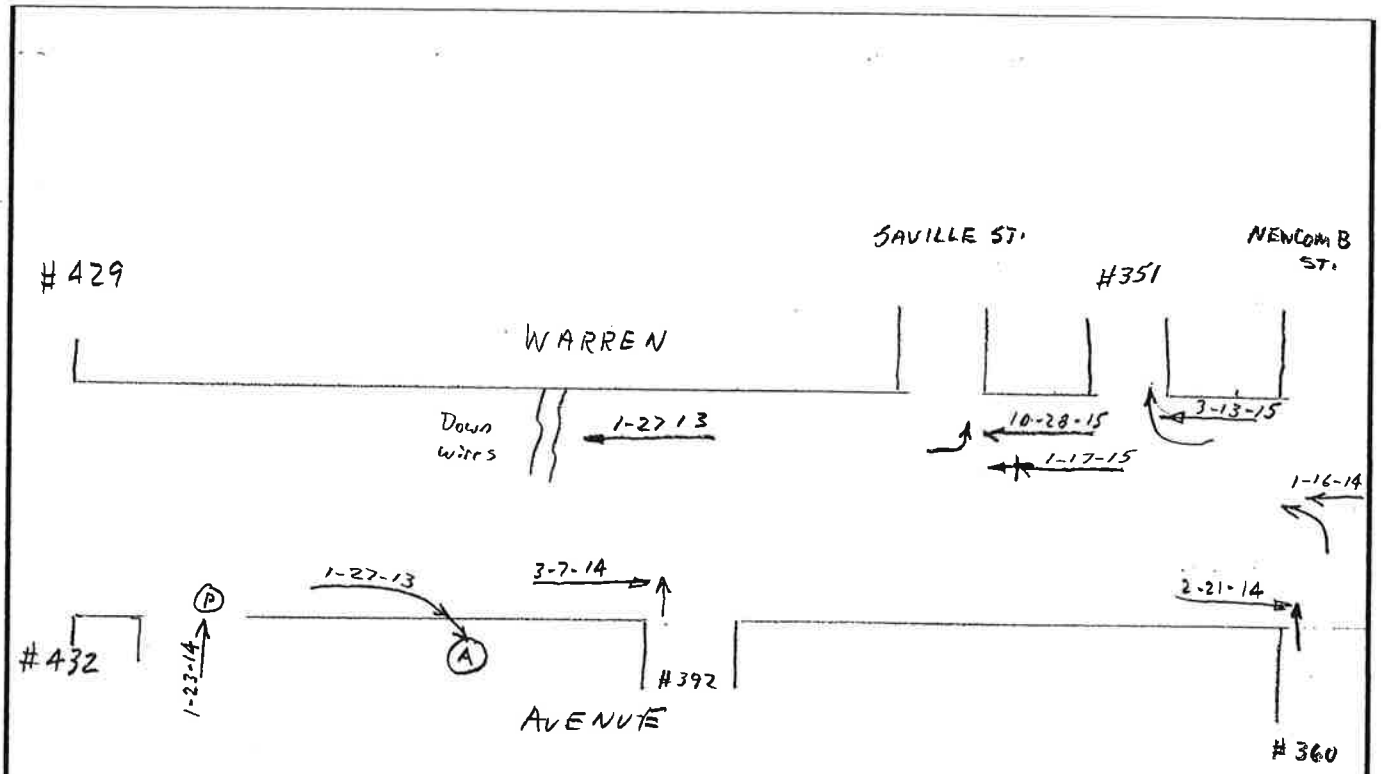
COLLISION DIAGRAM

SHEET 4 OF 5

LOCATION WARREN AVE. – SECTION #4 [# 432 WARREN TO NEWCOMB ST.]

TOWN PORTLAND NODE NO(S) 15893 - 15895

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-26-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 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

LOCATION WARREN AVE

TOWN PORTLAND NODE NO(S) 15893 - 15895

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-344	1-28-13	17:27					4	SNOW	2	
13-1128	4-8-13	10:30					2	1	2	
13-1132	4-8-13	16:45					2	1	8	
13-1672	6-10-13	9:45					2	1	8	
13-2223	8-7-13	10:24					2	1	4	
13-2602	9-13-13	19:32				1	4	2	4	
13-3550	12-9-13	19:30			1	1	4	SNOW	51	
13-3834	12-30-13	17:43				1	4	SLUSH	2	
14-164	1-11-14	1:24			1	1	4	2	7	
14-948	3-15-14	10:20					2	2	4	
14-3761	12-20-14	11:04					2	1	4	
15-972	2-26-15	11:28					2	1	4	
15-981	2-26-15	16:45				1	4	2	7, 14	
15-2707	8-12-15	16:25					2	1	51	
15-3195	9-23-15	13:43					2	1	2, 14	
15-3500	10-18-15	18:50					4	1	14	SWERVED TO AVOID CRASH
15-4050	12-4-15	15:25				1	2	1		
574	2-14-14	12:36					2	SLUSH	2, 14	
-2556	9-9-13	19:53		1			4	1	ILLEGAL	PASSING OUI
15-4309	12-24-15	10:09					2	2	2, 14	
15-3572	10-24-15	15:46					2	1	2	
15-2906	8-27-15	12:23					2	1	2, 14	
14-2417	8-18-14	10:15			1		2	1	2	
14-2387	8-15-14	11:59					2	1	2, 14	
14-2354	8-13-14	16:28				1	2	2	2	
13-486	2-10-13	8:05					2	SNOW	51	
13-3032	10-27-13	20:00					5	1	4	
13-3304	11-20-13	15:47					2	1	2	
14-502	2-10-14	19:14				1	4	ICE / FROST	3	
14-587	2-15-14	12:20					2	2	2, 14	
14-1038	3-24-15	17:47					3	1	2, 14	
14-2603	9-3-14	18:03					2	1	4	
14-3645	12-11-14	10:53					2	2	2, 14	
15-2406	7-14-15	20:50				1	3	1	31	
15-2582	7-31-15	15:00					2	1	2, 14	
15-1863	5-26-15	11:20				1	2	1	2	
15-3632	10-28-15	19:29				1	5	2	2	
14-230	1-6-14	12:30					2	2	2	
-316	1-23-14	17:13				1	5	1	2	Pedestrian
869	3-7-14	14:36					2	1	2, 14	
15-241	1-17-15	11:10					2	1	4	
15-1163	3-13-15	12:55					2	1	51	
13-321	1-27-13	3:30					?	1	DOG, 14	
13-332	1-27-13	3:33					4	1		

(1) #392 Cornelius Moto Works, Penske Truck Rental (Warren Ave. Trade Ctr.)
(2) #340 Speedy Auto Top
(3) A. Hausmann Assoc. Inc.
(4) Warren Ave. Trade Ctr. #352
(5) Sign Concepts.
(6) Saville St.
(7) Bayside Towing #355
(8) Giroux Energy
(9) Home
(10) Vance Pools
(11) Harbor Auto Body #401
(12) New Bldg.
(13) #429 Warren

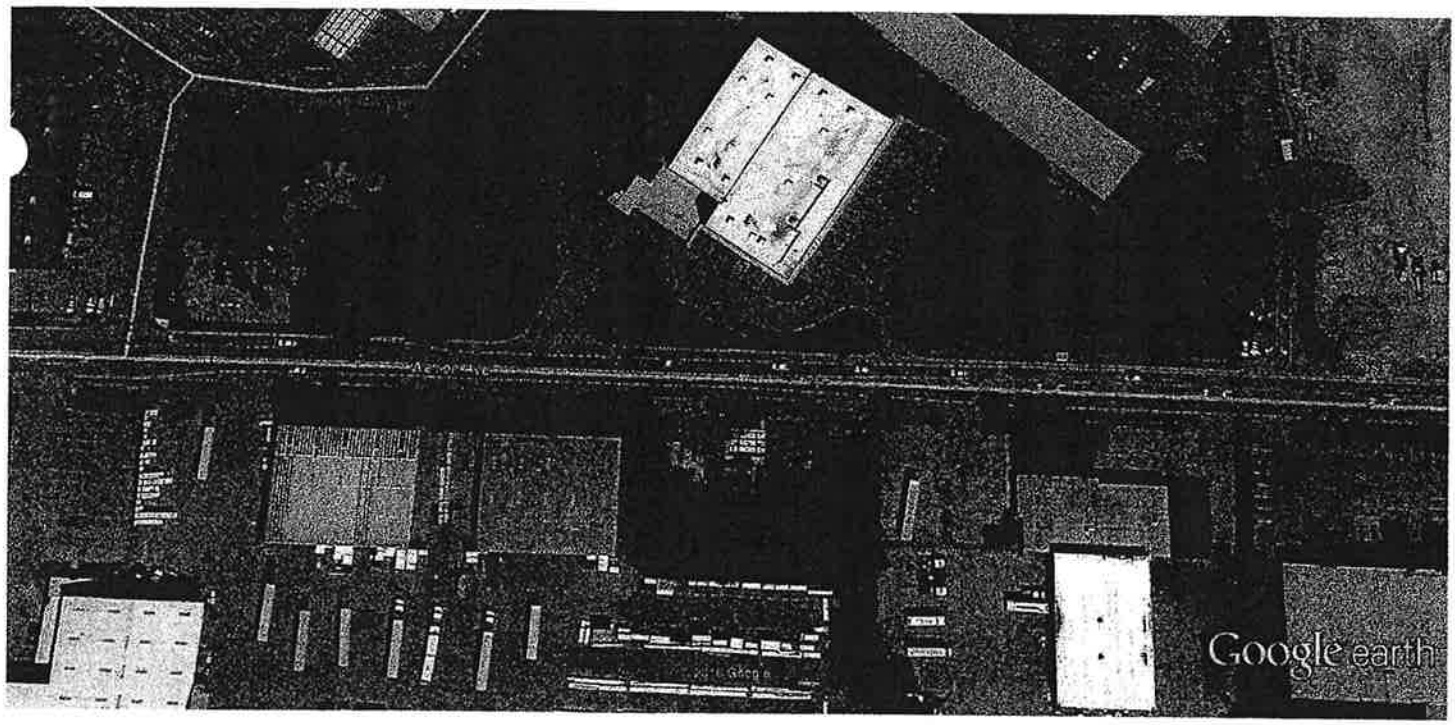
Google earth feet 700 meters 200

1. Home Depot entrance
2. " " truck delivery entrance
· Car wash
4. D'; D, Wendy's
5. Wendy's
6. # 633 Paper Party House
7. Handyman Rental # 357 Riverside
8. Restore, Urban Garden Ctr.

Google earth feet 600 meters 100

(1) The Dome, Gold Room, Turfs, Fitness Factory, E.J. Prescott
(2) Blue Linx
(3) Aroma Joe's, Lucas Tree

513 Warren Ave. B.J.'s entrance
510 Jokers, 550 also



Google earth feet 600 meters 100

(1) Vacant gas station
(2) 432 New England Detroit Diesel, Allison Trans.
(3) Application Sales #400
(4) Granger
(5) B.J's, Shed Happens, Yexa's, Karatee

City of Portland

2013/2015 Roadway Safety Summary Report

Warren Avenue – City Line to Riverside Street Intersection

(Nodes# 15135 to 15893)

[23 Crashes – 1.96 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The vehicle accident review completed for this 0.25 mile long road segment shows a total of 23 roadway crashes have occurred during the latest reporting time period. Sixteen (16) or nearly 70 percent of the vehicle accidents involved motorists turning to/from the Irving Gas Station and Convenience Store site. Three additional "*angle*" collisions were reported for the road section at the driveway entrances to Sullivan Tire and Hammond Lumber.

Two (2) single-vehicle crashes also occurred at the abrupt curb extension located in the westbound travel lane on Warren Avenue near the main entrance to Hammond Lumber.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Install a raised traffic island separating both directions of travel on Warren Avenue extending from the Riverside Street intersection to a point west of the driveway entrance to the Irving Gas Station; effectively restricting all traffic movements to a right-turn movement.
- Re-construct westbound departure lane on Warren Avenue eliminating the abrupt lane drop. Install appropriate signage and pavement markings as necessary.

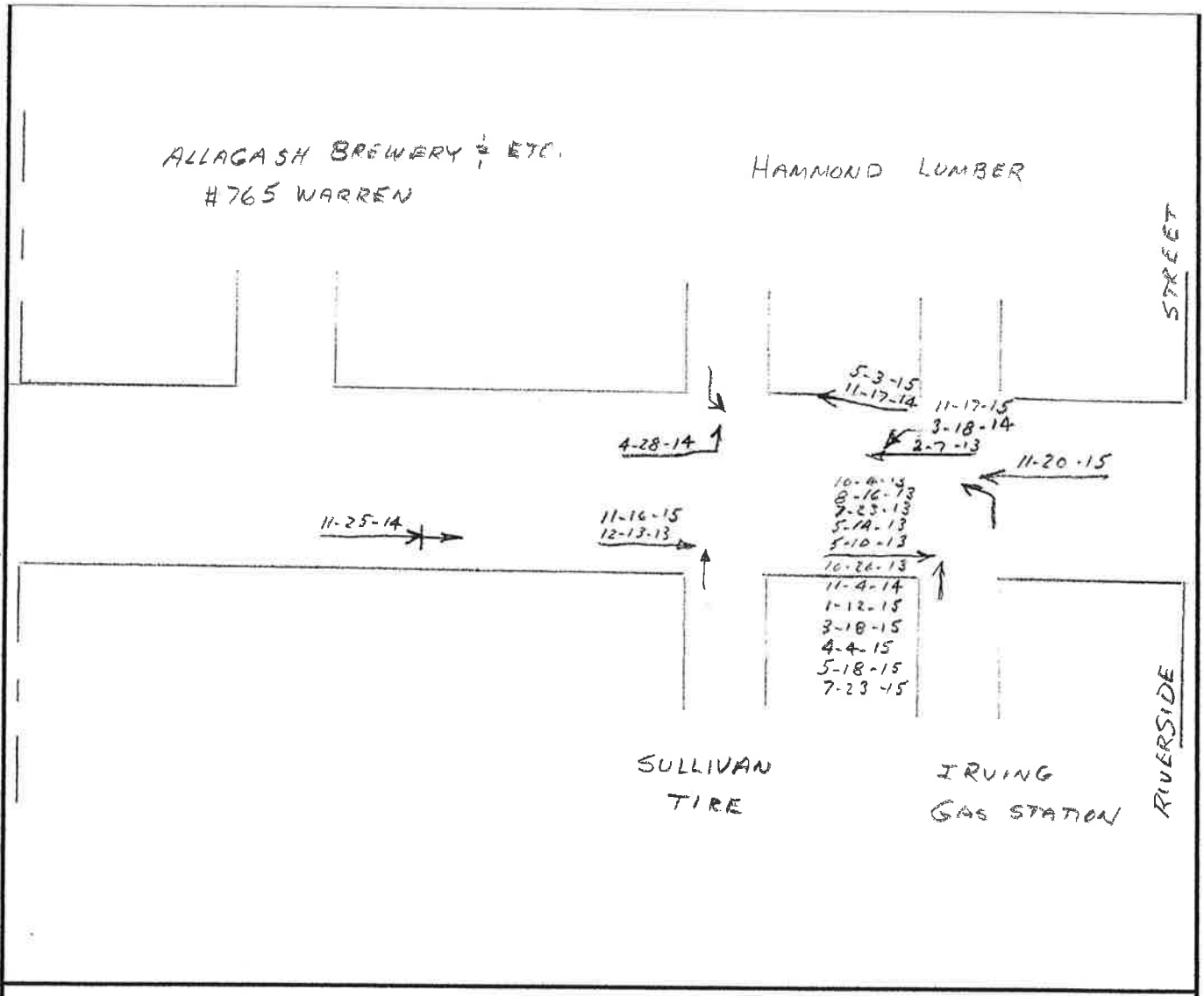
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION WARREN AVE - [RIVERSIDE ST. TO CITYLINE]

TOWN PORTLAND NODE NO(S) 15135 - 15893

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 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 WARREN AVE. [RIVERSIDE ST. TO CITYLINE]

TOWN PORTLAND NODE NO(S) 15135 - 15893

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-453	2-7-13	6:57					2	1	8	LANE DROP AREA
13-1382	5-10-13	6:48					2	2	2	
13-1410	5-14-13	13:45					2	1	2	
13-2080	7-23-13	12:05					2	2	2	
13-2313	8-16-13	11:14				1	2	1	2	
13-2809	10-4-13	6:50					2	1	2	
13-3022	10-26-13	11:10					2	1	2, 14	
13-3617	12-13-13	16:02					2	1	2	
14-982	3-18-14	20:00					4	1	7, 8	
14-1324	4-28-14	17:25					2	1	2	
14-9906B	11-4-14	13:00					2	1	2	
14-3393	11-17-14	18:20				1	4	2	ROAD NARROWS NOT VISIABLE	
14-3475	11-25-14	12:51					2	1	4	
14-3800	12-23-14	18:50					4	2	ROAD NARROWS NOT VISIABLE	
15-135	1-12-15	6:58					2	SLUSH	2	
15-1222	3-18-15	16:21					2	1	2	
15-1384	4-4-15	15:56					2	1	2	
15-1629	5-3-15	14:14					2	1	ROAD NARROWS NOT VISIABLE	
15-1776	5-18-15	7:45					2	1	2	
15-2495	7-23-15	11:28					2	1	2, 14	
15-3830	11-16-15	18:13					4	1	2	
15-3838	11-17-15	10:45				1	2	1	7, 8	LANE DROP AREA
15-3876	11-20-15	4:53				1	4	2	2	

Google earth feet 900 meters 200

1 & 2 - Hancock Lumber

3 - Allagash Brewery; Animal Hospital #765

4 - Sullivan Tire

5 - Irving Gas; Conv. Store

City of Portland

2013/2015 Roadway Safety Summary Report

Riverside Street –Riverside Street to McAllister Farm Road

(Nodes# 10387 to 15893)

[13 Crashes – 1.08 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The vehicle accident review completed for this very short (0.17 mile) road segment shows a total of 13 roadway crashes have been reported for this section of Riverside Street. The principal crash pattern (7 crashes) occurring on this section of Riverside Street was "*lane-change*" accidents in both the approach and departure lanes on Riverside Street. The remaining traffic accidents were generally isolated incidents occurring throughout the road section.

Recommended Intersection Mitigation Measures

The following mitigation measures are recommended for this location:

- Add a more prominent W9-2 sign on northbound travel lane on Riverside Street; consider supplemental BlinkerSign LED boarder lighting.
- Add lane reduction transition markings on northbound travel lane on Riverside Street.

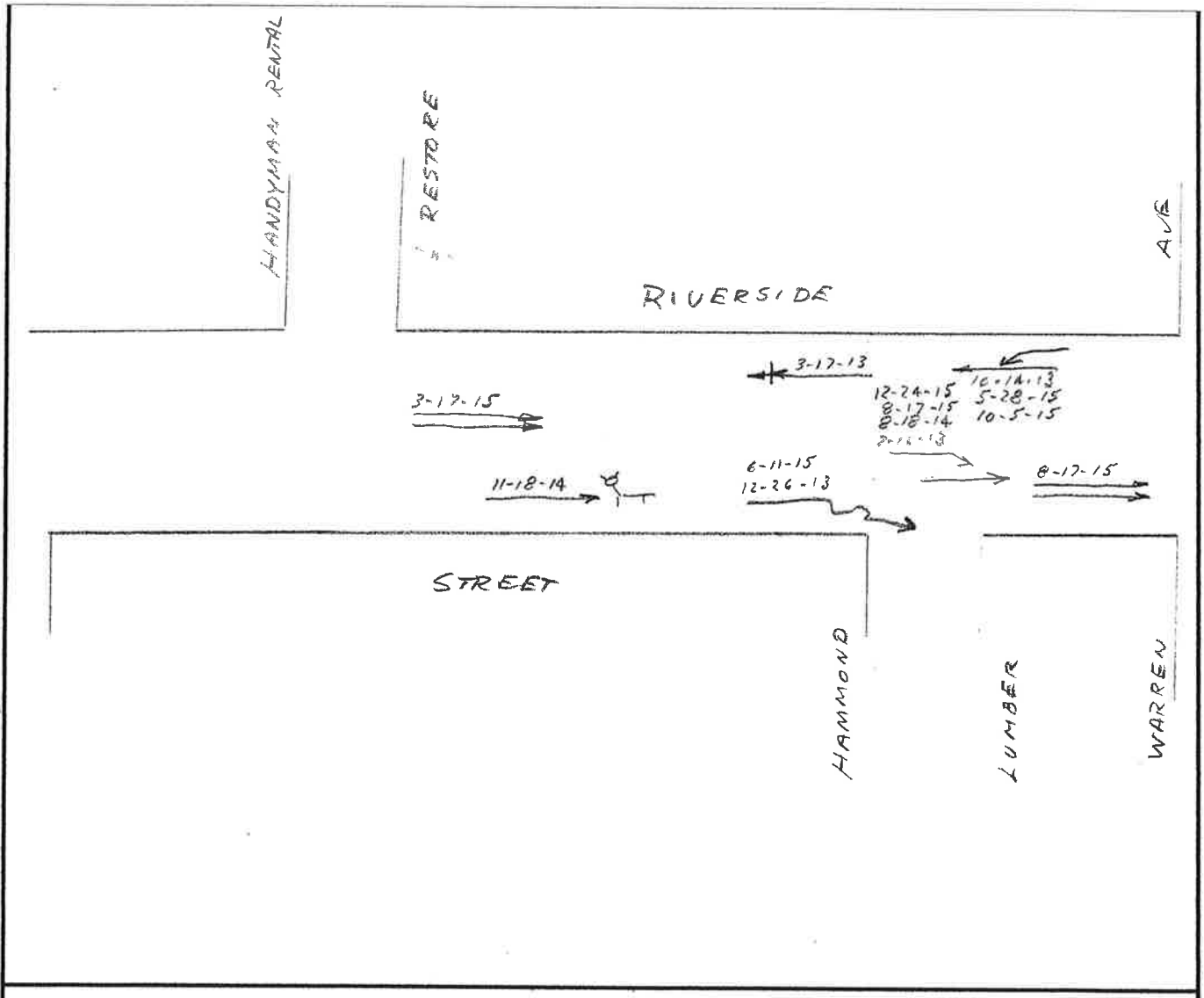
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION RIVERSIDE ST. [McALLISTER FARM RD. TO WARREN AVE]

TOWN PORTLAND NODE NO(S) 15893 - 10387

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT
OR FACTOR 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, ANIMAL, SLED

WEATHER
C = CLEAR
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:\PHOTOS\COLLISION DIAGRAM.DWG

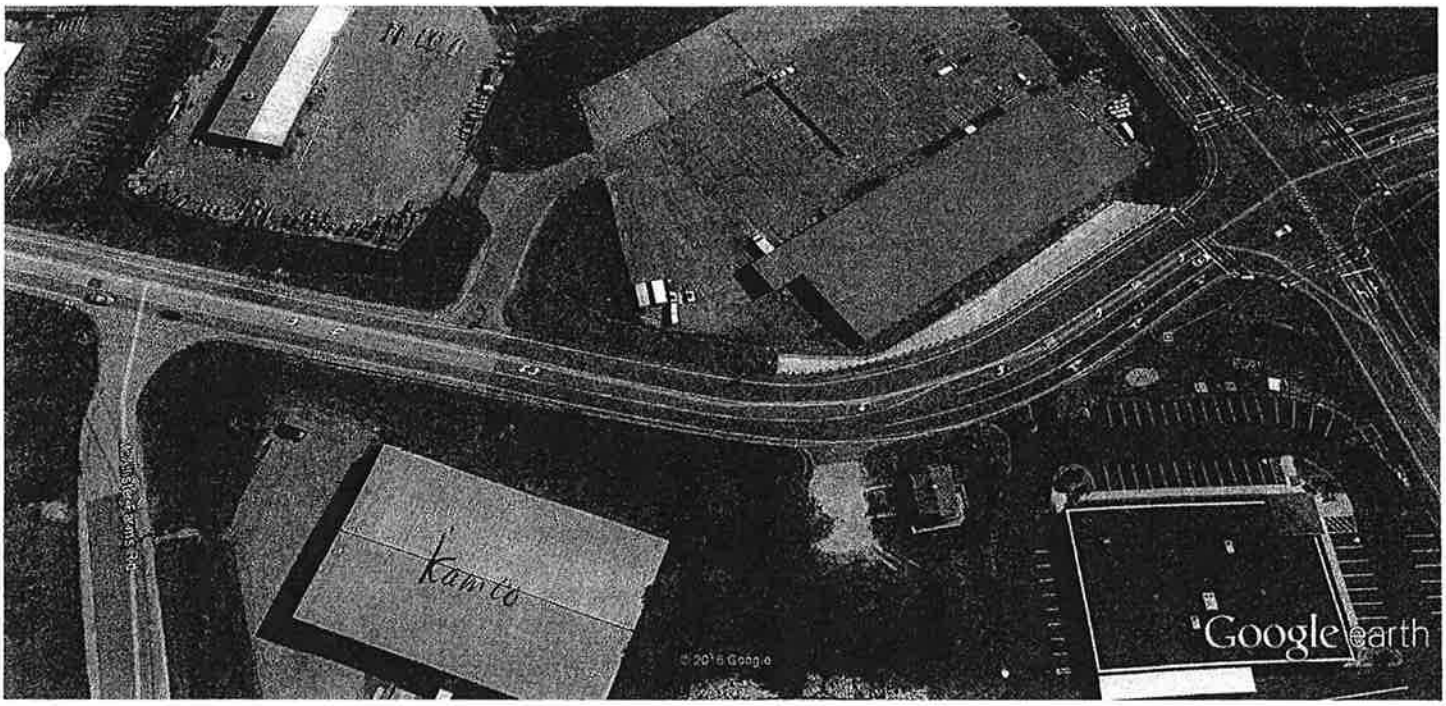
COLLISION DIAGRAM

LOCATION RIVERSIDE ST. [MCALLISTER FARM RD. TO WARREN AVE.]

TOWN PORTLAND NODE NO(S) 15893 - 10387

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-25-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-1131	3-17-13	00:00				—	4	2	51	
13-2011	7-16-13	9:19			1		2	1	8	
13-2914	10-14-13	15:14	—	—	—	—	2	1	2	MERGE AREA
13-3800	12-26-13	23:37		—	—	—	4	SNOW	51	
14-2423	8-18-14	15:53	—	—	—	—	2	1	8	
14-3406	11-18-14	19:04		—	—	—	4	1	DEER	
15-1196	3-17-15	7:56		—	—	—	2	1	7	
15-1884	5-28-15	11:21		—	—	—	2	1	2, 8, 14	MERGE AREA
15-2016	6-11-15	21:22		1	1		4	1	3, OUI	
15-2757	8-17-15	7:59		—	—	—	2	1	2	
15-2761	8-17-15	13:00		—	—	—	2	1	FAILED TO STAY IN LANE	
15-3348	10-5-15	7:21				1	2	1	4,	MERGE AREA
15-4308	12-24-15	10:03		—	—	—	2	2	8, 14	



Google earth feet 400 meters 100

1. Hammond Lumber
2. Handiman Rental + Restore
3. Medisto Dr (Kamco)

City of Portland

2013/2015 Roadway Safety Summary Report

Brighton Avenue – Lomond Street to Rowe Avenue

(Nodes# 13050 to 13131)

[8 Crashes – 1.79 Critical Rate Factor]

Vehicle Collision Diagram Report Summary

The vehicle crash review completed for this road segment determined that the (8) vehicle crashes generally occur somewhat randomly throughout the short roadway section with multiple traffic crash patterns. The only feature that appears worthy of note is that 4 of the 8 crashes occurred during the evening peak commuter hours (3:00 to 6:00PM) when traffic loadings are greatest.

Recommended Intersection Mitigation Measures

Intersection capacity improvements to the Brighton Avenue/Rowe Avenue/Warwick Street signalized intersection would have a profound impact on reducing peak hour traffic congestion leading to improved roadway safety. Aligning the Rowe Avenue approach directly opposite the Warwick Street approach would eliminate a traffic signal phase increasing potential green time allocation to the Brighton Avenue signal phase(s).

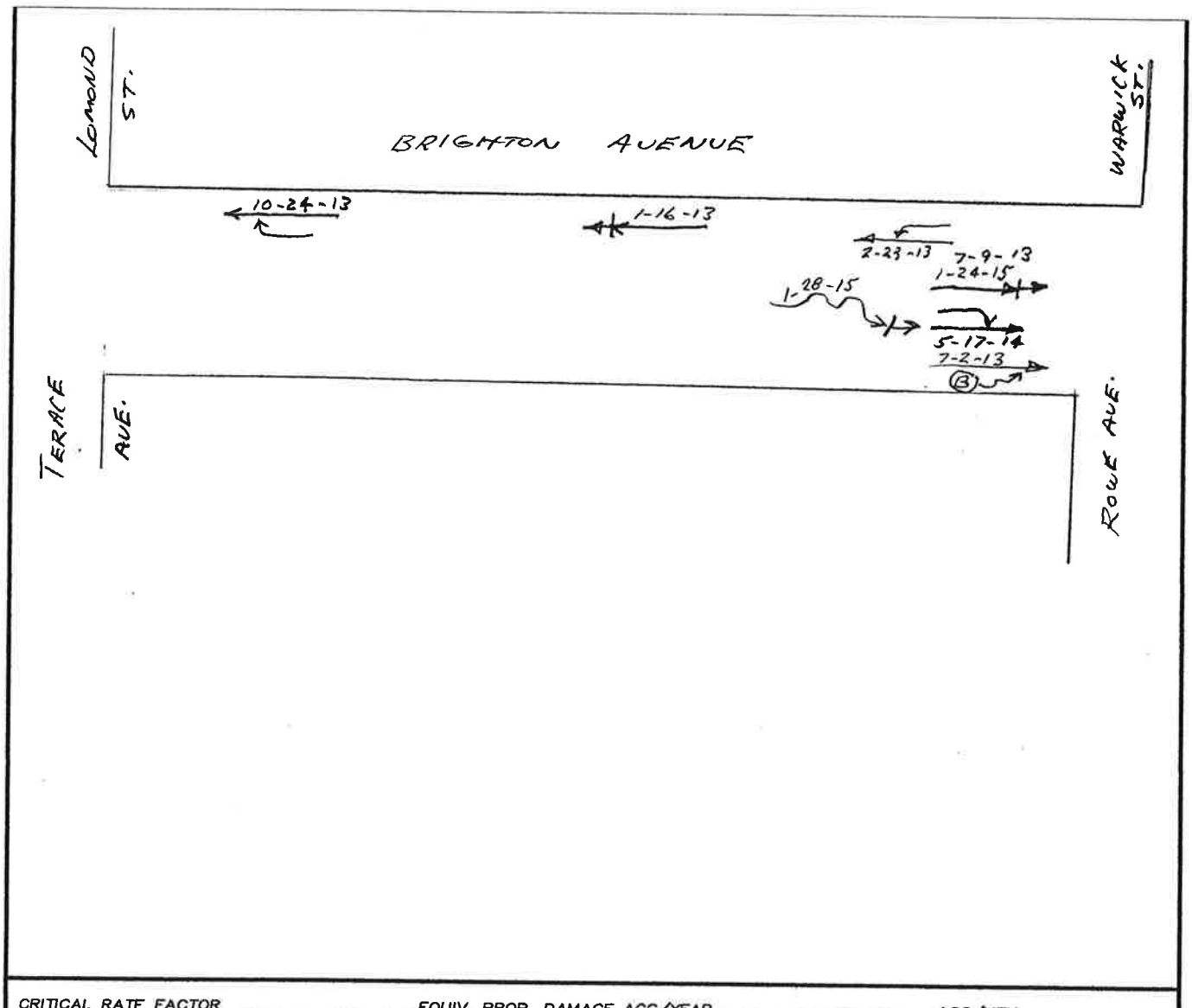
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION BRIGHTON AVE. [LOMOND ST to ROWE AVE.]

TOWN PORTLAN NODE NO(S) 13131 to 13050

YEARS REVIEWED 2013 - 2015 DATE PREPARED 6-17-2016



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 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT OR FACTOR
51. UNKNOWN

SYMBOLS
ANGLE, BACKING, FIXED OBJECT, HEAD ON, OVERTURN, PARKED VEHICLE
PEDESTRIAN (P), REAR END, SIDE SWIPE, TURNING MOVE, CHANGE LANE, OUT OF CONTROL
FATAL ACCIDENT, VEHICLE (MOVING), BICYCLE (B), ANIMAL (A), SLED (S)

WEATHER
C = CLEAR
SL = SLEET
F = FOG
S = SNOW
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES
K = FATAL
A = INCAPACITATING
B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:\SHEETS\COLLISION DIAGRAM.DWG

COLLISION DIAGRAM

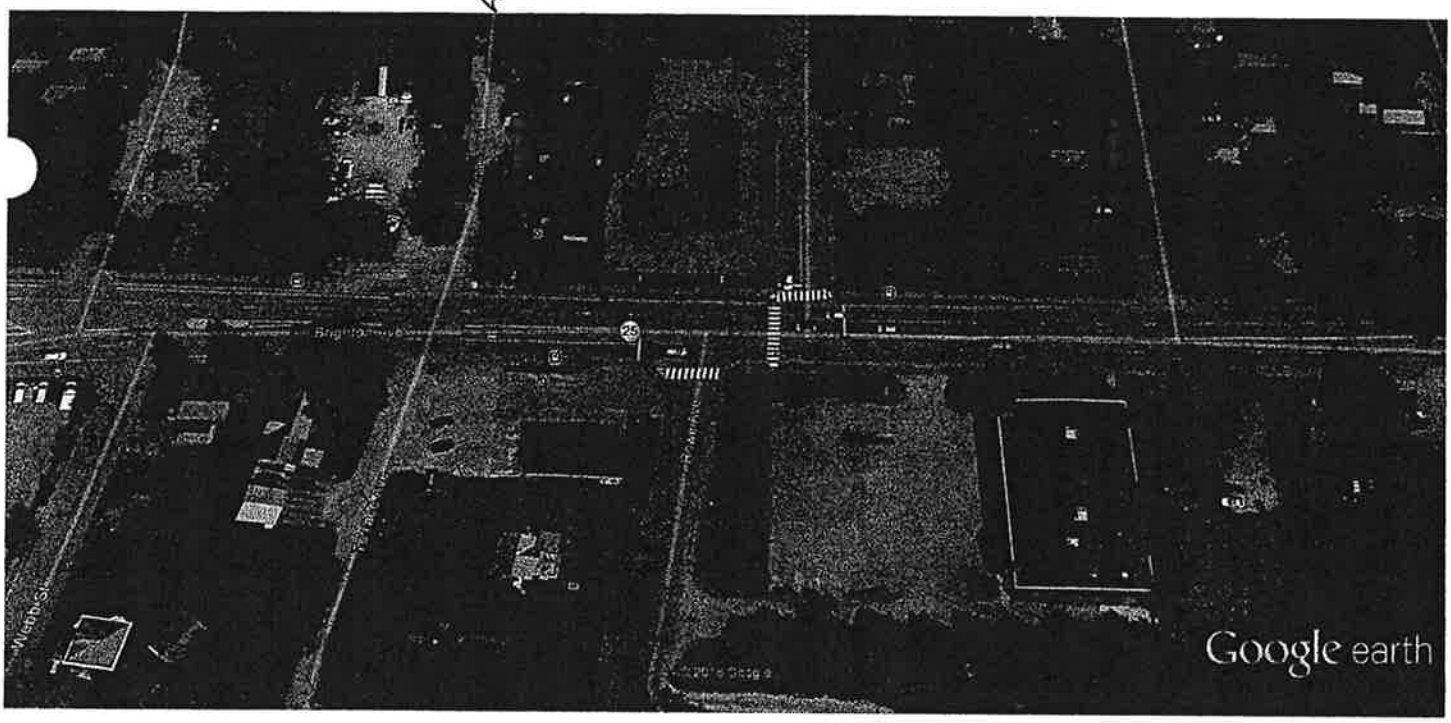
LOCATION BRIGHTON AVE. [LOMOND ST. to ROWE AVE]

T N PORTLAND NODE NO(S) 13131 to 13050

YEARS REVIEWED 2013-2015 DATE PREPARED 6-7-2016

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
13-3004	10-24-13	12:50	—	—	—	—	2	1	8	CONST. ZONE LANE REDUCT.
14-1509	5-17-14	15:30	—	—	—	—	2	1	8	
15-312	1-24-15	13:52				1	2	SLUSH	4	
15-346	1-28-15	10:39	—	—	—	—	2	SNOW	TOO FAST FOR CONDITIONS	
13-187	1-16-13	6:58				1	2	SNOW	TOO FAST FOR CONDITIONS	
13-658	2-23-13	16:21				1	2	2	8	
13-1881	7-2-13	15:50			1		2	2	HIT & RUN	
13-1930	7-9-13	16:30			1		2	1		

Lomas



Google earth

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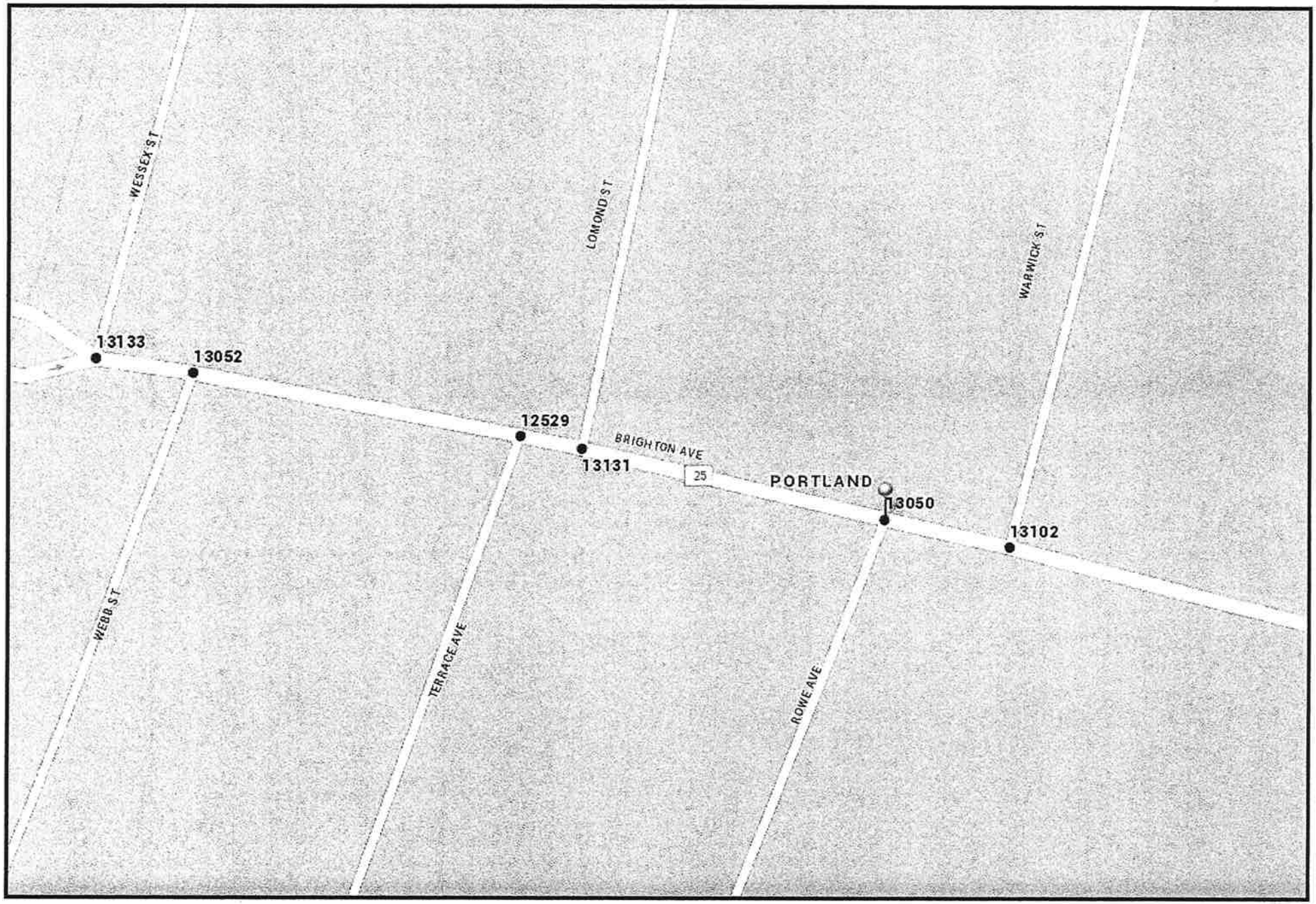


The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.025 Miles

1 inch = 0.02 miles

Date: 6/14/2016
Time: 12:32:11 PM

PERKINS | THOMPSON
ATTORNEYS & COUNSELORS AT LAW

ESTABLISHED 1871

ONE CANAL PLAZA
PO BOX 426
PORTLAND ME 04112
TEL 207.774.2635
FAX 207.871.8026

www.perkinsthompson.com

September 7, 2016

Barbara Barhydt,
Development Review Services Manager
Planning Division
389 Congress Street 4th Floor
Portland, ME 04101

PHILIP C. HUNT
JOHN S. UPTON
PEGGY L. McGEHEE
MELISSA HANLEY MURPHY
JOHN A. HOBSON
JAMES N. KATSIAFICAS
TIMOTHY P. BENOIT
J. GORDON SCANNELL, JR.
FRED W. BOPP III
MARK P. SNOW
WILLIAM J. SHEILS
DAVID B. McCONNELL
PAUL D. PIETROPAOLI
RANDY J. CRESWELL
JULIANNE C. RAY
DAWN M. HARMON
CHRISTOPHER M. DARGIE
SARA N. MOPPIN
PETER J. McDONELL
SHAWN K. DOIL
JOSEPH G. TALBOT
LAUREN B. WELIVER
JOSEPH C. SIVISKI
JOHN W. MASLAND

Re: Site Plan and Subdivision Application, Dirigo Plaza; Dirigo Center Developers, LLC; Applicant's Narrative Response to the City of Portland's Off-Site Traffic Mitigation Comments

Dear Barbara:

I am writing to provide Applicant Dirigo Center Developers, LLC's ("Applicant") response regarding the City of Portland's Off-Site Traffic Mitigation Comments for the Dirigo Plaza project ("Project") provided to us by Jeremiah Bartlett on Friday, September 2, 2016. We appreciate the efforts by the City of Portland, the Maine Department of Transportation, the City of Westbrook, and the Maine Turnpike Authority to meet with us on September 1 to review MDOT's draft Traffic Movement Permit ("draft TMP") and other traffic and development concerns, and to prepare comments on the same so promptly. We understand that the City of Portland seeks the following items for incorporation into the finalized Traffic Movement Permit to be issued by MDOT, and our response follows each item listed below. Schematic plans prepared by Vanasse & Associates, Inc. ("VAI") to illustrate the Applicant's proposed work are enclosed.

1. Riverside Street from Berlin City to Exit 48

- *Provide consistent roadway width to allow for a center left turn lane to reduce crash frequency*

We understand from our meeting on September 1 that there is sufficient roadway width to permit us to restripe this area, and so the **Applicant agrees** to restripe this area, as requested by the City of Portland (see VAI Conceptual Improvement Plan, Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 2 of 2).

- *Eliminate sidewalk gap on west side of street north of Burger King (i.e. result in sidewalks on both sides of Riverside between Exit 48 and Berlin City)*

The **Applicant agrees** to construct the sidewalk to eliminate sidewalk gap on west side of street north of Burger King, as requested by the City of Portland (see VAI Conceptual Improvement Plan, Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 2 of 2).

2. Riverside Street at Larrabee Road and Exit 48

More specific recommendations for this location, as related to the mitigation plan, include:

- *Updated signal timing, coordination, and new signal structures (the City's position is that this intersection is too large for span wire)*
- *Updated wiring*
- *Controller cabinet*
- *Video detection that detects and accommodates bicyclists*
- *Signal heads with reflective back plates*
- *Overhead lane use signage as per MTA comments*
- *Countdown pedestrian heads*
- *Placement of ADA compliant ramps*
- *Use of durable pavement markings to supplement overhead provisions*
- *Establish queue detection for Exit 48 off-ramp to provide pre-emption capability as per MTA comments*

The Larrabee Road approach, proposed to be widened to provide a dual left turn lane, results in a wider intersection and is a costly improvement. The City would urge the Applicant to explore the need for two left turn lanes, or utilizing an existing through lane as a left turn lane to reduce costs and intersection size.

The **Applicant agrees** to construct the Exit 48 improvements as stated in the draft TMP and with the above detail, as requested by the City of Portland, and also **agrees** to review the Larrabee Road approach to provide lanes consistent with MDOT's findings and directions, all with the understanding that this work will be coordinated with scheduled MDOT and City of Portland projects for this intersection and that the City funding for this intersection will remain in place as proposed in the City's FY2017-FY2021 Capital Improvement Plan (CIP). (See VAI Conceptual Improvement Plan, Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 2 of 2.)

3. Riverside Street at Westbrook Crossing

- *Updated signal timing, coordination*
- *Provision of detectable warning panels at pedestrian ramps*
- *Signal heads with reflective back plates*

The **Applicant agrees** to provide these improvements, as requested by the City of Portland. (See VAI Conceptual Improvement Plan, Riverside Street Corridor, Sheet 2 of 2.)

4. Riverside Street from Brighton Avenue to Exit 48

- *Explore potential for provision of bicycle lanes or the width within the project limits of Exit 48 work to allow for such lanes in the future.*

Actual construction of bicycle lanes along Riverside Street is not financially viable for the Applicant, but the Applicant understands that is not what the City is seeking here; the **Applicant agrees** to provide the City of Portland with the existing conditions data that will be prepared as part of the off-site mitigation, for the City's use in the conceptual design for bicycle improvements. The Applicant does not believe that the Exit 48 improvements it is undertaking will preclude the City from later establishing bicycle lanes. Bicycles can use the full travel lane similar to the bicycle use of Main Street in Westbrook and signage can be installed to promote this full lane use.

- *Provision of continuous sidewalk along east side of Riverside Street from Brighton Avenue to Exit 48 , including filling the gap at the Foreside Inn frontage (much of this sidewalk currently exists)*

The **Applicant agrees** to construct the portion of the sidewalk along the **Fireside** Inn frontage from the driveway north to the existing guardrail, as requested by the City of Portland. (See VAI Conceptual Improvement Plan, Riverside Street at Larrabee Road and I-95 Exit 48 Ramps, Sheet 2 of 2.)

5. *Riverside Street at Brighton Avenue*

- *Examination of need for right turn slip lanes, primarily slip lane from Riverside to Brighton. City may be willing to partner financially on this aspect.*

The **Applicant does not agree** to make this a part of its mitigation plan, but would make a donation to the City for this and other Brighton Avenue improvements (see responses to Items 6 and 9 below).

- *Video detection that detects and accommodates bicyclists*
- *Signal heads with reflective back plates*
- *Up-to-date ADA provisions and corrections to immediately adjacent deficient sidewalk segments*

The **Applicant agrees** to these improvements as part of its mitigation plan, some elements of which are included in the Ransom Brighton Avenue improvements plan; the sidewalk location can be adjusted within the limits of the right of way. (See VAI Figure 14, Conceptual Improvement Plan, Sheet 5 of 5).

6. *Brighton Avenue at Capisic Street*

The City seeks mitigation at this location, as the TIS identifies a substandard LOS. Provision of updated ramps and pedestrian equipment may be a satisfactory outcome.

The **Applicant does not agree** to make this a part of its mitigation plan, but would make a donation to the City for this and other Brighton Avenue improvements (see responses to Item 5 above and Item 9 below).

7. Brighton Avenue at Woodford Street

The City seeks mitigation at this location, as the TIS identifies a substandard LOS. One option here would be modifications that would allow for a concurrent pedestrian crossing with a lead ped interval, which could be accomplished with ADA and signal equipment improvements. This would increase operational efficiency above and beyond the current exclusive pedestrian phase configuration. Potential implementation of Lead Pedestrian Interval walk lights to improve vehicular and pedestrian Level of Service.

The **Applicant does not agree** to make this part of its mitigation plan; this is not financially viable for this Project as the requested improvements would be located so far from the Project that they are not reasonably related to pedestrian concerns generated by the Project. This intersection was not identified in the MDOT draft TMP as traffic mitigation for the proposed Dirigo Plaza project.

8. Rand Road at Exit 47

The City understands that mitigation is likely required at this location. However, if alternative mitigation strategies can be determined, the City will be open, in consultation with Westbrook and the Turnpike Authority, to alternatives.

The **Applicant agrees**, as an alternative to the improvements at this intersection in the draft TMP, to either: 1) in conjunction with MDOT and MTA, and as a condition of the final TMP, monitor traffic conditions at this intersection following construction of the Project's North Campus and to undertake any improvements to Exit 47 deemed necessary by MDOT at the time of permitting of the South Campus of the Project; or 2) to forego constructing improvements to this intersection with the funds it would otherwise be required to expend on Exit 47 to be used for other mitigation measures as agreed upon by the City of Portland and the Applicant. (See VAI Rand Road at I-95 Exit 47 Ramps Conceptual Improvement Plan, Sheet 1 of 1 for MDOT draft TMP plan).

9. Sidewalks on Brighton Avenue

The City seeks improvements to the sidewalks on Brighton Avenue in order to encourage non-vehicular trips to and from the site. Specifically, the City requests that, where documented existing conditions are fair or poor, replacement concrete sidewalks on the west side of Brighton Avenue be provided from the site entrance south to Albion Street.

Because of the schedule for the Project and the need to complete offsite mitigation improvements before a certificate of occupancy can issue for the Project, the **Applicant agrees** to donate to the City of Portland an amount equal to the amount remaining from Lowe's payment for the Brighton Street streetscape improvements -- $220,000 -- to fund this and the improvements described at Items 5 and 6 above as well as other improvements identified by Ransom that the City may wish to make.

10. Riverside Street at Warren Avenue (lower priority)

- *Reconfigure westbound Warren Avenue to consist of two left turn lanes and a shared through/right turn lane. This will consist primarily of restriping.*
- *Adjust phasing and timing to eliminate the split phasing structure for the Warren Avenue approaches*

The **Applicant agrees** to provide the existing conditions data that will be prepared as part of the off-site mitigation, for conceptual design of the intersection to be prepared by the City of Portland. Actual design and construction of the requested improvement is not financially viable for the Project and was not part of the MDOT draft TMP.

11. Riverside Street at Home Depot Drive (lower priority)

Signal heads with reflective back plates
- *Overhead lane use signage*
- *Countdown pedestrian heads*

The **Applicant does not agree** to the requested improvement; this was not identified by MDOT in the draft TMP and is not financially viable for the Project.

We acknowledge that the City of Portland has authority to seek off-site traffic mitigation measures through the subdivision and site plan ordinance processes to ensure that the Project will not cause unreasonable highway or public road congestion or unsafe conditions with regard to use of the public roads. Since these ordinance standards mirror the State traffic movement standards at 23 M.R.S. §704-A and Chapter 305, the improvements required by the draft TMP, which is intended to be regional ibn scope and which covers a two-mile radius, should form the basis for required traffic improvements for the Project. As explained during the September 1, 2016 meeting, we estimate that the total cost of traffic improvements required by the draft TMP is $6.8 million, with $3.365 attributable to "front door" access improvements and $3.425 million attributable to regional off-site mitigation improvements ($2.270 million in Portland and $1.155 million in Westbrook).

However, in addition to carrying out the off-site mitigation tasks required by the draft TMP, we are, as noted in our responses above, agreeing to take on additional off-site traffic mitigation responsibilities as requested by the City of Portland by: 1) clarifying and amplifying the draft TMP requirements, and 2) offering to provide the additional installation, equipment, striping and

sidewalk work as stated above, to ensure that the intersections listed in the draft TMP **and** the street segments between them in the immediate Project area are improved appropriately. Also, as we have mentioned above, we agree to contribute the amount of $220,000 to the City to match the amount of mitigation funding remaining from the Lowe's project so that the City can apply these funds towards Brighton Avenue streetscape improvements, as discussed in our responses to Items 5, 6 and 9 above.

We believe that City staff will find that these responses, and the significant contribution to the Project area's transportation infrastructure that they represent, address the reasonable off-site traffic mitigation needs generated by the Project as measured under State law and under Portland's land use ordinances.

Sincerely,

James N. Katsiaficas

cc: Jeremiah Bartlett, Transportation Systems Engineer, City of Portland
Jeff Levine, Planning & Urban Development Director, City of Portland
Jennie Franceschi, Director of Planning and Code Enforcement, City of Westbrook
Stephen Landry, Maine Department of Transportation, Traffic Engineering Division Engineer, Maintenance and Operations Bureau, Maine Department of Transportation
Timothy Soucie, Region 1 Traffic Engineer, Maine Department of Transportation
Jeffrey Gove, Dirigo Center Developers, LLC
Wayne Morrill, Vice President, Jones & Beach Engineers, Inc.
David J. Tracy, Esq., Hinckley Allen
Philip Saucier, Esq., Bernstein Shur
Katherine Joyce, Esq., Bernstein Shur

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO ATTENTION OF

MAINE GENERAL PERMIT (GP)
AUTHORIZATION LETTER AND SCREENING SUMMARY

J&J Gove Development, LLC
7 Swan Drive
Hampton Falls, NH 03844

CORPS PERMIT # NAE-2015-01814
CORPS GP ID# 16-141
STATE ID# L-02734-TG-D-N

DESCRIPTION OF WORK:
place temporary fill in 1,319 SF(.03 acres) and permanent fill in 64,218 SF (1.47 acres) of wetland in conjunction with the development of a retail shopping center and associated infrastructure on a 39 acre parcel off Main Street and Larrabee Road Westbrook and Portland, Maine as shown on the attached plans entitled "Dirigo Plaza 58 & 80 Main Street Westbrook, Maine" in 9 sheets by Jones & Beach Engineers, Inc.

LAT/LONG COORDINATES : 43.67505° N -70.33336° W **USGS QUAD:** Portland West, ME

I. CORPS DETERMINATION:
Based on our review of the information you provided, we have determined that your project will have only minimal individual and cumulative impacts on waters and wetlands of the United States. **Your work is therefore authorized by the U.S. Army Corps of Engineers under the enclosed Federal Permit, the Maine General Permit (GP).** Accordingly, we do not plan to take any further action on this project.

You must perform the activity authorized herein in compliance with all the terms and conditions of the GP [including any attached Additional Conditions and any conditions placed on the State 401 Water Quality Certification including any required mitigation]. Please review the enclosed GP carefully, including the GP conditions beginning on page 5, to familiarize yourself with its contents. You are responsible for complying with all of the GP requirements; therefore you should be certain that whoever does the work fully understands all of the conditions. You may wish to discuss the conditions of this authorization with your contractor to ensure the contractor can accomplish the work in a manner that conforms to all requirements.

If you change the plans or construction methods for work within our jurisdiction, please contact us immediately to discuss modification of this authorization. This office must approve any changes before you undertake them.

Condition 38 of the GP (page 16) provides one year for completion of work that has commenced or is under contract to commence prior to the expiration of the GP on October 13, 2020. You will need to apply for reauthorization for any work within Corps jurisdiction that is not completed by October 13, 2021.

This authorization presumes the work shown on your plans noted above is in waters of the U.S. Should you desire to appeal our jurisdiction, please submit a request for an approved jurisdictional determination in writing to the undersigned.

No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained. **This includes but is not limited to a Flood Hazard Development Permit issued by the town if necessary.**

II. STATE ACTIONS: PENDING [X], ISSUED [ ], DENIED [ ] DATE_____

APPLICATION TYPE: PBR:___, TIER 1:____, TIER 2:____, TIER 3:_X_, LURC:____ DMR LEASE:____ NA:____

III. FEDERAL ACTIONS:

JOINT PROCESSING MEETING:_3/17/16_____LEVEL OF REVIEW: CATEGORY 1:___CATEGORY 2:_X____

AUTHORITY (Based on a review of plans and/or State/Federal applications): SEC 10_____, 404__X____ 10/404_____, 103_____

EXCLUSIONS: The exclusionary criteria identified in the general permit do not apply to this project.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA_NO__, USF&WS_NO__, NMFS_NO__

If you have any questions on this matter, please contact my staff at 207-623-8367 at our Manchester, Maine Project Office. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0

Rodney A. Howe
RODNEY A. HOWE
SENIOR PROJECT MANAGER
MAINE PROJECT OFFICE

6-13-2016
FRANK J. DEL GIUDICE **DATE**
CHIEF, PERMITS & ENFORCEMENT BRANCH
REGULATORY DIVISION

US Army Corps
of Engineers ®
New England District

PLEASE NOTE THE FOLLOWING CONDITIONS FOR
DEPARTMENT OF THE ARMY
GENERAL PERMIT
NO. NAE-2015-01814

1. This authorization requires you to 1) notify us before beginning work so we may inspect the project, and 2) submit a Compliance Certification Form. You must complete and return the enclosed Work Start Notification Form(s) to this office at least two weeks before the anticipated starting date. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation (but not mitigation monitoring, which requires separate submittals).

2. The permittee shall assure that a copy of this permit is at the work site whenever work is being performed and that all personnel performing work at the site of the work authorized by this permit are fully aware of the terms and conditions of the permit. This permit, including its drawings and any appendices and other attachments, shall be made a part of any and all contracts and sub-contracts for work which affects areas of Corps of Engineers' jurisdiction at the site of the work authorized by this permit. This shall be done by including the entire permit in the specifications for the work. If the permit is issued after construction specifications but before receipt of bids or quotes, the entire permit shall be included as an addendum to the specifications. The term "entire permit" includes permit amendments. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions of the entire permit, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps of Engineers jurisdiction.

3. Adequate sedimentation and erosion control devices, such as geotextile silt fences or other devices capable of filtering the fines involved, shall be installed and properly maintained to minimize impacts during construction. These devices must be removed upon completion of work and stabilization of disturbed areas. The sediment collected by these devices must also be removed and placed upland, in a manner that will prevent its later erosion and transport to a waterway or wetland.

4. All exposed soils resulting from the construction will be promptly seeded and mulched in order to achieve vegetative stabilization.

5. All areas of temporary fill shall be restored to their original contour and character upon completion of the project.

6. Instream work shall be conducted between July 15 through September 30 to minimize potential impacts to fisheries and local water quality.

7. No tree clearing activities shall occur from June 1- July 31 of any given year to minimize the potential effect to the Northern Long eared bat.

8. Mitigation shall consist of payment of $276,137.40 to the Natural Resource Mitigation Fund. The Corps will provide a completed ILF Project Data Worksheet which must be mailed with a cashier's check or bank draft, made out to "Treasurer, State of Maine", with the permit number noted on the check. The check and worksheet should be mailed to: MEDEP, Attn: ILF PROGRAM ADMINISTRATOR, State House Station 17, Augusta, ME 04333. This authorization (permit) is not valid until the permittee provides the Corps with a copy of the check, with the permit number noted on the check. The ILF amount is only valid for a period of one year from the date on the authorization letter. After that time, the project would need to be reevaluated and a new amount determined.

MAR 15 2016

APPLICATION FOR A NATURAL RESOURCES PROTECTION ACT PERMIT

➔PLEASE TYPE OR PRINT IN *BLACK INK ONLY*

1. Name of Applicant:	J&J Gove Development, LLC	**5 Name of Agent: (if applicable)**	Gove Environmental Services, Inc. C/O Brendan Quigley
2. Applicant's Mailing Address:	7 Swain Drive Hampton Falls, NH 03844	**6 Agent's Mailing Address:**	8 Continental Drive Bldg 2 Unit H Exeter, NH 03833
3. Applicant's Daytime Phone #:	(603) 926-7662	**7 Agent's Daytime Phone #:**	(603) 778-0644
4 Applicant's Email Address Required from *either* applicant or agent:		**8. Agent's Email Address:**	bquigley@gesinc.biz

9. Location of Activity: (Nearest Road, Street, Rt.#)	58 Main Street	**10. Town:**	Westbrook	**11. County:**	Cumberland

12A. Significant Groundwater well? ☐ Yes **OR** ☒ No

12. Type of Resource: (Check all that apply)	☒ River, stream or brook ☐ Great Pond ☐ Coastal Wetland ☒ Freshwater Wetland ☐ Wetland Special Significance ☐ Significant Wildlife Habitat ☐ Fragile Mountain	**13. Name of Resource:**	Nasons Brook and unnamed freshwater wetland
		14. Amount of Impact: (Sq.Ft.)	**Fill:** 1,319 Temp/64,218 Perm **Dredging/Veg Removal/Other:** see attached sheet

15. Type of Wetland: (Check all that apply)	☒ Forested ☒ Scrub Shrub ☒ Emergent ☐ Wet Meadow ☐ Peatland ☐ Open Water ☐ Other_____	**FOR FRESHWATER WETLANDS**	*Tier 1*	*Tier 2*	*Tier 3*
			☐ 0 - 4,999 sq ft. ☐ 5,000-9,999 sq ft ☐ 10,000-14,999 sq ft.	☐ 15,000 – 43,560 sq. ft.	☒ > 43,560 sq. ft. or ☐ smaller than 43,560 sq ft., not eligible for Tier 1

16. Brief Activity Description Please see attached sheet

17. Size of Lot or Parcel: ☐ ____ square feet, or ☒ 81.08 acres UTM Northing: 392607 UTM Easting: 4836509

18. Title, Right or Interest: ☐ own ☐ lease ☒ purchase option ☐ written agreement

19. Deed Reference Numbers:	Book#: see attached sheet Page:	**20. Map and Lot Numbers:**	Map #: see attached sheet	Lot #:	
21. DEP Staff Previously Contacted:	Robert Green Mark Stebbins	**22. Part of a larger project:**	☐ Yes ☒ No	**After-the-Fact:**	☐ Yes ☒ No

23. Resubmission of Application?	☐ Yes➔ ☒ No	**If yes, previous application #**		**Previous project manager:**	
24. Written Notice of Violation?	☐ Yes ➔ ☐ No	**If yes, name of DEP enforcement staff involved:**		**25. Previous Wetland Alteration:**	☐ Yes ☒ No

26. Detailed Directions to the Project Site: The main access to the site is located at 58 Main Street in Westbrook. From Exit 48 on I-95 follow Larabee Road to the intersection of Main Street and Turn left, PIKE Industries is on the right immediately after the intersection

27. TIER 1	**TIER 2/3 AND INDIVIDUAL PERMITS**	
☐ Title, right or interest documentation	☒ Title, right or interest documentation	☒ Erosion Control/Construction Plan
☐ Topographic Map	☒ Topographic Map	☒ Functional Assessment (Attachment 3), if required
☐ Narrative Project Description	☒ Copy of Public Notice/Public Information Meeting Documentation	☒ Compensation Plan (Attachment 4), if required
☐ Plan or Drawing (8 1/2" x 11")	☒ Wetlands Delineation Report (Attachment 1) that contains the Information listed under Site Conditions	☒ Appendix A and others, if required
☐ Photos of Area	☒ Alternatives Analysis (Attachment 2) including description of how wetland impacts were Avoided/Minimized	☒ Statement/Copy of cover letter to MHPC
☐ Statement of Avoidance & Minimization		☐ Description of Previously Mined Peatland, if required
☐ Statement/Copy of cover letter to MHPC		

28. FEES, Amount Enclosed: $ 1,990.76

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

DEP SIGNATORY REQUIREMENT

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

CORPS SIGNATORY REQUIREMENT

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fines not more than $10,000 or imprisoned not more than five years or both. I authorize the Corps to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

DEP SIGNATORY REQUIREMENT

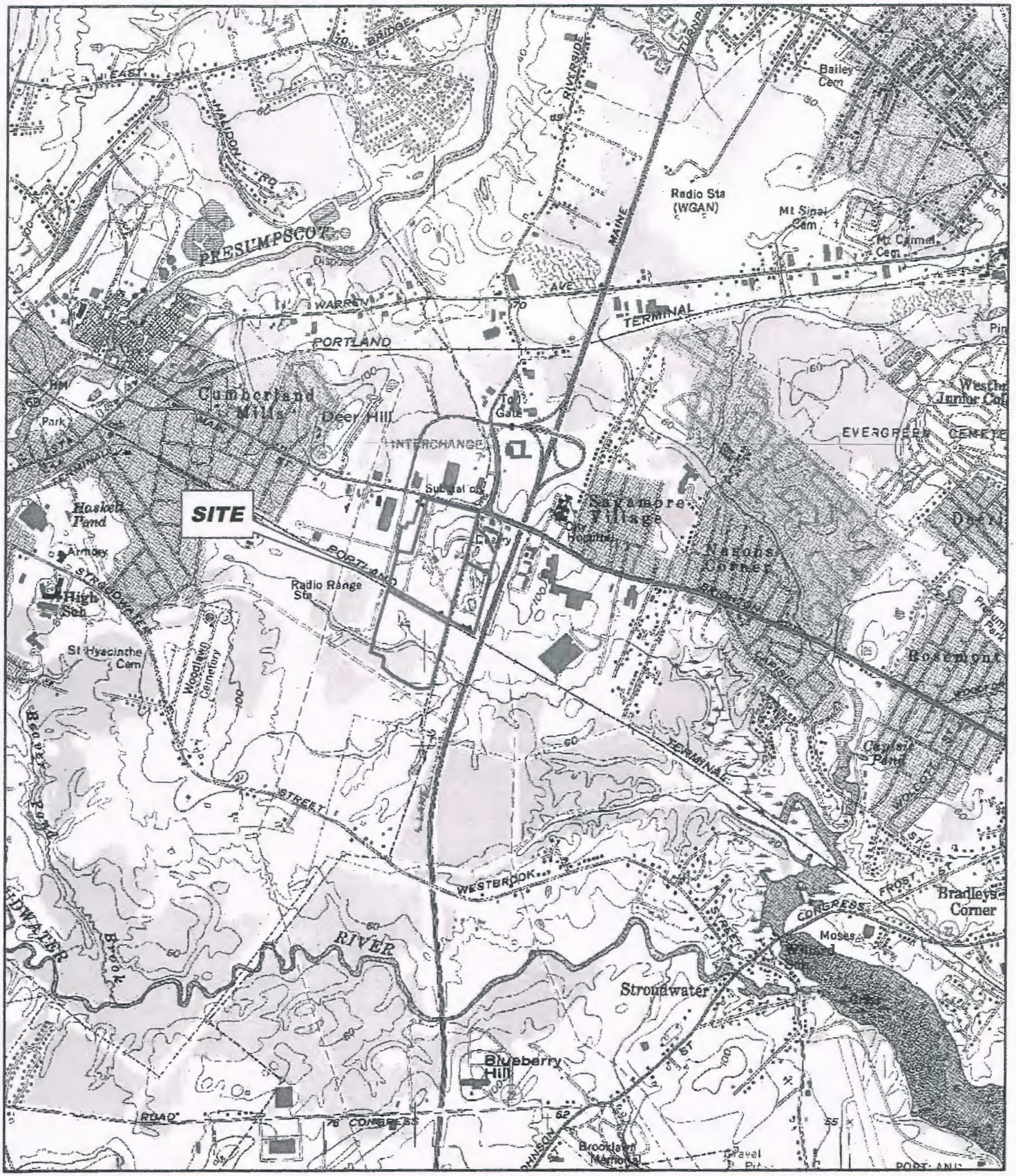
"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #4 for the applicant and #8 for the agent)."

SIGNATURE OF AGENT/APPLICANT

Date: 3-3-2016

NOTE: Any changes in activity plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.

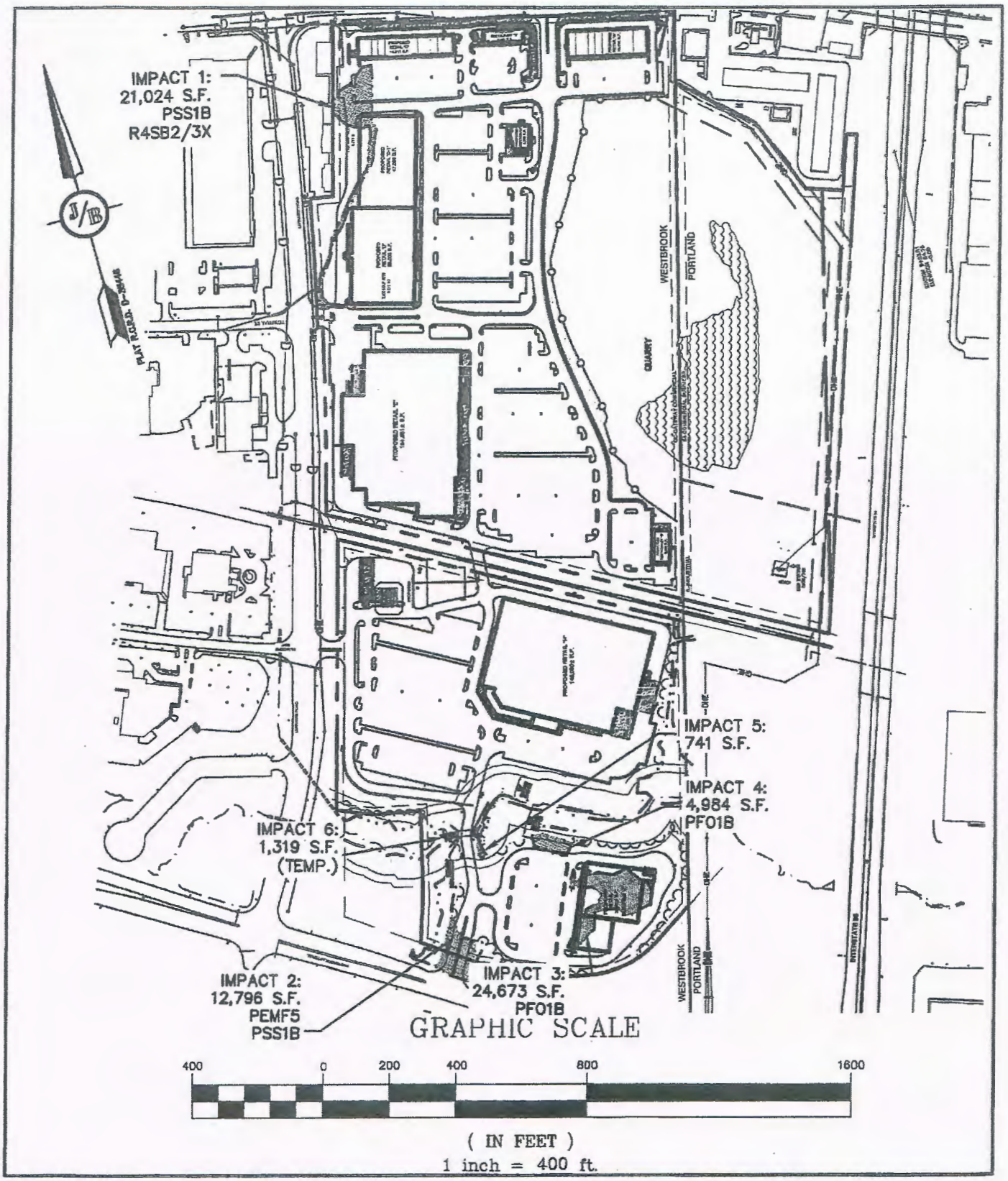


1 inch = 2,000 feet

Gove Environmental Services, Inc.

Locus Map

PIKE Quarry
58 Main Street
Westbrook, ME



Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

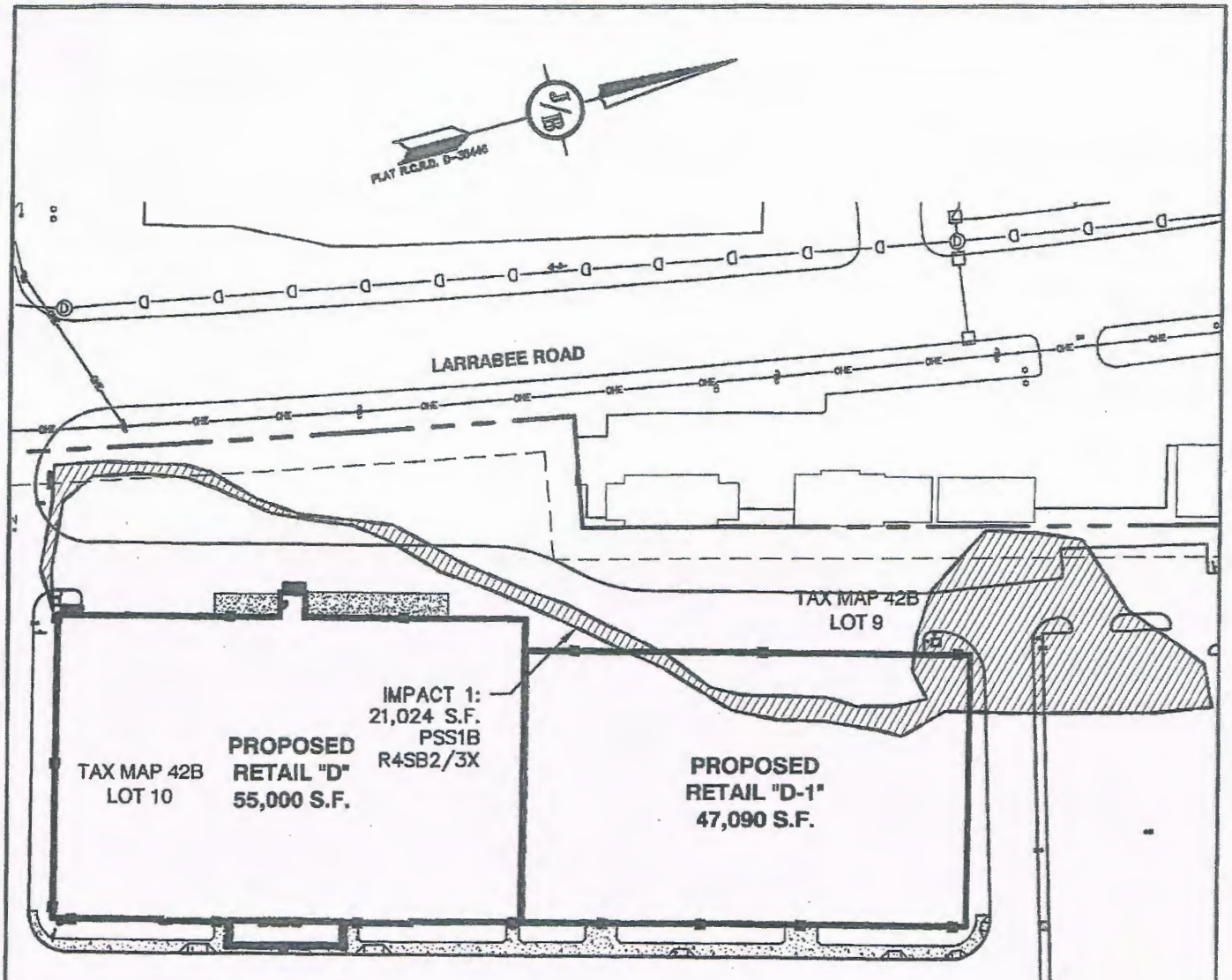
Drawing Name: OVERALL WETLAND IMPACT PLAN

Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP-O
SHEET 1 OF 9

JBE PROJECT
No. 14110



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

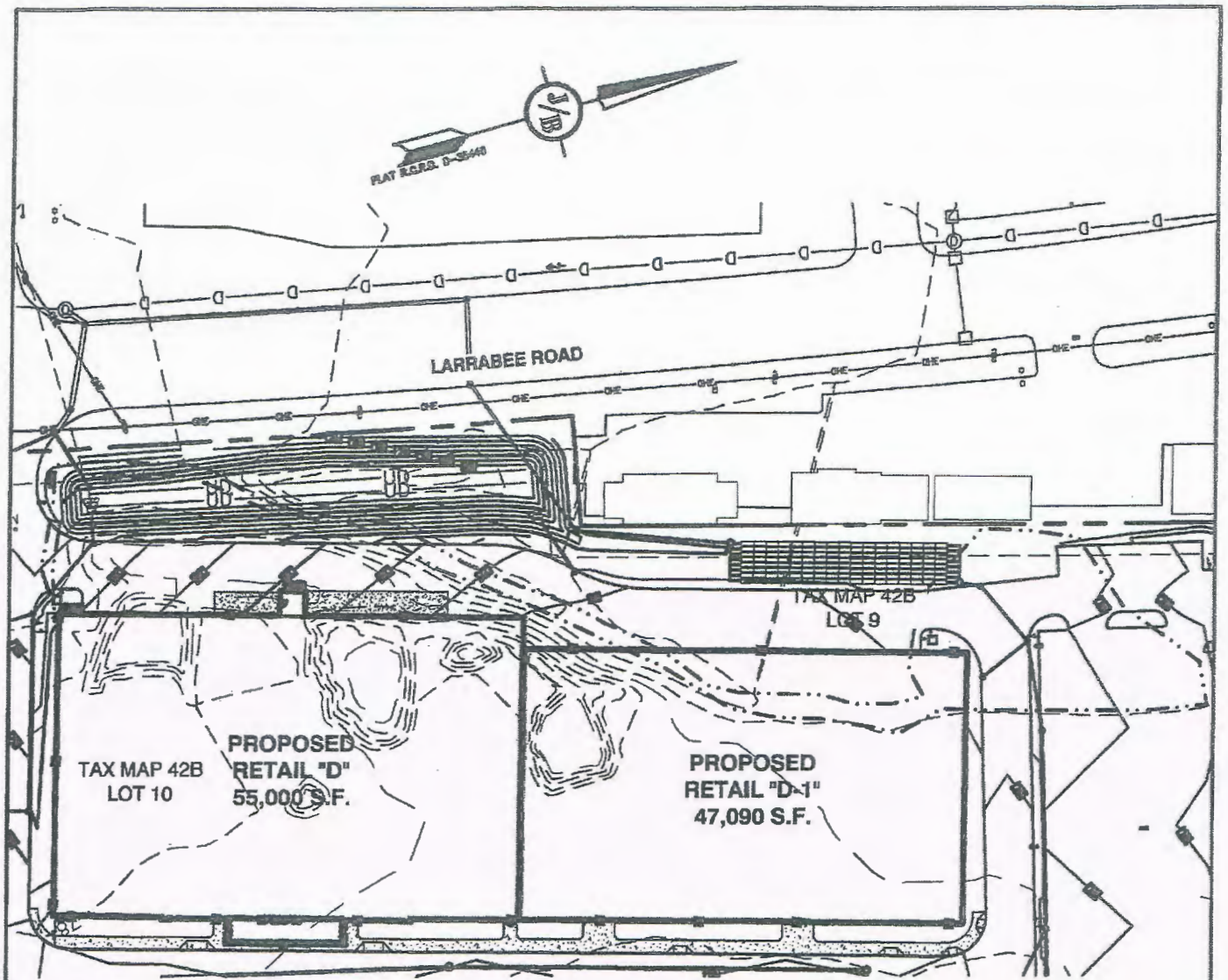
Drawing Name: WETLAND IMPACT PLAN

Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP1
SHEET 2 OF 9

JBE PROJECT
No. 14110



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

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Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

Drawing Name: WETLAND IMPACT PLAN

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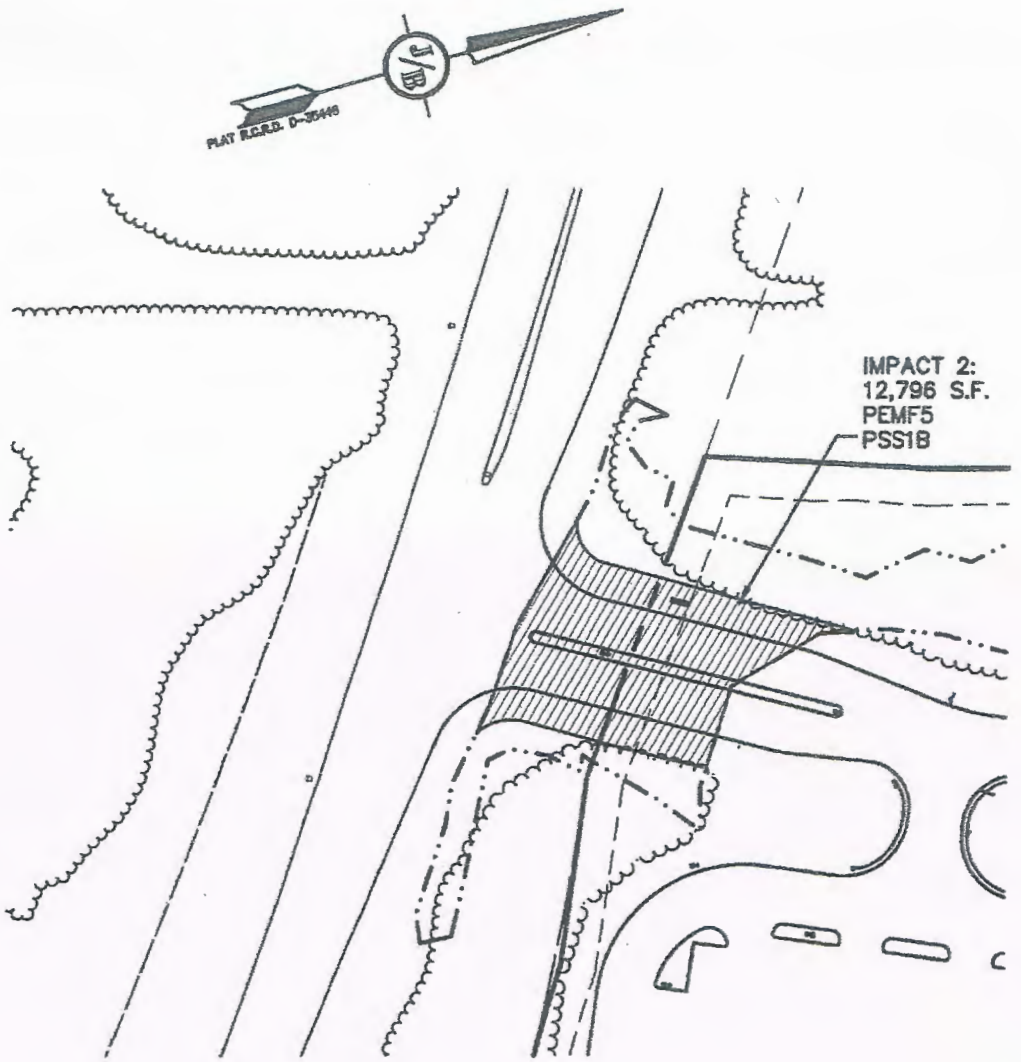
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP2
SHEET 3 OF 9

JBE PROJECT
No. 14110



GRAPHIC SCALE

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(IN FEET)

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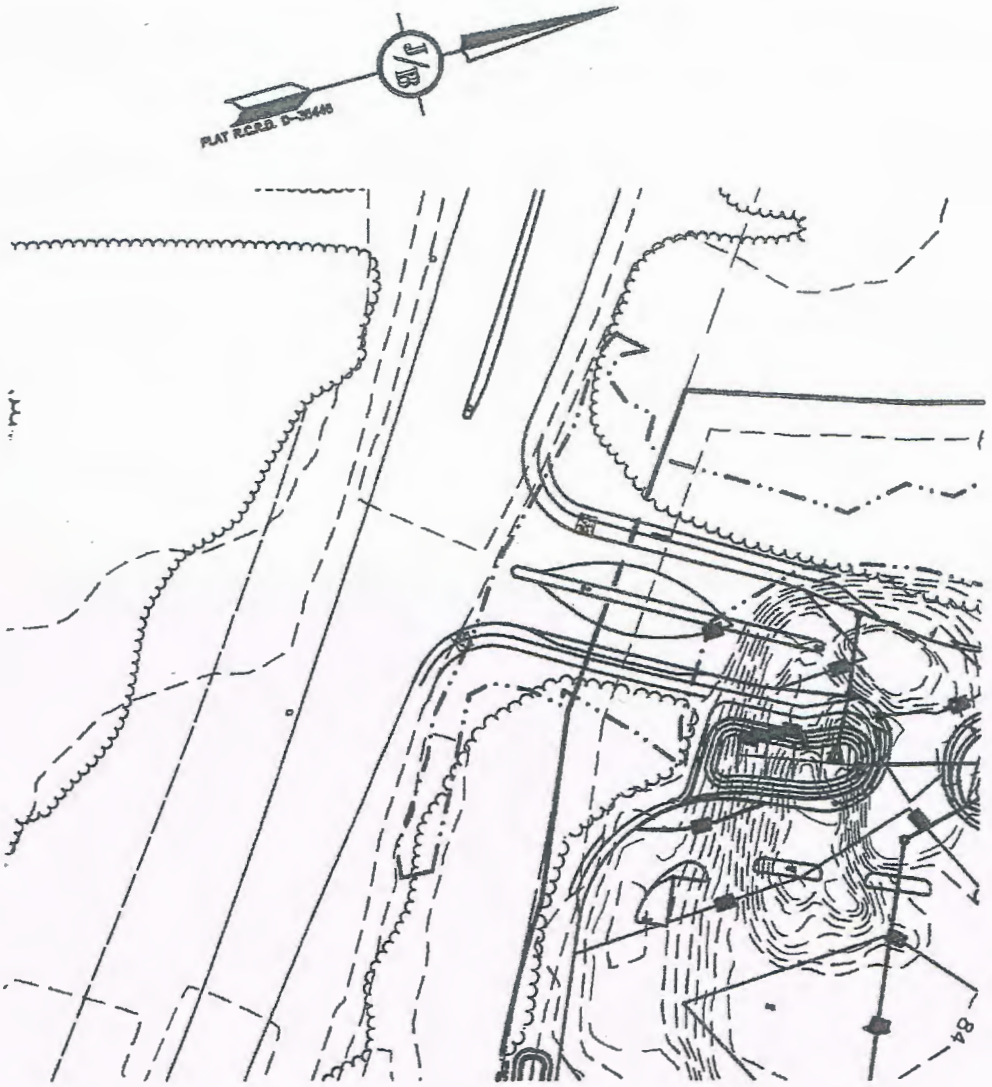
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

Drawing Name: WETLAND IMPACT PLAN

Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP3
SHEET 4 OF 9
JBE PROJECT No. 14110



GRAPHIC SCALE

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(IN FEET)

1 inch = 100 ft.

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Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

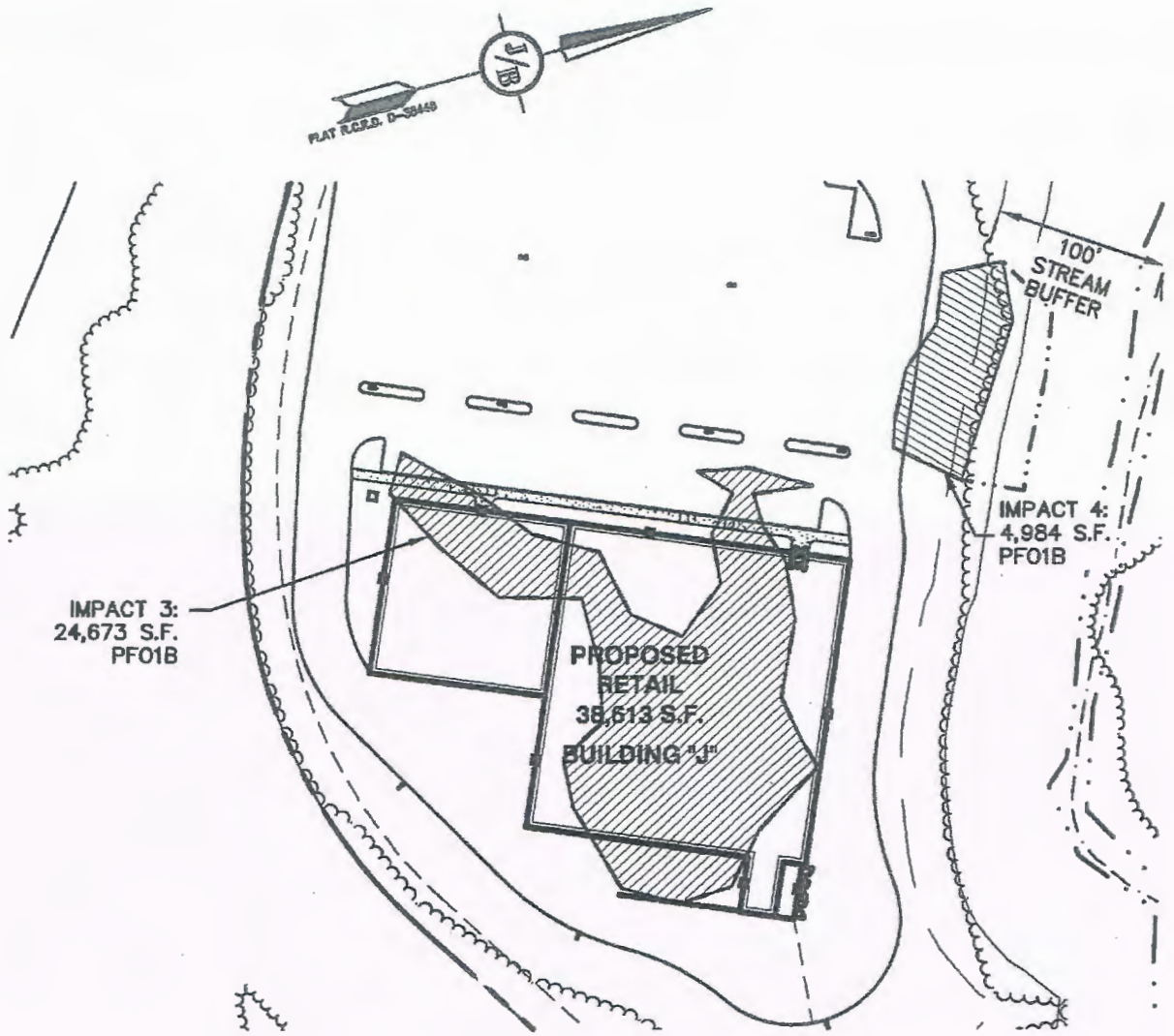
Drawing Name: WETLAND IMPACT PLAN

Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP4
SHEET 5 OF 9

JBE PROJECT
No. 14110



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

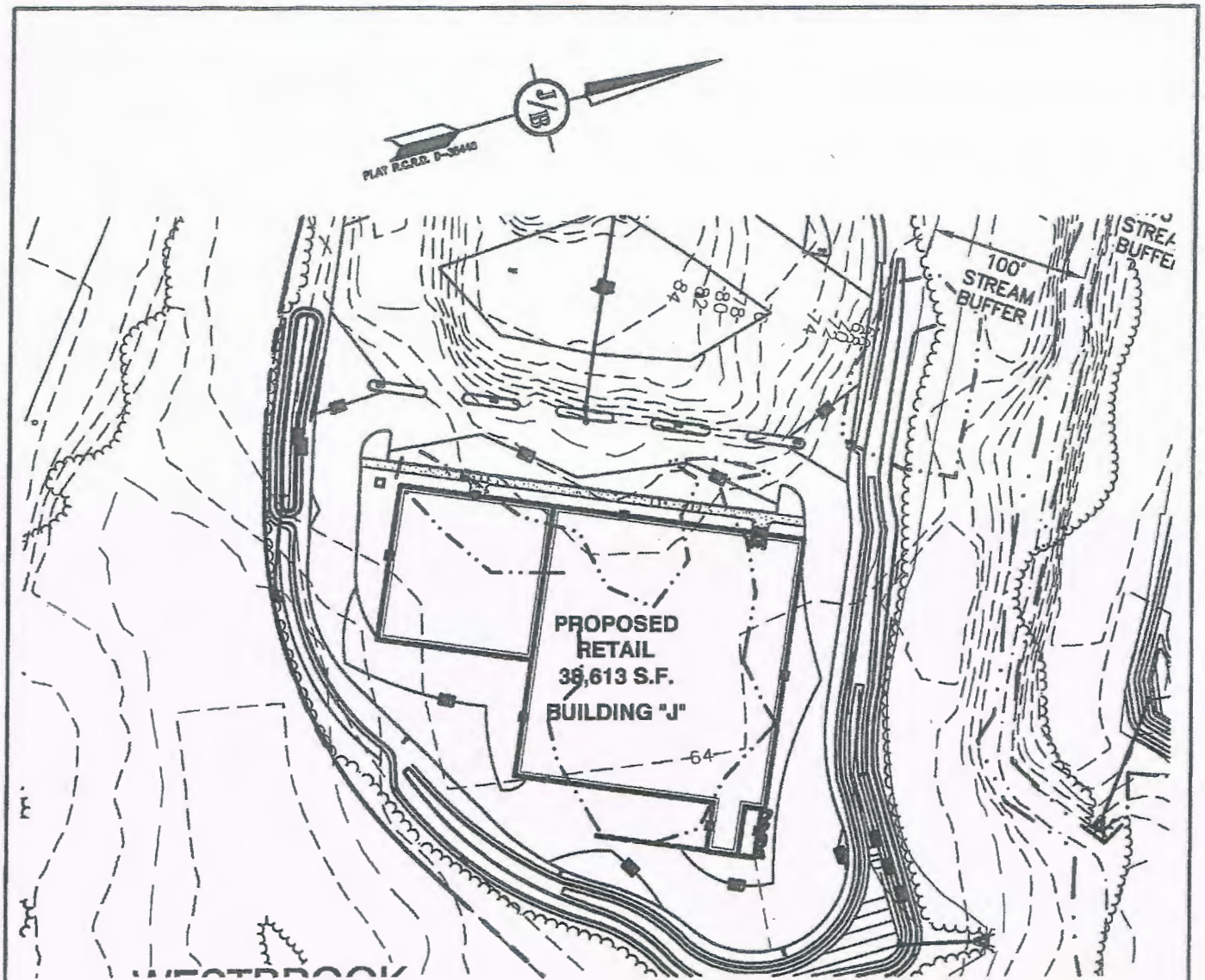
Drawing Name: WETLAND IMPACT PLAN

Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP5
SHEET 6 OF 9

JBE PROJECT No. 14110



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(IN FEET)

1 inch = 100 ft.

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Jones & Beach Engineers, Inc.
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FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

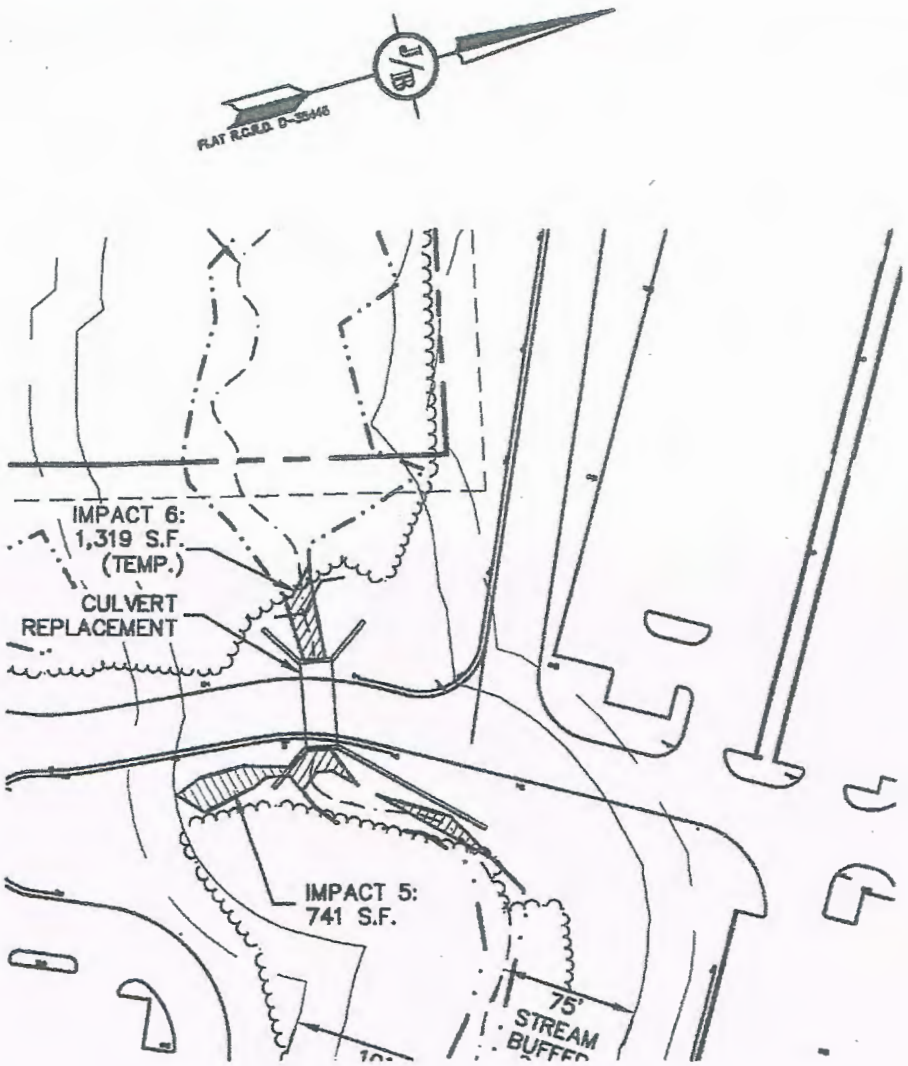
Drawing Name: WETLAND IMPACT PLAN

Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP6
SHEET 7 OF 9

JBE PROJECT No. 14110



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(IN FEET)

1 inch = 100 ft.

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Jones & Beach Engineers, Inc.
Civil Engineering Services
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PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

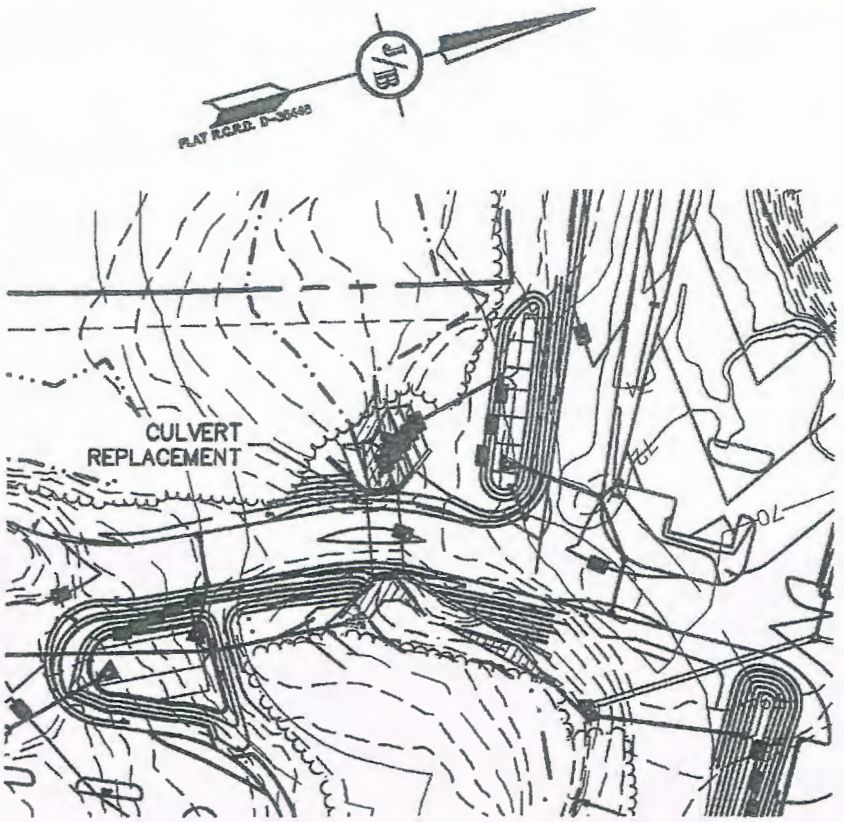
Drawing Name: WETLAND IMPACT PLAN

Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP7
SHEET 8 OF 9

JBE PROJECT
No. 14110



GRAPHIC SCALE

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(IN FEET)

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Civil Engineering Services
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PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

Drawing Name: WETLAND IMPACT PLAN

Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC.
3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
WIP8
SHEET 9 OF 9

JBE PROJECT
No. 14110

US Army Corps of Engineers®
New England District

WORK-START NOTIFICATION FORM

(Minimum Notice: Two weeks before work begins)

****
* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Policy Analysis/Technical Support Branch *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *
****

Corps of Engineers Permit No. NAE-2015-01814 was issued to J&J Gove Development, LLC. The permit authorized the permittee to place temporary fill in 1,319 SF (.03 acres) and permanent fill in 64,218 SF (1.47 acres) of wetland in conjunction with the development of a retail shopping center and associated infrastructure on a 39 acre parcel off Main Street and Larrabee Road Westbrook and Portland, Maine. The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

Business Address: _____

_____

_____

_____

Telephone Numbers: ( ) _____ ( ) _____

Proposed Work Dates: **Start** _____ **Finish** _____

Permittee's Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

****

FOR USE BY THE CORPS OF ENGINEERS

PM: Howe **Submittals Required:** _____

Inspection Recommendation: _____

_____

US Army Corps of Engineers®
New England District

(Minimum Notice: Permittee must sign and return notification within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

USACE Project Number: NAE-2015-01814p

Name of Permittee: _____

Permit Issuance Date: _____

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

****
* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Policy Analysis/Technical Support Branch *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *
****

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

_____ _____
Signature of Permittee Date

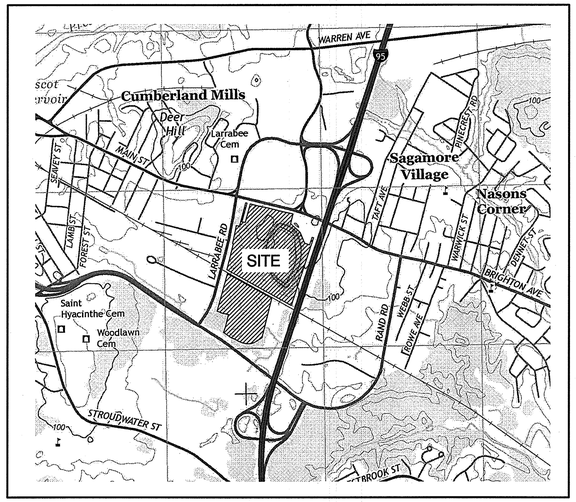
_____ _____
Printed Name Date of Work Completion

(____) _____ (____) _____
Telephone Number ***Telephone Number***

COMMERCIAL DEVELOPMENT
"DIRIGO PLAZA"
TAX MAP 42B, LOTS 9, 10, 11 & 14
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME

SHEET INDEX

CS	COVER SHEET
A1	EXISTING CONDITIONS PLAN
A2	EXISTING CONDITIONS DETAILS & NOTES
A3	SUBDIVISION / LOT CONSOLIDATION
C1-2-1 - C-1-2-2	DEMOLITION PLANS
C2	OVERALL SITE PLAN
C2-1	SITE PLAN - NORTH CAMPUS
C2-1-1 - C2-1-4	SITE PLANS - NORTH CAMPUS
C2-2	SITE PLAN - SOUTH CAMPUS
C2-2-1 - C2-2-2	SITE PLANS - SOUTH CAMPUS
C3	OVERALL GRADING AND DRAINAGE PLAN
C3-1	GRADING AND DRAINAGE PLAN - NORTH CAMPUS
C3-1-1 - C3-1-4	GRADING AND DRAINAGE PLANS - NORTH CAMPUS
C3-2	GRADING AND DRAINAGE PLAN - SOUTH CAMPUS
C3-2-1 - C3-2-2	GRADING AND DRAINAGE PLANS - SOUTH CAMPUS
C4	OVERALL UTILITY PLAN
C4-1	UTILITY PLAN - NORTH CAMPUS
C4-1-1 - C4-1-4	UTILITY PLANS - NORTH CAMPUS
C4-2	UTILITY PLAN - SOUTH CAMPUS
C4-2-1 - C4-2-2	UTILITY PLANS - SOUTH CAMPUS
C4-3-1 - C4-3-5	SEWER PLAN & PROFILES
L1.0	LANDSCAPE NOTES AND LEGENDS
L2.0	LANDSCAPE OVERALL PLAN
L3.0 - L3.2	HARDSCAPE PLANS
L4.0 - L4.1	HARDSCAPE DETAILS
L5.0 - L5.8	PLANTING PLAN - NORTH CAMPUS
L6.0 - L6.1	PLANTING PLAN ENLARGEMENTS
L7.0 - L7.1	PLANTING DETAILS
L8.0	LANDSCAPE SPECIFICATIONS
LP1	OVERALL LIGHTING PLAN
LP1-1 - LP1-7	LIGHTING PLANS
PP1 - PP8	PLAN AND PROFILE
D1 - D21	DETAIL SHEETS
E1	EROSION AND SEDIMENT CONTROL DETAILS
EC-1 - EC-6	EROSION CONTROL SHEETS
	EXTERIOR ELEVATION BUILDING "A"
	EXTERIOR ELEVATION BUILDING "B"
	EXTERIOR ELEVATION BUILDING "C"
	EXTERIOR ELEVATION BUILDING "D"
	EXTERIOR ELEVATION BUILDING "E"
	EXTERIOR ELEVATION BUILDING "F"
	EXTERIOR ELEVATION BUILDING "G"
	EXTERIOR ELEVATION BUILDING "J"
PH1-1 - PH1-3	PHASE 1 PLANS
VAI1-VAI5	CONCEPTUAL IMPROVEMENT PLANS



LOCUS MAP
SCALE 1" = 2000'

PERMITS

TYPE OF PERMIT	STATUS
WESTBROOK SITE PLAN APPROVAL:	SUBMITTED:
CITY OF WESTBROOK	2/9/16
2 YORK STREET	PERMIT NO.
WESTBROOK, ME 04092	
(207)-854-9105	DATED:
RESPONSIBLE CONSULTANT:	
JONES & BEACH ENGINEERS, INC.	EXPIRATION:
WESTBROOK SUBDIVISION APPROVAL:	SUBMITTED:
CITY OF WESTBROOK	2/9/16
2 YORK STREET	PERMIT NO.
WESTBROOK, ME 04092	
(207)-854-9105	DATED:
RESPONSIBLE CONSULTANT:	
JONES & BEACH ENGINEERS, INC.	EXPIRATION:
WESTBROOK SPECIAL EXCEPTION:	SUBMITTED:
CITY OF WESTBROOK	2/9/16
2 YORK STREET	PERMIT NO.
WESTBROOK, ME 04092	
(207)-854-9105	DATED:
RESPONSIBLE CONSULTANT:	
JONES & BEACH ENGINEERS, INC.	EXPIRATION:
PORTLAND SUBDIVISION APPROVAL:	SUBMITTED:
CITY OF PORTLAND	3/22/16
389 CONGRESS STREET	PERMIT NO.
PORTLAND, ME 04101	
(207)-874-8719	DATED:
RESPONSIBLE CONSULTANT:	
JONES & BEACH ENGINEERS, INC.	EXPIRATION:

TYPE OF PERMIT	STATUS
SITE LOCATION OF DEVELOPMENT PERMIT:	SUBMITTED:
MDEP - SOUTHERN MAINE REGIONAL OFFICE	3/4/16
312 CANCO ROAD	PERMIT NO.
PORTLAND, ME 04103	
(207)-822-6365	DATED:
RESPONSIBLE CONSULTANT:	
JONES & BEACH ENGINEERS, INC.	EXPIRATION:
U.S. ARMY CORPS OF ENGINEERS:	SUBMITTED:
NEW ENGLAND DIVISION:	3/4/16
424 TRAPELO ROAD	PERMIT NO.
WALTHAM, MA 02254-9149	NAE-2015-01814
(800) 343-4789	DATED:
RESPONSIBLE CONSULTANT:	
JONES & BEACH ENGINEERS, INC.	EXPIRATION: 10/13/2020
NATURAL RESOURCE PROTECTION ACT PERMIT	SUBMITTED:
MDEP - SOUTHERN MAINE REGIONAL OFFICE	3/4/16
312 CANCO ROAD	PERMIT NO.
PORTLAND, ME 04103	
(207)-822-6365	DATED:
RESPONSIBLE CONSULTANT:	
GOVE ENVIRONMENTAL SERVICES	EXPIRATION:
MAINE DOT TRAFFIC MOVEMENT PERMIT:	SUBMITTED:
STATE OF MAINE DEPARTMENT OF	12/22/15
TRANSPORTATION - REGION 1	PERMIT NO.
P.O. BOX 358	
SCARBOROUGH, ME 04070-0358	DATED:
(207)-885-7000	
RESPONSIBLE CONSULTANT:	EXPIRATION:
VANASSE & ASSOCIATES	

USEPA NPDES PHASE II CONSTRUCTION GENERAL PERMIT, NOTICE OF INTENT (NOI), AND NOTICE OF TERMINATION (NOT) TO BE FILED IN ACCORDANCE WITH FEDERAL AND LOCAL REGULATIONS PRIOR TO AND FOLLOWING CONSTRUCTION:
EPA STORMWATER NOTICE PROCESSING CENTER
MAIL CODE 4203M,
US EPA
1200 PENNSYLVANIA AVENUE, NW
WASHINGTON, DC 20460
RESPONSIBLE CONSULTANT:
JONES & BEACH ENGINEERS, INC.

WETLANDS CONSULTANT
GOVE ENVIRONMENTAL SERVICES, INC
8 CONTINENTAL DRIVE
BLDG 2 UNIT H
EXETER, NH 03833
(603)778-0644

CIVIL ENGINEER
JONES & BEACH ENGINEERS, INC.
85 PORTSMOUTH AVENUE
PO BOX 219
STRATHAM, NH 03885
(603) 772-4746
CONTACT: WAYNE MORRILL
EMAIL: WMORRILL@JONESANDBEACH.COM

GEOTECH ENGINEER
S.W. COLE ENGINEERING, INC
286 PORTLAND ROAD
GRAY, ME 04039-9586
(207) 657-2866

SURVEYOR
KNIGHT HILL LAND SURVEYING SERVICES, INC.
34 OLD POST ROAD
NEWINGTON, NH 03801
(603) 436-1330

ARCHITECT
PHASE ZERO DESIGN
35 POND PARK ROAD, BAY 16
HINGHAM, MA 02043
(781) 452-7121 EXT. 205

WATER DISTRICT
MEANS GROUP
PORTLAND WATER DISTRICT
225 DOUGLAS STREET
PORTLAND, ME 04104
(207)-774-5961

CENTRAL MAINE POWER
162 CANCO ROAD
PORTLAND, ME 04103
(800)-750-4000
CONTACT: JAMIE COUGH

UNITIL
1075 FOREST AVE
PORTLAND, ME 04103
(888)-301-7700
CONTACT: SCOTT CARPENTER

FAIRPOINT
5 DAVIS FARM ROAD
PORTLAND, ME 04103
(866)-984-3001
CONTACT: HARRY LORING

TRAFFIC ENGINEER
VANASSE & ASSOCIATES, INC.
35 N.E. BUSINESS CENTER DRIVE, SUITE 140
ANDOVER, MA 01810-1066
(978) 474-8800
CONTACT: JEFF DIRK
EMAIL:JDIRK@RDVA.COM

WESTBROOK WASTEWATER DIVISION
CITY OF WESTBROOK
371 SACO STREET
WESTBROOK, ME 04002
(207)-854-0660
CONTACT: ROGER JACKSON

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 2/15/2015 11:44:58 AM EST

Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS NOTED	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name: COVER SHEET
Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
CS
SHEET 1 OF 120
JBE PROJECT NO. 14110

COMMERCIAL DEVELOPMENT - "DIRIGO PLAZA", WESTBROOK, ME
JBE # 14110 REVISION 7 - 9/13/16

SOIL SERIES SYMBOL	SOIL SERIES NAME	DESCRIPTION
CR	COMPACT RECLAIM OVER SANDY FILL	CRUSHED CONCRETE DUST & CHIPS, SOMETIMES WITH LAYERS OF OLD PAVEMENT AT THE SURFACE OR BURIED
En	ELMWOOD	VERY FINE SANDY LOAM OVER SILTY CLAY LOAM
QU	QUARRY	EXPOSED BEDROCK IN FORMER QUARRY, WITH STEEP SIDES, SOME SOIL/DEBRIS IN BOTTOM AREAS, PONDED WATER AT DEEPEST AREA
Rd	ROUNDABOUT	VERY FINE SANDY LOAM IN THE UPPER PART OVER STRATIFIED FINE SAND AND SILT TO SILT LOAM
SI	SILTY POORLY DRAINED FILL	GRAVELY CRUSHED CONCRETE, STONE DUST, AND SEDIMENT OVERFLOWED FROM SEDIMENTATION TRAP OR ERODED INTO STREAM CHANNEL.
SO		STONY LOAMY SAND TO SILT LOAM SOIL, WITH NONSOIL RECLAIMED PAVEMENT AND CRUSHED CONCRETE
SP	STONE DUST & WASH TAILINGS IN PILE	SILT FROM STONE DUST AND WASH TAILINGS
SW	STONE DUST & WASH TAILINGS	RECLAIMED ASPHALT, CRUSHED CONCRETE DUST AND CHIPS, AND WASH TAILINGS
UC	UNSTABLE CONCRETE WASTE	CRUSHED CONCRETE DUST AND CHIPS WITH LARGE SLABS OF CONCRETE OVERLYING SILTY LOAM

CERTIFICATION:

THIS SURVEY MAP IS IN ACCORDANCE WITH CHAPTER 90, PARTS 1 & 2 OF THE STATE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS EXCEPTING A WRITTEN REPORT.

Gordon D. Hislop 6-25-2016

GORDON D. HISLOP, JR. PLS #2293 DATE:
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

PROJECT PARCEL
TOWN OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14

CITY OF PORTLAND
TAX MAP 264, LOT A002
TAX MAP 265, LOT A004

APPLICANT
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

Design: WGM	Draft: MJS	Date: 2/23/15
Checked:WGM	Scale: AS NOTED	Project No.:14110
Drawing Name: 14110-EX-CONDITIONS.DWG		

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STATE OF MAINE * GORDON D. HISLOP JR. 2293 * PROFESSIONAL LAND SURVEYOR

REV.	DATE	REVISION	BY
1	6/23/16	REVISED PER ADDITIONAL SURVEY	ISM
0	2/2/16	ISSUED FOR REVIEW	BWG

Designed and Produced in NH

J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	EXISTING CONDITIONS PLAN
Project:	"DIRIGO PLAZA" 58 & 80 MAIN STREET, WESTBROOK, ME
Owner of Record:	PIKE INDUSTRIES, INC. 3 EASTGATE PARK ROAD, BELMONT, NH 03220

DRAWING No.
A1
SHEET 2 OF 120
JBE PROJECT NO. 14110

W:\14110-WESTBROOK-TEST\DWG - DO NOT USE GO TO W DRIVE\14110-EX-CONDITIONS.dwg 10/7/2015 10:21:06 AM EDT

SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO CONSOLIDATE WESTBROOK TAX MAP 42B, LOTS 9, 10 & 11 INTO 1 LOT WITH 2 LEASE PARCELS B & E, AND TO SHOW THE EXTENT OF WESTBROOK TAX MAP 42B, LOT 14 AND PORTLAND TAX MAP 264, LOTS A002 AND A004 AND TAX MAP 265, LOTS A003.

2. OWNER OF RECORD: PIKE INDUSTRIES, INC. CCRD BOOK 23504, PAGE 113, CORRECTED BY BOOK 23578, PAGE 296.
a. WESTBROOK TAX MAP 42B, LOT 14 REFERENCE DEED 8964/221, 2001/491, 2198/493.
b. WESTBROOK TAX MAP 42B, LOT 11 REFERENCE DEED 2198/493, 1737,445.
c. WESTBROOK TAX MAP 42B, LOT 10 REFERENCE DEED 21632/224, 4166/68.
d. WESTBROOK TAX MAP 42B, LOT 9 REFERENCE DEED DEED 1868/410.
e. PORTLAND TAX MAP 264, LOT A002 REFERENCE DEED 3162/899, 1921/59.
f. PORTLAND TAX MAP 264, LOT A004 REFERENCE DEED 2755/81.

3. WESTBROOK ZONING DISTRICT: GATEWAY COMMERCIAL DISTRICT
LOT AREA MINIMUM = 20,000 SF
LOT FRONTAGE MINIMUM = 200'
BUILDING SETBACKS (MINIMUM):
FRONT SETBACK = 20'
SIDE SETBACK = 20'
REAR SETBACK = 20'
MAX. BUILDING HEIGHT = 50'

4. PORTLAND ZONING DISTRICT: B-4 COMMERCIAL CORRIDOR ZONE
LOT AREA MINIMUM = 10,000 SF
LOT FRONTAGE MINIMUM = 60'
BUILDING SETBACKS (MINIMUM):
FRONT SETBACK = 20'
SIDE SETBACK 1-2 STORIES = 10'
SIDE SETBACK 3 OR MORE STORIES = 12'
REAR SETBACK = 20'
WETLAND SETBACK = 50'
MAX. BUILDING HEIGHT = 65'
MAX. SEALED SURFACE = 80%

5. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.

6. BASIS OF BEARING FOR THIS SURVEY IS MAINE ME2000 STATE PLANE COORDINATES. ELEVATIONS ARE BASE ON NGVD 29. STATIONS "POR 4" AND "CHARTER" WERE USED TO ESTABLISH HORIZONTAL CONTROL. STATIONS "CHARTER", "GERALD" AND "GERALD RM 1" WERE USED TO ESTABLISHED VERTICAL CONTROL.

7. LOT AREAS:
MAP 42B LOT 9: 30,401 SQ. FT., 0.78 ACRES
MAP 42B LOT 10: 176,685 SQ. FT., 4.056 ACRES
MAP 42B LOT 11: 1,530,124 SQ. FT., 35.127 ACRES
MAP 42B LOT 14: 1,106,877 SQ. FT., 25.410 ACRES
MAP 264 LOT A002 (265/A003): 652,513 SQ. FT., 14.980 ACRES
MAP 264 LOT A004 (265/A005): 65,497 SQ. FT., 1.504 ACRES
TOTAL AREA: 3531697 SQ. FT., 81.077 ACRES

8. PART OF THE SUBJECT PROPERTY IS LOCATED WITHIN FEDERALLY DESIGNATED "C" ZONE - AREAS OF MINIMAL FLOODING. REFERENCE FEMA COMMUNITY PANEL NOs. 230054 0006 B, DATED JANUARY 2, 1981; 230051 006 C, DATED DECEMBER 8, 1998; AND 230051 0012C, DATED DECEMBER 8, 1999.

9. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.

10. ALL CONSTRUCTION WILL CONFORM TO TOWN AND CITY STANDARDS AND REGULATIONS, AND MEDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.

11. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.

12. GRANITE BOUNDS TO BE SET AT ALL ROADWAY POINTS OF CURVATURE AND TANGENCY. IRON RODS WITH SURVEY CAPS TO BE SET AT ALL PROPERTY CORNERS AND ANGLE POINTS, UNLESS OTHERWISE INDICATED. ALL MONUMENTS SET ARE 5/8" IRON RODS WITH ALUMINUM CAPS MARKED "JONES & BEACH ENGINEERS BOUNDARY, DO NOT DISTURB, STRATHAM, N.H." AS SHOWN.

13. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY BRENDAN QUIGLEY OF GOVE ENVIRONMENTAL SERVICES DURING THE MONTH OF OCTOBER 2014, IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:

a. THE CORPS OF ENGINEERS FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS.

b. THE NORTH CENTRAL & NORTHEAST REGIONAL SUPPLEMENT TO THE FEDERAL MANUAL.

c. THE CURRENT VERSION OF THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, AS PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION AND/OR THE CURRENT VERSION OF THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, AS PUBLISHED BY THE USDA, NRCS, AS APPROPRIATE.

d. THE CURRENT NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, AS PUBLISHED BY THE US FISH AND WILDLIFE SERVICE.

13. LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.

14. ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

15. THE TAX MAP AND LOT NUMBERS AND ABUTTING OWNERS ARE BASED ON THE CITY OF WESTBROOK AND CITY OF PORTLAND TAX RECORDS AND ARE SUBJECT TO CHANGE.

16. RESEARCH WAS PERFORMED AT THE CITY OF WESTBROOK ASSESSOR'S OFFICE, THE CITY OF PORTLAND ASSESSOR'S OFFICE, AND THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

17. THIS SURVEY IS NOT A CERTIFICATION TO OWNERSHIP OR TITLE OF LANDS SHOWN. OWNERSHIP AND ENCUMBRANCES ARE MATTERS OF TITLE EXAMINATION NOT OF A BOUNDARY SURVEY. THE INTENT OF THIS PLAN IS TO RETRACE THE BOUNDARY LINES OF DEEDS REFERENCED HEREON. OWNERSHIP OF ADJOINING PROPERTIES IS ACCORDING TO ASSESSOR'S RECORDS. THIS PLAN MAY OR MAY NOT INDICATE ALL ENCUMBRANCES EXPRESSED, IMPLIED OR PRESCRIPTIVE.

18. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.

19. PER PLAN REFERENCE 6, WESTBROOK TAX MAP 42B LOT 11 IS ALLOWED ONE ENTRANCE TO STATE HIGHWAY 12, AND TAX MAP 42B LOT 14 IS ALLOWED TWO ENTRANCES TO STATE HIGHWAY 12.

20. SUBJECT LOT MAY BENEFIT FROM A "FARM CROSSING" SHOWN ON THE RAILROAD PLAN, REFERENCE 3. THE PLAN LOCATION IS SHOWN HEREON.

21. A SITE-SPECIFIC CLASS 'B' HIGH INTENSITY SOIL SURVEY WAS PERFORMED BY MICHAEL CUOMO, SOIL SCIENTIST, DURING JUNE, 2015, BASED ON THE STANDARDS OF THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS. THE MAP IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY.

ABUTTERS

WESTBROOK

TAX MAP 9(1) LOT 5
PORTLAND WATER DISTRICT
PO BOX 3553
PORTLAND, ME 04104-3553

TAX MAP 9(1) LOT 6
LLEWELLYN A. RANDALL, SR, DEVISEES
C/O LLEWELLYN A. RANDALL, JR
691 STROUDWATER STREET
WESTBROOK, ME 04092
BK 2685/PG 105

TAX MAP 9(1) LOT 8B
MAINE TURNPIKE AUTHORITY
430 RIVERSIDE STREET
PORTLAND, ME 04103
BK 16036/PG 331

TAX MAP 42A LOT 8
WALLACE E. CAMPT, SR., TRUSTEE
CAMP SIBLING TRUST
PO BOX 109
WESTBROOK, ME 04098
BK 30134/PG 136

TAX MAP 42A LOT 10
PORTLAND ASSOC. LLC
C/O WS ASSET MANAGEMENT INC.
33 BOYLSTON STREET, SUITE 3000
CHESTNUT HILL, MA 02467
BK 25490/PG 39

TAX MAP 42B LOT 6
W E 100 LARRABEE ROAD LLC
C/O WINSTANLEY ENTERPRISES LLC
150 BAKER AVENUE EXT. SUITE 303
CONCORD, MA 01742
BK 26693/PG 280

TAX MAP 42B LOT 7
MIDAS PROPERTIES, INC.
C/O MARVIN F. POER & CO.
PO BOX 52427
ATLANTA, GA 30355
BK 8662/PG 169

TAX MAP 42B LOT 8
SHOEMAKER LLC
C/O CHARLOTTE SHOEMAKER
5100 SW 111 LANE ROAD
OCALA, FL 34473
BK 20854/PG 0074

TAX MAP 42B/LOT 9
LL LATHROP LLC
10 MOULTON STREET SUITE 4
PORTLAND, ME 04101
BK 21632/PG 224

TAX MAP 42B LOT 12B
DAVID B. MOORE REVOC. TRUST
DAVID B. MOORE, TRUSTEE
C/O HARCROS CHEMICAL INC.
5200 SPEAKER ROAD
KANSAS CITY, KS 66106
BK 20960/PG 218

TAX MAP 42B LOT 15
PORTLAND TERMINAL COMPANY
GUILFORD TRANSPORTATION
IRON HORSE PARK
NORTH BILLERICA, MA 01862-1681
BK 2590/PG 301

TAX MAP 42B LOTS 101 & 113
WWS PROPERTIES LLC
C/O BILL DODGE AUTO GROUP INC.
PO BOX 9567
WESTBROOK, ME 04098-5067

ABUTTERS

PORTLAND

TAX MAP 243 LOT B001001
CITY OF PORTLAND
389 CONGRESS STREET
PORTLAND, ME 04101

TAX MAP 264 LOT A001
SAI PRASAD LLC
1150 BRIGHTON AVENUE
PORTLAND, ME 04102
BK 29899/PG 331

TAX MAP 264 LOT A005
RAND ROAD HOLDINGS LLC
7 RAND ROAD
PORTLAND, ME 04104
BK 31342/PG 191

TAX MAP 265 LOT A001, A008 & A009
PORTLAND HOTELS REALTY INC.
1200 BRIGHTON AVENUE
PORTLAND, ME 04102
BK 26152/PG 307

TAX MAP 266 LOT C002
CENTRAL MAINE POWER CO.
LOCAL TAX
70 FARM VIEW DRIVE
NEW GLOUCESTER, ME 04260

MAINE DEPT. OF TRANSPORTATION
REGION 1
51 PLEASANT HILL ROAD
SCARBOROUGH, ME 04070-0358

MAINE DEPT. OF TRANSPORTATION
REGION 3
PO BOX 817
ROUTE 2
DIXFIELD, ME 04224

GENERAL LEGEND

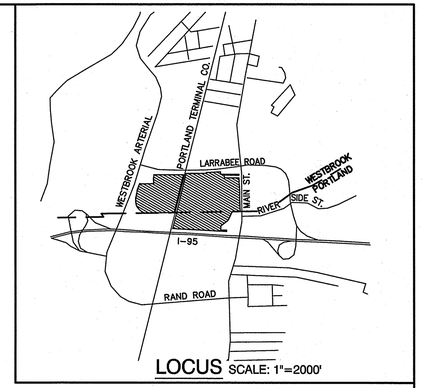
EXISTING	DESCRIPTION
	PROPERTY LINES
	SETBACK LINES
— —60— —	TREE LINE MAJOR CONTOUR
	MINOR CONTOUR
OHE OHE	EDGE OF PAVEMENT OVERHEAD ELECTRIC
	IRON PIPE/IRON ROD
	CONCRETE BOUND
BM	BENCHMARK (TBM)
	UTILITY POLE
SB	SOIL BOUNDARY

PLAN REFERENCES

1. "PROPERTY OF BLUE ROCK QUARRY, WESTBROOK, MAINE" DATED: FEBRUARY 24, 1965, SCALE 1" = 100', BY ENGINEERING LABORATORY SERVICE. CCRD PAGE 68 VOLUME 40.
2. "ALTA/ASCM LAND TITLE SURVEY FOR SUSSE CHALET PROJECT, B&C SITE NO. 97620-6, 1200 BRIGHTON AVENUE, PORTLAND, MAINE" DATED: MAY 2, 1997, SCALE 1" = 30', BY BOOK & CLARK'S NATION SURVEYORS NETWORK.
3. "RIGHT-OF-WAY AND TRACK MAP, THE PORTLAND & OGDENSBURG RY., OWNED & OPERATED BY THE PORTLAND TERMINAL COMPANY. STATION 158+40 TO STATION 211+20" DATED: JUNE 10, 1916, SCALE 1" = 100', OFFICE OF CHIEF ENGINEER, PORTLAND, MAINE. SHEET V-2/4.
4. "MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY '12' PORTLAND-WESTBROOK CUMBERLAND COUNTY, STATE PROJECT NO U-012-1(502)" DATED: AUGUST 1963, SCALE 1" = 50'. S.H.C FILE NO 3-165. CCRD PLAN BOOK 74, PAGES 3-4.
5. "MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY '127' WESTBROOK CUMBERLAND COUNTY, FEDERAL AID PROJECT NO SU-0127(2) SECT. II" DATED: MAY 1968, SCALE 1" = 50'. S.H.C FILE NO 3-190. CCRD PLAN BOOK 103, PAGE 26.
6. "MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY '12' WESTBROOK CUMBERLAND COUNTY, FEDERAL AID PROJECT NO F-012-1(9)" DATED: OCTOBER 1972, SCALE 1" = 50'. S.H.C FILE NO 3-189. CCRD PLAN BOOK 127, PAGES 25-26.
7. "MAINE TURNPIKE AUTHORITY, MAINE TURNPIKE, SECTION 2-PORTLAND TO AUGUSTA, PROPERTY PLAN, CITY OF PORTLAND CUMBERLAND COUNTY" SHEET 4. DATED: AUGUST 18, 1952, SCALE 1" = 100'.
10. "MAINE TURNPIKE AUTHORITY, MAINE TURNPIKE, SECTION 2-PORTLAND TO AUGUSTA, PROPERTY PLAN, CITY OF PORTLAND CUMBERLAND COUNTY" SUPPLEMENTAL SHEET 14, DATED: JANUARY 1955, SCALE 1" = 200'.
11. "MAINE TURNPIKE AUTHORITY, MAINE TURNPIKE, PROPERTY AND RIGHT-OF-WAY PLAN, SECTION 2 - PORTLAND TO AUGUSTA, BRIDGE REPLACEMENT PROJECT, BRIGHTON AVENUE UNDERPASS, PORTLAND, MAINE. SUPPLEMENTAL DRAWING 1 OF 1. DATED: APRIL 2004, SCALE 1" = 25'.
12. "MIDAS REALTY CORP, BOUNDARY AND TOPOGRAPHIC SURVEY, MAIN ST. AND LARRABEE ROAD, WESTBROOK, MAINE" DATED: APRIL 15, 1980, SCALE 1" = 20', BY TIMOTHY O. BROWN PE.
13. "PLAN OF STATE AID ROAD, LOWER MAIN STREET, CITY OF WESTBROOK, MAINE" DATED: JUNE 1916, SCALE 1" = 50', BY D. R. DURAN. ON FILE AT CITY OF WESTBROOK ENGINEERING OFFICE.
14. "CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, TOWN LINE BETWEEN PORTLAND AND WESTBROOK" DATED JANUARY 3, 1946, SCALE 1" = 500', CITY OF PORTLAND PLAN 471/45.
15. "CITY OF PORTLAND MAINE DEPT. OF PUBLIC WORKS, BRIGHTON AT RIVERSIDE" DATED OCTOBER 1, 1973, SCALE 1" = 30', CITY OF PORTLAND PLAN 574/1.
16. "BOUNDARY & TOPOGRAPHIC SURVEY AT 1200 BRIGHTON AVENUE, PORTLAND, MAINE FOR WALSH ENGINEERING, 1 KAREN DRIVE #2A, WESTBROOK, MAINE 04092" DATED: JULY 2, 2014, SCALE 1" = 30', BY OWEN HASKELL, INC.
17. "CITY OF PORTLAND PROPERTY REVALUATION SHEET" SHEETS 141 AND 142. SCALE 1" = 300'.

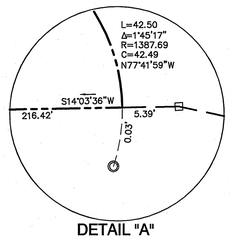
LINE TABLE		
LINE	LENGTH	BEARING
L1	3.12'	S78°35'19"E
L2	25.35'	N68°25'34"W
L3	15.00'	N77°29'27"W
L4	4.90'	N13°44'59"E
L5	50.23'	S76°01'52"E

CURVE TABLE					
CURVE	LENGTH	DELTA	RADIUS	CHORD	BEARING
C1	11524.16	0°02'09"	11524.16'	7.23'	N12°31'38"E

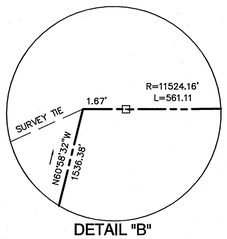


LOCUS SCALE: 1"=2000'

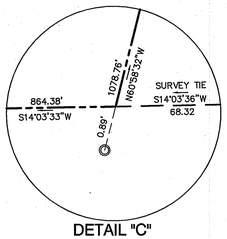
SOIL LEGEND		
SOIL SERIES SYMBOL	SOIL SERIES NAME	DESCRIPTION
CR	COMPACT RECLAIM OVER SANDY FILL	CRUSHED CONCRETE DUST & CHIPS, SOMETIMES WITH LAYERS OF OLD PAVEMENT AT THE SURFACE OR BURIED
En	ELMWOOD	VERY FINE SANDY LOAM OVER SILTY CLAY LOAM
QU	QUARRY	EXPOSED BEDROCK IN FORMER QUARRY, WITH STEEP SIDES, SOME SOIL/DEBRIS IN BOTTOM AREAS, PONDED WATER AT DEEPEST AREA
Rd	ROUNDABOUT	VERY FINE SANDY LOAM IN THE UPPER PART OVER STRATIFIED FINE SAND AND SILT TO SILT LOAM
SI	SILTY POORLY DRAINED FILL	GRAVELY CRUSHED CONCRETE, STONE DUST, AND SEDIMENT OVERFLOWED FROM SEDIMENTATION TRAP OR ERODED INTO STREAM CHANNEL
SO		STONY LOAMY SAND TO SILT LOAM SOIL, WITH MINSOIL RECLAIMED PAVEMENT AND CRUSHED CONCRETE
SP	STONE DUST & WASH TAILINGS IN PILE	SILT FROM STONE DUST AND WASH TAILINGS
SW	STONE DUST & WASH TAILINGS	RECLAIMED ASPHALT, CRUSHED CONCRETE DUST AND CHIPS, AND WASH TAILINGS
UC	UNSTABLE CONCRETE WASTE	CRUSHED CONCRETE DUST AND CHIPS WITH LARGE SLABS OF CONCRETE OVERLYING SILT LOAM



DETAIL "A" NOT TO SCALE



DETAIL "B" NOT TO SCALE



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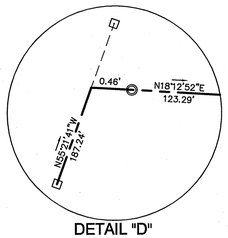

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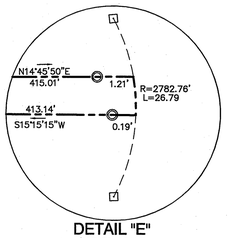

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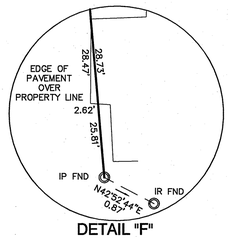


DETAIL "F" NOT TO SCALE

CERTIFICATION:

THIS SURVEY MAP IS IN ACCORDANCE WITH CHAPTER90, PARTS 1 & 2 OF THE STATE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS EXCEPTING A WRITTEN REPORT.

GORDON D. HISLOP, JR. PLS #2293 DATE:
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

PROJECT PARCEL
TOWN OF WESTBROOK
TAX MAP 42B, LOTS 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOT A003

APPLICANT
J & J GOVE DEVELOPMENT
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,179 SQ. FT.
81.78 ACRES

W:\14110-WESTBROOK-TEST\DWG - DO NOT USE GO TO W DRIVE\14110-EX-CONDITIONS.dwg 10/7/2015 10:21:06 AM EDT

Design: WGM	Draft: MJS	Date: 2/23/15	
Checked: WGM	Scale: AS NOTED	Project No.: 14110	
Drawing Name: EX-CONDITIONS-DWGNAME.dwg			

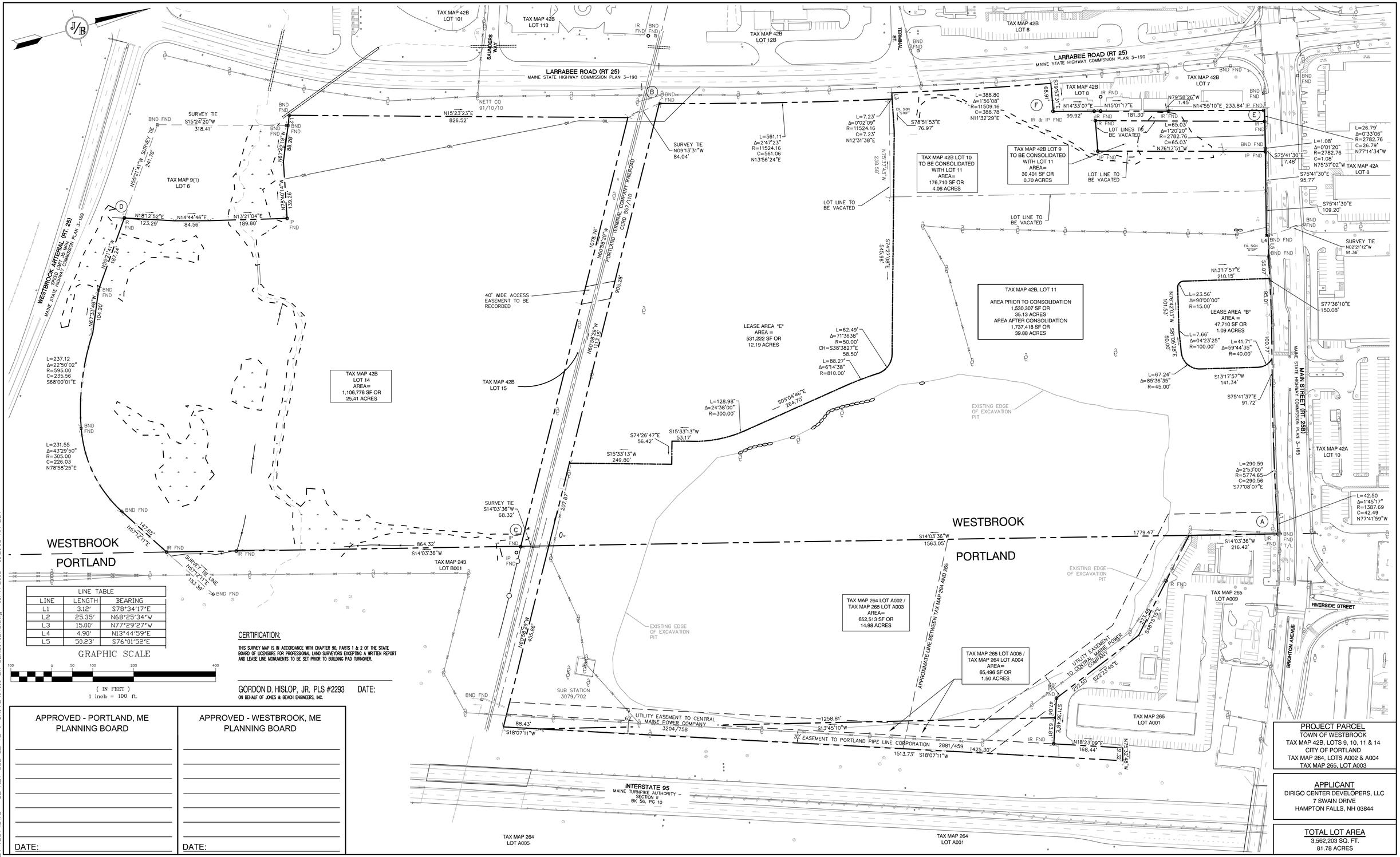
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV.	DATE	REVISION	BY
0	2/2/16	ISSUED FOR REVIEW	BWG

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name: SUBDIVISION - LOT CONSOLIDATION PLAT
Project: "DIRIGO PLAZA"
58 & 80 MAIN STREET, WESTBROOK, ME
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
A2
SHEET 1 OF X
JBE PROJECT NO. 14110


LARRABEE ROAD (RT 25)
MAINE STATE HIGHWAY COMMISSION PLAN 3-190
WESTBROOK ARTERIAL (RT. 25)
SPECIAL ACT 30
MAINE STATE HIGHWAY COMMISSION PLAN 3-189
MAIN STREET (RT 25B)
MAINE STATE HIGHWAY COMMISSION PLAN 3-185
INTERSTATE 95
MAINE TURNPIKE AUTHORITY - SECTION II
BK 56, PG 10
PORTLAND TERMINAL COMPANY RAILROAD
CORD 5/27/10
NETT CO
91/10/10
SAUNDERS WAY
TERMINAL ST
TAX MAP 42B LOT 101
TAX MAP 42B LOT 113
TAX MAP 42B LOT 12B
TAX MAP 42B LOT 6
TAX MAP 42B LOT 7
TAX MAP 42B LOT 8
TAX MAP 9(1) LOT 6
TAX MAP 42B LOT 14
AREA=
1,106,776 SF OR
25.41 ACRES
TAX MAP 42B LOT 15
TAX MAP 243 LOT B001
TAX MAP 264 LOT A005
TAX MAP 264 LOT A001
TAX MAP 42A LOT 8
TAX MAP 42A LOT 10
TAX MAP 265 LOT A009
TAX MAP 265 LOT A001
TAX MAP 42B LOT 10 TO BE CONSOLIDATED WITH LOT 11
AREA=
176,710 SF OR
4.06 ACRES
TAX MAP 42B LOT 9 TO BE CONSOLIDATED WITH LOT 11
AREA=
30,401 SF OR
0.70 ACRES
TAX MAP 42B, LOT 11
AREA PRIOR TO CONSOLIDATION
1,530,307 SF OR
35.13 ACRES
AREA AFTER CONSOLIDATION
1,737,418 SF OR
39.88 ACRES
LEASE AREA "E"
AREA =
531,222 SF OR
12.19 ACRES
LEASE AREA "B"
AREA =
47,710 SF OR
1.09 ACRES
TAX MAP 264 LOT A002 / TAX MAP 265 LOT A003
AREA=
652,513 SF OR
14.98 ACRES
TAX MAP 265 LOT A005 / TAX MAP 264 LOT A004
AREA=
65,496 SF OR
1.50 ACRES
APPROXIMATE LINE BETWEEN TAX MAP 264 AND 265
40' WIDE ACCESS EASEMENT TO BE RECORDED
LOT LINE TO BE VACATED
LOT LINES TO BE VACATED
EXISTING EDGE OF EXCAVATION PIT
UTILITY EASEMENT TO CENTRAL MAINE POWER COMPANY
32' EASEMENT TO PORTLAND PIPE LINE CORPORATION 2881/459
SUB STATION 3079/702
SURVEY TIE S15°24'20"W 318.41'
SURVEY TIE N15°23'23"E 826.52'
SURVEY TIE N09°13'31"W 84.04'
SURVEY TIE S14°03'36"W 68.32'
SURVEY TIE N57°12'11"E 153.39'
SURVEY TIE S79°53'31"E 68.91'
SURVEY TIE N02°21'12"W 91.36'
N15°23'23"E 88.28'
N67°42'52"W 86.21'
N55°21'41"W 241.78'
N55°21'41"W 167.24'
N67°33'48"W 104.20'
N67°12'11"E 147.65'
N18°12'52"E 123.29'
N14°44'46"E 84.56'
N13°21'04"E 189.80'
N60°58'29"W 1078.76'
N60°58'29"W 114.15'
N60°58'29"W 905.28'
N60°58'29"W 465.86'
N60°58'29"W 207.87'
S74°26'47"E 56.42'
S15°33'13"W 53.17'
S15°33'13"W 249.80'
S09°04'46"E 264.70'
S74°27'08"E 545.96'
S78°51'53"E 76.97'
S14°03'36"W 1563.05'
S14°03'36"W 216.42'
S18°07'11"W 88.43'
S13°45'10"W 1258.81'
S18°07'11"W 1513.73'
S22°23'45"E 252.50'
S48°15'15"E 272.48'
S75°41'30"E 7.48'
S75°41'30"E 95.77'
S75°41'30"E 109.20'
S77°36'10"E 150.08'
S13°17'57"W 141.34'
S75°41'37"E 91.72'
S18°35'38"E 55.00'
N13°17'57"E 210.15'
N79°58'26"W 1.45'
N14°33'07"E 99.92'
N15°01'17"E 181.30'
N14°55'10"E 233.84'
N76°17'51"W 65.03'
L=237.12 Δ=22°50'02" R=595.00 C=235.56 S68°00'01"E
L=231.55 Δ=43°29'50" R=305.00 C=226.03 N78°58'25"E
L=561.11 Δ=2°47'23" R=11524.16 C=561.06 N13°56'24"E
L=7.23' Δ=0°02'09" R=11524.16 C=7.23' N12°31'38"E
L=388.80 Δ=1°56'08" R=11509.16 C=388.78 N11°32'29"E
L=62.49' Δ=71°36'38" R=50.00' CH=S38°38'27"E 58.50'
L=88.27' Δ=6°14'38" R=810.00'
L=128.98' Δ=24°38'00" R=300.00'
L=65.03' Δ=1°20'20" R=2782.76 C=65.03'
L=26.79' Δ=0°33'06" R=2782.76 C=26.79' N77°14'34"W
L=1.08' Δ=0°01'20" R=2782.76 C=1.08' N75°37'02"W
L=23.56' Δ=90°00'00" R=15.00'
L=7.66' Δ=04°23'25" R=100.00'
L=41.71' Δ=59°44'35" R=40.00'
L=67.24' Δ=85°36'35" R=45.00'
L=290.59 Δ=2°53'00" R=5774.65 C=290.56 S77°08'07"E
L=42.50 Δ=1°45'17" R=1387.69 C=42.49 N77°41'59"W
N18°23'09"E 168.44'
N18°23'09"E 20.15'
N71°36'51"W 3.89'
S71°36'51"E 4.24'
1779.47'
1425.30'
1513.73'
1078.76'
905.28'
864.32'
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1425.30'
1779.47'
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L43

ME2000 STATE PLANE

EXISTING SIGNALIZED INTERSECTION

PARK RIDE

TAX MAP 42B LOT 101

TAX MAP 42B LOT 113

BILL DODGE AUTO GROUP

NATIONALEASE OF MAINE

TAX MAP 42B LOT 12B

TERMINAL ST.

REVT-A-CENTER

SPA-TECH INSTITUTE

JOKEY'S

WOODFORDS FAMILY SERVICES

CRITICAL ALERT SYSTEMS

LEGACY PUBLISHING CO.

HAMOO POOL, PATIO & GAMEROOM

ADVANCE AUTO PARTS

TAX MAP 42B LOT 6

EXISTING SIGNALIZED INTERSECTION

LARRABEE ROAD

SAUNDERS BROOK

PROPOSED SIGNALIZED INTERSECTION

PROPOSED WESTBROOK PYLON SIGN

TAX MAP 42B LOT 8

NEW ENGLAND CHIROPRACTIC

KOHLER ANIMAL CLINIC

MIDAS

TAX MAP 42B LOT 7

ROMC FORD

MAIN STREET

TAX MAP 9(1) LOT 6

WESTBROOK ARTERIAL

HEAVY-DUTY PAVEMENT

20' SETBACK

45'

70'

80'

PROPOSED RETAIL "E" 154,906± S.F.

MAINE CENTRAL RAILROAD

EXISTING PROPOERTY LINES TO BE ABANDONED

TAX MAP 42B LOT 10

PROPOSED RETAIL "D" 55,339 S.F.

PROPOSED RETAIL "D1" 17,000 S.F.

PROPOSED RETAIL "D2" 25,090 S.F.

PROPOSED RETAIL "D3" 5,009 S.F.

TAX MAP 42B LOT 9

PROPOSED RETAIL "C" 15,000 S.F.

FORD QUICK LANE

PROPOSED BUS STOP

SEE ROADWAY IMPROVEMENT PLAN (BY OTHERS)

PROPOSED SIGNALIZED INTERSECTION

MITIGATED STREAM CROSSING

TAX MAP 42B LOT 14

100' STREAM BUFFER

75' STREAM BUFFER

LEASE LINE (TYP)

PROPOSED RESTAURANT "B" 6,640 S.F.

KOHL'S

PROPOSED WESTBROOK PYLON SIGN

DUNKIN' DONUTS

PROPOSED RETAIL 38,613 S.F. BUILDING "K"

PORTLAND TERMINAL COMPANY TAX MAP 42B LOT 15

PROPOSED RETAIL "H" 148,000± S.F.

HEAVY-DUTY PAVEMENT

PROPOSED SECURITY FENCE (TYP.)

PROPOSED BUILDING "F"

EMERGENCY FLOTATION RING BUOY W/ SIGN POST (SEE DTL SHT D3)

12' WIDE GRAVEL ROAD FIRE DEPARTMENT ACCESS

PROPOSED RESTAURANT "G" 7,200 S.F.

PROP. LOT TAX MAP 42B LOT 11 A=1,737,418 S.F. =39.89 AC.

PROP. LOT TAX MAP 42B LOT 14 A=1,106,776 S.F. =25.41 AC.

WESTBROOK

PORTLAND

GC-GATEWAY COMMERCIAL

B4-COMMERCIAL BUSINESS

IL-INDUSTRIAL

25' SETBACK

TAX MAP 42A LOT 10

PROPOSED RETAIL "A" 19,440 S.F.

MAIN STREET

CHIPOTLE

TAX MAP 265 LOT A009

DENNY'S

TAX MAP 266 LOT C002

EXISTING SIGNALIZED INTERSECTION

RIVERSIDE ST.

TAX MAP 265 LOT A008

TRAVELODGE

BRIGHTON AVE.

TAX MAP 265 LOT A007

TAX MAP 265 LOT A001

TAX MAP 243 LOT B001

MASKINS BROOK

EX. BOX CULVERT

INTERSTATE 95

PROPOSED SUB STATION (DESIGN BY OTHERS)

PROPOSED 18' LOCKABLE GATE

EX. QUARRY

EX. UTILITY EASEMENT

APPROX. EDGE OF QUARRY

APPROXIMATE LINE BETWEEN TAX MAP 284 AND 285

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

APPROVED - WESTBROOK, ME PLANNING BOARD

DATE:

SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW A PROPOSED RETAIL SPACE WITH ASSOCIATED PARKING.
2. ZONING DISTRICT: GATEWAY COMMERCIAL

	REQUIRED	PROPOSED
LOT AREA MINIMUM	20,000 SF	1,737,418± SF (N. CAMPUS) 1,106,776± S.F. (S. CAMPUS) TOTAL=2,844,194 ± S.F. (65.294 AC)
BUILDING SETBACKS (MINIMUM):		
FRONT SETBACK	20'	20'
SIDE SETBACK	20'	20'
REAR SETBACK	20'	20'
MAX. BUILDING HEIGHT	50'(4-STORIES)	<50'
MIN. FRONTAGE	100'	
MAX. FOOTPRINT	160,000	
MAX. FOOTPRINT FACTOR	50%	
NORTH CAMPUS = 313,489/1,737,418		18.0%
SOUTH CAMPUS = 207,500/1,106,776		19.0%
MAX. GROSS DENSITY FACTOR	75%	
NORTH CAMPUS = 1,138,659/1,737,418		65.5%
SOUTH CAMPUS = 633,348/1,106,776		57.2%
LANDSCAPE FACTOR	25%	
NORTH CAMPUS = 238,066/1,737,418		13.7%
SOUTH CAMPUS = 473,428/1,106,776		42.8%
TOTAL = 711,494/2,844,194		25.02%

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Design: BWG	Draft: BWG	Date: 10/20/15
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Drawing Name: 14110-PLAN.dwg		

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3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH

J/B Jones & Beach Engineers, Inc.

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85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885

603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name: OVERALL SITE PLAN

Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.

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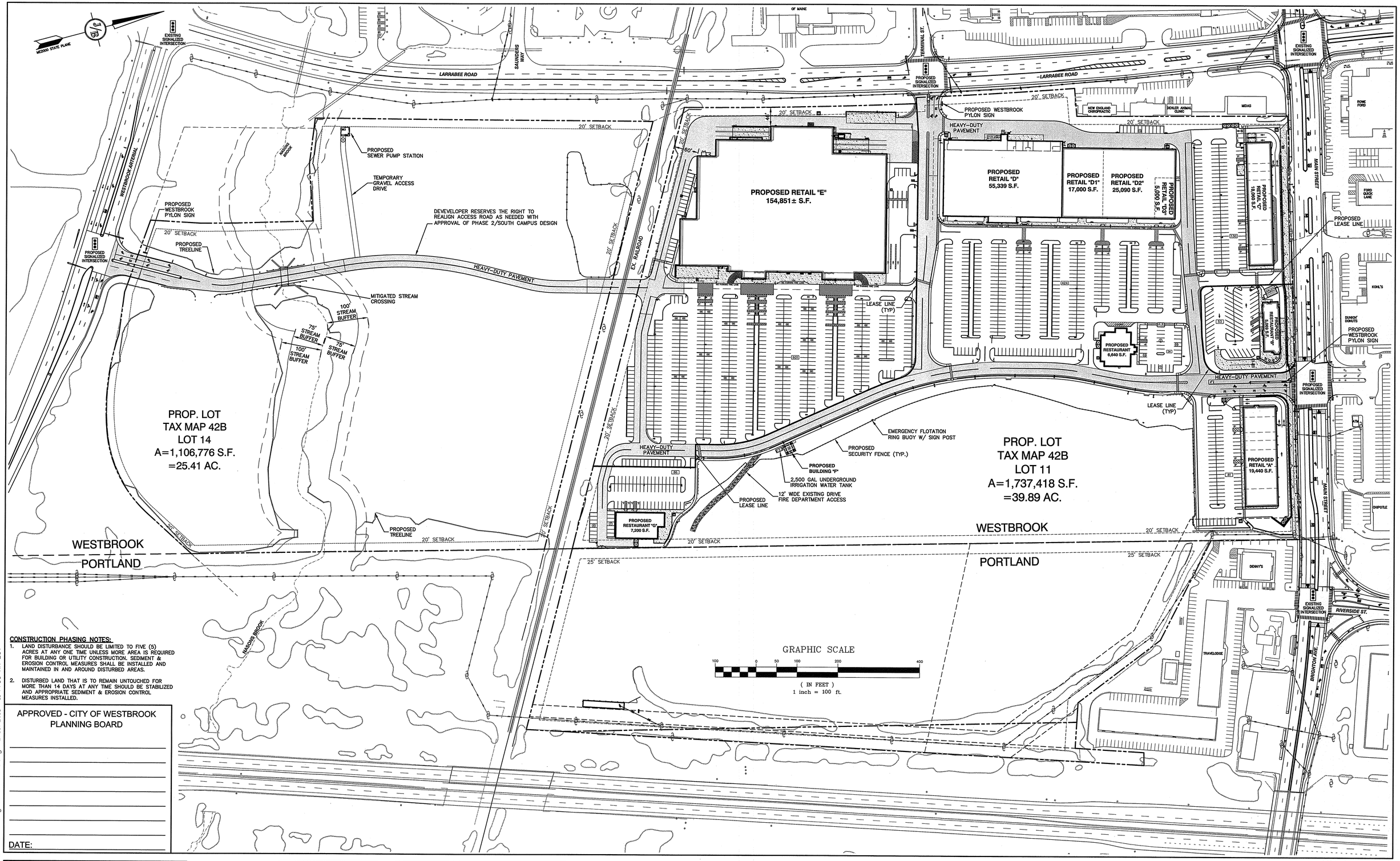
SHEET 7 OF 120
JBE PROJECT NO. 14110



CONSTRUCTION PHASING NOTES:

1. LAND DISTURBANCE SHOULD BE LIMITED TO FIVE (5) ACRES AT ANY ONE TIME UNLESS MORE AREA IS REQUIRED FOR BUILDING OR UTILITY CONSTRUCTION. SEDIMENT & EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN AND AROUND DISTURBED AREAS.
2. DISTURBED LAND THAT IS TO REMAIN UNTOUCHED FOR MORE THAN 14 DAYS AT ANY TIME SHOULD BE STABILIZED AND APPROPRIATE SEDIMENT & EROSION CONTROL MEASURES INSTALLED.

APPROVED - CITY OF WESTBROOK PLANNING BOARD

DATE:

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3	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
2	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

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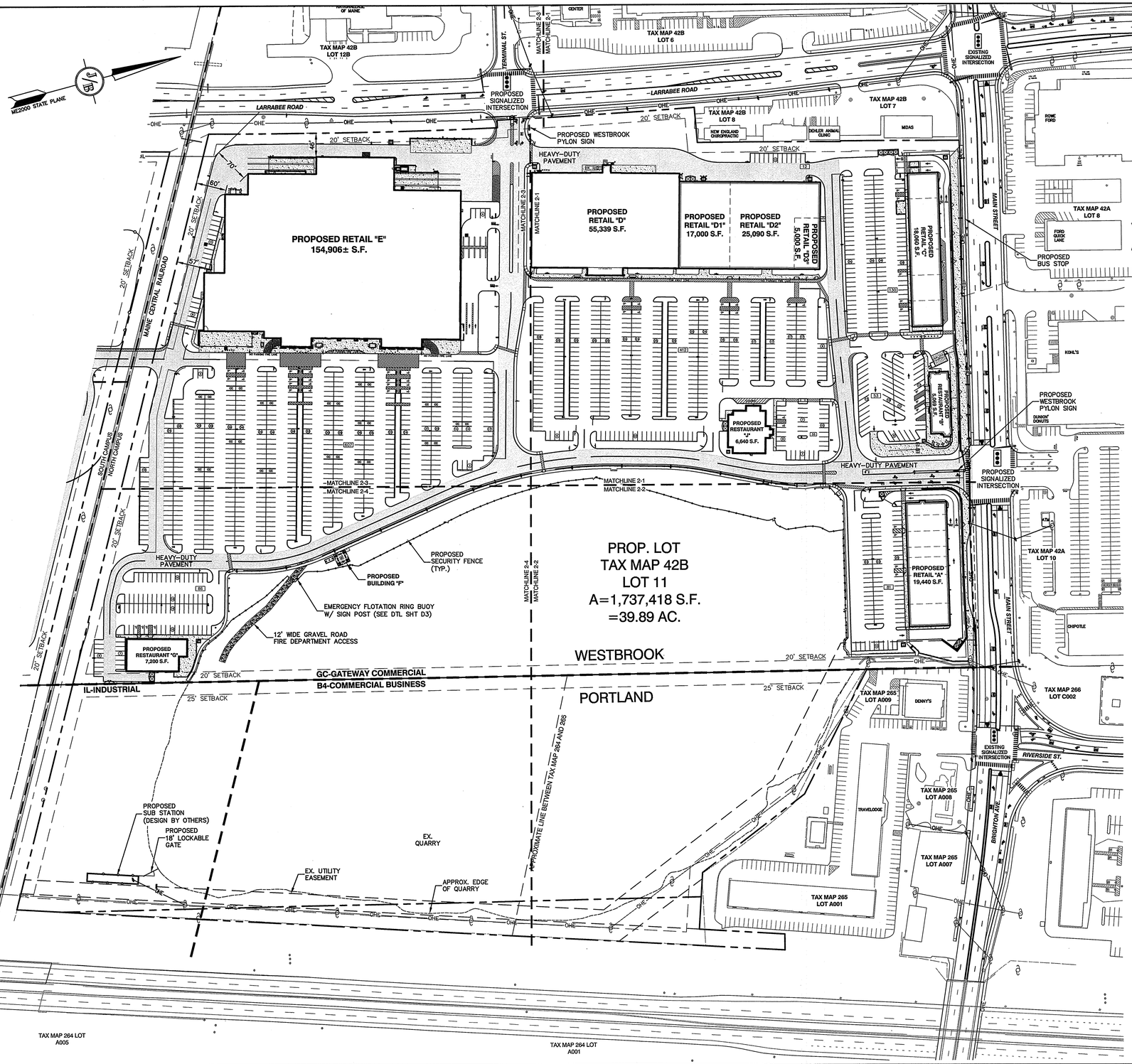
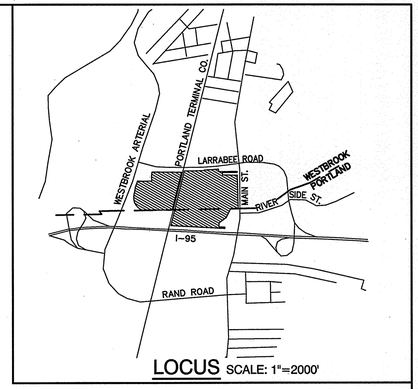
Plan Name:	OVERALL SITE PLAN - PHASE 1
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.

PH1-1

SHEET 113 OF 120
JBE PROJECT NO. 14110





LOCUS SCALE: 1"=2000'

SITE NOTES (NORTH CAMPUS):

1. THE INTENT OF THIS PLAN IS TO SHOW A PROPOSED MIXED-USE RETAIL DEVELOPMENT WITH ASSOCIATED PARKING. SITE TO BE SERVICED BY MUNICIPAL SEWER AND WATER AND ELECTRIC.

2. CITY OF WESTBROOK

ZONING DISTRICT: GATEWAY COMMERCIAL DISTRICT	REQUIRED	PROPOSED
LOT AREA MINIMUM	20,000 SF	1,737,418± SF
BUILDING SETBACKS (MINIMUM):		
FRONT SETBACK	20'	20'
SIDE SETBACK	20'	20'
REAR SETBACK	20'	20'
MAX. BUILDING HEIGHT	50'(4-STORIES)	<50'
MIN. FRONTAGE	100'	
MAX. FOOTPRINT	160,000	
MAX. FOOTPRINT FACTOR	50%	
NORTH CAMPUS = 313,489/1,737,418		18.0%
MAX. GROSS DENSITY FACTOR	75%	
NORTH CAMPUS = 1,138,659/1,737,418		65.5%

3. PARKING CALCULATIONS:
NORTH CAMPUS:
GROSS FLOOR AREA, MAJOR RETAIL CENTER (294,441 S.F.) - (5.5 SPACES PER 1000 SF)
SPACES REQUIRED = 1,619
GROSS FLOOR AREA, RESTAURANT (18,909 S.F. / 446 SEATS) - (0.3 SPACES PER SEAT)
SPACES REQUIRED = 134
TOTAL SPACES REQUIRED = 1,753
TOTAL SPACES PROVIDED = 1,414 (48 HANDICAP INCL.)
*PARKING WAIVER REQUESTED

4. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.

5. ALL CONSTRUCTION SHALL CONFORM TO CITY STANDARDS AND REGULATIONS, AND MEDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.

6. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.

7. A PRE-CONSTRUCTION CONFERENCE, AT LEAST FORTY EIGHT (48) HOURS PRIOR TO INITIAL SITE WORK, WILL BE HELD WITH REPRESENTATIVES OF THE CITY DEPARTMENTS.

8. ALL PROPOSED SIGNAGE SHALL CONFORM WITH CITY ZONING REGULATIONS, UNLESS A VARIANCE IS OTHERWISE REQUESTED. PROPOSED BUILDING SIGNAGE FOR RETAIL BUILDING WILL BE AS PER THE CITY OF WESTBROOK PLANNING BOARD DECISION.

9. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND MEDOT STANDARDS AND SPECIFICATIONS (NON-REFLECTORIZED PAVEMENT MARKINGS), UNLESS OTHERWISE NOTED.

10. ALL PARKING STALLS SHALL BE SEPARATED USING 4" WIDE SOLID STRIPES. STRIPING SHALL HAVE TWO COATS OF PAINT, ALKYD BASIN SYNTHETIC RESIN, FEDERAL SPECIFICATION TTP-115 TYPE 1, IN A COLOR OF WHITE. UNLESS OTHERWISE SPECIFIED.

11. ALL STOP BARS SHALL BE 18" IN WIDTH IN A COLOR OF WHITE; ALL TRAFFIC ARROWS SHALL BE PAINTED IN A COLOR OF WHITE.

12. ALL CURBING TO HAVE MINIMUM RADIUS OF 2', UNLESS OTHERWISE NOTED.

13. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PROVIDED BY THE OWNER AND CONSISTENT WITH ALL APPROVALS FROM THE CITY. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE START OF CONSTRUCTION. BUILDING DIMENSIONS AND AREAS TO BE TO OUTSIDE OF MASONRY, UNLESS OTHERWISE NOTED.

14. ADDRESSING FOR THE PROJECT WILL BE IN ACCORDANCE WITH E-911 AND CITY OF WESTBROOK STANDARDS. ALL BUILDINGS ON THE PROPERTY SHALL HAVE ADDRESS NUMBERS CLEARLY MARKED ON THE BUILDING.

15. THE EXISTING QUARRY SHALL REMAIN FENCED OFF FROM THE PUBLIC, TILL SUCH A TIME THAT THE SAFETY OF THE PUBLIC CAN BE MAINTAINED. NO ENTRANCE WILL BE MADE INTO THE QUARRY WITHOUT FIRST NOTIFYING THE WESTBROOK FIRE DEPARTMENT. FLOTATION RING BUOYS WITH ATTACHES LIFE ROPES SHALL BE MOUNTED ON 4x4 POST AROUND THE QUARRY, MARKED "FOR EMERGENCY USE ONLY".

16. FIRE LANES SHALL BE MARKED PER CITY OF WESTBROOK ORDINANCE SECTION 31-115 THROUGH 31-12. THIS INCLUDES ALL SIGNAGE WITH "NO PARKING FIRE LANE" "TOW AWAY ZONE".

17. ACCESS TO THE SITE FOR FIRE APPARATUS IN ACCORDANCE WITH NFPA 1 AND NFPA 241 SHALL BE STABLISHED PRIOR TO ANY BUILDING CONSTRUCTION. FIRE APPARATUS ACCESS WILL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION.

18. ALL TRAFFIC INTERSECTIONS WITH TRAFFIC LIGHTS WILL BE EQUIPPED WITH SYSTMES TO ALLOW IN-COMING EMERGENCY VEHICLES THE RIGHT OF WAY. THIS WILL BE COORDINATED WITH THE FIRE CHIEF AND/OR HIS DESIGNEE PRIOR TO INSTALLATION.

19. PER NFPA 72, A RADIO ENHANCEMENT TEST SHALL BE PERFORMED IN EVERY BUILDING. THIS WILL DETERMINE IF EMERGENCY RADIOS CAN TRANSMIT AND RECEIVE FROM THE SITE. THIS MAY INCLUDE INSTALLAING A VOTE SITE THAT WOULD ENHANCE RADIO COMMUNICATION THROUGHOUT THE SITE.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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Project: "DIRIGO PLAZA"
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Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
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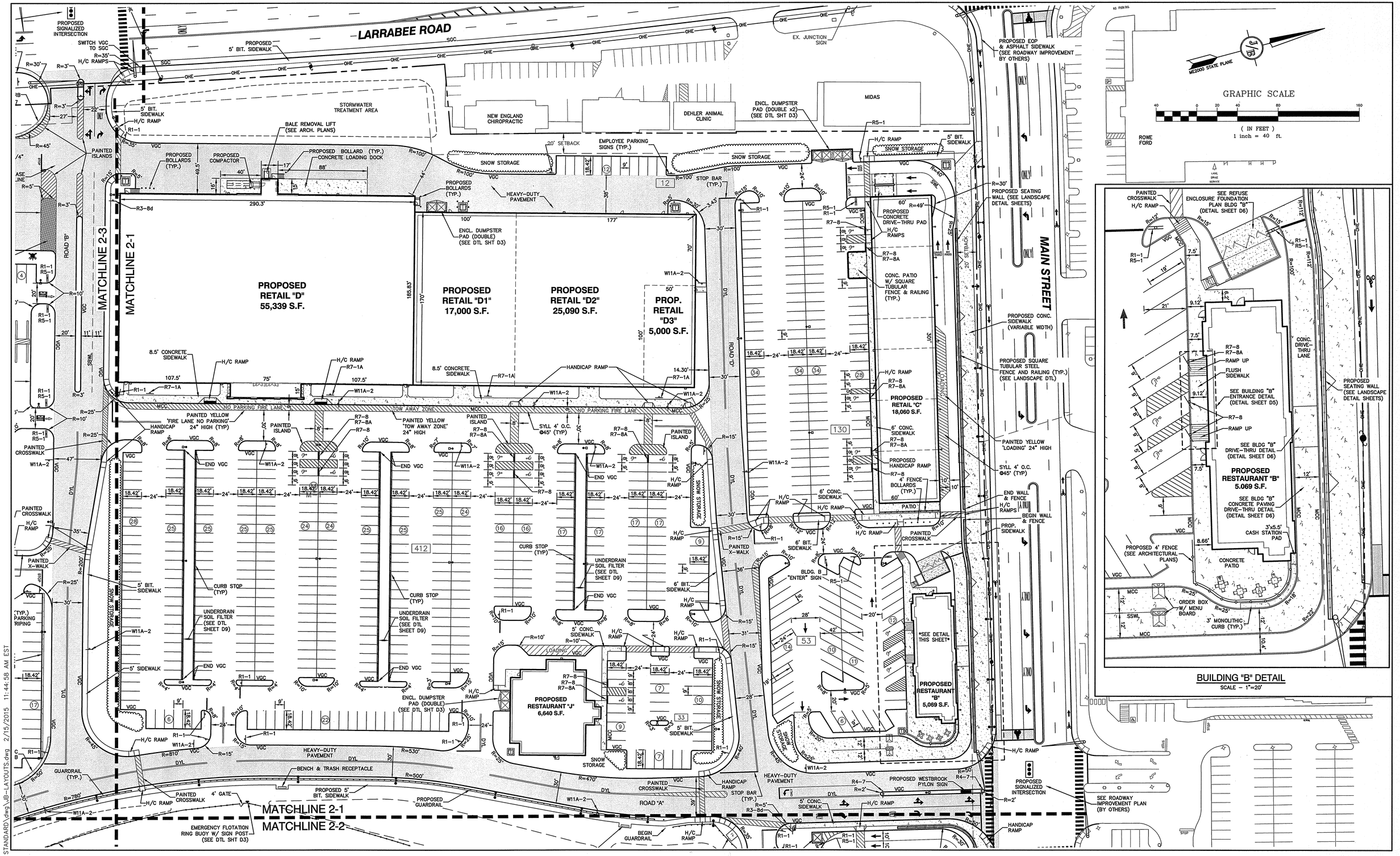
SHEET 8 OF 120
JBE PROJECT NO. 14110



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DRAWING No.
C2-1-1
SHEET 9 OF 120
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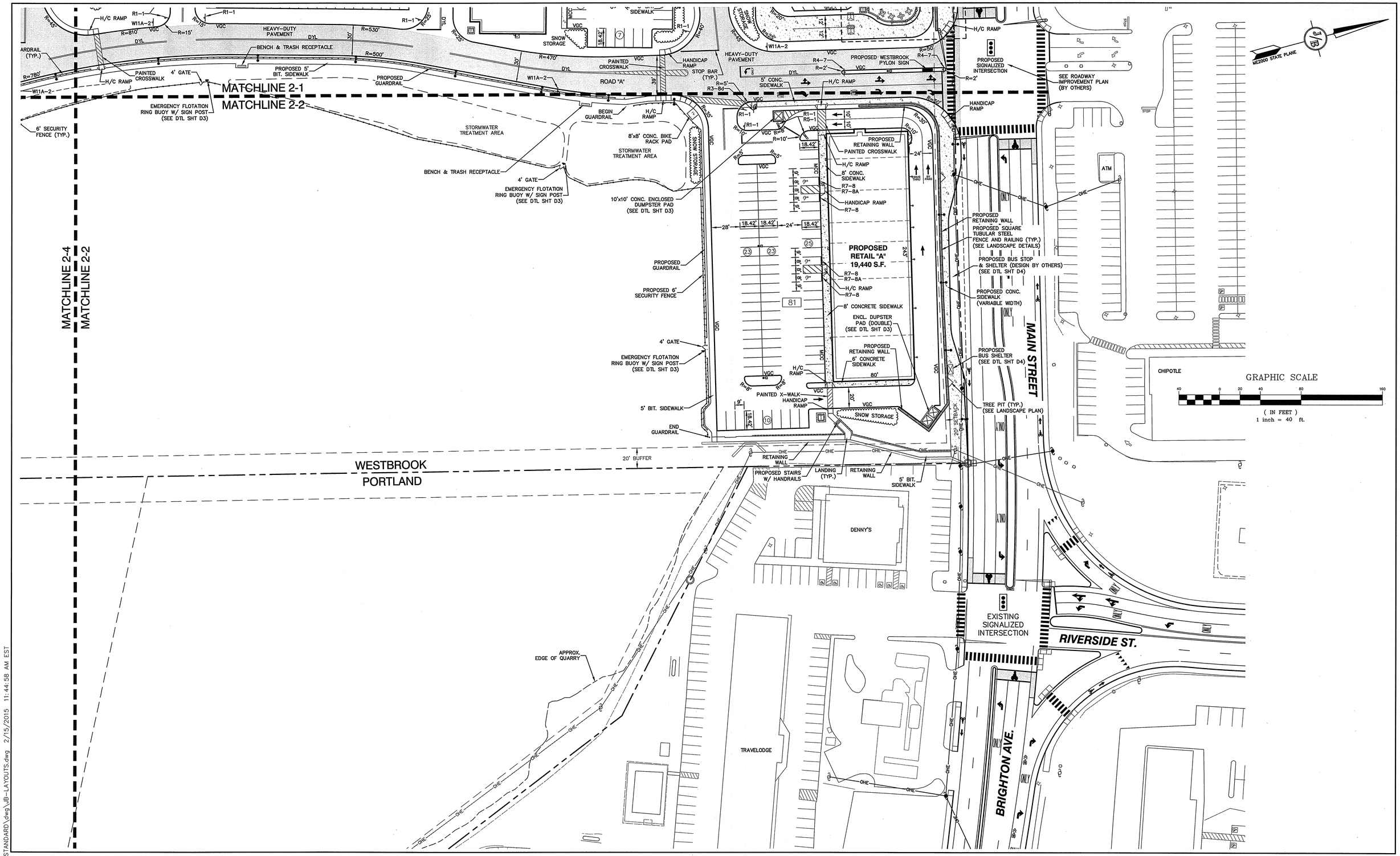

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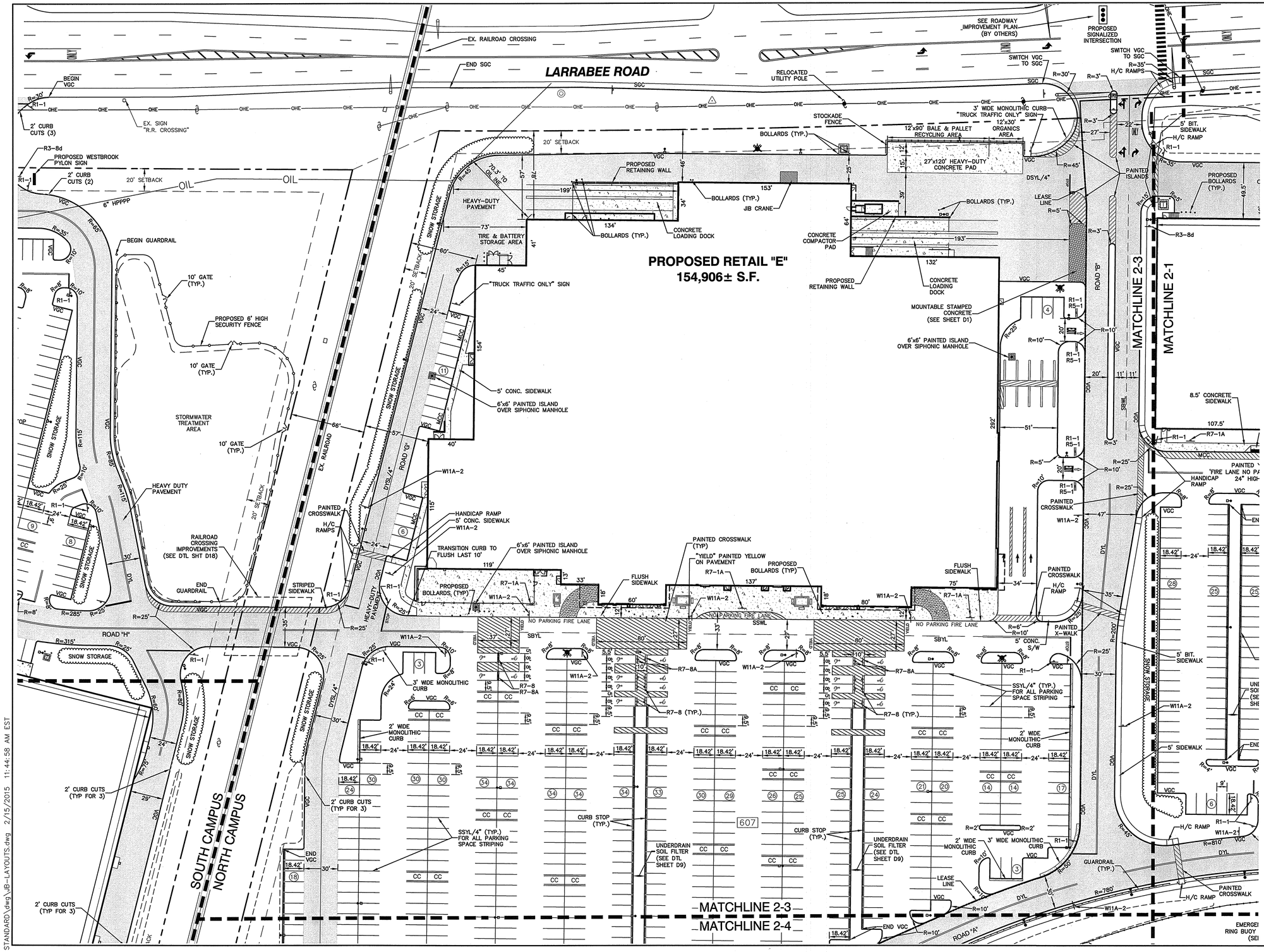
Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C2-1-2
SHEET 10 OF120
JBE PROJECT NO. 14110



GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		LEASE LINE
		SETBACK LINES
		TREE LINE
		STONEWALL
		FENCE
		EASEMENT
		EDGE OF PAVEMENT
VGC	VGC	VERTICAL GRANITE CURB
MCC	MCC	MOUNTABLE CONCRETE CURB
		GUARDRAIL
		DOUBLE POST SIGN
		SINGLE POST SIGN
		CONCRETE
		SNOW STORAGE
		RETAINING WALL
	CC	CART CORRAL
		HEAVY-DUTY PAVEMENT
		STANDARD DUTY PAVEMENT
		LIGHT POLE
		BOLLARD
		FIRE HYDRANT

PAINTING STRIPING LEGEND

SSWL/4" - SINGLE SOLID WHITE LINE / 4" WIDE
SSYL/4" - SINGLE SOLID YELLOW LINE / 4" WIDE EACH
DSYL/4" - DOUBLE SOLID YELLOW LINE / 4" WIDE EACH
SSYL/10" - SINGLE SOLID YELLOW LINE / 10" WIDE
SBWL/4" - SINGLE BROKEN WHITE LINE / 4" WIDE
SBYL/4" - SINGLE BROKEN YELLOW LINE / 4" WIDE
SSWL/24" - SINGLE SOLID WHITE LINE / 24" WIDE

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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Drawing Name: 14110-PLAN.dwg		

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3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH

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Civil Engineering Services
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FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN - NORTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C2-1-3
SHEET 11 OF120
JBE PROJECT NO. 14110

MATCHLINE 2-3
MATCHLINE 2-4

MATCHLINE 2-4
MATCHLINE 2-2

RAILROAD CENTERLINE
EXISTING RAILROAD
HEAVY-DUTY PAVEMENT
20' SETBACK
66'
STORMWATER TREATMENT AREA
SNOW STORAGE
END SGC
D'SL./4"
SSYL./4" (TYP.) FOR ALL PARKING SPACE STRIPING
CURB STOP (TYP.)
LEASE LINE
END VGC
3' WIDE MONOLITHIC CURB
R1-1
R=15'
R=60'
R=30'
R=50'
R=74'
R=10'
R=330'
W11A-2
PAINTED CROSSWALK
BEGIN GUARDRAIL
END GUARDRAIL
5' BIT. SIDEWALK
R=8'
86
16
18
19
2' WIDE CURB CUT
8' CONC. SIDEWALK (TYP.)
R=25'
MCC
H/C RAMP
R7-8 (TYP.)
H/C RAMPS R7-8A
PROPOSED RESTAURANT "G" 7,200 S.F.
CONC. PATIO
104'
64'
35'
16'
29'
4' FENCE
4' GATE
EMERGENCY FLOTATION RING BUOY W/ SIGN POST (SEE DTL SHT D3)
ENCL. DUMPSTER PAD (DOUBLE) (SEE DTL SHT D3)
PROPOSED 24' WIDE GATE (TYP.)
PROPOSED 6' SECURITY FENCE (TYP.)
20' SETBACK
25' SETBACK
WESTBROOK
PORTLAND
ROAD "A"
H/C RAMP
PAINTED CROSSWALK
W1A-2
6' SECURITY FENCE (TYP.)
4' GATE
EMERGENCY FLOTATION RING BUOY W/ SIGN POST (SEE DTL SHT D3)
GUARDRAIL
STORMWATER TREATMENT AREA
6'x8' CONC. BIKE RACK PAD
PROPOSED BUILDING "F"
2,500 GAL. UNDERGROUND IRRIGATION WATER TANK (SEE DTL SHT D4)
SWITCH VGC TO SGC
LOCKABLE GATE W/ KNOX BOX
EXISTING GRAVEL DRIVE FIRE DEPARTMENT ACCESS (SEE DTL SHT D4)
ME2000 STATE PLANE

APPROX. EDGE OF QUARRY
PROPOSED SUBSTATION (DESIGN & CONSTRUCTION BY CENTRAL MAINE POWER)
PROPOSED 18' LOCKABLE GATE

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		LEASE LINE
		SETBACK LINES
		TREE LINE
		STONEWALL
		FENCE
		EASEMENT
		EDGE OF PAVEMENT
VGC	VGC	VERTICAL GRANITE CURB
MCC	MCC	MOUNTABLE CONCRETE CURB
		GUARDRAIL
		DOUBLE POST SIGN
		SINGLE POST SIGN
		CONCRETE
		SNOW STORAGE
		RETAINING WALL
	CC	CART CORRAL
		HEAVY-DUTY PAVEMENT
		STANDARD DUTY PAVEMENT
		LIGHT POLE
		BOLLARD
		FIRE HYDRANT

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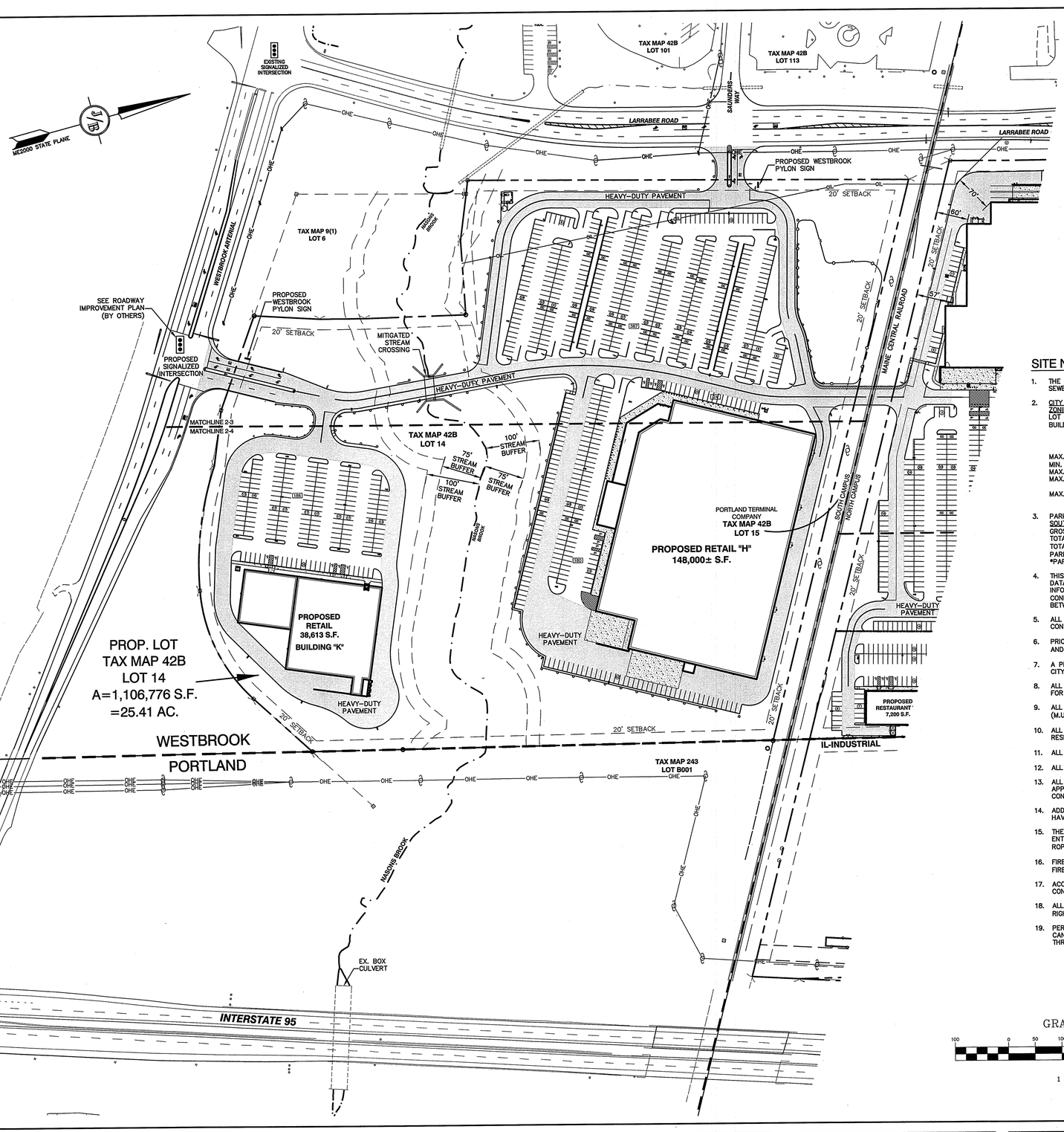
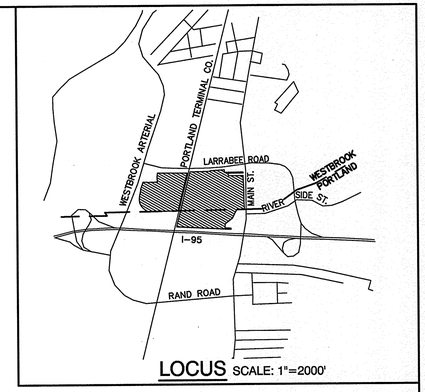
Plan Name:	SITE PLAN - NORTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C2-1-4
SHEET 12 OF120
JBE PROJECT NO. 14110





LOCUS SCALE: 1"=2000'

SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW A PROPOSED MIXED-USE RETAIL DEVELOPMENT WITH ASSOCIATED PARKING. SITE TO BE SERVICED BY MUNICIPAL SEWER AND WATER AND ELECTRIC.

2. CITY OF WESTBROOK

ZONING DISTRICT: GATEWAY COMMERCIAL DISTRICT	REQUIRED	PROPOSED
LOT AREA MINIMUM	20,000 SF	1,106,776± SF
BUILDING SETBACKS (MINIMUM):		
FRONT SETBACK	20'	20'
SIDE SETBACK	20'	20'
REAR SETBACK	20'	20'
MAX. BUILDING HEIGHT	50'(4-STORIES)	<50'
MIN. FRONTAGE	100'	
MAX. FOOTPRINT	160,000	
MAX. FOOTPRINT FACTOR	50%	
SOUTH CAMPUS = 186,613/1,106,776		16.9%
MAX. GROSS DENSITY FACTOR	75%	
SOUTH CAMPUS = 666,755/1,106,776		60.2%

3. PARKING CALCULATIONS:
   SOUTH CAMPUS:
   GROSS FLOOR AREA, MAJOR RETAIL CENTER (186,613 S.F.) - (5.5 SPACES PER 1,000 S.F.)
   TOTAL SPACES REQUIRED = 1,026
   TOTAL SPACES PROVIDED = 777 (13 HANDICAP INCL.)
   PARKING DIMENSIONS= 18'-5" x 9' (EXCEPT RETAIL BUILDING "E" - 18'-5" x 9'-6")
   *PARKING WAIVER REQUESTED

4. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.

5. ALL CONSTRUCTION SHALL CONFORM TO CITY STANDARDS AND REGULATIONS, AND MEDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.

6. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.

7. A PRE-CONSTRUCTION CONFERENCE, AT LEAST FORTY EIGHT (48) HOURS PRIOR TO INITIAL SITE WORK, WILL BE HELD WITH REPRESENTATIVES OF THE CITY DEPARTMENTS.

8. ALL PROPOSED SIGNAGE SHALL CONFORM WITH CITY ZONING REGULATIONS, UNLESS A VARIANCE IS OTHERWISE REQUESTED. PROPOSED BUILDING SIGNAGE FOR RETAIL BUILDING WILL BE AS PER THE CITY OF WESTBROOK PLANNING BOARD DECISION.

9. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND MEDOT STANDARDS AND SPECIFICATIONS (NON-REFLECTORIZED PAVEMENT MARKINGS), UNLESS OTHERWISE NOTED.

10. ALL PARKING STALLS SHALL BE SEPARATED USING 4" WIDE SOLID STRIPES. STRIPING SHALL HAVE TWO COATS OF PAINT, ALKYD BASIN SYNTHETIC RESIN, FEDERAL SPECIFICATION TTP-115 TYPE 1, IN A COLOR OF WHITE.

11. ALL STOP BARS SHALL BE 18" IN WIDTH IN A COLOR OF WHITE; ALL TRAFFIC ARROWS SHALL BE PAINTED IN A COLOR OF WHITE.

12. ALL CURBING TO HAVE MINIMUM RADIUS OF 2', UNLESS OTHERWISE NOTED.

13. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PROVIDED BY THE OWNER AND CONSISTENT WITH ALL APPROVALS FROM THE CITY. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE START OF CONSTRUCTION. BUILDING DIMENSIONS AND AREAS TO BE TO OUTSIDE OF MASONRY, UNLESS OTHERWISE NOTED.

14. ADDRESSING FOR THE PROJECT WILL BE IN ACCORDANCE WITH E-911 AND CITY OF WESTBROOK STANDARDS. ALL BUILDINGS ON THE PROPERTY SHALL HAVE ADDRESS NUMBERS CLEARLY MARKED ON THE BUILDING.

15. THE EXISTING QUARRY SHALL REMAIN FENCED OFF FROM THE PUBLIC, TILL SUCH A TIME THAT THE SAFETY OF THE PUBLIC CAN BE MAINTAINED. NO ENTRANCE WILL BE MADE INTO THE QUARRY WITHOUT FIRST NOTIFYING THE WESTBROOK FIRE DEPARTMENT. FLOTATION RING BUOYS WITH ATTACHES LIFE ROPES SHALL BE MOUNTED ON 4x4 POST AROUND THE QUARRY, MARKED "FOR EMERGENCY USE ONLY".

16. FIRE LANES SHALL BE MARKED PER CITY OF WESTBROOK ORDINANCE SECTION 31-115 THROUGH 31-12. THIS INCLUDES ALL SIGNAGE WITH "NO PARKING FIRE LANE" "TOW AWAY ZONE".

17. ACCESS TO THE SITE FOR FIRE APPARATUS IN ACCORDANCE WITH NFPA 1 AND NFPA 241 SHALL BE STABLISHED PRIOR TO ANY BUILDING CONSTRUCTION. FIRE APPARATUS ACCESS WILL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION.

18. ALL TRAFFIC INTERSECTIONS WITH TRAFFIC LIGHTS WILL BE EQUIPPED WITH SYSTMES TO ALLOW IN-COMING EMERGENCY VEHICLES THE RIGHT OF WAY. THIS WILL BE COORDINATED WITH THE FIRE CHIEF AND/OR HIS DESIGNEE PRIOR TO INSTALLATION.

19. PER NFPA 72, A RADIO ENHANCEMENT TEST SHALL BE PERFORMED IN EVERY BUILDING. THIS WILL DETERMINE IF EMERGENCY RADIOS CAN TRANSMIT AND RECEIVE FROM THE SITE. THIS MAY INCLUDE INSTALLAING A VOTE SITE THAT WOULD ENHANCE RADIO COMMUNICATION THROUGHOUT THE SITE.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

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Plan Name: OVERALL SITE PLAN - SOUTH CAMPUS
Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
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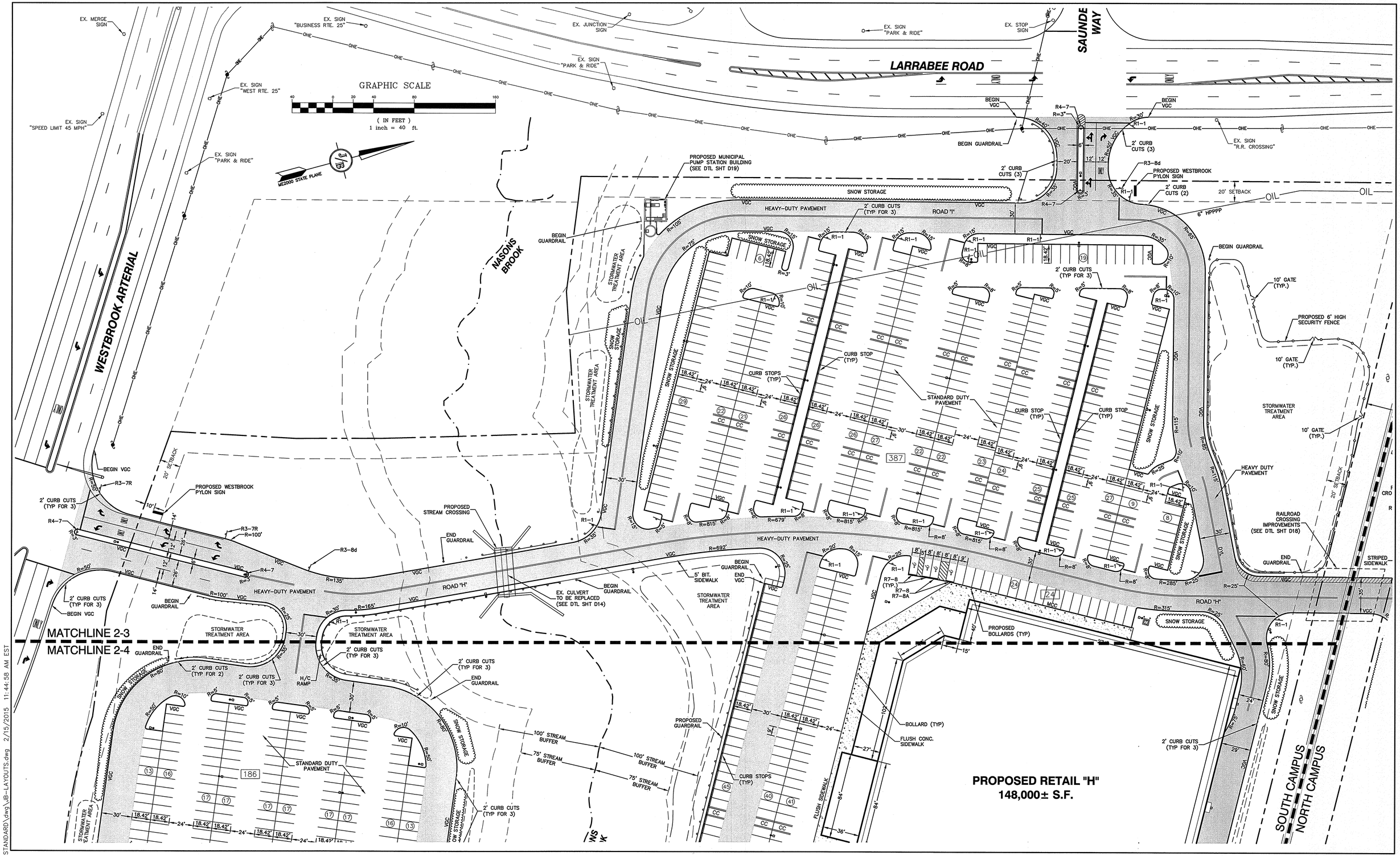

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Plan Name:	SITE PLAN - SOUTH CAMPUS
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DRAWING No.
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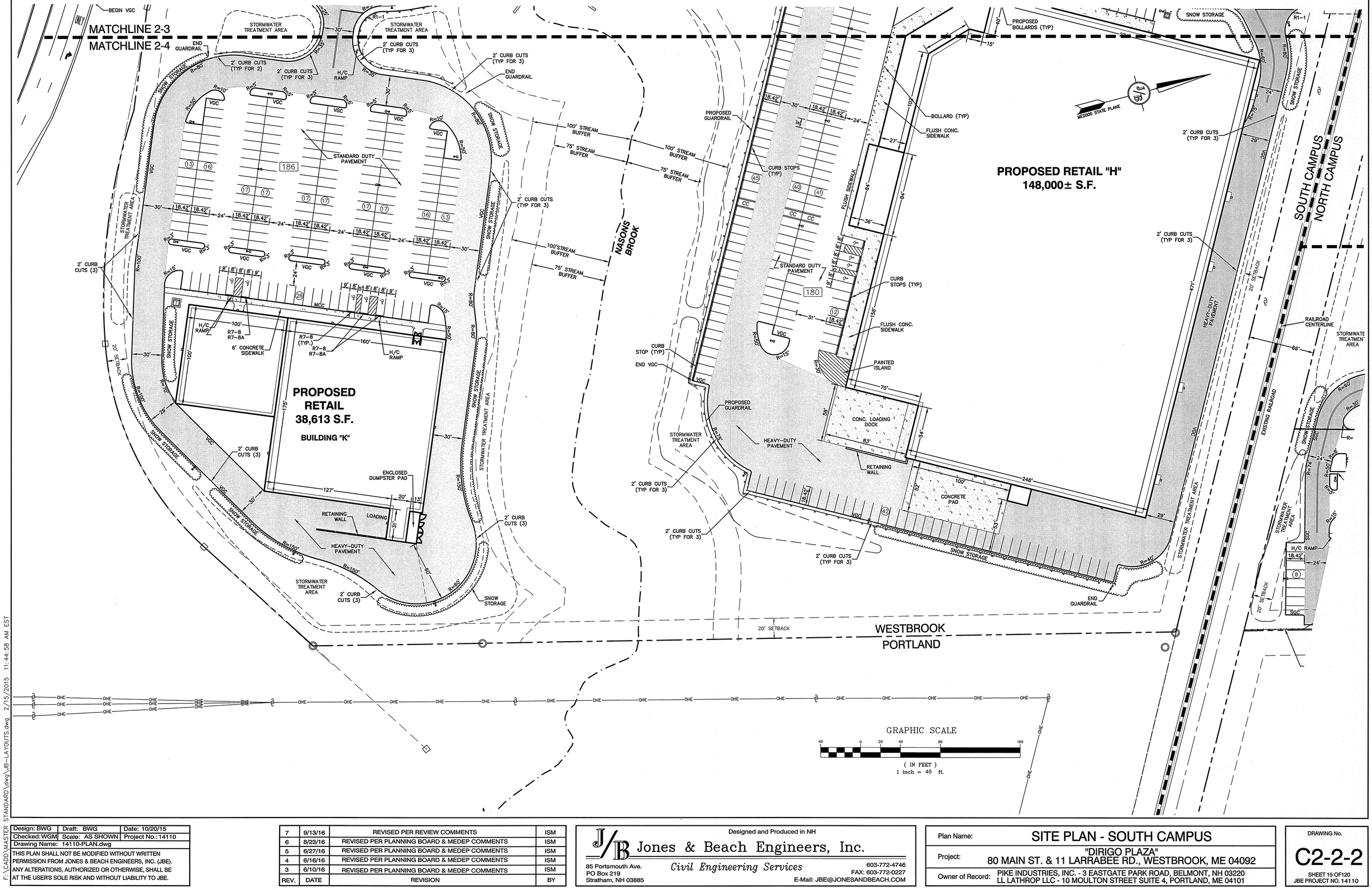

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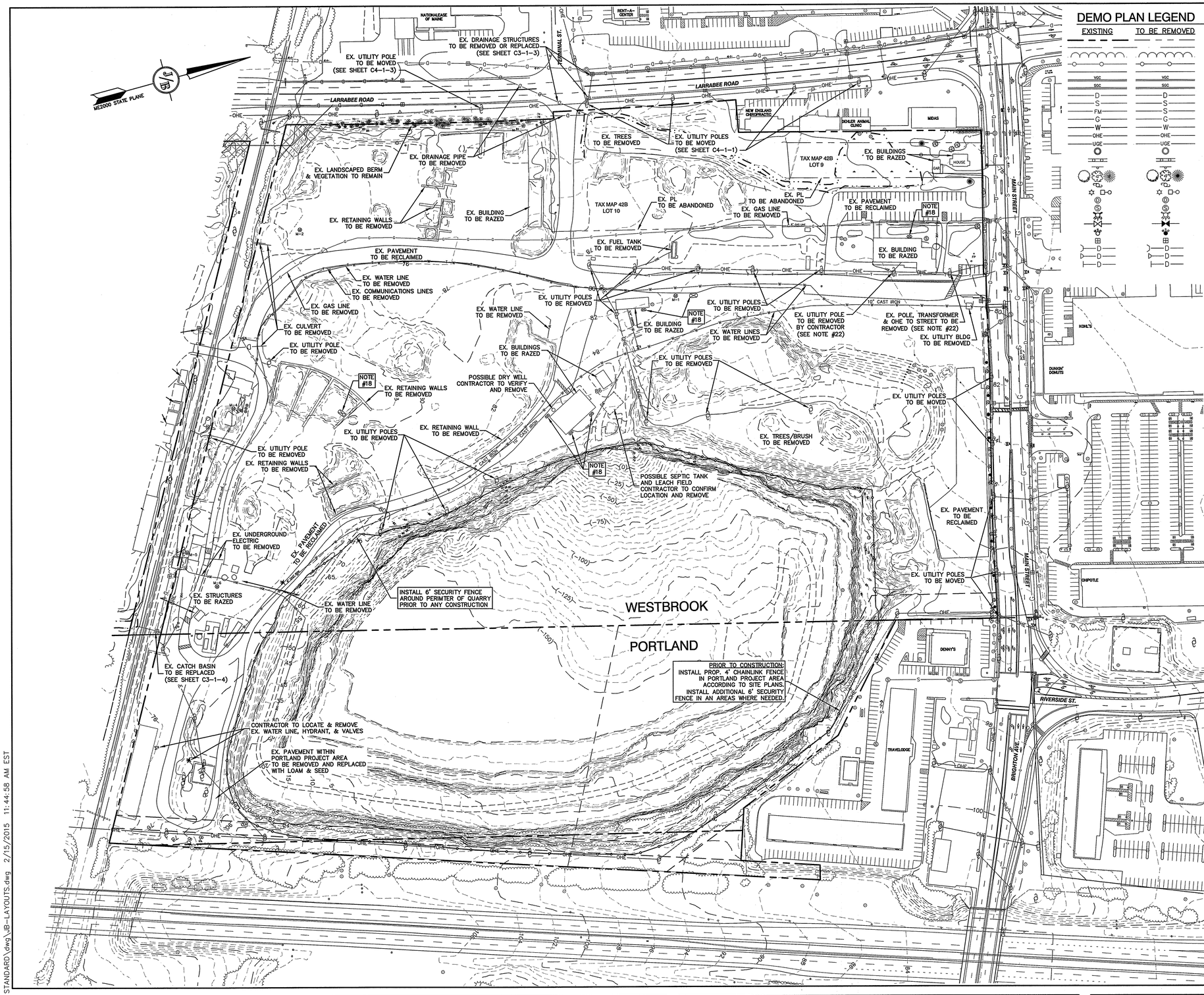
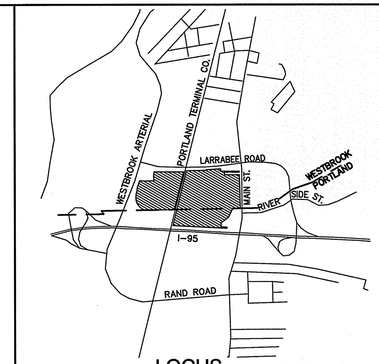


DEMO PLAN LEGEND

EXISTING	TO BE REMOVED	DESCRIPTION
		PROPERTY LINES
		STREAM CHANNEL
		TREE LINE
		FENCE
VGC	VGC	EDGE OF PAVEMENT
SGC	SGC	VERTICAL GRANITE CURB
D	D	SLOPE GRANITE CURB
S	S	DRAINAGE LINE
FM	S	SEWER LINE
G	G	SEWER FORCE MAIN
W	W	GAS LINE
OHE	OHE	WATER LINE
UGE	UGE	OVERHEAD ELECTRIC
		UNDERGROUND ELECTRIC
		IRON PIPE/IRON ROD
		DOUBLE POST SIGN
		SINGLE POST SIGN
		TREES AND BUSHES
		UTILITY POLE
		LIGHT POLES
D	D	DRAIN MANHOLE
S	S	SEWER MANHOLE
		HYDRANT
		WATER GATE
		WATER SHUT OFF
D	D	SINGLE GRATE CATCH BASIN
D	D	CULVERT W/WINGWALLS
D	D	CULVERT W/FLARED END SECTION
D	D	CULVERT W/STRAIGHT HEADWALL



LOCUS SCALE: 1"=2000'

DEMOLITION NOTES:

1. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR SITE DEMOLITION. IT SHOULD BE NOTED THAT ALL MANMADE FEATURES, PAVEMENT, SIGNS, POLES, CURBING, CONCRETE WALKS, UTILITIES, ETC., SHALL BE REMOVED AS NECESSARY TO CONSTRUCT WORK, UNLESS OTHERWISE NOTED TO REMAIN. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCIES FROM DATA AS SHOWN ON DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
2. WETLAND IMPACTS SHALL NOT OCCUR UNTIL ALL PERMITS HAVE BEEN ACQUIRED AND IMPACT MITIGATION REQUIREMENTS HAVE BEEN SATISFIED.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED. CLEARING LIMITS ARE THE EDGE OF THE PROPERTY AND THE LIMITS OF WORK.
4. ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES. ANY BURNING ON-SITE SHALL BE SUBJECT TO LOCAL ORDINANCES.
5. ALL EXISTING PAVED SURFACES WITHIN THE LIMITS OF WORK THAT ARE TO REMAIN SHALL BE RECLAIMED TO MINIMUM DEPTH OF 12" AND REGRADED AS SHOWN ON THE GRADING AND DRAINAGE PLAN. RECLAIMED ASPHALT SHALL CONFORM TO STATE SPECIFICATIONS. PRIOR TO REMOVAL, PAVEMENT SHALL BE SAWCUT AT ALL ENTRANCES AND LIMITS OF REMOVAL.
6. ALL EXISTING GRANITE CURBING TO BE REMOVED SHALL BE STOCKPILED IN AN AREA TO BE DESIGNATED BY THE OWNER OR OWNER'S REPRESENTATIVE. THE OWNER SHALL INSPECT GRANITE CURBING TO BE RESET AND APPROVE LOCATION OF RESET CURBING. THE CONTRACTOR SHALL NOT INSTALL USED CURBING AT ANY ENTRANCE LOCATIONS.
7. ALL EXISTING UTILITIES SHALL BE TERMINATED AT THE PROPERTY LINE, UNLESS OTHERWISE NOTED ON THE PLANS, IN CONFORMANCE WITH LOCAL, STATE AND UTILITY COMPANY STANDARDS, SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES PRIOR TO THE START OF WORK.
8. EXISTING WATERLINES AND HYDRANTS TO BE REMOVED SHALL BE CAPPED AT EXISTING WATERMAIN.
9. EXISTING GAS SERVICE LINES ARE TO BE REMOVED ON-SITE UP TO EXISTING GASMAIN LINES OR VALVES.
10. ALL CURBING, CONCRETE, PAVEMENT, BUILDINGS AND SUBBASE MATERIALS LOCATED WITHIN PROPOSED LANDSCAPED AREAS SHALL BE REMOVED AND REPLACED WITH LOAM MATERIALS SUITABLE FOR LANDSCAPING IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS. (SEE ALSO LANDSCAPE PLAN).
11. SEE LANDSCAPE PLAN FOR "TREES TO BE SAVED" AND DETAILS ASSOCIATED WITH LANDSCAPED AREAS.
12. THE CONTRACTOR SHALL OBTAIN TREE CLEARING PERMIT FROM LOCAL AND STATE AUTHORITIES PRIOR TO START OF CONSTRUCTION (IF REQUIRED).
13. CONTRACTOR SHALL HAVE THE OPTION TO REMOVE DRAINAGE/SEWER STRUCTURES, OR REMOVE MANHOLE FRAME AND GRATE/COVER TO A MINIMUM OF 36" BELOW FINISH GRADE, FRACTURE BOTTOM AND FILL WITH COMPACTED BORROW.
14. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
15. EXISTING SANITARY SEWER LINE AND STRUCTURES LOCATED WITHIN THE EXISTING SEWER EASEMENTS SHALL BE MAINTAINED OR MODIFIED AS NOTED ON PLANS. SEWER LINES SHALL BE DISCONNECTED IN ACCORDANCE WITH LOCAL STANDARDS AND REGULATIONS.
16. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND ANY EARTH MOVING OPERATIONS. SILT FENCE SHALL BE INSTALLED AT THE LIMITS OF IMPACT AREAS ACCORDING TO THE DETAILS SHOWN ON SHEET E1.
17. EXCAVATED MATERIALS WILL BE PLACED WITHIN UPLAND AREAS AS FILL MATERIAL OR HAULED OFF-SITE FOR DISPOSAL IN AN APPROPRIATE UPLAND LOCATION.
18. EXISTING POTENTIAL UNDERGROUND STORAGE TANKS SHOWN ARE APPROXIMATE LOCATIONS IDENTIFIED BY GROUND PENETRATING RADAR. CONTRACTOR TO VERIFY LOCATION/PRESENCE OF ALL TANKS AND TAKE ALL NECESSARY STEPS TO PROPERLY DISPOSE OF TANKS AND THEIR CONTENTS.
19. TREES TO BE REMOVED SHALL BE GROUND UP AND USED FOR EROSION CONTROL AND/OR LANDSCAPING MATERIALS.
20. UNSUITABLE SOILS AND DEMOLITION DEBRIS MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN A PROPER MANNER.
21. PRIOR TO START OF CONSTRUCTION A 6' HIGH SECURITY FENCE SHALL BE INSTALLED AROUND EXISTING QUARRY.
22. CENTRAL MAIN POWER (CMP) IS RESPONSIBLE FOR THE REMOVAL OF THE UTILITY POLE NEAREST MAIN STREET, THE POLE MOUNTED TRANSFORMER, AND THE OVERHEAD ELECTRIC LINES LEADING TO MAIN STREET. CMP WILL CUT ALL OVERHEAD LINES AT THIS POLE AND THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF REMAINING UTILITY POLES AND OVERHEAD LINES WITHIN THE PROJECT AREA. ALL POLE MOUNTED TRANSFORMERS MUST BE REMOVED AND RETURNED TO CMP.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS SHOWN	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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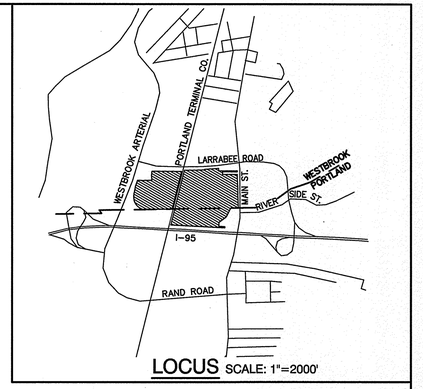
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name: DEMOLITION PLAN - NORTH CAMPUS
Project: "DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C1-2-1
SHEET 5 OF 120
JBE PROJECT NO. 14110



DEMOLITION NOTES:

1. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR SITE DEMOLITION. IT SHOULD BE NOTED THAT ALL MANMADE FEATURES, PAVEMENT, SIGNS, POLES, CURBING, CONCRETE WALKS, UTILITIES, ETC., SHALL BE REMOVED AS NECESSARY TO CONSTRUCT WORK, UNLESS OTHERWISE NOTED TO REMAIN. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCIES FROM DATA AS SHOWN ON DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
2. WETLAND IMPACTS SHALL NOT OCCUR UNTIL ALL PERMITS HAVE BEEN ACQUIRED AND IMPACT MITIGATION REQUIREMENTS HAVE BEEN SATISFIED.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED. CLEARING LIMITS ARE THE EDGE OF THE PROPERTY AND THE LIMITS OF WORK.
4. ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES. ANY BURNING ON-SITE SHALL BE SUBJECT TO LOCAL ORDINANCES.
5. ALL EXISTING PAVED SURFACES WITHIN THE LIMITS OF WORK THAT ARE TO REMAIN SHALL BE RECLAIMED TO MINIMUM DEPTH OF 12" AND REGRADED AS SHOWN ON THE GRADING AND DRAINAGE PLAN. RECLAIMED ASPHALT SHALL CONFORM TO STATE SPECIFICATIONS. PRIOR TO REMOVAL, PAVEMENT SHALL BE SAWCUT AT ALL ENTRANCES AND LIMITS OF REMOVAL.
6. ALL EXISTING GRANITE CURBING TO BE REMOVED SHALL BE STOCKPILED IN AN AREA TO BE DESIGNATED BY THE OWNER OR OWNER'S REPRESENTATIVE. THE OWNER SHALL INSPECT GRANITE CURBING TO BE RESET AND APPROVE LOCATION OF RESET CURBING. THE CONTRACTOR SHALL NOT INSTALL USED CURBING AT ANY ENTRANCE LOCATIONS.
7. ALL EXISTING UTILITIES SHALL BE TERMINATED AT THE PROPERTY LINE, UNLESS OTHERWISE NOTED ON THE PLANS, IN CONFORMANCE WITH LOCAL, STATE AND UTILITY COMPANY STANDARDS, SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES PRIOR TO THE START OF WORK.
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17. EXCAVATED MATERIALS WILL BE PLACED WITHIN UPLAND AREAS AS FILL MATERIAL OR HAULED OFF-SITE FOR DISPOSAL IN AN APPROPRIATE UPLAND LOCATION.
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20. UNSUITABLE SOILS AND DEMOLITION DEBRIS MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN A PROPER MANNER.
21. PRIOR TO START OF CONSTRUCTION A 6' HIGH SECURITY FENCE SHALL BE INSTALLED AROUND EXISTING QUARRY.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14

CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

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Drawing Name: 14110-PLAN.dwg		

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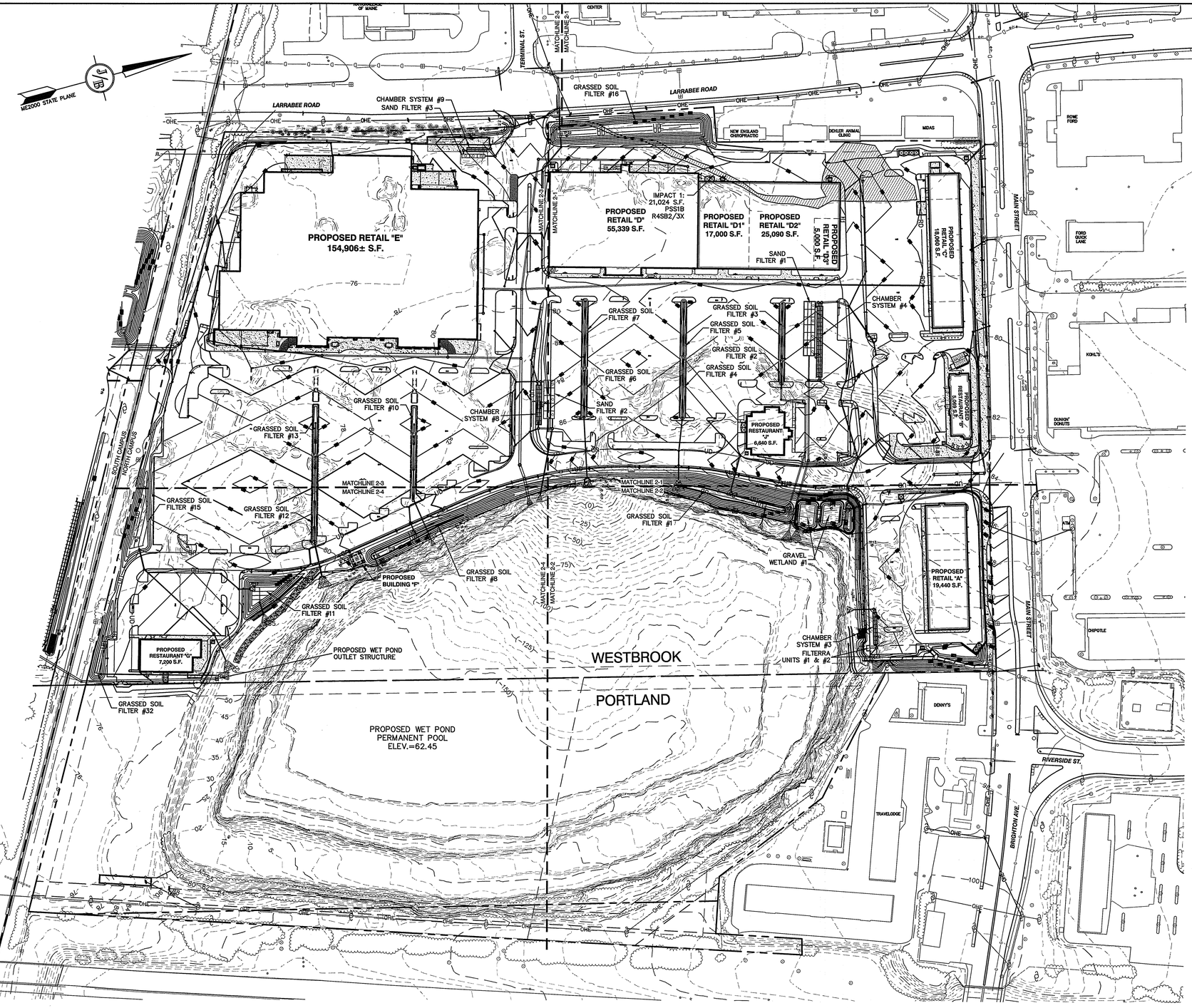
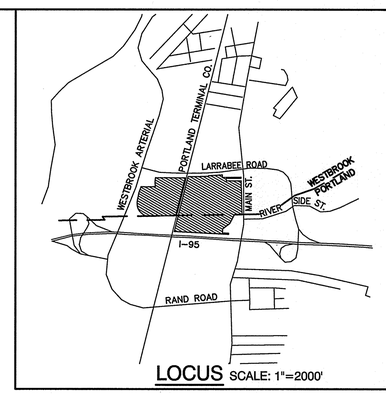
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	DEMOLITION PLAN - SOUTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C1-2-2
SHEET 6 OF 120
JBE PROJECT NO. 14110





LOCUS SCALE: 1"=2000'

GRADING AND DRAINAGE NOTES:

1. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC., NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 888-DIG-SAFE (888-344-7233).
2. VERTICAL DATUM: NVGD29
3. ALL BENCHMARKS AND TOPOGRAPHY SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
4. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. SEE CONSTRUCTION SEQUENCE ON SHEET E1 AND SHEETS EC-1 THROUGH EC-6.
5. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT'S LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.
6. ALL ROOF DRAINS FROM BUILDING SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLAN AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT THE END. ALL EXTERIOR ROOF DOWNSPOUTS ARE TO BE INSTALLED WITH OVERFLOW DEVICES.
7. ALL STORMWATER TREATMENT FEATURES ARE TO BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. PROPOSED RIM ELEVATIONS OF DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
9. ALL SWALES AND ANY SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER), UNLESS OTHERWISE SPECIFIED.
10. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS. CATCH BASINS SHALL HAVE 3' DEEP SUMPS WITH GREASE HOODS, UNLESS OTHERWISE NOTED.
11. ALL DRAINAGE STRUCTURES SHALL BE PRECAST, UNLESS OTHERWISE SPECIFIED. SEE SHEETS C3-1-1 – C3-1-4, C3-2-1 & C3-2-2 FOR DRAINAGE STRUCTURE SCHEDULE AND DETAIL SHEETS FOR DRAINAGE DETAILS.
12. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC H20 LOADING AND SHALL BE INSTALLED ACCORDINGLY.
13. IMMEDIATELY APPLY AND COMPACT STONE BASE FOR BUILDING PAD TO +/-½" PRIOR TO EXCAVATING INTERIOR AND PERIMETER FOOTINGS.
14. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
15. ALL DRAINAGE PIPE SHALL BE NON-PERFORATED ADS N-12 OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED.
16. INLET PROTECTION SHALL BE PLACED AT ALL CATCH BASINS. SEE DETAIL WITHIN THE DETAIL SHEETS.
17. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY ALL COVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE EPA SWPPP DURING CONSTRUCTION OPERATIONS.
18. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
19. ALL EXPOSED AREAS SHALL BE SEEDED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING.
20. SHOULD CONSTRUCTION STOP FOR LONGER THAN 3 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED.
21. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN EVENT OF 0.5" OR GREATER IN A 24 HOUR PERIOD AND AT LEAST ONCE A WEEK.
22. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE, AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
23. CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE TO THE EXTENT POSSIBLE THROUGHOUT CONSTRUCTION.
24. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
25. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
26. SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
27. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
28. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEMED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.

SEE ALSO EROSION AND SEDIMENT CONTROL SPECIFICATIONS ON SHEET E1 AND EROSION & SEDIMENT CONTROL SHEETS EC-1 THROUGH EC-6.

30. FOR STORMWATER TREATMENT CALCULATIONS, SEE SHEETS W2-1 & W2-2 WITHIN DRAINAGE CALCULATIONS.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
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TOTAL LOT AREA
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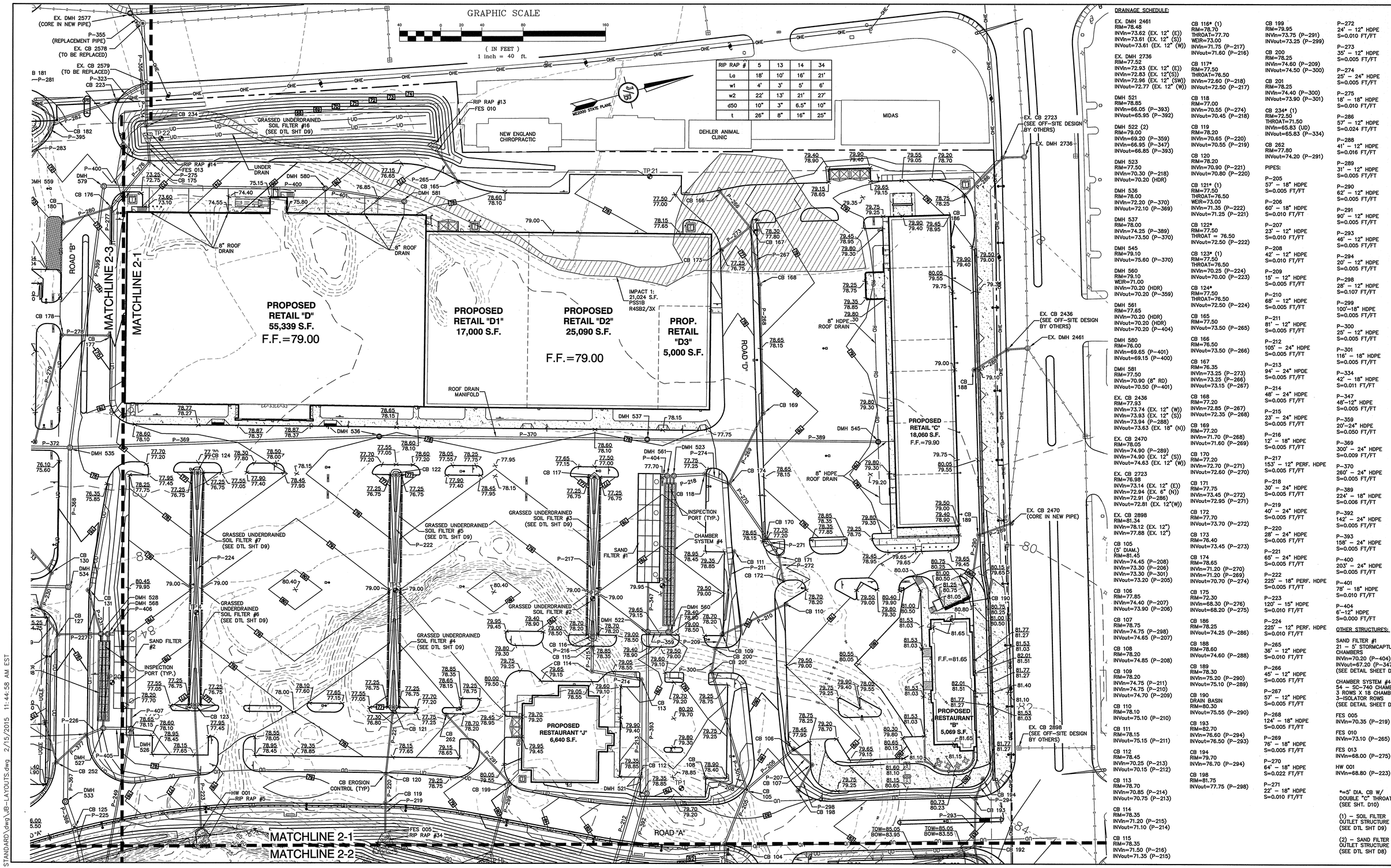
Plan Name: GRADING & DRAINAGE PLAN - NORTH CAMPUS
Project: "DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C3-1
SHEET 17 OF120
JBE PROJECT NO. 14110



RIP RAP #	5	13	14	34
La	18'	10'	16'	21'
w1	4'	3'	5'	6'
w2	22'	13'	21'	27'
d50	10"	3"	6.5"	10"
t	26"	8"	16"	25"

DRAINAGE SCHEDULE:

EX. DMH 2461
RIM=78.48
INVin=73.62 (EX. 12" (E))
INVin=73.61 (EX. 12" (S))
INVout=73.61 (EX. 12" (W))

EX. DMH 2736
RIM=77.52
INVin=72.93 (EX. 12" (E))
INVin=72.83 (EX. 12"(S))
INVin=72.96 (EX. 12" (SW))
INVout=72.77 (EX. 12" (W))

DMH 521
RIM=78.85
INVin=66.05 (P-393)
INVout=65.95 (P-392)

DMH 522 (2)
RIM=79.00
INVin=69.20 (P-359)
INVin=66.95 (P-347)
INVout=66.85 (P-393)

DMH 523
RIM=77.50
INVin=70.30 (P-218)
INVout=70.20 (HDR)

DMH 536
RIM=78.00
INVin=72.20 (P-370)
INVout=72.10 (P-369)

DMH 537
RIM=78.00
INVin=74.25 (P-389)
INVout=73.50 (P-370)

DMH 545
RIM=79.10
INVout=75.60 (P-370)

DMH 560
RIM=79.10
WEIR=71.00
INVin=70.20 (HDR)
INVout=70.20 (P-359)

DMH 561
RIM=77.65
INVin=70.20 (HDR)
INVout=70.20 (HDR)
INVout=70.20 (P-404)

DMH 580
RIM=76.00
INVin=69.65 (P-401)
INVout=69.15 (P-400)

DMH 581
RIM=77.50
INVin=70.90 (8" RD)
INVout=70.50 (P-401)

EX. CB 2436
RIM=77.93
INVin=73.74 (EX. 12" (W))
INVin=73.93 (EX. 12" (S))
INVin=73.94 (P-288)
INVout=73.63 (EX. 18" (N))

EX. CB 2470
RIM=78.05
INVin=74.90 (P-289)
INVin=74.90 (EX. 12" (S))
INVout=74.63 (EX. 12" (W))

EX. CB 2723
RIM=76.98
INVin=73.14 (EX. 12" (E))
INVin=72.94 (EX. 6" (N))
INVin=72.91 (P-286)
INVout=72.81 (EX. 12"(W))

EX. CB 2898
RIM=81.34
INVin=78.12 (EX. 12")
INVin=77.88 (EX. 12")

CB 105
(5' DIAM.)
RIM=81.45
INVin=74.45 (P-208)
INVin=73.30 (P-206)
INVin=73.30 (P-301)
INVout=73.20 (P-205)

CB 106
RIM=77.85
INVin=74.40 (P-207)
INVout=73.90 (P-206)

CB 107
RIM=78.75
INVin=74.75 (P-298)
INVout=74.65 (P-207)

CB 108
RIM=78.20
INVout=74.85 (P-208)

CB 109
RIM=78.20
INVin=74.75 (P-211)
INVin=74.75 (P-210)
INVout=74.70 (P-209)

CB 110
RIM=78.10
INVout=75.10 (P-210)

CB 111
RIM=78.15
INVout=75.15 (P-211)

CB 112
RIM=78.45
INVin=70.25 (P-213)
INVout=70.15 (P-212)

CB 113
RIM=78.70
INVin=70.85 (P-214)
INVout=70.75 (P-213)

CB 114
RIM=78.35
INVin=71.20 (P-215)
INVout=71.10 (P-214)

CB 115
RIM=78.35
INVin=71.50 (P-216)
INVout=71.35 (P-215)

CB 116* (1)
RIM=78.70
THROAT=77.70
WEIR=73.00
INVin=71.75 (P-217)
INVout=71.60 (P-216)

CB 117*
RIM=77.50
THROAT=76.50
INVin=72.60 (P-218)
INVout=72.50 (P-217)

CB 118
RIM=77.00
INVin=70.55 (P-274)
INVout=70.45 (P-218)

CB 119
RIM=78.20
INVin=70.65 (P-220)
INVout=70.55 (P-219)

CB 120
RIM=78.20
INVin=70.90 (P-221)
INVout=70.80 (P-220)

CB 121* (1)
RIM=77.50
THROAT=76.50
WEIR=73.00
INVin=71.35 (P-222)
INVout=71.25 (P-221)

CB 122*
RIM=77.50
THROAT = 76.50
INVout=72.50 (P-222)

CB 123* (1)
RIM=77.50
THROAT=76.50
INVin=70.25 (P-224)
INVout=70.00 (P-223)

CB 124*
RIM=77.50
THROAT=76.50
INVout=72.50 (P-224)

CB 165
RIM=76.50
INVout=73.50 (P-265)

CB 166
RIM=76.50
INVout=73.50 (P-266)

CB 167
RIM=76.35
INVin=73.25 (P-273)
INVin=73.25 (P-266)
INVout=73.15 (P-267)

CB 168
RIM=77.20
INVin=72.85 (P-267)
INVout=72.35 (P-268)

CB 169
RIM=77.20
INVin=71.70 (P-268)
INVout=71.60 (P-269)

CB 170
RIM=77.20
INVin=72.70 (P-271)
INVout=72.60 (P-270)

CB 171
RIM=77.75
INVin=73.45 (P-272)
INVout=72.95 (P-271)

CB 172
RIM=77.70
INVout=73.70 (P-272)

CB 173
RIM=76.40
INVout=73.45 (P-273)

CB 174
RIM=78.65
INVin=71.20 (P-270)
INVin=71.20 (P-269)
INVout=70.70 (P-274)

CB 175
RIM=72.30
INVin=68.30 (P-276)
INVout=68.20 (P-275)

CB 186
RIM=78.25
INVout=74.25 (P-286)

CB 188
RIM=78.60
INVout=74.60 (P-288)

CB 189
RIM=78.30
INVin=75.20 (P-290)
INVout=75.10 (P-289)

CB 190
DRAIN BASIN
RIM=80.30
INVout=75.55 (P-290)

CB 193
RIM=82.70
INVin=76.60 (P-294)
INVout=76.50 (P-293)

CB 194
RIM=79.70
INVin=76.70 (P-294)

CB 198
RIM=81.75
INVout=77.75 (P-298)

CB 199
RIM=79.95
INVin=73.75 (P-291)
INVout=73.25 (P-299)

CB 200
RIM=78.25
INVin=74.60 (P-209)
INVout=74.50 (P-300)

CB 201
RIM=78.25
INVin=74.40 (P-300)
INVout=73.90 (P-301)

CB 234* (1)
RIM=72.50
THROAT=71.50
INVin=65.83 (UD)
INVout=65.83 (P-334)

CB 262
RIM=77.80
INVout=74.20 (P-291)

PIPES:

P-205
57' – 18" HDPE
S=0.005 FT/FT

P-206
60' – 18" HDPE
S=0.010 FT/FT

P-207
23' – 12" HDPE
S=0.010 FT/FT

P-208
42' – 12" HDPE
S=0.010 FT/FT

P-209
15' – 12" HDPE
S=0.005 FT/FT

P-210
68' – 12" HDPE
S=0.005 FT/FT

P-211
81' – 12" HDPE
S=0.005 FT/FT

P-212
105' – 24" HDPE
S=0.005 FT/FT

P-213
94' – 24" HDPE
S=0.005 FT/FT

P-214
48' – 24" HDPE
S=0.005 FT/FT

P-215
23' – 24" HDPE
S=0.005 FT/FT

P-216
12' – 18" HDPE
S=0.005 FT/FT

P-217
153' – 12" PERF. HDPE
S=0.005 FT/FT

P-218
30' – 24" HDPE
S=0.005 FT/FT

P-219
40' – 24" HDPE
S=0.005 FT/FT

P-220
28' – 24" HDPE
S=0.005 FT/FT

P-221
65' – 24" HDPE
S=0.005 FT/FT

P-222
225' – 18" PERF. HDPE
S=0.005 FT/FT

P-223
120' – 15" HDPE
S=0.010 FT/FT

P-224
225' – 12" PERF. HDPE
S=0.010 FT/FT

P-265
36' – 12" HDPE
S=0.010 FT/FT

P-266
45' – 12" HDPE
S=0.005 FT/FT

P-267
57' – 12" HDPE
S=0.005 FT/FT

P-268
124' – 18" HDPE
S=0.005 FT/FT

P-269
76' – 18" HDPE
S=0.005 FT/FT

P-270
64' – 18" HDPE
S=0.022 FT/FT

P-271
22' – 18" HDPE
S=0.010 FT/FT

P-272
24' – 12" HDPE
S=0.010 FT/FT

P-273
35' – 12" HDPE
S=0.005 FT/FT

P-274
25' – 24" HDPE
S=0.005 FT/FT

P-275
18' – 18" HDPE
S=0.010 FT/FT

P-286
57' – 12" HDPE
S=0.024 FT/FT

P-288
41' – 12" HDPE
S=0.016 FT/FT

P-289
31' – 12" HDPE
S=0.005 FT/FT

P-290
62' – 12" HDPE
S=0.005 FT/FT

P-291
90' – 12" HDPE
S=0.005 FT/FT

P-293
46' – 12" HDPE
S=0.005 FT/FT

P-294
20' – 12" HDPE
S=0.005 FT/FT

P-298
28' – 12" HDPE
S=0.107 FT/FT

P-299
100'–18" HDPE
S=0.005 FT/FT

P-300
25' – 12" HDPE
S=0.005 FT/FT

P-301
116' – 18" HDPE
S=0.005 FT/FT

P-334
42' – 18" HDPE
S=0.011 FT/FT

P-347
48'–12" HDPE
S=0.005 FT/FT

P-359
20'–24" HDPE
S=0.050 FT/FT

P-369
300' – 24" HDPE
S=0.009 FT/FT

P-370
260' – 24" HDPE
S=0.005 FT/FT

P-389
224' – 18" HDPE
S=0.006 FT/FT

P-392
142' – 24" HDPE
S=0.005 FT/FT

P-393
158' – 24" HDPE
S=0.005 FT/FT

P-400
203' – 24" HDPE
S=0.005 FT/FT

P-401
78' – 18" HDPE
S=0.010 FT/FT

P-404
6'–12" HDPE
S=0.000 FT/FT

OTHER STRUCTURES:

SAND FILTER #1
21 – 5' STORMCAPTURE CHAMBERS
INVin=70.20 (P-404)
INVout=67.20 (P-347)
(SEE DETAIL SHEET D7)

CHAMBER SYSTEM #4
54 – SC-740 CHAMBERS
3 ROWS X 18 CHAMBERS
3–ISOLATOR ROWS
(SEE DETAIL SHEET D8)

FES 005
INVin=70.35 (P-219)

FES 010
INVin=73.10 (P-265)

FES 013
INVin=68.00 (P-275)

HW 001
INVin=68.80 (P-223)

*=5' DIA. CB W/ DOUBLE "C" THROAT (SEE SHT. D10)

(1) – SOIL FILTER OUTLET STRUCTURE (SEE DTL SHT D9)

(2) – SAND FILTER OUTLET STRUCTURE (SEE DTL SHT D8)

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Drawing Name: 14110-PLAN.dwg		

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603-772-4746
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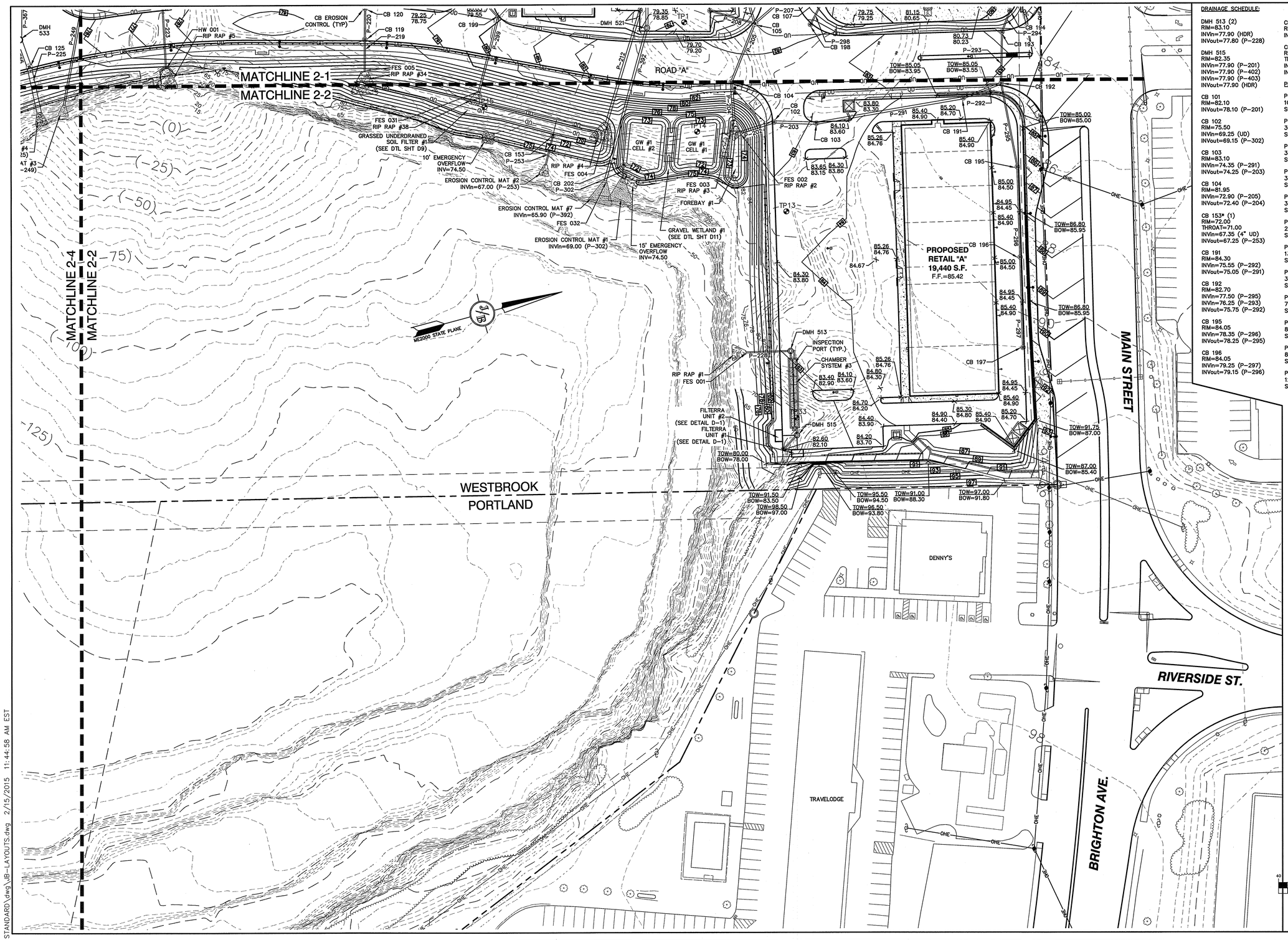
E-Mail: JBE@JONESANDBEACH.COM

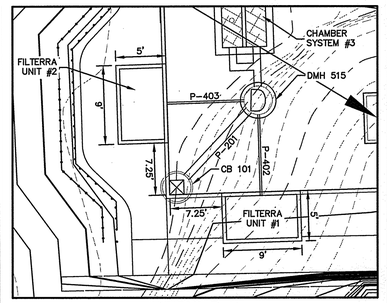
Plan Name: GRADING & DRAINAGE PLAN

Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C3-1-1
SHEET 18 OF 120
JBE PROJECT NO. 14110





DETAIL D-1
SCALE – 1"=10'

RIP RAP #	1	2	3	4	38
La	12'	19'	21'	19'	12'
w1	3'	6'	3'	6'	4.5'
w2	15'	25'	24'	25'	16'
d50	4"	8"	14"	6"	3"
t	10"	19"	34"	15"	8"

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

DRAINAGE SCHEDULE:

DMH 513 (2)
RIM=83.10
INVin=77.90 (HDR)
INVout=77.80 (P-228)

DMH 515
RIM=82.35
INVin=77.90 (P-201)
INVin=77.90 (P-402)
INVin=77.80 (P-403)
INVout=77.90 (HDR)

CB 101
RIM=82.10
INVout=78.10 (P-201)

CB 102
RIM=75.50
INVin=69.25 (UD)
INVout=69.15 (P-302)

CB 103
RIM=83.10
INVin=74.35 (P-291)
INVout=74.25 (P-203)

CB 104
RIM=81.95
INVin=72.90 (P-205)
INVout=72.40 (P-204)

CB 153* (1)
RIM=72.00
THROAT=71.00
INVin=67.35 (4" UD)
INVout=67.25 (P-253)

CB 191
RIM=84.30
INVin=75.55 (P-292)
INVout=75.05 (P-291)

CB 192
RIM=82.70
INVin=77.50 (P-295)
INVin=76.25 (P-293)
INVout=75.75 (P-292)

CB 195
RIM=84.05
INVin=78.35 (P-296)
INVout=78.25 (P-295)

CB 196
RIM=84.05
INVin=79.25 (P-297)
INVout=79.15 (P-296)

CB 197
RIM=84.05
INVout=80.05 (P-297)

CB 202
RIM=75.50
THROAT=74.50
INVin=71.67 (8" ORIFICE)
INVout=69.15 (P-302)

OTHER STRUCTURES:

PIPES:

P-201
10' – 18" HDPE
S=0.010 FT/FT

P-202
30' – 24" HDPE
S=0.005 FT/FT

P-203
38' – 24" HDPE
S=0.005 FT/FT

P-204
35' – 24" HDPE
S=0.005 FT/FT

P-228
35' – 12" HDPE
S=0.010 FT/FT

P-253
27' – 24" HDPE
S=0.010 FT/FT

P-291
134' – 24" HDPE
S=0.005 FT/FT

P-292
36' – 18" HDPE
S=0.005 FT/FT

P-295
76' – 12" HDPE
S=0.010 FT/FT

P-296
81' – 12" HDPE
S=0.010 FT/FT

P-297
81' – 12" HDPE
S=0.010 FT/FT

P-302
12' – 12" HDPE
S=0.010 FT/FT

P-402
13'–4" HDPE
S=0.062 FT/FT

P-403
13'–4" HDPE
S=0.062 FT/FT

OTHER STRUCTURES:

FILTERRA UNIT #1
6'x10' UNIT
THROAT=82.20
INVout=78.70
(SEE DETAIL SHEET D10)

FILTERRA UNIT #2
6'x10' UNIT
THROAT=82.20
INVout=78.70 (P-403)
(SEE DETAIL SHEET D10)

CHAMBER SYSTEM #3
16 – SC-310 CHAMBERS
2 ROWS X 8 CHAMBERS
2–ISOLATOR ROWS
(SEE DETAIL SHEET D8)

GRAVEL WETLAND #1
CELL #1 BOT.=72.00
CELL #2 BOT.=72.00
(SEE DTL SHT D6)

FES 001
INVin=75.00 (P-228)

FES 002
INVin=73.80 (P-350)

FES 003
INVin=72.20 (P-204)

FES 004
INVin=69.60 (P-212)

FES 031
INVin=72.75 (P-299)

FES 032
INVin=65.90 (P-392)

EROSION CONTROL PAD #1
INVin=69.00 (P-302)

EROSION CONTROL MAT #2
INVin=67.00 (P-253)

EROSION CONTROL PAD #7
INVin=65.90 (P-392)

*=5' DIA. CB W/
DOUBLE "C" THROAT
(SEE SHT. D10)

(1) – SOIL FILTER
OUTLET STRUCTURE
(SEE DTL SHT D9)

(2) – SAND FILTER
OUTLET STRUCTURE
(SEE DTL SHT D8)

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Drawing Name: 14110-PLAN.dwg		

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Civil Engineering Services
85 Portsmouth Ave.
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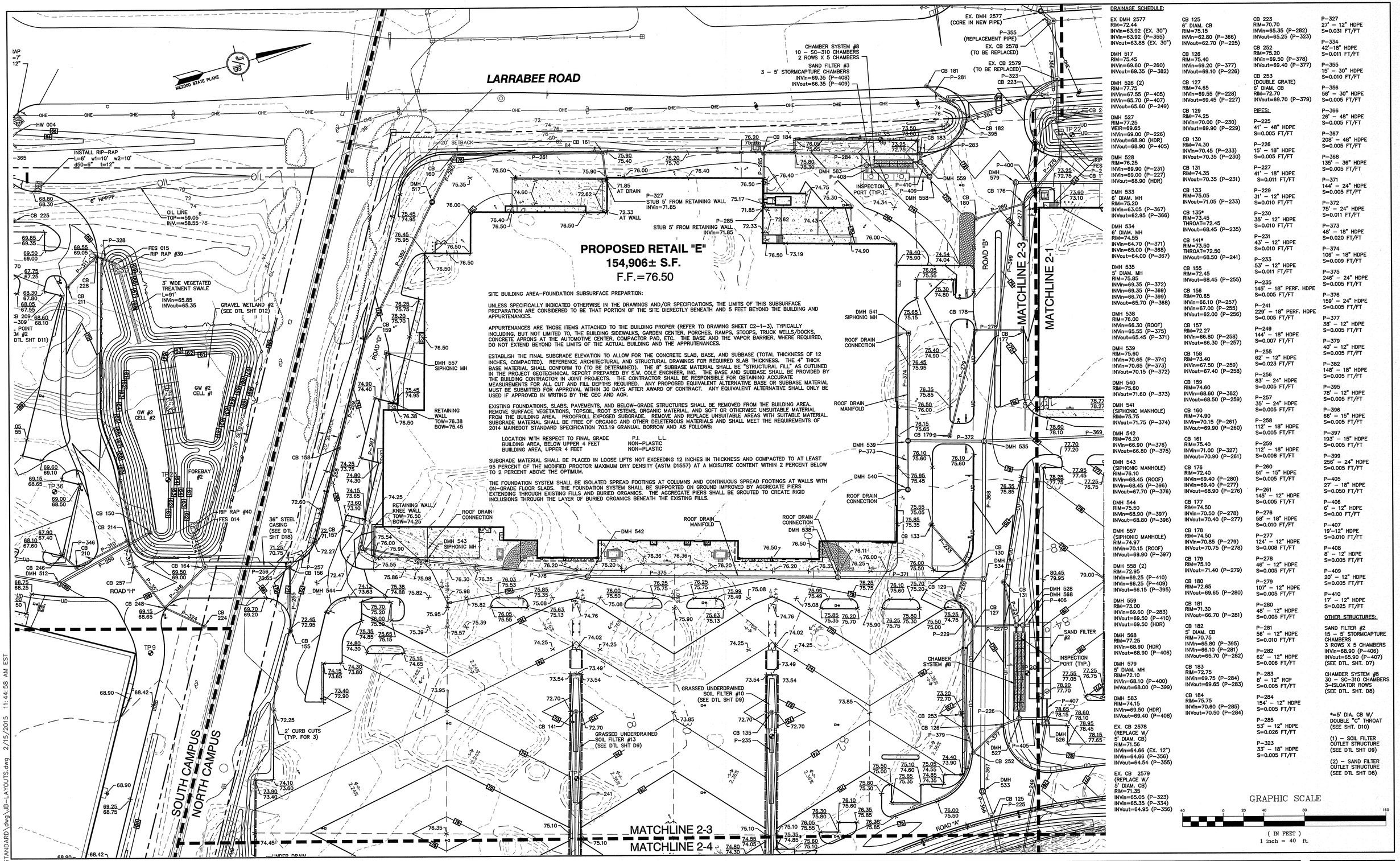
DRAWING No.
C3-1-2
SHEET 19 OF 120
JBE PROJECT NO. 14110



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3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

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Project: "DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
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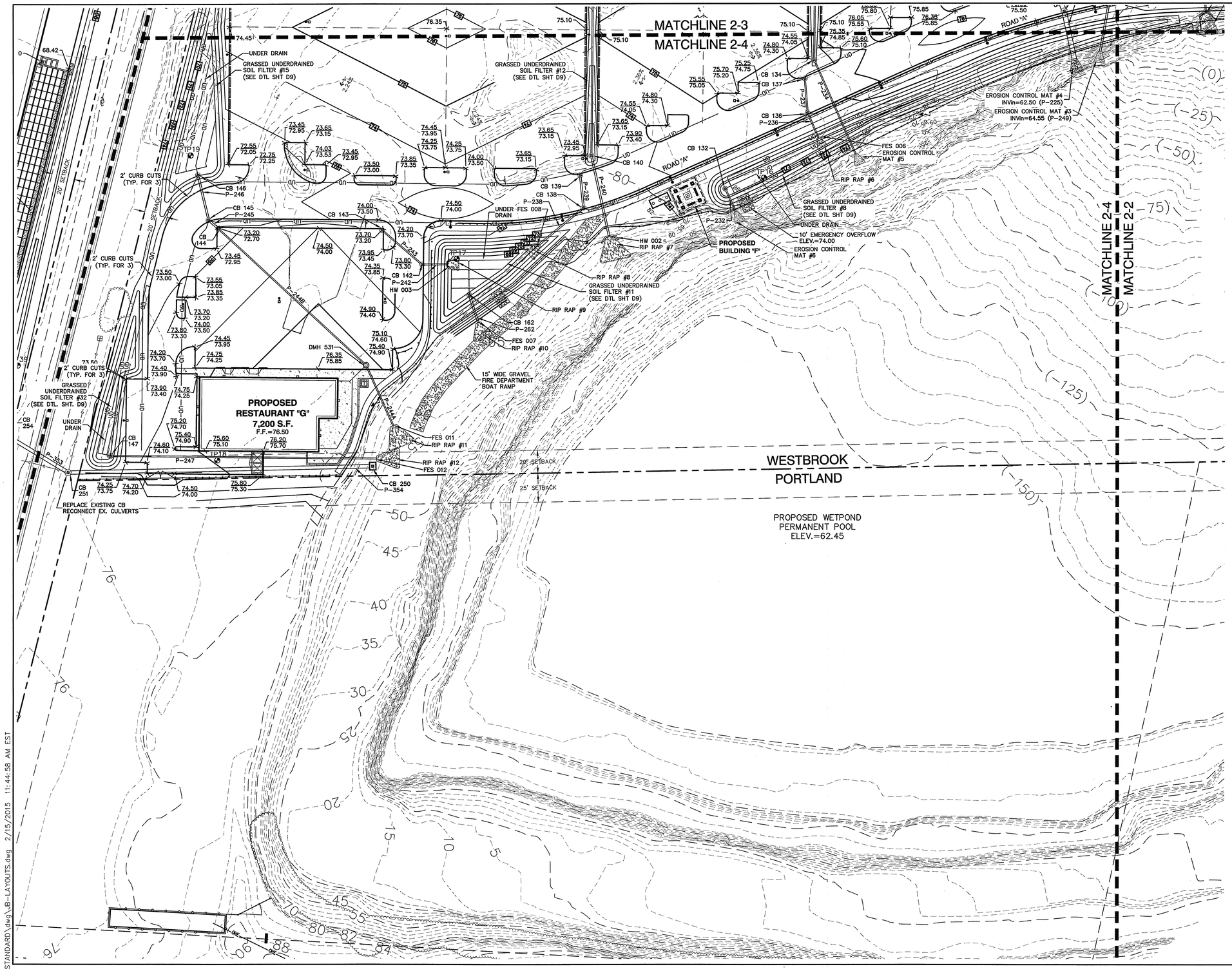
DRAWING No.
C3-1-3
SHEET 20 OF 120
JBE PROJECT NO. 14110



DRAINAGE SCHEDULE:

DMH 531
RIM=75.25
INVin=61.45 (ROOF)
INVin=65.35 (P-244B)
INVout=61.35 (P-244A)

CB 132* (1)
RIM=73.00
THROAT=72.00
INVin=68.33 (4" UD)
INVout=68.30 (P-232)

CB 134* (1)
RIM=75.05
THROAT=74.05
INVin=67.70 (P-235)
INVout=67.60 (P-234)

CB 136
RIM=74.35
INVin=71.05 (P-237)
INVout=70.95 (P-236)

CB 137
RIM=74.35
INVout=71.35 (P-237)

CB 138
RIM=73.00
INVin=69.80 (P-239)
INVout=69.55 (P-238)

CB 139
RIM=72.95
INVout=69.95 (P-239)

CB 140* (1)
RIM=73.70
THROAT=72.70
INVin=67.35 (P-241)
INVout=67.25 (P-240)

CB 142
RIM=73.10
INVin=68.70 (P-243)
INVout=68.60 (P-242)

CB 143
RIM=73.20
INVout=69.20 (P-243)

CB 144
RIM=72.70
INVin=66.85 (P-245)
INVout=66.75 (P-244B)

CB 145
RIM=71.97
INVin=67.10 (P-246)
INVout=67.00 (P-245)

CB 146* (1)
RIM=72.50
THROAT=71.50
INVin=67.83 (4" UD)
INVout=67.50 (P-246)

CB 147* (1)
RIM=73.50
THROAT=72.50
INVin=68.83 (4" UD)
INVout=68.30 (P-247)

CB 162 (1)
RIM=70.45
THROAT=69.45
INVin=65.83 (6" UD)
INVout=65.70 (P-262)

CB 250
RIM=70.00
INVout=62.45 (P-354)
(SEE DTL SHT D7)

CB 251
RIM=74.47
5' DIAM.
INVin=61.10 (P-354)
INVin=68.48 (EX. 8")
INVout=68.37 (EX. 18")
INVout=61.00 (P-353)

P-232
27' – 12" HDPE
S=0.013 FT/FT

P-234
79' – 18" HDPE
S=0.010 FT/FT

P-236
23' – 12" RCP
S=0.010 FT/FT

P-237
30' – 12" RCP
S=0.010 FT/FT

P-238
50' – 15" RCP
S=0.005 FT/FT

P-239
29' – 12" RCP
S=0.005 FT/FT

P-240
72' – 24" RCP
S=0.005 FT/FT

P-242
26' – 12" HDPE
S=0.010 FT/FT

P-243
46' – 12" RCP
S=0.010 FT/FT

P-244A
57' – 24" HDPE
S=0.005 FT/FT

P-244B
139' – 18" HDPE
S=0.008 FT/FT

P-245
11' – 18" HDPE
S=0.010 FT/FT

P-246
40' – 18" HDPE
S=0.010 FT/FT

P-247
231' – 12" HDPE
S=0.023 FT/FT

P-262
25' – 18" HDPE
S=0.040 FT/FT

P-353
101' – 36" HDPE
S=0.005 FT/FT

P-354
265' – 36" HDPE
S=0.005 FT/FT

FES 006
INVin=70.70 (P-236)

FES 007
INVin=64.70 (P-262)

FES 008
INVin=69.30 (P-238)

FES 011
INVin=61.05 (P-244A)

FES 012
INVin=63.00 (P-359)

HW 002
INVin=66.85 (P-240)

HW 003
INVin=68.30 (P-242)

EROSION CONTROL MAT #3
INVin=64.55 (P-249)

EROSION CONTROL MAT #4
INVin=62.50 (P-225)

EROSION CONTROL MAT #5
INVin=66.80 (P-234)

EROSION CONTROL MAT #6
INVin=67.95 (P-232)

*=5' DIA. CB W/ DOUBLE "C" THROAT (SEE SHT. D10)

(1) – SOIL FILTER OUTLET STRUCTURE (SEE DTL SHT D9)

(2) – SAND FILTER OUTLET STRUCTURE (SEE DTL SHT D8)

RIP RAP #	6	7	8	9	10	11	12
La	10'	21'	12'	9'	15'	19'	8'
w1	3'	6'	4'	3'	5'	6'	3'
w2	13'	27'	16'	12'	19'	25'	11'
d50	3"	11"	3"	3"	4"	8"	3"
t	8"	26"	8"	8"	11"	19"	8"

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS SHOWN	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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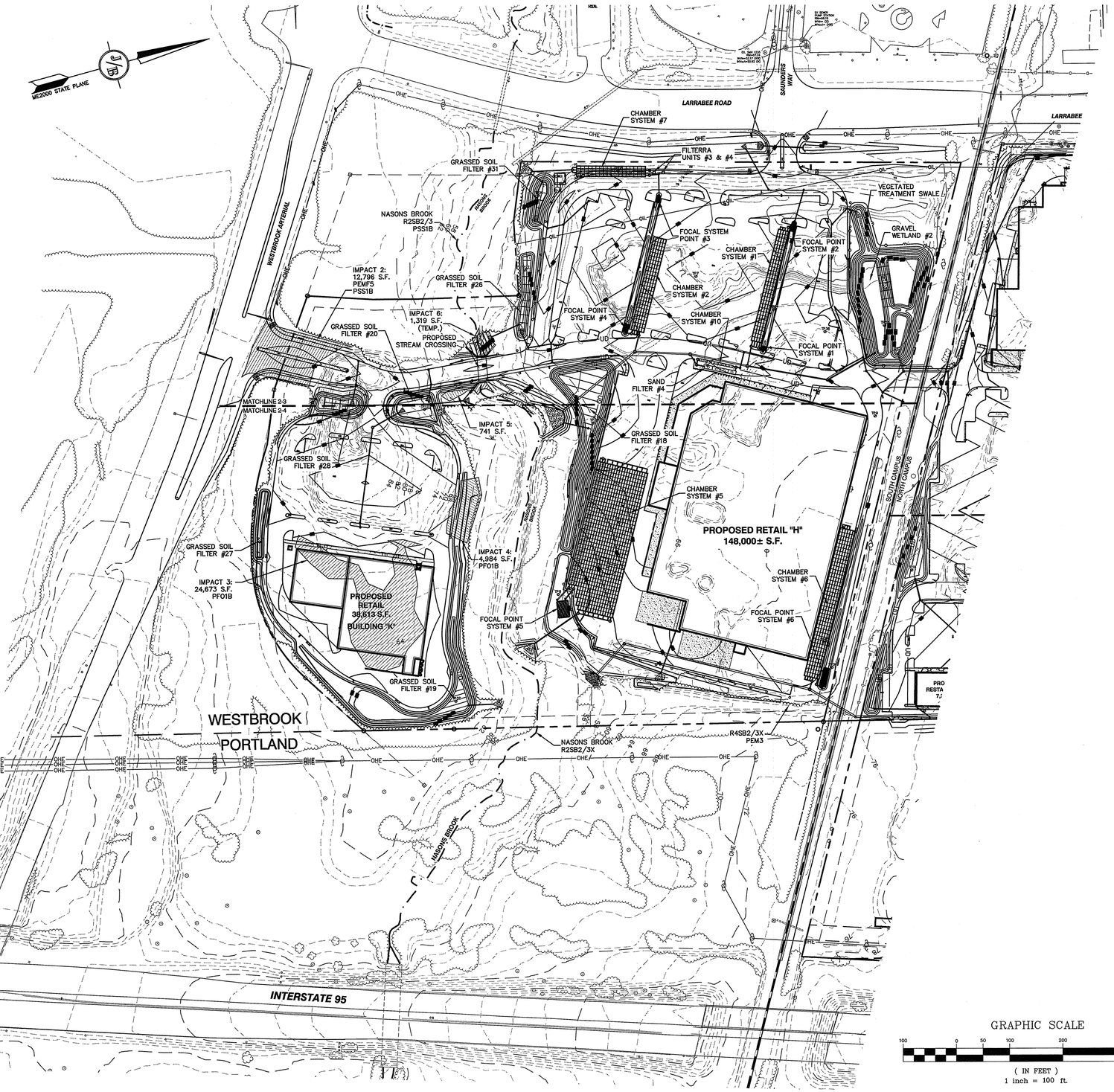
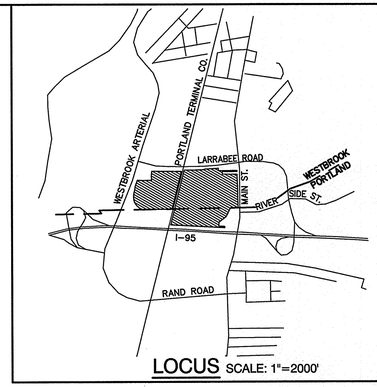
REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	GRADING & DRAINAGE PLAN
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C3-1-4
SHEET 21 OF 120
JBE PROJECT NO. 14110





LOCUS SCALE: 1"=2000'

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14

CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

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Checked:WGM	Scale: AS SHOWN	Project No.:14110	
Drawing Name: 14110-PLAN.dwg			

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FAX: 603-772-0227
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Plan Name: **GRADING & DRAINAGE PLAN - SOUTH CAMPUS**

Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C3-2
SHEET 22 OF 120
JBE PROJECT NO. 14110

DRAINAGE SCHEDULE:

DMH 508 (5' DIAM. MH)
RIM=67.20
INVin=60.60 (P-364)
INVin=58.60 (P-361)
INVout=58.50 (P-360)

DMH 509 (5' DIAM. MH)
RIM=67.55
INVin=59.60 (P-394)
INVin=59.25 (P-362)
INVout=59.15 (P-361)

DMH 511 (5' DIA. MH)
RIM=68.30
INVin=60.25 (P-399)
INVin=59.05 (P-363)
INVout=58.95 (P-362)

DMH 512
RIM=69.00
INVin=560.00 (P-350)
INVout=59.90 (P-363)

DMH 553
RIM=70.00
INVin=61.90 (P-250)
INVout=61.80 (P-350)

DMH 555
RIM=67.50
INVin=62.50 (P-413)
INVin=59.85 (P-411)
INVout=59.75 (P-394)

DMH 556
RIM=66.60
INVin=63.10 (P-390)
INVout=63.10 (P-412)
INVout=63.00 (HDR)

DMH 569
RIM=70.00
INVin=61.00 (HDR)
INVout=60.90 (P-398)

DMH 570
RIM=67.85
INVin=63.40 (P-414)
INVout=61.00 (HDR)

DMH 571
RIM=68.50
INVin=61.10 (P-414)
INVout=61.00 (HDR)

DMH 574
RIM=67.30
INVin=62.75 (HDR)
INVout=62.65 (P-399)

DMH 575
RIM=67.20
INVin=62.85 (P-308)
INVout=62.75 (HDR)

DMH 576
RIM=67.35
INVin=62.85 (P-309)
INVout=62.75 (HDR)

DMH 577
RIM=67.25
INVin=61.95 (HDR)
INVout=61.85 (P-364)

DMH 578
RIM=67.25
INVin=62.05 (P-306)
INVout=61.95 (HDR)

DMH 584
RIM=67.20
WEIR=64.10
INVin=63.00 (HDR)
INVout=63.0 0 (P-413)

CB 150
RIM=65.00
INVout=60.95 (P-250)
GW #2 OUTLET STRUCT.
(SEE DTL. SHT. D12)

CB 164 (5' CB)
RIM=68.45
INVin=61.60 (P-348)
INVin=61.60 (P-256)
INVout=61.50 (P-314)

CB 203* (1)
RIM=66.15
THROAT=65.15
INVin=61.48 (UD)
INVout=61.40 (P-303)

CB 204* (4)
RIM=64.60
THROAT=63.60
INVin=59.68 (UD)
INVout=59.68 (P-304)

CB 206* (4)
RIM=67.00
THROAT=66.00
INVin=62.21 (UD)
INVout=62.20 (P-306)

CB 207* (4)
RIM=68.00
THROAT=67.00
INVout=62.96 (P-307)

CB 208* (1)
RIM=67.50
THROAT=66.50
INVout=62.95 (P-308)

CB 209 (4)
RIM=67.70
THROAT=66.70
INVin=63.50 (P-325)
INVout=62.95 (P-309)

CB 210
RIM=68.80
INVin=63.70 (P-346)
INVout=63.60 (P-310)

CB 211
RIM=69.35
INVout=66.35 (P-311)

CB 214
RIM=69.05
INVin=63.30 (P-310)
INVout=62.80 (P-314)

CB 217
RIM=66.00
INVout=62.80 (P-317)

CB 218
RIM=67.50
INVout=64.50 (P-218)

CB 224 (3)
RIM=68.55
INVout=65.55 (P-324)

CB 225
RIM=68.10
INVout=65.10 (P-325)

CB 226
RIM=68.30
INVout=64.30 (P-326)

CB 227
RIM=65.90
INVout=62.90 (P-381)

CB 228
RIM=69.05
INVin=66.05 (P-311)
INVout=65.95 (P-328)

CB 229
RIM=65.80
INVin=62.60 (P-317)
INVout=62.60 (P-381)
INVout=62.50 (P-329)

CB 230
RIM=65.90
INVin=62.15 (P-329)
INVout=62.05 (P-330)

CB 231
RIM=68.40
INVin=63.90 (P-332)
INVout=63.80 (P-331)

CB 232
RIM=68.55
INVin=64.15 (P-318)
INVout=64.05 (P-332)

CB 233
RIM=67.15
INVin=62.55 (P-307)
INVin=63.30 (P-415)
INVout=62.45 (P-333)

CB 235
RIM=66.30
INVin=62.15 (P-336)
INVout=62.05 (P-335)

CB 236
RIM=66.30
INVout=62.30 (P-336)

CB 237
RIM=67.60
INVin=63.20 (P-338)
INVout=63.10 (P-337)

CB 238
RIM=67.65
INVout=63.65 (P-338)

CB 239* (1)
RIM=64.75
THROAT=63.75
INVin=59.43 (UD)
INVin=59.10 (P-240)
INVout=59.00 (P-339)

CB 240* (1)
RIM=65.50
THROAT=64.50
INVin=59.83 (6" UD)
INVout=59.83 (P-340)

CB 246
RIM=67.40
INVout=63.80 (P-346)

CB 248
RIM=68.65
INVin=65.10 (P-324)
INVin=65.10 (P-348)
INVout=62.00 (P-348)

CB 255
RIM=66.60
INVin=63.30 (P-391)
INVout=63.20 (P-390)

CB 256
RIM=66.60
INVout=63.60 (P-391)

CB 257
RIM=69.10
INVin=62.60 (P-314)
INVout=62.50 (P-357)

PIPES:
P-250
102' – 18" HDPE
S=0.009 FT/FT

P-264
36' – 24" HDPE
S=0.005 FT/FT

P-303
27' – 12" HDPE
S=0.033 FT/FT

P-306
12' – 12" HDPE
S=0.010 FT/FT

P-307
39' – 12" HDPE
S=0.005 FT/FT

P-308
10' – 12" HDPE
S=0.010 FT/FT

P-309
17' – 12" HDPE
S=0.005 FT/FT

P-310
57' – 12 " HDPE
S=0.005 FT/FT

P-311
41' – 12" HDPE
S=0.005 FT/FT

P-314
26' – 18" HDPE
S=0.0075 FT/FT

P-317
19' – 12" HDPE
S=0.010 FT/FT

P-318
65' – 12" HDPE
S=0.005 FT/FT

P-324
43' – 12" HDPE
S=0.010 FT/FT

P-325
62' – 12" HDPE
S=0.022 FT/FT

P-326
87' – 12" HDPE
S=0.015 FT/FT

P-328
21' – 12" HDPE
S=0.005 FT/FT

P-329
43' – 12" HDPE
S=0.0075 FT/FT

P-330
28' – 12" HDPE
S=0.0075 FT/FT

P-331
25' – 12" HDPE
S=0.005 FT/FT

P-332
30' – 12" HDPE
S=0.005 FT/FT

P-333
18' – 12" HDPE
S=0.075 FT/FT

P-335
22' – 12" HDPE
S=0.005 FT/FT

P-336
28' – 12" HDPE
S=0.005 FT/FT

P-337
29' – 12" HDPE
S=0.010 FT/FT

P-338
44' – 12" HDPE
S=0.010 FT/FT

P-339
59' – 18" HDPE
S=0.005 FT/FT

P-340
139' – 12" HDPE
S=0.005 FT/FT

P-346
20' – 12" HDPE
S=0.005 FT/FT

P-348
56' – 12" HDPE
S=0.0075 FT/FT

P-357
51' – 18" HDPE
S=0.0075 FT/FT

P-360
175' – 36" HDPE
S=0.005 FT/FT

P-361
104' – 36" HDPE
S=0.005 FT/FT

P-362
107' – 24" HDPE
S=0.005 FT/FT

P-363
153' – 18" HDPE
S=0.006 FT/FT

P-364
31' – 12" HDPE
S=0.040 FT/FT

P-365
82' – 24" HDPE
S=0.002 FT/FT

P-381
35' – 12" HDPE
S=0.0075 FT/FT

P-385
84' – 18" HDPE
S=0.005 FT/FT

P-390
8' – 12" HDPE
S=0.010 FT/FT

P-391
30' – 12" HDPE
S=0.010 FT/FT

P-394
22' – 12" HDPE
S=0.007 FT/FT

P-398
77' – 12" HDPE
S=0.005 FT/FT

P-399
38' – 18" HDPE
S=0.005 FT/FT

P-411
15' – 12" HDPE
S=0.007 FT/FT

P-412
7' – 12" HDPE
S=0.007 FT/FT

P-413
11' – 12" HDPE
S=0.007 FT/FT

P-414
6' – 4" HDPE
S=0.050 FT/FT

P-415
8' – 4" HDPE
S=0.050 FT/FT

OTHER STRUCTURES:

FES 014
INVin=61.32 (P-314)

FES 015
INVin=65.85 (P-328)

FES 018
INVin=63.00 (P-326)

FES 019
INVin= 63.65 (P-331)

FES 025
INVin=61.90 (P-335)

HW 004
INVin=63.00 (P-365)

HW 005
INVin=62.80 (P-365)

HW 024
INVin=58.70 (P-339)

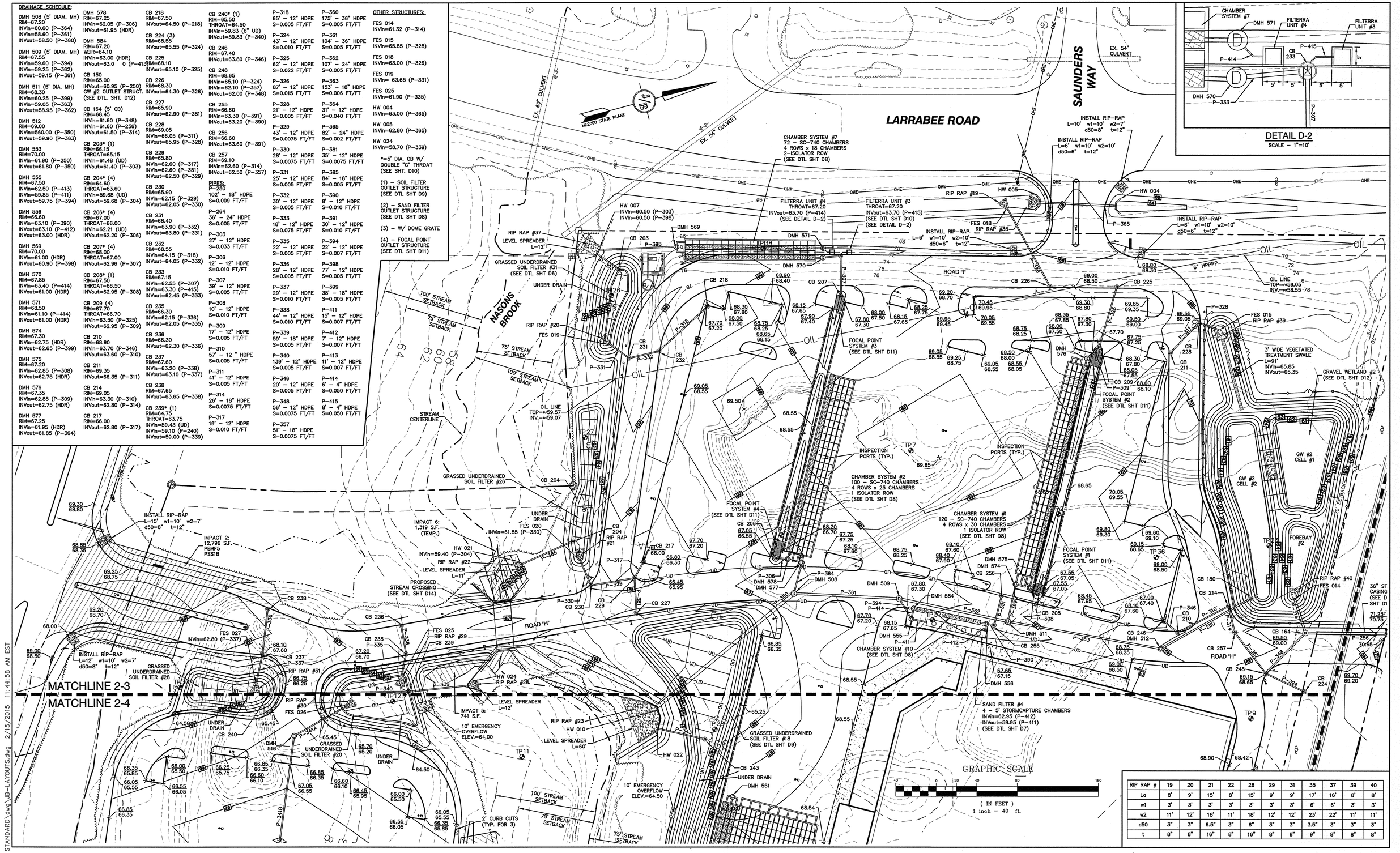
*=5' DIA. CB W/ DOUBLE "C" THROAT (SEE SHT. D10)

(1) – SOIL FILTER OUTLET STRUCTURE (SEE DTL SHT D9)

(2) – SAND FILTER OUTLET STRUCTURE (SEE DTL SHT D8)

(3) – W/ DOME GRATE

(4) – FOCAL POINT OUTLET STRUCTURE (SEE DTL SHT D11)



DETAIL D-2
SCALE – 1"=10'

RIP RAP #	19	20	21	22	28	29	31	35	37	39	40
La	8'	9'	15'	8'	15'	9'	9'	17'	16'	8'	8'
w1	3'	3'	3'	3'	3'	3'	3'	6'	6'	3'	3'
w2	11'	12'	18'	11'	18'	12'	12'	23'	22'	11'	11'
d50	3"	3"	6.5"	3"	6"	3"	3"	3.5"	3"	3"	3"
t	8"	8"	16"	8"	16"	8"	8"	9"	8"	8"	8"

Design: BWG	Draft: BWG
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Drawing Name: 14110-PLAN.dwg	Date: 10/20/15
	Project No.:14110

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Civil Engineering Services
603-772-4746
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E-Mail: JBE@JONESANDBEACH.COM

Plan Name: GRADING & DRAINAGE PLAN

Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C3-2-1
SHEET 23 OF 120
JBE PROJECT NO. 14110

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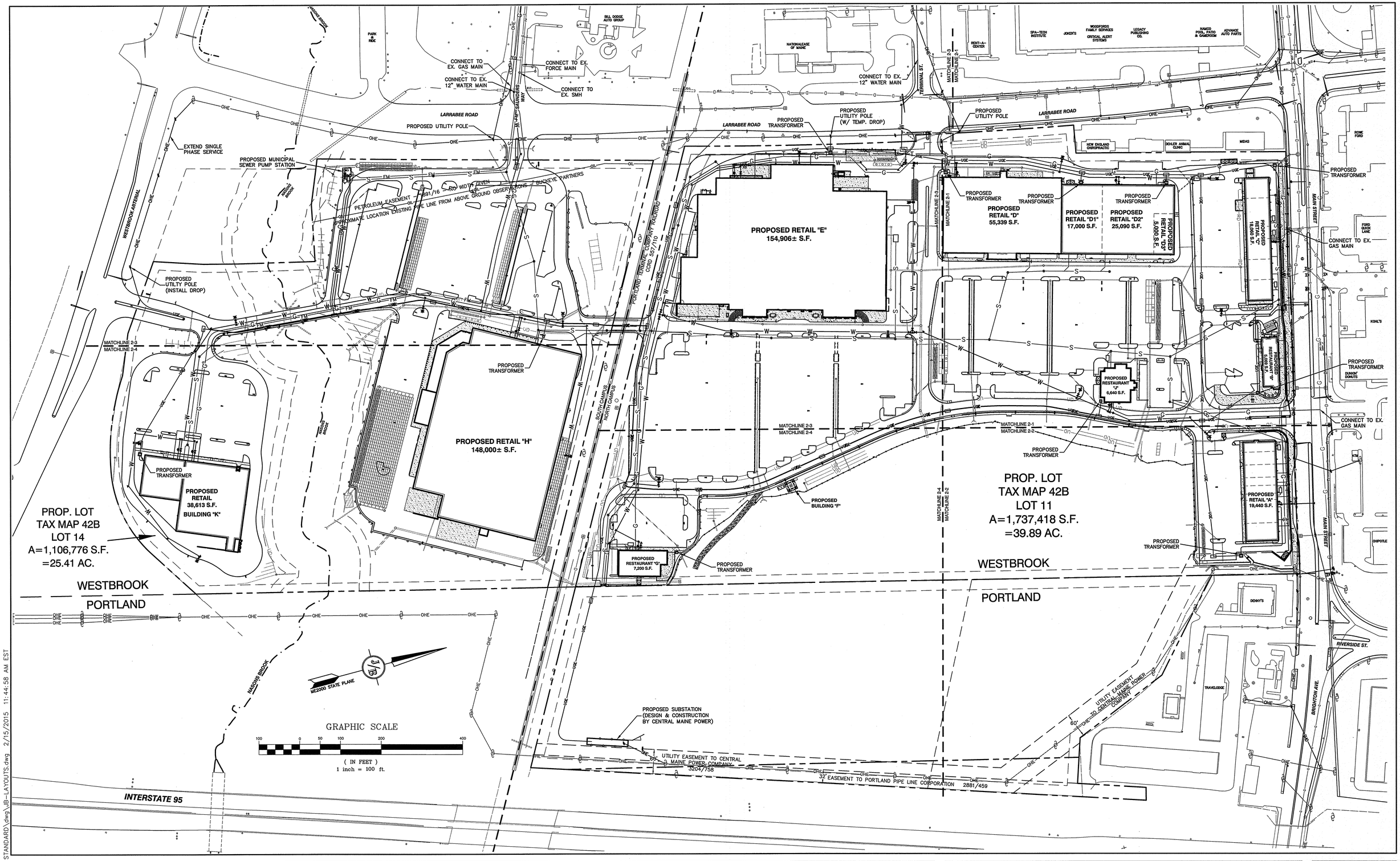

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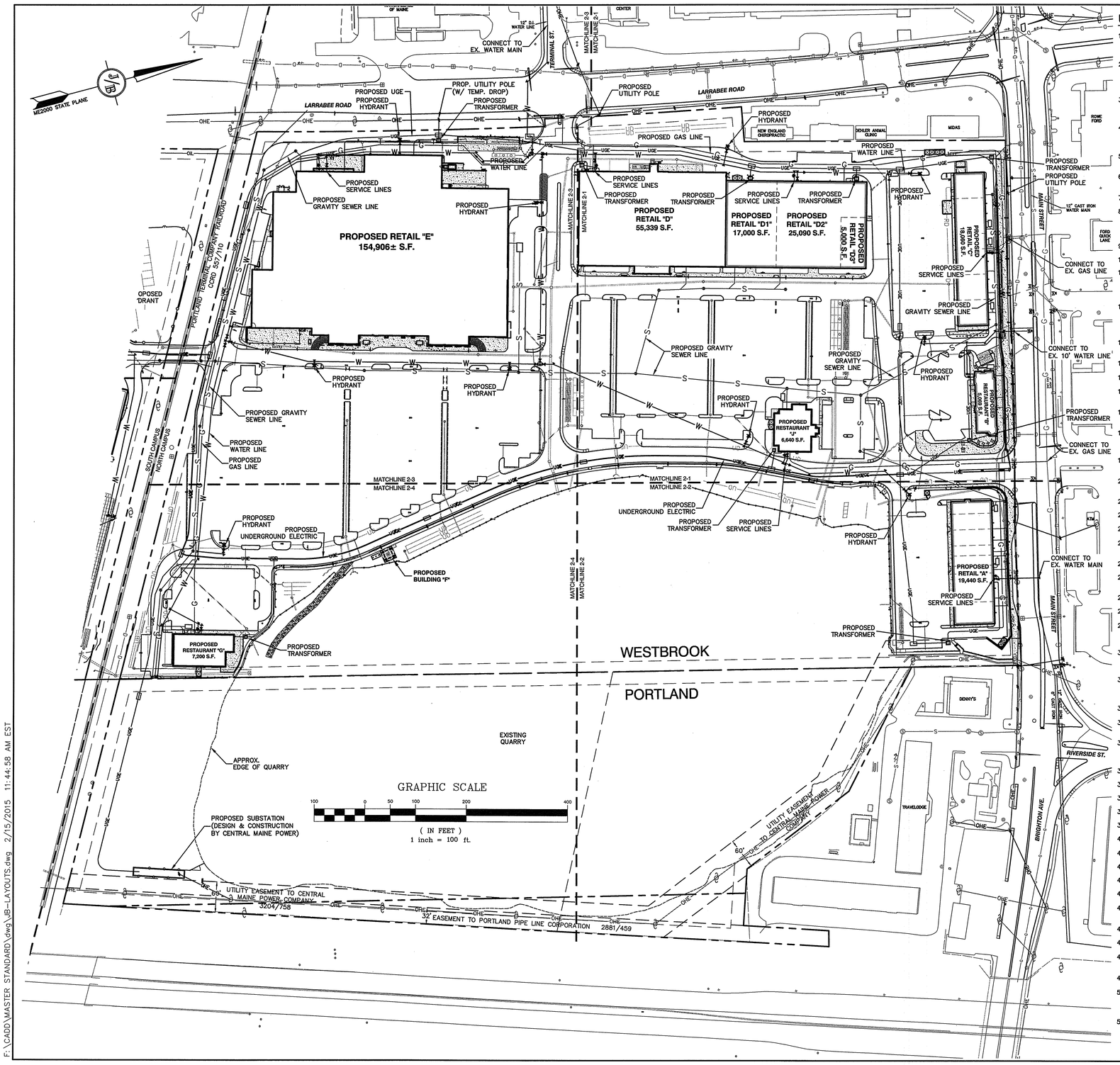
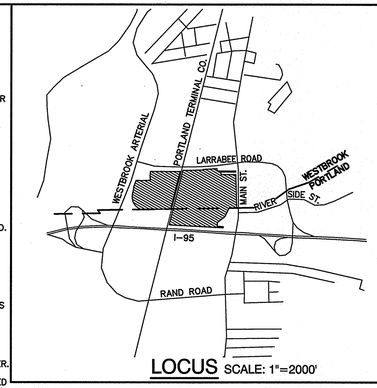
Plan Name:	OVERALL UTILITY PLAN
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C4
SHEET 25 OF 120
JBE PROJECT NO. 14110





UTILITY NOTES:

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, CONNECTION FEES AND BONDS.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
3. THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, FIRE ALARM, GAS, WATER, AND SEWER).
4. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
5. ALL CONSTRUCTION SHALL CONFORM TO THE TOWN STANDARDS AND REGULATIONS, AND NHDES STANDARDS AND SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, UNLESS OTHERWISE SPECIFIED.
6. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
7. BUILDING TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
8. THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
9. AS-BUILT PLANS SHALL BE SUBMITTED TO DEPARTMENT OF PUBLIC WORKS.
10. CONTRACTOR TO PROVIDE UNDERDRAIN, AS NECESSARY, AT DISCRETION OF THE PROJECT ENGINEER.
11. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE THROUGH CHANNEL UNDERLAYMENT OF INVERT, AND SHELF SHALL CONSIST OF BRICK MASONRY.
12. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA, CLEAR OPENING. THE WORD "SEWER" OR DRAIN" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS. THE CASTING SHALL BE OF EVEN-GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES, AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION. CASTINGS SHALL BE EQUAL TO CLASS 30, CONFORMING TO ASTM A48 / 48M-03.
13. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H20 LOADS.
14. CONTRACTOR SHALL PLACE 2" WIDE METAL WIRE IMPREGNATED RED PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS, SERVICES, AND FORCE MAINS.
15. ALL SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS.
16. PROPOSED RIM ELEVATIONS OF DRAINAGE AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
17. ALL WATER MAINS AND SERVICE PIPES SHALL HAVE A MINIMUM 12" VERTICAL AND 24" HORIZONTAL SEPARATION TO MANHOLES, OR CONTRACTOR SHALL INSTALL BOARD INSULATION FOR FREEZING PROTECTION.
18. WATER MAINS SHALL BE HYDROSTATICALLY PRESSURE TESTED FOR LEAKAGE PRIOR TO ACCEPTANCE. WATERMAINS SHALL BE TESTED AT 1.5 TIMES THE WORKING PRESSURE OR 150 PSI, WHICH EVER IS GREATER. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600. WATERMAINS SHALL BE DISINFECTED AFTER THE ACCEPTANCE OF THE PRESSURE AND LEAKAGE TESTS ACCORDING TO AWWA STANDARD C 651.
19. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
20. IF THE BUILDING IS REQUIRED TO HAVE A SPRINKLER SYSTEM, A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR, OWNER, ARCHITECT AND THE LOCAL FIRE DEPARTMENT PRIOR TO THE INSTALLATION.
21. THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES, MECHANICAL JOINTS AND FIRE HYDRANTS.
22. DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
23. FIRE LINE SHALL BE STUBBED UP 1' ABOVE FINISH FLOOR ELEVATION IN SPRINKLER ROOM.
24. AN APPROVED AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH 101 LIFE SAFETY CODE/NFPA 1 AND LOCAL REGULATIONS. FIRE DEPARTMENT CONNECTION SHALL BE FIELD VERIFIED BY LOCAL FIRE DEPARTMENT TO ENSURE OPTIMUM PLACEMENT.
25. THE CONTRACTOR SHALL HAVE THE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER FIRE PROTECTION SYSTEM PRIOR TO INSTALLATION.
26. CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPLICATE TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
27. EXISTING UTILITIES SHALL BE DIGSAFED BEFORE CONSTRUCTION.
28. ALL WATER LINES SHOULD HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
29. SANITARY SEWER LINES SHALL BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM AN EXISTING OR PROPOSED WATER LINE. WHEN A SEWER LINE CROSSES UNDER A WATER LINE, THE SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATERMAIN. THE SEWER LINE SHALL ALSO MAINTAIN A VERTICAL SEPARATION OF NOT LESS THAN 18 INCHES WITH WATER OVER SEWER.
30. SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6 FEET BELOW GRADE IN ALL ROADWAY LOCATIONS, AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS-COUNTRY LOCATIONS. PROVIDE TWO-INCHES OF R-10 FOAM BOARD INSULATION 2-FOOT WIDE TO BE INSTALLED 6-INCHES OVER SEWER PIPE IN AREAS WHERE DEPTH IS NOT ACHIEVED.
31. SEWER AND WATER INFRASTRUCTURE ON PRIVATE PROPERTY IS TO REMAIN PRIVATE, HOWEVER, THE TOWN RESERVES THE RIGHT TO ENTER THE PROPERTY IN ORDER TO INSPECT, REPAIR AND/OR TERMINATE INDIVIDUAL SEWER OR WATER SERVICES (AT OWNER'S EXPENSE). THIS RIGHT IS TO BE CONVEYED TO THE TOWN IN THE SITE'S DECLARATION OF CONDOMINIUM DOCUMENTS, AND IN ALL INDIVIDUAL DEEDS.
32. ALL FIRE HYDRANTS SHALL BE PROVIDED WITH AN APPROVED GATE VALVE A MAXIMUM OF 5'-0" FROM HYDRANT.
33. THE CONTRACTOR SHALL MINIMIZE THE DISRUPTIONS TO THE EXISTING SEWER FLOWS AND THOSE INTERRUPTIONS SHALL BE LIMITED TO FOUR (4) HOURS OR LESS AS DESIGNATED BY THE TOWN SEWER DEPARTMENT.
34. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO USERS AT ALL TIMES. REQUIREMENTS BY THE TOWN WATER DEPARTMENT REGARDING NOTIFICATION FOR INTERRUPTION OF SERVICE SHOULD BE INCLUDED (TYPICALLY 24 HOURS) AND ALLOWABLE INTERRUPTION DURATION. WATER TESTING AND DISINFECTION REQUIREMENTS SHALL BE PERFORMED IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.
35. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
36. ALL SEWER PIPING AND APPURTENANCE SHALL CONFORM TO MEDEP SPECIFICATIONS.
37. NEW CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE DRILLED.
38. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
39. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
40. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
41. MINIMUM COVER OVER WATERLINES SHALL BE 5.5'.
42. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
43. ALL CONCRETE FOR ENCASEMENT SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.
44. REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
45. PROPOSED STRUCTURES WILL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE MAINE UNIFORM BUILDING AND ENERGY CODE (MUBEC) SECTION (IRC) 5501.3 AND ALL OTHER STATE AND LOCAL CODES, ORDINANCES, AND STANDARDS.
46. THE PROPOSED BUILDINGS WILL MEET THE FIRE PROTECTION REQUIREMENTS AS DETERMINED BY THE FIRE/RESCUE DEPARTMENT, UPON SUBMITTAL OF BUILDING PLANS.
47. THE FIRE DEPARTMENT SHALL APPROVE ALL FIRE PROTECTION AND LIFE SAFETY SYSTEMS EQUIPMENT AND MATERIALS.
48. FIRE LANES SHALL BE MARKED PER CITY OF WESTBROOK ORDINANCE SECTION 31-115 THROUGH 31-12. THIS INCLUDES ALL SIGNAGE WITH "NO PARKING FIRE LANE" "TOW AWAY ZONE".
49. FINAL FIRE DEPARTMENT CONNECTION SHALL BE COORDINATED WITH THE FIRE CHIEF OR HIS DESIGNEE PRIOR TO ANY SPRINKLER INSTALLATIONS.
50. CONTRACTOR TO PROVIDE 4" PVC SCH40 PIPE FROM BUILDING "F" TO EACH LANDSCAPE ISLAND FOR IRRIGATION SYSTEM. 4" PVC PIPE TO END 2' (MIN.) BEHIND CURB WITHIN LANDSCAPED ISLANDS. SEE SHEETS 4-1-1 THROUGH 4-1-4 FOR APPROXIMATE LOCATIONS (PIPE AT RAILROAD CROSSING TO BE STEEL PIPE PER RAILROAD CROSSING DESIGN BY OTHERS).
51. FIRE HYDRANTS SHALL BE INSTALLED WITHIN THE DEVELOPMENT WITH THE LOCATION AND NUMBER TO BE DETERMINED BY THE FIRE/RESCUE DEPARTMENT. FIRE FLOWS FOR THE PROJECT WILL BE IN ACCORDANCE WITH NFPA 1 STANDARDS. THE FIRE HYDRANTS SHALL BE TESTED BY THE PORTLAND WATER DISTRICT OR ANOTHER ACCEPTABLE AUTHORITY APPROVED BY THE FIRE/RESCUE DEPARTMENT PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATION OF OCCUPANCY FOR THE PROJECT. THESE HYDRANTS WILL BE PRIVATE HYDRANTS AND THE OWNER IS COMPLETELY RESPONSIBLE TO MAINTAIN YEAR ROUND INCLUDING BUT NOT LIMITED TO KEEPING HYDRANTS CLEAR OF SNOW AND ICE DURING WINTER MONTHS. HYDRANTS SHALL HAVE PROTECTION PROVIDED IN TRAFFIC AREAS.

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Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C4-1
SHEET 26 OF 120
JBE PROJECT NO. 14110

LARRABEE ROAD

MAIN STREET

MATCHLINE 2-3

MATCHLINE 2-1

MATCHLINE 2-1

MATCHLINE 2-2

PROPOSED RETAIL "D" 55,339 S.F.

PROPOSED RETAIL "D1" 17,000 S.F.

PROPOSED RETAIL "D2" 25,090 S.F.

PROP. RETAIL "D3" 5,000 S.F.

PROPOSED RETAIL "C" 18,060 S.F.

PROPOSED RESTAURANT "J" 6,640 S.F.

PROPOSED RESTAURANT "B" 5,069 S.F.

PROPOSED RESTAURANT "B"

NEW ENGLAND CHIROPRACTIC

DEHLER ANIMAL CLINIC

MIDAS

KOHL'S

DUNKIN' DONUTS

(2)-45° BENDS W/ THRUST BLOCKS

246'-10" CL52 CLDI WATER LINE

10" WATER METER VAULT #2 SWITCH PIPEFROM CL52 CLDI TO DR18 C900 (SEE DTL SHT D17)

PROPOSED UTILITY POLE INSTALL DROP FOR TELEPHONE

PROPOSED UTILITY POLE

ELECTRICAL VAULT (SEE DTL SHT D16)

34'-10" DR18 C900 WATER LINE

10"x6" TEE W/ GATE VALVE

3" SERVICE SADDLE W/ WSO

10"-11.25° BEND

FIRE HYDRANT ASSEMBLY (TYP.)

35'-6" DR18 C900 WATER LINE

522'-10" DR18 C900 WATER LINE

1.5" DR11 HDPE SERVICE

6" DR18 C900 FIRE SERVICE

PROPOSED TRANSFORMER

PROPOSED UGE 4x5" CONDUIT

10"x6" TEE W/ GATE VALVE

ELECTRICAL VAULT (SEE DTL SHT D16)

10"-11.25° BEND

10"x6" REDUCER (TYP.)

6" DR18 C900 FIRE SERVICE

3" DR11 HDPE SERVICE

PROPOSED TRANSFORMER

10"x6" TEE W/ GATE VALVE

3" SERVICE SADDLE W/ WSO

227'-6" DR18 C900 WATER LINE

PROPOSED GAS LINE

PROPOSED TRANSFORMER

ELECTRICAL VAULT (SEE DTL SHT D16)

FIRE HYDRANT ASSEMBLY (TYP.) W/ GATE VALVE

SMH 320 RIM=79.25 INVin=73.35 (SERVICE) INVout=73.25 (P-420)

INVout=73.65 (MIN.)

GREASE TRAP #8 1,500 GAL INVin=73.40 INVout=73.15

INVout=73.25 (MIN.)

GREASE TRAP #6 1,500 GAL INVin=73.20 INVout=72.95

INVout=73.07 (MIN.)

4" SCH40 PVC IRRIGATION PIPE SLEEVE PIPE TO END 2' MIN. FROM BACK OF CURB (SEE NOTE 50)

6" DR18 C900 FIRE SERVICE W/ GATE VALVE

3" DR11 HDPE SERVICE

INVout=72.84 (MIN.)

PROPOSED UGE 4x5" CONDUIT

P-420 256'-8" SDR35 PVC S=0.005 FT/FT

INVout=72.63 (MIN.)

GREASE TRAP #2 3,000 GAL INVin=72.65 INVout=72.40

INVout =72.43 (MIN.)

CONNECT TO EX. GAS MAIN AT PROPERTY LINE

192'-3" DR11 HDPE WATER SERVICE

186'-6" DR18 C900 WATER LINE

ELECTRICAL VAULT (SEE DTL SHT D16)

164'-8" DR18 C900 WATER LINE

FIRE HYDRANT ASSEMBLY (TYP.) W/ GATE VALVE

14'-6" DR18 C900 WATER LINE

INSTALL 8"x6" 90° REDUCING ELBOW W/ THRUST BLOCK

24' - 6" SDR35 PVC S=0.020 FT/FT

6" CLEAN-OUT

SEE DETAIL U-1 THIS SHEET

P-419 300'-8" SDR35 PVC S=0.004 FT/FT

INVout =75.50

P-419B 108' - 6" SDR35 PVC S=0.028 FT/FT

GREASE TRAP #1 2,500 GAL INVin=75.30 (SERVICE) INVout=75.05 (P-419B)

PROPOSED GAS LINE

PROPOSED TRANSFORMER

PROPOSED GAS SERVICE

CONNECT TO EX. GAS MAIN

PROP. GAS LINE

PROPOSED UGE SINGLE PHASE CONDUIT

SMH 319 RIM=79.30 INVin=72.00 (P-420) INVin=72.00 (P-419B) INVout=71.90 (P-419A)

EX SMH 2727 RIM=77.90 INVin=65.69 - 10" PVC E INVout=65.68 - 10" PVC W

EX SMH 2463 RIM=79.37 INVin=67.21 - 8" PVC NE INVin=67.22 - 8" PVC E INVout=67.20 - 10" PVC W

EX SMH 2467 RIM=79.87 INVin=68.38 - 8" PVC SE INVout=67.34 - 8" PVC W

EX SMH 2896 RIM=79.73 INVin=69.08 - 8" PVC E INVout=69.06 - 8" PVC NW

EX SMH 2897 RIM=80.84 INVin=73.99 - 8" PVC E INVout=73.96 - 8" PVC W

SMH 311 RIM=78.15 INVin=69.55 (P-412) INVout=69.45 (P-411)

P-412 118'-8" SDR35 PVC S=0.004 FT/FT

SMH 312 RIM=77.60 INVin=70.15 (P-413) INVout=70.05 (P-412)

P-413 180'-8" SDR35 PVC S=0.004 FT/FT

SMH 313 RIM=77.70 INVin=71.00 (SERVICE) INVout=70.90 (P-413)

P-411 187'-8" SDR35 PVC S=0.004 FT/FT

10"-22.5° BEND W/ THRUST BLOCK

SMH 316 RIM=79.25 INVin=68.70 (P-411) INVin=68.70 (P-417) INVout=68.60 (P-416)

P-417 300'-8" SDR35 PVC S=0.004 FT/FT

P-416 231'-8" SDR35 PVC S=0.005 FT/FT

535'-10" DR18 C900 WATER LINE

SMH 317 RIM=79.20 INVin=70.00 (P-418) INVin=72.15 (SERVICE) INVin=72.15 (SERVICE) INVout=69.90 (P-417)

P-418 146'-8" SDR35 PVC S=0.004 FT/FT

13'-6" SDR35 PVC S=0.015 FT/FT

GREASE TRAP #4 1,500 GAL INVin=72.60 INVout=72.35

41'-6" SDR35 PVC S=0.017 FT/FT

17'-6" SDR35 PVC S=0.015 FT/FT

INVout=72.85

SMH 318 RIM=78.50 INVin=70.70 (P-419A) INVin=70.70 (P-421) INVout=70.60 (P-418)

P-421 111'-8" SDR35 PVC S=0.005 FT/FT

SMH 321 RIM=79.30 INVin=71.35 (P-422) INVout=71.25 (P-421)

P-422A 303'-8" SDR35 PVC S=0.005 FT/FT

FIRE HYDRANT ASSEMBLY (TYP)

PROPOSED TRANSFORMER

22'-6" DR18 C900 WATER LINE

2" DR11 HDPE SERVICE

6" CL52 DR18 C900 FIRE SERVICE

6"-22.5° BEND W/ THRUST BLOCK

6"-45° BEND

ELECTRICAL VAULT (SEE DTL SHT D16)

PROPOSED UGE SINGLE PHASE CONDUIT

10"x6" TEE W/ GATE VALVE

2" SADDLE SERVICE W/ WSO

PROPOSED UGE 4x5" CONDUIT

ELECTRICAL VAULT (SEE DTL SHT D16)

10"x6" TEE W/ GATE VALVE

10"x6" REDUCER (TYP.)

ELECTRICAL VAULT (SEE DTL SHT D16)

190'-6" DR18 C900

11' - 4" SDR35 PVC

INVout=70.70

INVout=71.35

INVout=72.00

DETAIL U-1

SCALE - 1"=20'

PROPOSED RETAIL "C"

2" SEPARATION MIN.

192'-3" DR11 HDPE SERVICE

186'-6" DR18 C900 FIRE SERVICE

EX. FIRE HYDRANT (TO REMAIN)

INSTALL 8"x6" TEE W/ THRUST BLOCK

8" CL52 CLDI WATER LINE

INSTALL 10"x8" REDUCER (TYP.)

INSTALL 45° BEND W/ THRUST BLOCK

164'-8" DR18 C900 WATER LINE

EX. 10" C.I. WATER LINE

INSTALL 8"x4" TEE W/ THRUST BLOCK (SWITCH FROM 8" CL52 CLDI TO 8" DR18 C900)

4" METER VAULT SWITCH FROM CL52 CLDI TO DR18 C900 PIPE (SEE DTL SHT D17)

150'-2" DR11 HDPE SERVICE

INSTALL 8"x6" TEE W/ THRUST BLOCK

INSTALL 4"x3"x3" REDUCING TEE W/ 3"x2" REDUCER (SEE DTL SHT D17)

EX. 12" CAST IRON WATER LINE

6" DR18 C900 FIRE SERVICE

6" FIRE CONN. W/ GATE VALVE

2" SERVICE CONN. W/ WSO

6"-90° BEND W/ THRUST BLOCK

PROPOSED RESTAURANT "B"

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

MEZ2000 STATE PLANE

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Plan Name: UTILITY PLAN - NORTH CAMPUS

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Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
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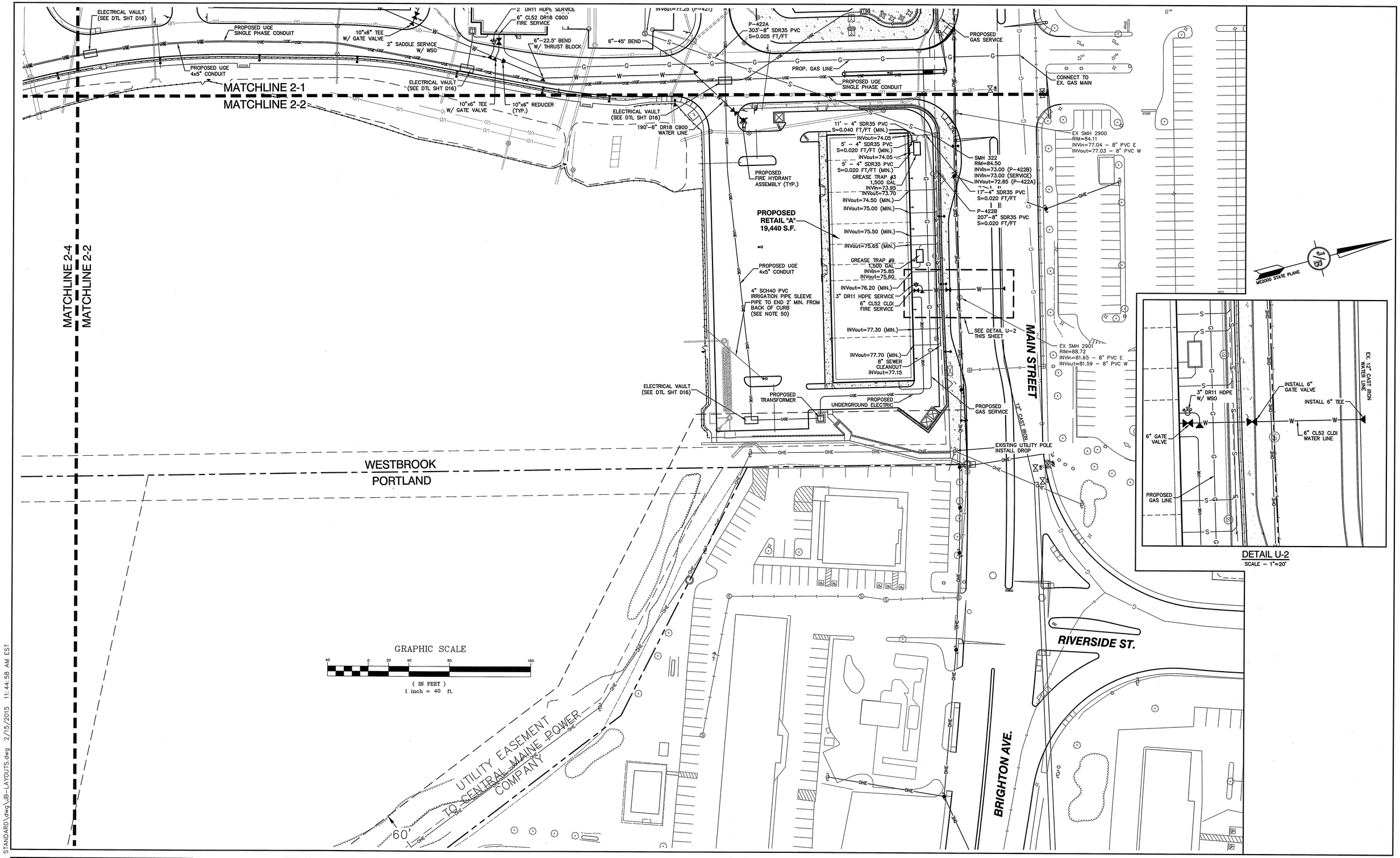
DRAWING No. C4-1-1

SHEET 27 OF 120
JBE PROJECT NO. 14110



DETAIL U-2
SCALE - 1"=20'

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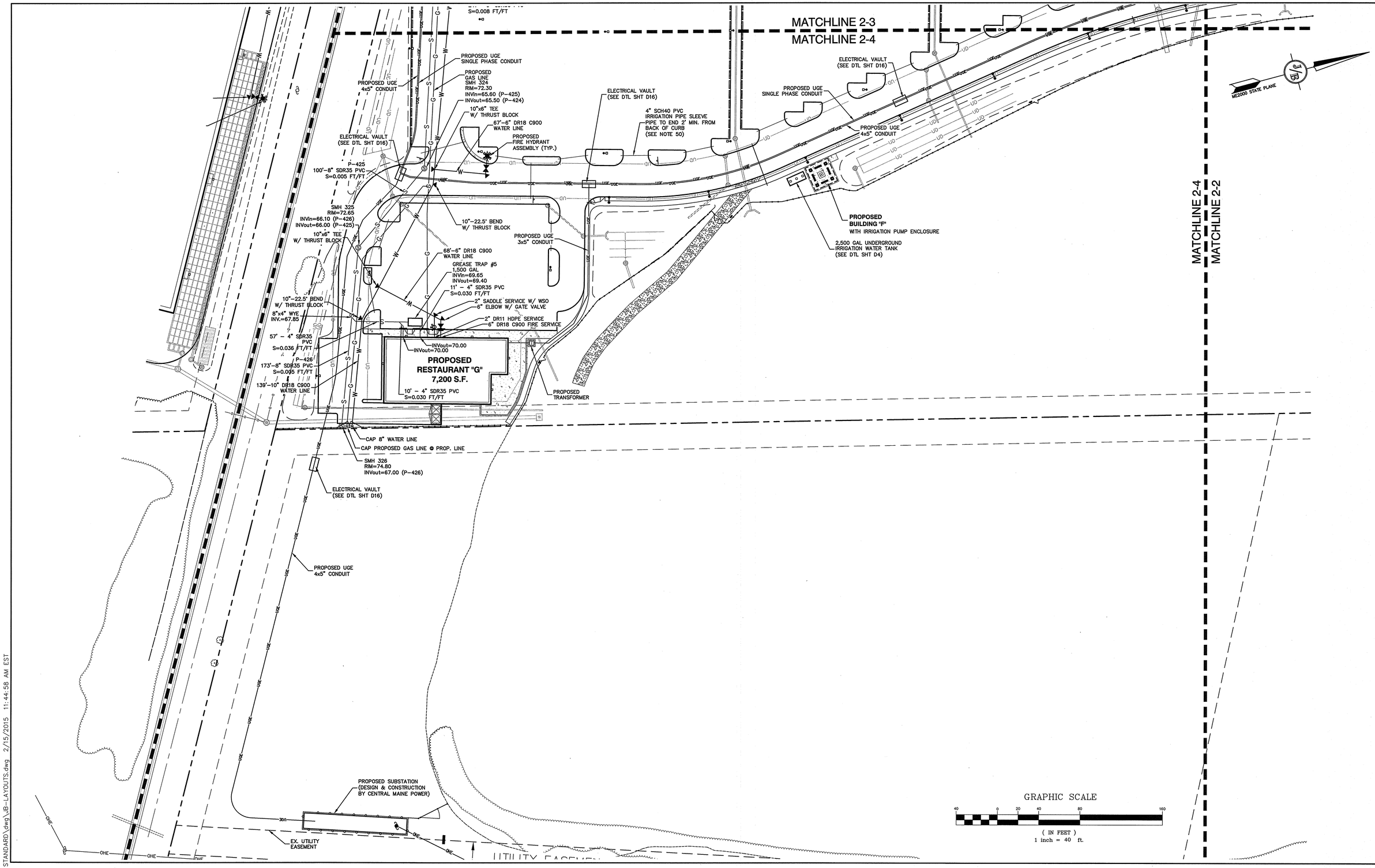
DRAWING No.
C4-1-2
SHEET 28 OF 120
JBE PROJECT NO. 14110



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DRAWING No.
C4-1-4
SHEET 30 OF 120
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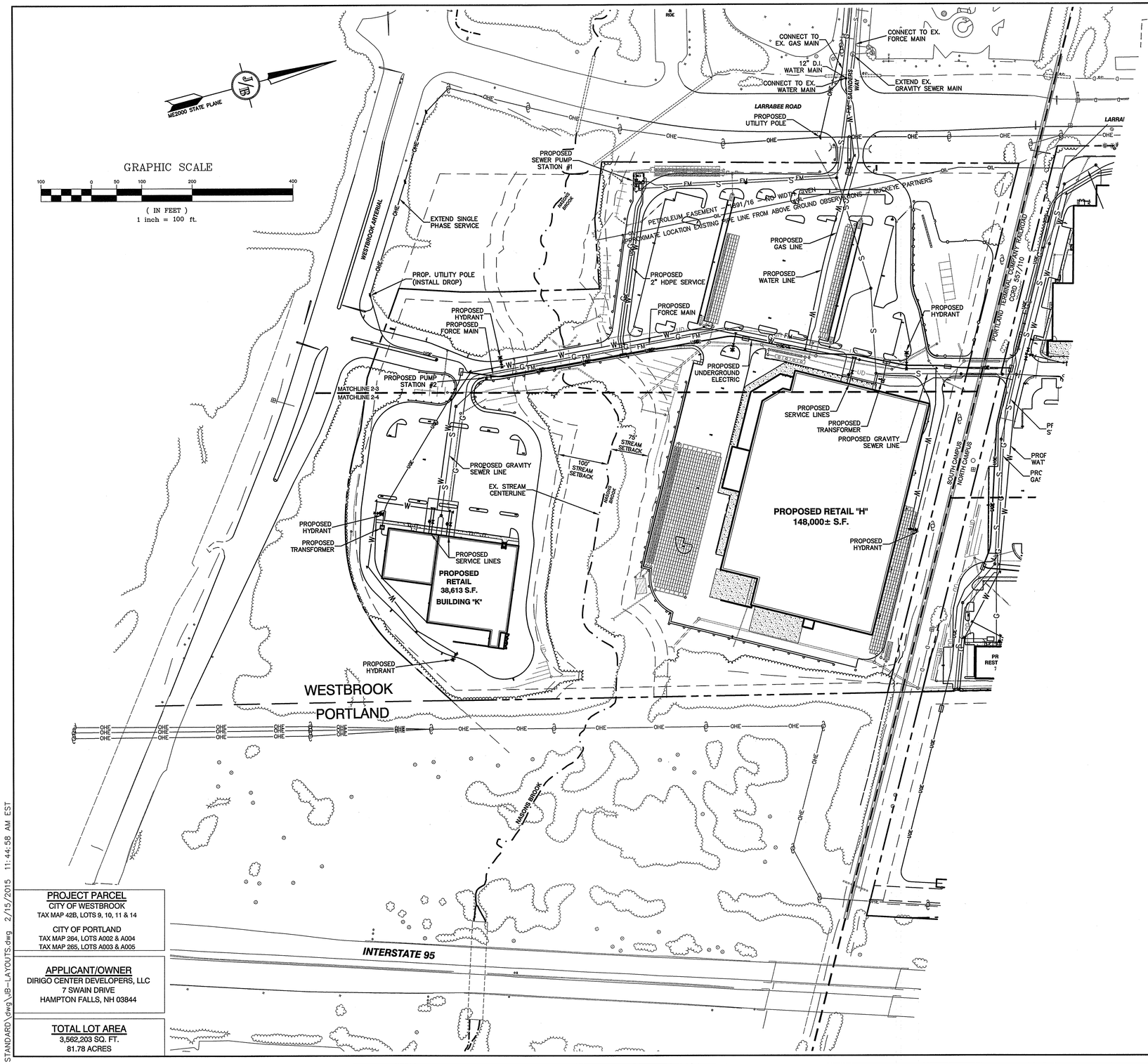

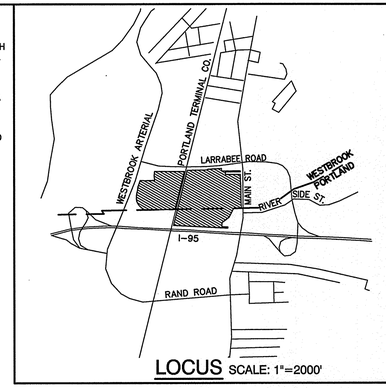

LOCUS SCALE: 1"=2000'

UTILITY NOTES:

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, CONNECTION FEES AND BONDS.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
3. THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, FIRE ALARM, GAS, WATER, AND SEWER).
4. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
5. ALL CONSTRUCTION SHALL CONFORM TO THE TOWN STANDARDS AND REGULATIONS, AND NHDES STANDARDS AND SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, UNLESS OTHERWISE SPECIFIED.
6. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
7. BUILDING TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
8. THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
9. AS-BUILT PLANS SHALL BE SUBMITTED TO DEPARTMENT OF PUBLIC WORKS.
10. CONTRACTOR TO PROVIDE UNDERDRAIN, AS NECESSARY, AT DISCRETION OF THE PROJECT ENGINEER.
11. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE THROUGH CHANNEL UNDERLAYMENT OF INVERT, AND SHELF SHALL CONSIST OF BRICK MASONRY.
12. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA, CLEAR OPENING. THE WORD "SEWER" OR DRAIN" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS. THE CASTING SHALL BE OF EVEN-GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES, AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION. CASTINGS SHALL BE EQUAL TO CLASS 30, CONFORMING TO ASTM A48 / 48M-03.
13. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H20 LOADS.
14. CONTRACTOR SHALL PLACE 2" WIDE METAL WIRE IMPREGNATED RED PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS, SERVICES, AND FORCE MAINS.
15. ALL SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS.
16. PROPOSED RIM ELEVATIONS OF DRAINAGE AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
17. ALL WATER MAINS AND SERVICE PIPES SHALL HAVE A MINIMUM 12" VERTICAL AND 24" HORIZONTAL SEPARATION TO MANHOLES, OR CONTRACTOR SHALL INSTALL BOARD INSULATION FOR FREEZING PROTECTION.
18. WATER MAINS SHALL BE HYDROSTATICALLY PRESSURE TESTED FOR LEAKAGE PRIOR TO ACCEPTANCE. WATERMAINS SHALL BE TESTED AT 1.5 TIMES THE WORKING PRESSURE OR 150 PSI, WHICH EVER IS GREATER. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600. WATERMAINS SHALL BE DISINFECTED AFTER THE ACCEPTANCE OF THE PRESSURE AND LEAKAGE TESTS ACCORDING TO AWWA STANDARD C 651.
19. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
20. IF THE BUILDING IS REQUIRED TO HAVE A SPRINKLER SYSTEM, A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR, OWNER, ARCHITECT AND THE LOCAL FIRE DEPARTMENT PRIOR TO THE INSTALLATION.
21. THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES, MECHANICAL JOINTS AND FIRE HYDRANTS.
22. DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
23. FIRE LINE SHALL BE STUBBED UP 1' ABOVE FINISH FLOOR ELEVATION IN SPRINKLER ROOM.
24. AN APPROVED AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH 101 LIFE SAFETY CODE/NFPA 1 AND LOCAL REGULATIONS. FIRE DEPARTMENT CONNECTION SHALL BE FIELD VERIFIED BY LOCAL FIRE DEPARTMENT TO ENSURE OPTIMUM PLACEMENT.
25. THE CONTRACTOR SHALL HAVE THE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER FIRE PROTECTION SYSTEM PRIOR TO INSTALLATION.
26. CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPLICATE TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
27. EXISTING UTILITIES SHALL BE DIGSAFED BEFORE CONSTRUCTION.
28. ALL WATER LINES SHOULD HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
29. SANITARY SEWER LINES SHALL BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM AN EXISTING OR PROPOSED WATER LINE. WHEN A SEWER LINE CROSSES UNDER A WATER LINE, THE SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATERMAIN. THE SEWER LINE SHALL ALSO MAINTAIN A VERTICAL SEPARATION OF NOT LESS THAN 18 INCHES WITH WATER OVER SEWER.
30. SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6 FEET BELOW GRADE IN ALL ROADWAY LOCATIONS, AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS-COUNTRY LOCATIONS. PROVIDE TWO-INCHES OF R-10 FOAM BOARD INSULATION 2-FOOT WIDE TO BE INSTALLED 6-INCHES OVER SEWER PIPE IN AREAS WHERE DEPTH IS NOT ACHIEVED.
31. SEWER AND WATER INFRASTRUCTURE ON PRIVATE PROPERTY IS TO REMAIN PRIVATE, HOWEVER, THE TOWN RESERVES THE RIGHT TO ENTER THE PROPERTY IN ORDER TO INSPECT, REPAIR AND/OR TERMINATE INDIVIDUAL SEWER OR WATER SERVICES (AT OWNER'S EXPENSE). THIS RIGHT IS TO BE CONVEYED TO THE TOWN IN THE SITE'S DECLARATION OF CONDOMINIUM DOCUMENTS, AND IN ALL INDIVIDUAL DEEDS.
32. ALL FIRE HYDRANTS SHALL BE PROVIDED WITH AN APPROVED GATE VALVE A MAXIMUM OF 5'-0" FROM HYDRANT.
33. THE CONTRACTOR SHALL MINIMIZE THE DISRUPTIONS TO THE EXISTING SEWER FLOWS AND THOSE INTERRUPTIONS SHALL BE LIMITED TO FOUR (4) HOURS OR LESS AS DESIGNATED BY THE TOWN SEWER DEPARTMENT.
34. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO USERS AT ALL TIMES. REQUIREMENTS BY THE TOWN WATER DEPARTMENT REGARDING NOTIFICATION FOR INTERRUPTION OF SERVICE SHOULD BE INCLUDED (TYPICALLY 24 HOURS) AND ALLOWABLE INTERRUPTION DURATION. WATER TESTING AND DISINFECTION REQUIREMENTS SHALL BE PERFORMED IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.
35. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
36. ALL SEWER PIPING AND APPURTENANCE SHALL CONFORM TO MEDEP SPECIFICATIONS.
37. NEW CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE DRILLED.
38. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
39. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
40. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
41. MINIMUM COVER OVER WATERLINES SHALL BE 5'.
42. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
43. ALL CONCRETE FOR ENCASEMENT SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.
44. REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
45. PROPOSED STRUCTURES WILL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE MAINE UNIFORM BUILDING AND ENERGY CODE (MUBEC) SECTION (IRC) 5501.3 AND ALL OTHER STATE AND LOCAL CODES, ORDINANCES, AND STANDARDS.
46. THE PROPOSED BUILDINGS WILL MEET THE FIRE PROTECTION REQUIREMENTS AS DETERMINED BY THE FIRE/RESCUE DEPARTMENT, UPON SUBMITTAL OF BUILDING PLANS.
47. THE FIRE DEPARTMENT SHALL APPROVE ALL FIRE PROTECTION AND LIFE SAFETY SYSTEMS EQUIPMENT AND MATERIALS.
48. FIRE LANES SHALL BE MARKED PER CITY OF WESTBROOK ORDINANCE SECTION 31-115 THROUGH 31-12. THIS INCLUDES ALL SIGNAGE WITH "NO PARKING FIRE LANE" "TOW AWAY ZONE".
49. FINAL FIRE DEPARTMENT CONNECTION SHALL BE COORDINATED WITH THE FIRE CHIEF OR HIS DESIGNEE PRIOR TO ANY SPRINKLER INSTALLATIONS.
51. CONTRACTOR TO PROVIDE 4" PVC SCH40 PIPE FROM BUILDING "F" TO EACH LANDSCAPE ISLAND FOR IRRIGATION SYSTEM. 4" PVC PIPE TO END 2' (MIN.) BEHIND CURB WITHIN LANDSCAPED ISLANDS. SEE SHEETS 4-1-1 THROUGH 4-1-4 FOR APPROXIMATE LOCATIONS (PIPE AT RAILROAD CROSSING TO BE STEEL PIPE PER RAILROAD CROSSING DESIGN BY OTHERS).
52. FIRE HYDRANTS SHALL BE INSTALLED WITHIN THE DEVELOPMENT WITH THE LOCATION AND NUMBER TO BE DETERMINED BY THE FIRE/RESCUE DEPARTMENT. FIRE FLOWS FOR THE PROJECT WILL BE IN ACCORDANCE WITH NFPA 1 STANDARDS. THE FIRE HYDRANTS SHALL BE TESTED BY THE PORTLAND WATER DISTRICT OR ANOTHER ACCEPTABLE AUTHORITY APPROVED BY THE FIRE/RESCUE DEPARTMENT PRIOR TO THE ISSUANCE OF THE FIRST CERTIFICATION OF OCCUPANCY FOR THE PROJECT. THESE HYDRANTS WILL BE PRIVATE HYDRANTS AND THE OWNER IS COMPLETELY RESPONSIBLE TO MAINTAIN YEAR ROUND INCLUDING BUT NOT LIMITED TO KEEPING HYDRANTS CLEAR OF SNOW AND ICE DURING WINTER MONTHS. HYDRANTS SHALL HAVE PROTECTION PROVIDED IN TRAFFIC AREAS.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

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Designed and Produced in NH
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85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	OVERALL UTILITY PLAN - SOUTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
C4-2
SHEET 31 OF 120
JBE PROJECT NO. 14110

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

ME2000 STATE PLANE

SAUNDERS WAY

LARRABEE ROAD

WESTBROOK ARTERIAL

EX SEWER PUMP STATION
RIM=66.19
INVin= (S)
INVout= (NW)

EX. SMH 1235
RIM=66.57
INVin=52.17 (NW)
INVout=52.05 (P-402B)

12" D.I. WATER MAIN

CONNECT TO EX. 12" WATER MAIN

12"x10" REDUCER (TYP.)

10"-11.25° BEND

P-402B
246'-8" SDR35 PVC
S=0.004 FT/FT

PROPOSED UTILITY POLE

SMH 302
RIM=68.10
INVin=51.00 (P-402B)
INVin=52.00 (P-403)
INVout=50.90 (P-402A)

192'-10" CL52 CLDI WATER LINE

NETT CO 9/9

10"-22.5° BEND W/ THRUST BLOCK

10" WATER METER VAULT #1
SWITCH WATER LINE FROM CL52 CLDI TO DR18 C900 PIPE
(SEE DTL SHT D17)

PROPOSED PYLON SIGN

OIL LINE
TOP=≈59.05
INV.=≈58.55

6" HPPPP

PUMP STATION #1
WET WELL
RIM=68.00
INVin=48.75 (P-401)
INVout=60.50 (FM-1)
(SEE DTL SHT D20)

SMH 301
RIM=67.30
INVin=50.00 (P-402A)
INVout=49.90 (P-401)

P-402A
180'-8" SDR35 PVC
S=0.005 FT/FT

FORCE MAIN #1
6" HDPE DR11
L=641'

P-401
218'-8" SDR35 PVC
S=0.005 FT/FT

PETROLEUM EASEMENT - 1891/16 - NO WIDTH GIVEN

APPROXIMATE LOCATION EXISTING PIPE LINE FROM ABOVE GROUND OBSERVATIONS - BUCKEYE PARTNERS

CMP CO 14

CMP CO 13

CMP CO 12

CMP CO 11

100' STREAM SETBACK

75' STREAM SETBACK

EXTEND SINGLE PHASE SERVICE

OIL LINE
TOP=≈59.57
INV.=≈59.07

348'-2" DR11 HDPE WATER SERVICE

PROPOSED UTILITY POLE (INSTALL DROP)

PROPOSED UGE SINGLE PHASE CONDUIT

10"-45° BEND W/ THRUST BLOCK

PROPOSED FIRE HYDRANT ASSEMBLY (TYP.)

10"x6" TEE W/ GATE VALVE & THRUST BLOCK

1073'-10" DR18 C900 WATER LINE

18' - 6" DR18 C900 WATER LINE

ELECTRICAL VAULT (SEE DTL SHT D16)

10" - 22.5° BEND W/ THRUST BLOCK

FORCE MAIN #2
2.5" HDPE DR11
L=770'

2" SERVICE SADDLE

PROPOSED UGE SINGLE PHASE CONDUIT

ELECTRICAL VAULT (SEE DTL SHT D16)

PROPOSED UGE 4x5" CONDUIT

PROPOSED FIRE HYDRANT ASSEMBLY (TYP.)

10"x6" TEE W/ GATE VALVE & THRUST BLOCK

ELECTRICAL VAULT (SEE DTL SHT D16)

10"x10" TEE W/ THRUST BLOCK

31' - 6" DR18 C900 WATER LINE

2" SERVICE SADDLE W/ WSO

2" DR11 HDPE SERVICE

6" DR18 C900 FIRE SERVICE

10"x6" REDUCER (TYP.)

PROPOSED TRANSFORMER

INVout=62.00

SMH 304
RIM=68.25
INVin=61.00 (SERVICE)
INVin=57.15 (P-405)
INVout=57.05 (P-404)

ELECTRICAL VAULT (SEE DTL SHT D16)

357'-10" DR18 C900 WATER LINE (R=1000' BEND)

P-403
229'-8" SDR35 PVC
S=0.014 FT/FT

SMH 303
RIM=68.90
INVin=55.35 (P-404)
INVin=56.15 (FM-2)
INVout=55.25 (P-403)

P-404
169'-8" SDR35 PVC
S=0.010 FT/FT

ELECTRICAL VAULT (SEE DTL SHT D16)

PROPOSED FIRE HYDRANT ASSEMBLY (TYP.)

10"x6" TEE W/ GATE VALVE

32'-6" DR18 C900 WATER LINE

6"x6" TEE W/ GATE VALVE

485'-6" DR18 C900 WATER LINE

6"-90° BEND W/ THRUST BLOCK

6"-11.25° BEND

P-405
168'-8" SDR35 PVC
S=0.022 FT/FT

SMH 305
RIM=69.50
INVin=60.95 (P-406)
INVout=60.85 (P-405)

P-406
82'-8" FUSED HDPE
S=0.009 FT/FT

36" STEE CASING (SEE DT SHT D1

10"-11.25°

PUMP STATION #2
RIM=67.50
INVin=56.80 (P-427)
INVout=56.70 (FM-2)
(SEE DTL SHT D14)

10"-22.5° BEND

MATCHLINE 2-3

MATCHLINE 2-4

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Plan Name: UTILITY PLAN - SOUTH CAMPUS

Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.

C4-2-1

SHEET 32 OF 120
JBE PROJECT NO. 14110

GENERAL PROJECT NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE PLANS, DETAILS, AND SPECIFICATIONS, AND PER ALL APPLICABLE CODES AND REQUIREMENTS.
2. THE CONTRACTOR SHALL CAREFULLY INSPECT THE SITE AND VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH ANY WORK DESCRIBED HEREIN. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES WITH THESE DOCUMENTS PRIOR TO BEGINNING ANY CONSTRUCTION.
3. THE CONTRACTOR SHALL CARRY ALL WORKER'S COMPENSATION, PUBLIC LIABILITY, AND PROPERTY DAMAGE INSURANCE AS REQUIRED BY THE OWNER.
4. HOLD HARMLESS AND INDEMNIFICATION CLAUSE - THE CONTRACTOR SHALL AGREE THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT. INCLUDING SAFETY TO ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE LANDSCAPE ARCHITECT HARMLESS FROM ANY AND ALL LIABILITY; REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE LANDSCAPE ARCHITECT.
5. DAMAGE RESPONSIBILITY - CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE IMPOSED, INTENTIONALLY OR ACCIDENTALLY, TO EXISTING UTILITIES, BUILDINGS, OR OTHER AMENITIES, DUE TO THE ACTIONS OF THE CONTRACTOR, CONTRACTOR'S EMPLOYEES, AND/OR CONTRACTOR'S SUB CONTRACTORS. CONTRACTOR SHALL AT ALL TIMES PROTECT HIS WORK FROM DAMAGE AND THEFT AND REPLACE ALL DAMAGE OR STOLEN PARTS AT HIS EXPENSE UNTIL THE WORK IS ACCEPTED IN WRITING FROM THE OWNER.
6. UNAUTHORIZED CHANGES TO PLANS - THE LANDSCAPE ARCHITECT PREPARING THESE PLANS SHALL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF ANY WORK.
7. REVISED LANDSCAPE PLANS MUST BE SUBMITTED FOR APPROVAL IF ANY REVISIONS ARE MADE TO THE DEVELOPMENT PLAN OR PLAT FOR PAVING, GRADING, OR IMPROVEMENT PLANS.
8. THE CONTRACTOR SHALL APPLY, OBTAIN, AND PAY FOR ALL REQUIRED PERMITS TO COMPLETE THE SCOPE OF WORK.
9. TRADE COORDINATION - CONSTRUCTION AND INSTALLATION OF ALL ITEMS WITHIN THESE DOCUMENTS SHALL REQUIRE CLOSE COORDINATION BETWEEN TRADES INVOLVED IN UNDERGROUND AND UTILITY INSTALLATION, AND TREE LOCATION. CONTRACTOR SHALL BE RESPONSIBLE TO INSURE PROPER COORDINATION BETWEEN TRADES TO INSURE AND AVOID CONSTRUCTION DELAYS OR DAMAGE TO ANY IMPROVEMENTS OR UTILITIES.
10. UNDERGROUND SERVICE ALERT - CONTRACTOR SHALL NOTIFY BLUE STAKE 48 HOURS PRIOR TO DIGGING AT 1-800-STAKE-IT. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN WORKING NEAR EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATION AND CONDITION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
11. INSPECTIONS - THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE MUNICIPAL REPRESENTATIVE AT LEAST 48 HOURS IN ADVANCE PRIOR TO ANY REQUIRED MUNICIPAL INSPECTION.
12. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AT LEAST 48 HOURS IN ADVANCE PRIOR TO ANY REQUIRED OR DESIRED INSPECTION. CONTACT NUMBER IS (978) 764-6155.
13. THESE DRAWINGS AND SPECIFICATIONS ARE PROPERTY AND COPYRIGHT OF AMORY LAND DESIGN, LLC. THESE DRAWINGS SHALL NOT TO BE USED ON ANY OTHER WORK EXCEPT BY WRITTEN AUTHORIZATION FROM AMORY LAND DESIGN, LLC
14. WRITTEN DIMENSIONS TAKE PREFERENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
15. ALL QUANTITIES INDICATED ON THE PLANS ARE PROVIDED AS A COURTESY ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES SHOWN BY CONDUCTING A INDEPENDENT QUANTITY TAKE OFF.
16. THE LANDSCAPE ARCHITECT SHALL DECIDE ALL QUESTIONS RELATING TO THE INTERPRETATION OF THE DRAWINGS AND THE ACCEPTABLE FULFILLMENT OF THE CONTRACT DOCUMENTS.
17. THE CONTRACTOR SHALL MAINTAIN THE PREMISES CLEAN AND FREE OF EXCESS EQUIPMENT, MATERIALS, AND RUBBISH INCIDENTAL OF HIS WORK AT ALL TIMES INCLUDING WEEKENDS AND HOLIDAYS. ALL RUBBLE, TRASH, OR DISPOSABLE ITEMS RESULTING FOR THE DEMOLITION OF CONSTRUCTION SHALL BE DISPOSED OF IN A LEGAL, LAWFUL, AND SAFE MANNER TO AN APPROVED DISPOSAL SITE.
18. PLANT MATERIAL TO BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. ALL TREES SHALL HAVE A NUMBERED TAG.
19. ALL PLANT MATERIAL TO BE STAKED BY THE LANDSCAPE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO ANY HOLES BEING DUG.
20. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FINISHED GRADES.
21. THE LANDSCAPE CONTRACTOR SHALL VERIFY BERM AND RETENTION BASIN LOCATIONS SHOWN ON THESE PLANS WITH THOSE ON THE CIVIL ENGINEERING PLANS. SHOULD A DISCREPANCY EXIST BETWEEN THE PLANS, THIS OFFICE SHALL BE NOTIFIED IMMEDIATELY.
22. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS DURING THE FINISH GRADING PROCESS.
23. NO SLOPES TO EXCEED 4:1 IN LANDSCAPE AREAS UNLESS OTHERWISE NOTED ON THE PLAN.
24. UNDER NO CIRCUMSTANCES SHALL ANY TREE BE PLANTED WITHIN 6' OF ANY BUILDING WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT. TREES MUST BE LOCATED AT LEAST 10' FROM A SEWER LINE EASEMENT CENTERLINE. PLANT MATERIALS WITH INTRUSIVE ROOT SYSTEMS SHALL NOT BE PLACE WITHIN DRAINAGE BASINS WITH ENGINEERED BOTTOMS.
25. ALL PLANT MATERIAL WITHIN SIGHT VISIBILITY TRIANGLES SHALL BE PLACED SO AS NOT TO INTERFERE WITH A VISIBILITY PLANE DESCRIBED BY TWO HORIZONTAL LINES LOCATED 30 INCHES AND 72 INCHES ABOVE FINISHED GRADE OF THE ROADWAY SURFACE.
26. IT IS RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO INFORM THE LANDSCAPE ARCHITECT / OWNER / OWNER REPRESENTATIVE OF ANY PLANT MATERIAL CONCERNS BASED ON PLANTING SEASON (E.G. WINTER, SUMMER). SHOULD THE LANDSCAPE CONTRACTOR HAVE ANY CONCERNS ABOUT PLANT MATERIAL DUE TO FROST OR EXPOSURE, HE SHALL REQUEST A SUBSTITUTION OR DELAY IN PLANTING. ONCE PLANTED, ALL PLANT MATERIAL IS SUBJECT TO SPECIFIED WARRANTIES.
27. REFER SHEET L8.0 FOR ADDITIONAL SPECIFICATIONS.

LANDSCAPE NOTES

1. AREAS OF ORGANIC MULCH WITHOUT PLANT MATERIALS SHALL NOT EXCEED DIMENSIONS OF MORE THAN 7 FEET IN ANY ONE DIRECTION, MEASURED BETWEEN PLANT CANOPIES AND / OR COVERAGE.
2. A SINGLE TRUNK TREE'S CALIPER SIZE, THAT IS TO BE EQUAL TO OR LESS THAN 4-INCHES, SHALL BE DETERMINED BY UTILIZING THE SMALLEST DIAMERTER OF THE TRUNK 6-INCHES ABOVE FINISHED GRADE ADJACENT TO THE TRUNK.
3. A TREES CALIPER SIZE, FOR SINGLE TRUNK TREES THAT ARE TO HAVE A DIAMETER GREATER THAN 4-INCHES, SHALL BE DETERMINED BY UTILIZING THE SMALLEST DIAMETER OF THE TRUNK 12-INCHES ABOVE FINISHED GRADE ADJACENT TO THE TRUNK.
4. A MULTIPLE TRUNK TREE'S CALIPER SIZE IS MEASURED AT 6" ABOVE THE LOCATION THAT THE TRUNK SPLITS ORIGINATES, OR 6" ABOVE THE FINISHED GRADE IF ALL TRUNKS ORIGINATE FROM THE SOIL.
5. AREA WITHIN THE SIGHT DISTANCE TRIANGLE IS TO BE CLEAR OF LANDSCAPING, SIGNS, OR OTHER VISIBILITY OBSTRUCTIONS WITH A HEIGHT GREATER THAN 2 FEET. TREES WITHIN THE SAFETY TRIANGLE SHALL HAVE A CANOPY THAT BEGINS AT 7 FEET IN HEIGHT UPON INSTALLATION. ALL HEIGHTS ARE MEASURED FROM NEAREST STREET LINE ELEVATION.
6. RETENTION / DETENTION BASINS SHALL BE CONSTRUCTED SOLELY FROM THE APPROVED CIVIL PLANS WITH PLANT MATERIAL AS SPECIFIED. ANY ALTERATION OF THE APPROVED DESIGN (ADDITIONAL FILL, CHANGE OF GRADE, ECT.) SHALL REQUIRE ADDITIONAL FINAL PLANS STAFF REVIEW AND APPROVAL.
7. ALL SIGNS MAY REQUIRE SEPERATE PERMITS AND APPROVALS.
8. NEW LANDSCAPING, INCLUDING SALVAGED PLANT MATERIAL, AND LANDSCAPING INDICATED TO REMAIN, WHICH IS DESTROYED, DAMAGED, OR EXPIRED DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE SIZE, KIND, AND QUANTITY.

LIMIT OF WORK NOTES

1. LIMIT OF WORK (LOWL) AS DESIGNATED ON THE CIVIL DRAWINGS:
2. ALL AREAS OUTSIDE OF THE LOWL AREA REQUIRED TO BE REVEGETATED DUE TO CONSTRUCTION ACTIVITIES SHALL BE WATERED UNTIL PLANT MATERIAL IS ESTABLISHED.
3. NO CONSTRUCTION ACTIVITY SHALL ENCROACH INTO AREAS NOT DELINEATED BY EROSION CONTROL UNLESS PREVIOUSLY AUTHORIZED OR REQUIRED FOR THE INSTALLATION OF SITE IMPROVEMENTS SHOWN OUTSIDE OF THE EROSION CONTROL BARRIER.
4. ALL AREA OUTSIDE OF THE LIMIT OF WORK SHALL BE PROTECTED FROM DAMAGE PRIOR TO AND DURING CONSTRUCTION.
5. IF REQUIRED, A REGISTERED LAND SURVEYOR SHALL STAKE ALL LOWL AND AREAS BASED ON CIVIL DRAWINGS.
6. ALL PLANT MATERIAL OUTSIDE OF THE LOWL LINE SHALL REMAIN UNLESS OTHERWISE SHOWN.

SITE PREPARATION AND DEMOLITION NOTES

1. REFER TO COVER SHEET AND CIVIL DRAWINGS FOR ADDITIONAL GENERAL NOTES.
2. LOCATION OF UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE DIAGRAMMATIC ONLY. EXISTING UTILITIES MAY NOT BE SHOWN. CONTACT OWNER, PROPER LOCAL AUTHORITIES, OR RESPECTIVE UTILITY COMPANY TO CONFIRM LOCATION OF UTILITIES BEFORE COMMENCING WORK. REPAIR DAMAGE TO EXISTING UTUILITIES DUE TO EXECUTION OF WORK.
3. COORDINATE DEMOLITION AND RELOCATION OF UTILITIES WITH ALL TRADES.
4. BE RESPONSIBLE FOR DAMAGE TO EXISTING ITEMS TO BE PROTECTED AND TO REMAIN. CONTRACTOR IS TO PAY FOR DAMAGES TO EXISTING ITEMS TO BE PROTECTED AND TO REMAIN. REPLACE DAMAGED ITEMS AT NO ADDITIONAL COST TO OWNER.
5. REMOVE ITEMS REQUIRING REMOVAL TO FULL DEPTH INCLUDING BASE MATERIALS AND FOOTINGS AND DISPOSE OF LEGALLY OFF-SITE AND SAVE, RELOCATE, STOCKPILE AND PROTECT ON-SITE ITEMS NOTED AND AS DESIGNATED BY OWNER.
6. PERFORM DEMOLITION AND SALVAGE UNDER DRIP LINE OF EXISTING TREE CANOPIES, THAT ARE TO REMAIN, IN A MANNER THAT DOES NOT DAMAGE TREE.
7. LAYOUT THE LIMITS OF CLEARING, AND GRUBBING, AS WELL AS TREES TO REMAIN, PRIOR TO COMMENCING WORK. RECEIVE OWNER APPROVAL PRIOR TO CONSTRUCTION.
8. PROTECT EXISTING PLANT MATERIAL DESIGNATED TO REMAIN OR BE TRANSPLANTED FROM DAMAGE CAUSED BY CUTTING OF LIVE ROOTS OR BRANCHES OR OTHER MEANS. DO NOT PARK OR OPERATE VEHICLES WITHIN DRIP LINE OF TREES OR WHERE DAMAGE MAY RESULT WITHOUT OWNER APPROVAL. DO NOT STORE OR DISPOSE OF CONSTRUCTION MATERIALS BENEATH TREES TO BE PROTECTED OR TO REMAIN AS DESIGNATED ON THE SITE PREPERATION PLANS.
9. REFER TO CIVIL DRAWINGS FOR UTILITY WORK:

JONES AND BEACH ENGINEERS, INC.
85 PORTSMOUTH AVENUE
P.O. BOX 219
STRATHAM, NH 03885
CONTACT: GIFFORD COLBURN, P.E.
PHONE: (603) 7772-4746 EXT. 12
EMAIL: GCOLBURN@JONESANDBEACH.COM

PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Low	16
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal.	Zone: 3 Salt: Tolerant	4
Catalpa speciosa Northern Catalpa	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	29
Liriodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone: 4 Salt: Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal.	Zone: 4 Salt: Moderate	15

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone: 2 Salt: Moderate	52
Picea omorika Serbian Spruce	6' - 8'	Zone: 5 Salt: Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone: 4 Salt: Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal.	Zone: 3 Salt: Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	37
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	34
Gleditsia triacanthos inermis 'Skyline' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Tolerant	25

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer campestre Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone: 5 Salt: Moderate	12
Amelanchier Arborea Downey Serviceberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	5
Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Low	26
Maackia amurensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	20
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone: 5 Salt: Tolerant	6

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone: 4 Salt: Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone: 4 Salt: Moderate	60
Comptonia peregrina Sweetfern	3 Gallon	Zone: 3 Salt: Tolerant	76
Cornus sericea Red Osier Dogwood	2 Gallon	Zone: 5 Salt: Moderate	18
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone: 5 Salt: Moderate	64
Hypericum proificum Shrubby St. John's Wort	3 Gallon	Zone: 4 Salt: Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone: 3 Salt: Tolerant	164
Leucothoe fontanesiana Drooping Leucothoe	3 Gallon	Zone: 4 Salt: Moderate	6
Lindera benzoin Spicebush	3 Gallon	Zone: 4 Salt: Tolerant	74
Myrica gale Sweetgale	2 Gallon	Zone: 3 Salt: Moderate	167
Rhus aromatica 'Gro-low' Dwarf Fragrant Sumac	3 Gallon	Zone: 3 Salt: Tolerant	174
Spiraea x bumalda 'Froebelli' Dwarf Froebel Spirea	3 Gallon	Zone: 3 Salt: Moderate	237
Vaccinium corymbosum Highbush Blueberry	3 Gallon	Zone: 4 Salt: Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone: 2 Salt: Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone: 5 Salt: Low	47
Juniperus communis 'Depressa' Common juniper	5 Gallon	Zone: 3 Salt: Moderate	24
Rhododendron catawblense Rhododendron 'Grandiflorum'	5 Gallon	Zone: 5 Salt: Low	55
Viburnum acerifolium Mapleleaf Viburnum	3 Gallon	Zone: 2 Salt: Moderate	56

GRASSES	SIZE	NOTES	QTY
Eragrostis spectabilis Purple lovegrass	2 Gallon	Zone: 4 Salt: Low	20
Juncus bufonius Toad Rush	2 Gallon	Zone: 3 Salt: Low	246
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone: 4 Salt: Tolerant	0

GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Bearberry	2 Gallon	Zone: 3 Salt:	114
Cornus canadensis Bunchberry Dogwood	2 Gallon	Zone: 3 Salt: Moderate	74
Cotoneaster horizontalis 'Perpusillus' Prostrate Rockspray Cotoneaster	2 Gallon	Zone: 4 Salt: Tolerant	329
Hedera helix English Ivy	Flat	Zone: 3 Salt: Low	0
Juniperus chinensis 'Sargentii' Sargent juniper	3 Gallon	Zone: 3 Salt: Low	116
Vinca minor Periwinkle	Flat	Zone: 3 Salt: Low	0

VINES	SIZE	NOTES	QTY
Aristolochia macrophylla Dutchman's Pipe	1 Gallon	Zone: 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone: 5	4

TURF AND SEED MIX	QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification	10,450 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification	48,583 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification	28,066 S.F.

LANDSCAPE MATERIALS		QTY
Bark Mulch Shredded Organic Bark Mulch	3" depth all planting areas	162,970 S.F.
Landscape Border Landscape edging material		594 LN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L8.0 for additional specifications.

Design: HAS	Draft: PB Coord Set	Date: 08/24/2016	
Checked: HAS	Scale: AS-NOTED	Project No.: 14110	
ALD Project No.: 15.016			

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

Howard A. Snyder No. 4368 LICENSED LANDSCAPE ARCHITECT STATE OF MAINE — For Permit Approval — Not For Construction

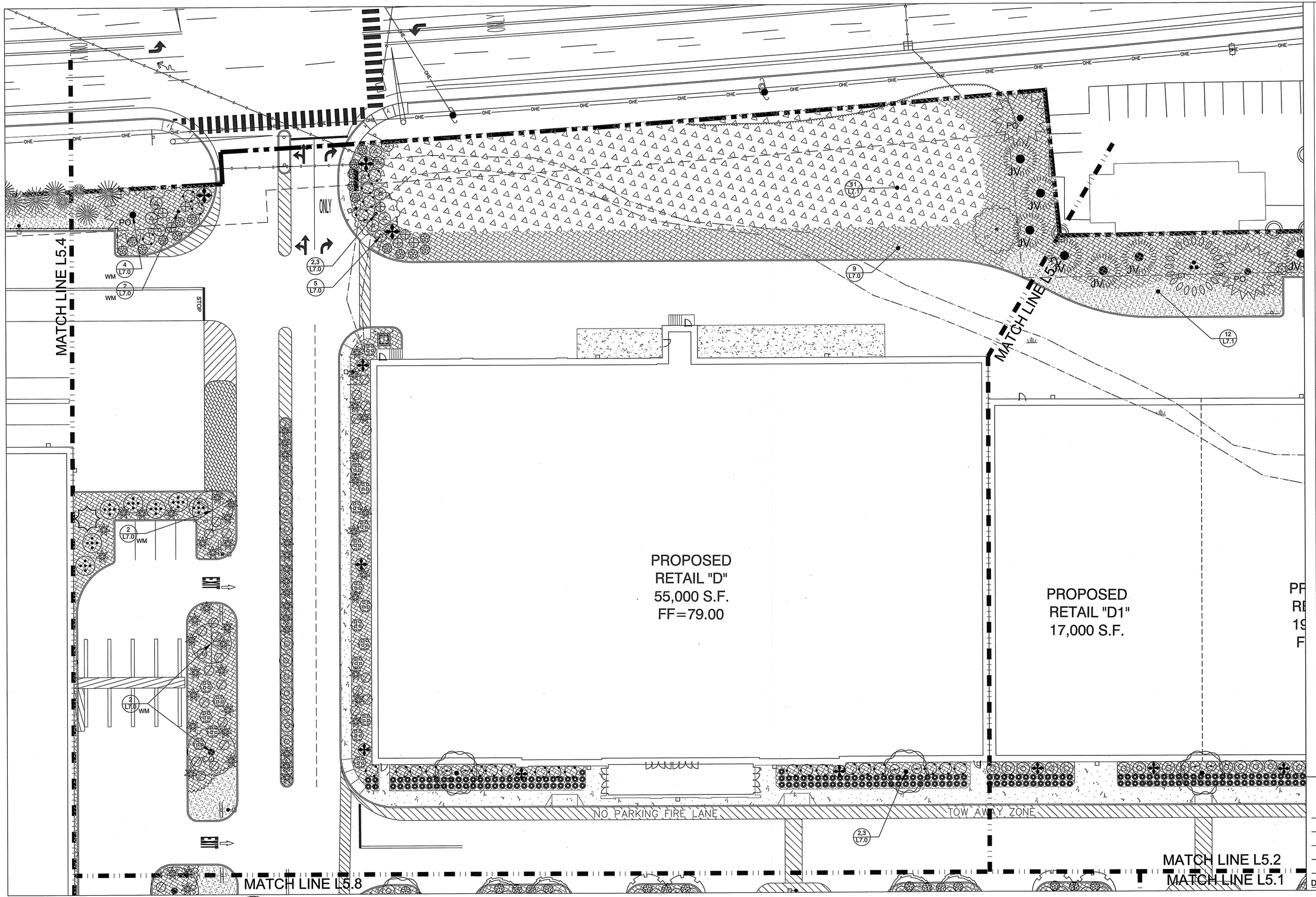
REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	LANDSCAPE NOTES AND LEGENDS
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-1.0
SHEET 39 OF ~~118~~ 120
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.



PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Low	10
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal.	Zone: 3 Salt: Tolerant	4
Catalpa speciosa Northern Catalpa	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	29
Liriodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone: 4 Salt: Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	15

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone: 2 Salt: Moderate	52
Picea omorika Serbian Spruce	6' - 8'	Zone: 5 Salt: Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone: 4 Salt: Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal.	Zone: 3 Salt: Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	37
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	34
Gleditsia triacanthos inermis 'Shylmr' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Tolerant	28

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer ginnnala Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone: 5 Salt: Moderate	12
Amelanchier Arbores Downy Serviceberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	5
Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Low	26
Maackia amurensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	20
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone: 5 Salt: Tolerant	6

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone: 4 Salt: Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone: 4 Salt: Moderate	60
Comptonia peregrina Sweetfern	3 Gallon	Zone: 3 Salt: Tolerant	78
Cornus sericea Red Osier Dogwood	2 Gallon	Zone: 5 Salt: Moderate	18
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone: 5 Salt: Moderate	64
Hypericum prolificum Shrubby St. John's Wort	3 Gallon	Zone: 4 Salt: Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone: 3 Salt: Tolerant	184
Leucothoe fontanesiana Drooping Leucothoe	3 Gallon	Zone: 4 Salt: Moderate	6
Lindera benzoin Spicebush	3 Gallon	Zone: 4 Salt: Tolerant	74
Myrica gale Sweetgale	2 Gallon	Zone: 3 Salt: Moderate	187
Rhus aromatica 'Gro-low' Dwarf Fragrant Sumac	3 Gallon	Zone: 3 Salt: Tolerant	174
Spiraea x bumalda 'Firebelt' Dwarf Firebelt Spirea	3 Gallon	Zone: 3 Salt: Moderate	237
Vaccinium corymbosum Highbush Blueberry	3 Gallon	Zone: 4 Salt: Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone: 2 Salt: Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone: 5 Salt: Low	47
Juniperus communis 'Depressa' Common Juniper	6 Gallon	Zone: 3 Salt: Moderate	24
Rhododendron stenolepsis 'Rhododendron 'GrandBoruni'	5 Gallon	Zone: 5 Salt: Low	65
Viburnum scarbifolium Mapleleaf Viburnum	3 Gallon	Zone: 3 Salt: Moderate	66

GRASSES	SIZE	NOTES	QTY
Eragrostis spectabilis Purple Lovegrass	2 Gallon	Zone: 4 Salt: Low	20
Juncus bufonius Toad Rush	2 Gallon	Zone: 3 Salt: Low	248
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone: 4 Salt: Tolerant	0

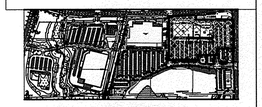
GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Bearberry	2 Gallon	Zone: 3 Salt:	114
Cornus canadensis Bunchberry Dogwood	2 Gallon	Zone: 3 Salt: Moderate	74
Cotoneaster horizontalis 'Perpusillus' Prostate Rockspray Cotoneaster	2 Gallon	Zone: 4 Salt: Tolerant	329
Hedera helix English Ivy	Flat	Zone: 5 Salt: Low	0
Juniperus chinensis 'Sargentii' Sargent Juniper	3 Gallon	Zone: 3 Salt: Low	116
Vinca minor Periwinkle	Flat	Zone: 3 Salt: Low	0

VINES	SIZE	NOTES	QTY
Aristolochia macrophylla Dutchman's Pipe	1 Gallon	Zone: 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone: 5	4

TURF AND SEED MIX		QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification		10,450 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification		48,583 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification		28,066 S.F.
LANDSCAPE MATERIALS		**QTY**
Bark Mulch Shredded Organic Bark Mulch	3" depth all planting areas	163,317 S.F.
Landscape Border Landscape edging material		594 LN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L8.0 for additional specifications.



0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set	Date: 08/24/2016
Checked: HAS	Scale: 1" = 20' - 0"	Project No.: 14110
ALD Project No.: 15.016		

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

For Preliminary Approval Not For Construction
LICENSED PROFESSIONAL ENGINEER Howard A. Snyder No. 4368 STATE OF MAINE

REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

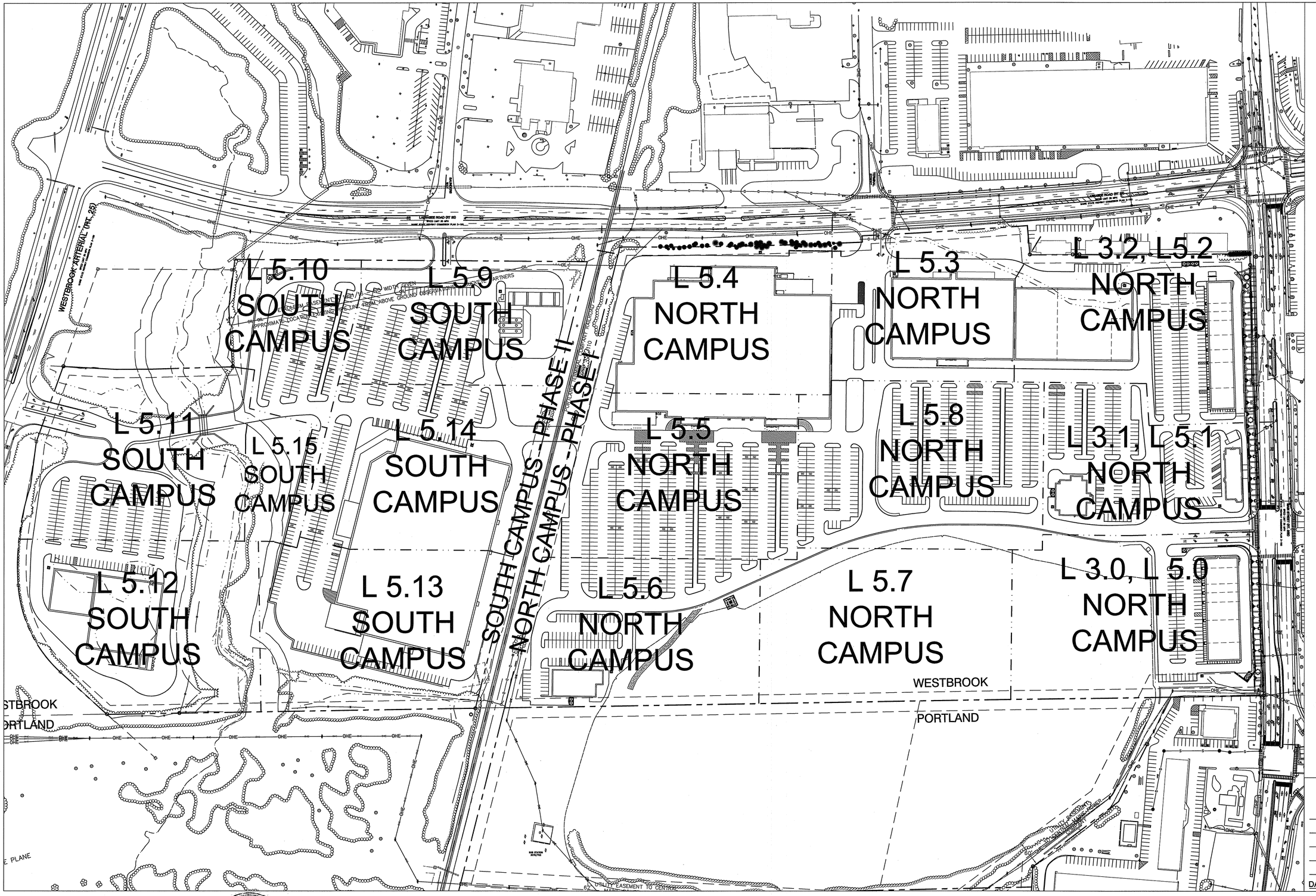
Designed and Produced in NH

J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	PLANTING PLAN - NORTH CAMPUS
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-5.3
SHEET 49 OF 149 120
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.



Design: HAS	Draft: PB Coord Set	Date:	08/24/2016
Checked: HAS	Scale:	1" = 100'	Project No.: 14110
ALD Project No.: 15.016			

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

For Permit Approval
Not For Construction
Howard A. Snyder No. 4368 LICENSED LANDSCAPE ARCHITECT STATE OF MAINE

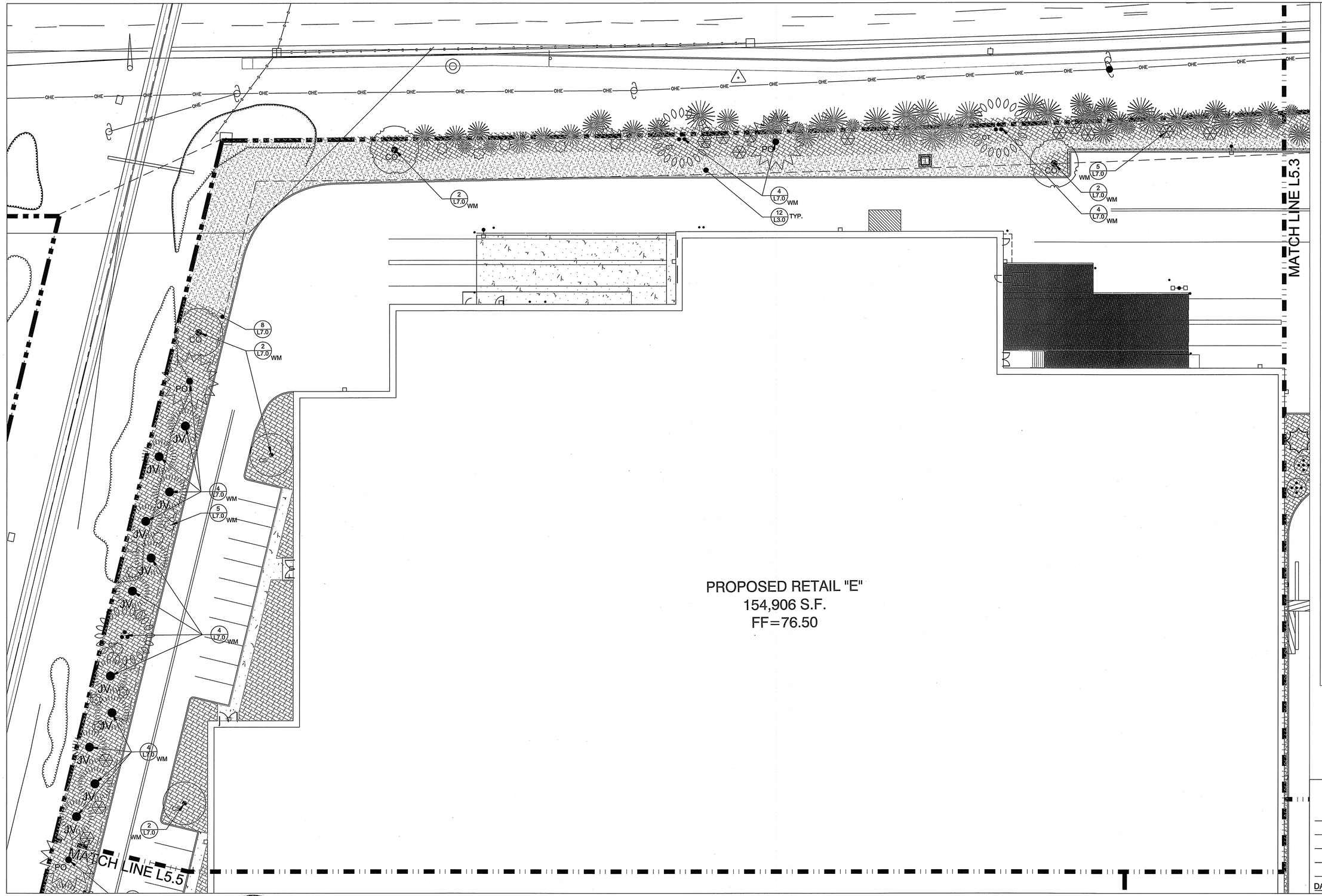
REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	LANDSCAPE OVERALL PLAN
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-2.0
SHEET 40 OF 118 | 12>
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.



PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Low	16
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal. Street Tree	Zone: 3 Salt: Tolerant	4
Celtis occidentalis Northern Celtidis	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	29
Liriodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone: 4 Salt: Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal.	Zone: 4 Salt: Moderate	15

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone: 2 Salt: Moderate	53
Picea orientalis Serbian Spruce	6' - 8'	Zone: 6 Salt: Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone: 4 Salt: Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal.	Zone: 3 Salt: Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	37
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	34
Gleditsia triacanthos inermis 'Skyline' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Tolerant	25

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer campestre Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone: 5 Salt: Moderate	12
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Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Low	39
Malus'sis sinensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	20
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone: 6 Salt: Tolerant	6

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone: 4 Salt: Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone: 4 Salt: Moderate	60
Comptonia peregrina Sweetfern	3 Gallon	Zone: 3 Salt: Tolerant	76
Cornus sericea Red Osier Dogwood	2 Gallon	Zone: 6 Salt: Moderate	18
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone: 6 Salt: Moderate	64
Hypericum prolificum Shrubby St. John's Wort	3 Gallon	Zone: 4 Salt: Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone: 3 Salt: Tolerant	104
Leucothoe fontanesiana Drooping Leucothoe	3 Gallon	Zone: 4 Salt: Moderate	6
Lindera benzoin Spicebush	3 Gallon	Zone: 4 Salt: Tolerant	74
Myrica gale Sweetgale	2 Gallon	Zone: 3 Salt: Moderate	167
Rhus aromatica 'Gro-low' Dwarf Fragrant Sumac	3 Gallon	Zone: 3 Salt: Tolerant	174
Spiraea x bumalda 'Froebelii' Dwarf Froebel Spirea	3 Gallon	Zone: 3 Salt: Moderate	237
Vaccinium corymbosum Highbush Blueberry	3 Gallon	Zone: 4 Salt: Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone: 2 Salt: Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone: 5 Salt: Low	47
Juniperus communis 'Depressa' Common Juniper	5 Gallon	Zone: 3 Salt: Moderate	24
Rhododendron catawbiense Rhododendron 'Grandiflorum'	5 Gallon	Zone: 5 Salt: Low	65
Viburnum x'earlidum Mapleleaf Viburnum	3 Gallon	Zone: 2 Salt: Moderate	56

GRASSES	SIZE	NOTES	QTY
Eragrostis spectabilis Purple lovegrass	2 Gallon	Zone: 4 Salt: Low	20
Juncus bulbosus Toad Rush	2 Gallon	Zone: 3 Salt: Low	246
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone: 4 Salt: Tolerant	0

GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Bearberry	2 Gallon	Zone: 3 Salt:	114
Cornus canadensis Bunchberry Dogwood	2 Gallon	Zone: 3 Salt: Moderate	74
Cotoneaster horizontalis 'Perpendicul' Perpendicular Rockspray Cotoneaster	2 Gallon	Zone: 4 Salt: Tolerant	329
Hedera helix English Ivy	Flat	Zone: 5 Salt: Low	0
Juniperus chinensis 'Sargentii' Sargent Juniper	3 Gallon	Zone: 3 Salt: Low	116
Vinca minor Periwinkle	Flat	Zone: 3 Salt: Low	0

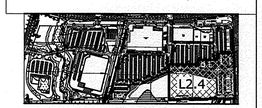
VINES	SIZE	NOTES	QTY
Aristolochia macrophylla Dutchman's Pipe	1 Gallon	Zone: 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone: 6	4

TURF AND SEED MIX	QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification	10,450 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification	48,583 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification	28,066 S.F.

LANDSCAPE MATERIALS		QTY
Bark Mulch Shredded Organic Bark Mulch	3" depth all planting areas	162,870 S.F.
Landscape Border Landscape edging material		594 LN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L6.0 for additional specifications.



0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set	Date:	08/24/2016
Checked: HAS	Scale: 1" = 20' - 0"	Project No.:	14110
ALD Project No.: 15.016			

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

LANDSCAPE ARCHITECT — LICENSED — Howard A. Snyder No. 4368 — STATE OF MAINE

Approved
Not For Construction

REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH

Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	PLANTING PLAN - NORTH CAMPUS
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-5.4
SHEET 50 OF ~~113~~ 120
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.

MATCH LINE L3.1

MATCH LINE L3.9

MATCH LINE L3.8

ONE WAY

ONE WAY

DRIVE THRU

BY PASS

PROPOSED
RETAIL "A"

19,440 S.F
FF=85.42

OHE

0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set
Checked: HAS	Scale: 1" = 20' - 0"
ALD Project No.: 15.016	Project No.: 14110

Date: 08/24/2016

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

For Permit Approval
Not For Construction
Howard A. Snyder
No. 4368
REGISTERED LANDSCAPE ARCHITECT
STATE OF MAINE

REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

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Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	HARDSCAPE PLAN
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-3.0
SHEET 11 OF 118 120
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.

MATCH LINE L3.2

MATCH LINE L3.2

MATCH LINE L3.9

LOADING

PROPOSED
RESTAURANT
6,640 S.F.
FF=80.00

PROPOSED
RESTAURANT "B"
5,069 S.F.
FF=81.65

ONLY

ONLY

ONLY

ONLY

MATCH LINE L3.0

MATCH LINE L3.9
MATCH LINE L3.1

0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set
Checked: HAS	Scale: 1" = 20' - 0"
ALD Project No.: 15.016	

Date: 08/24/2016
Project No.: 14110

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

For Permit Approval Not For Construction
LICENSED PROFESSIONAL ENGINEER
Howard A. Snyder
No. 4368
STATE OF MAINE

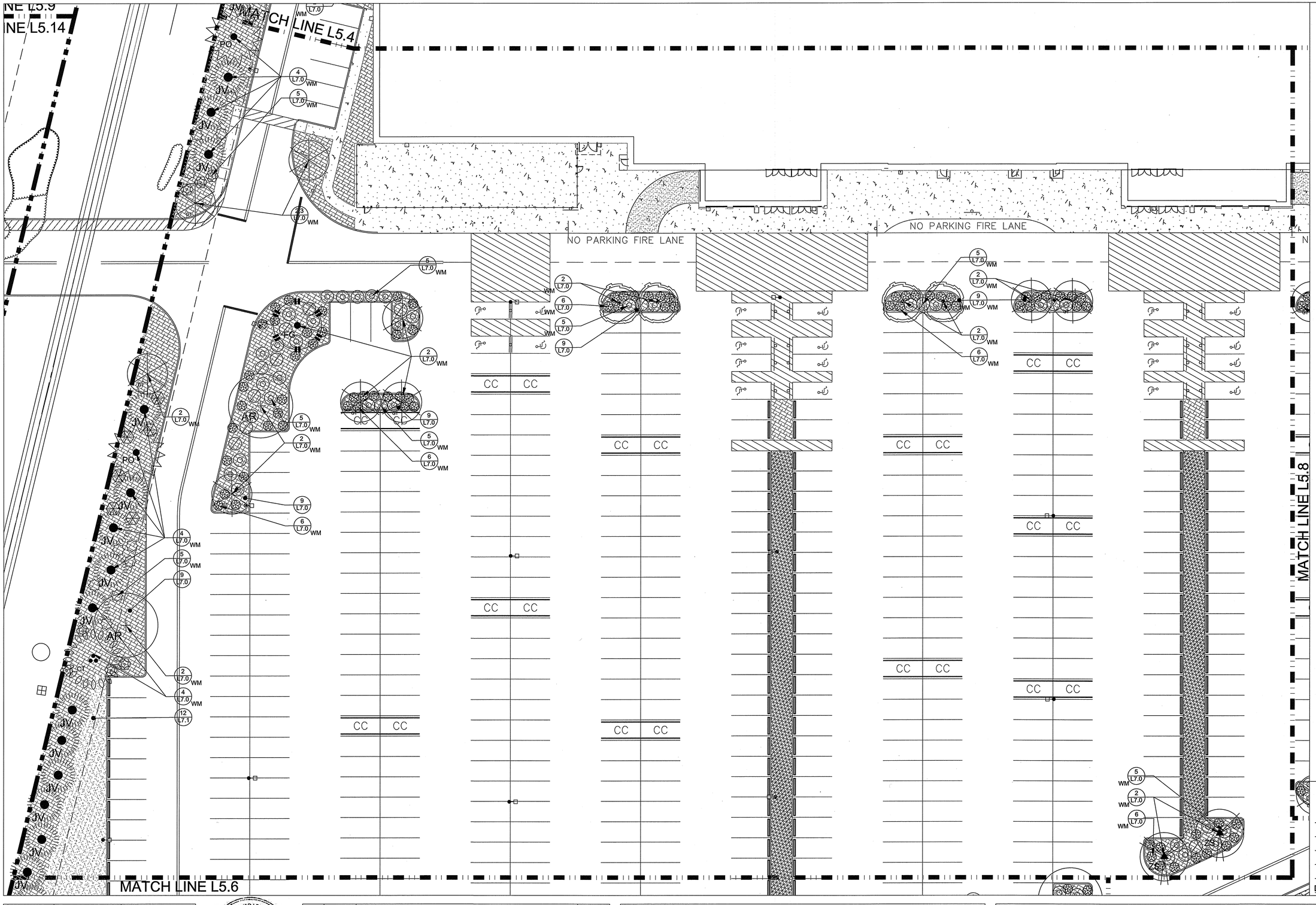
REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH
J/JB Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	HARDSCAPE PLAN
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-3.1
SHEET 12 OF 18 12
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.



PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Low	18
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal.	Zone: 3 Salt: Tolerant	4
Catalpa speciosa Northern Catalpa	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	29
Liriodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone: 4 Salt: Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal.	Zone: 4 Salt: Moderate	15

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone: 2 Salt: Moderate	62
Picea omorika Serbian Spruce	6' - 8'	Zone: 5 Salt: Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone: 4 Salt: Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal.	Zone: 3 Salt: Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	37
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	34
Gleditsia triacanthos inermis 'Skyline' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Tolerant	35

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer campestre Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone: 5 Salt: Moderate	12
Amelanchier Arborea Downy Serviceberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	5
Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Low	26
Maackia amurensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	20
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone: 5 Salt: Tolerant	6

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone: 4 Salt: Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone: 4 Salt: Moderate	60
Comptonia peregrina Sweetfern	3 Gallon	Zone: 3 Salt: Tolerant	76
Cornus sericea Red Osier Dogwood	3 Gallon	Zone: 2 Salt: Moderate	18
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone: 5 Salt: Moderate	64
Hypericum prolificum Shrubby St. John's Wort	3 Gallon	Zone: 4 Salt: Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone: 3 Salt: Tolerant	184
Leucothoe fontanesiana Drooping Leucothoe	3 Gallon	Zone: 4 Salt: Moderate	6
Lindera benzoin Spicebush	3 Gallon	Zone: 4 Salt: Tolerant	74
Myrica gale Sweetgale	3 Gallon	Zone: 3 Salt: Moderate	187
Rhus aromatica 'Gro-low' Dwarf Fragrant Sumac	3 Gallon	Zone: 3 Salt: Tolerant	174
Spiraea x bumalda 'Froebelii' Dwarf Froebel Spirea	3 Gallon	Zone: 3 Salt: Moderate	237
Vaccinium corymbosum Highbush Blueberry	3 Gallon	Zone: 4 Salt: Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone: 2 Salt: Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone: 5 Salt: Low	47
Juniperus communis 'Depressa' Common Juniper	5 Gallon	Zone: 3 Salt: Moderate	24
Rhododendron catawbiense 'Grandiflorum' Rhododendron 'Grandiflorum'	5 Gallon	Zone: 5 Salt: Low	50
Viburnum acerifolium Mapleleaf Viburnum	3 Gallon	Zone: 2 Salt: Moderate	56

GRASSES	SIZE	NOTES	QTY
Eragrostis spectabilis Purple lovegrass	2 Gallon	Zone: 4 Salt: Low	20
Juncus bufonius Toad Rush	2 Gallon	Zone: 3 Salt: Low	246
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone: 4 Salt: Tolerant	0

GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Bearberry	2 Gallon	Zone: 3 Salt:	114
Cornus canadensis Bunchberry Dogwood	3 Gallon	Zone: 3 Salt: Moderate	74
Calamagrostis acutiflora 'Karl Foerster' Feather Reed Grass	2 Gallon	Zone: 4 Salt: Tolerant	329
Hedera helix English Ivy	Flat	Zone: 5 Salt: Low	0
Juniperus chinensis 'Sargentii' Sargent Juniper	3 Gallon	Zone: 3 Salt: Low	116
Vinca minor Periwinkle	Flat	Zone: 3 Salt: Low	0

VINES	SIZE	NOTES	QTY
Aristolochia macrophylla Dutchman's Pipe	1 Gallon	Zone: 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone: 6	4

TURF AND SEED MIX	QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification	10,450 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification	48,593 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification	28,066 S.F.

LANDSCAPE MATERIALS	QTY
Bark Mulch Shredded Organic Bark Mulch	3" depth 182,870 S.F. at planting areas
Landscape Border Landscape edging material	594 LN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L8.0 for additional specifications.

0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set	Date: 08/24/2016
Checked: HAS	Scale: 1" = 20' - 0"	Project No.: 14110
ALD Project No.: 15.016		

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

For Permit Approval
Howard A. Snyder No. 4368 LICENSED LANDSCAPE ARCHITECT STATE OF MAINE
Not For Construction

REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH

Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

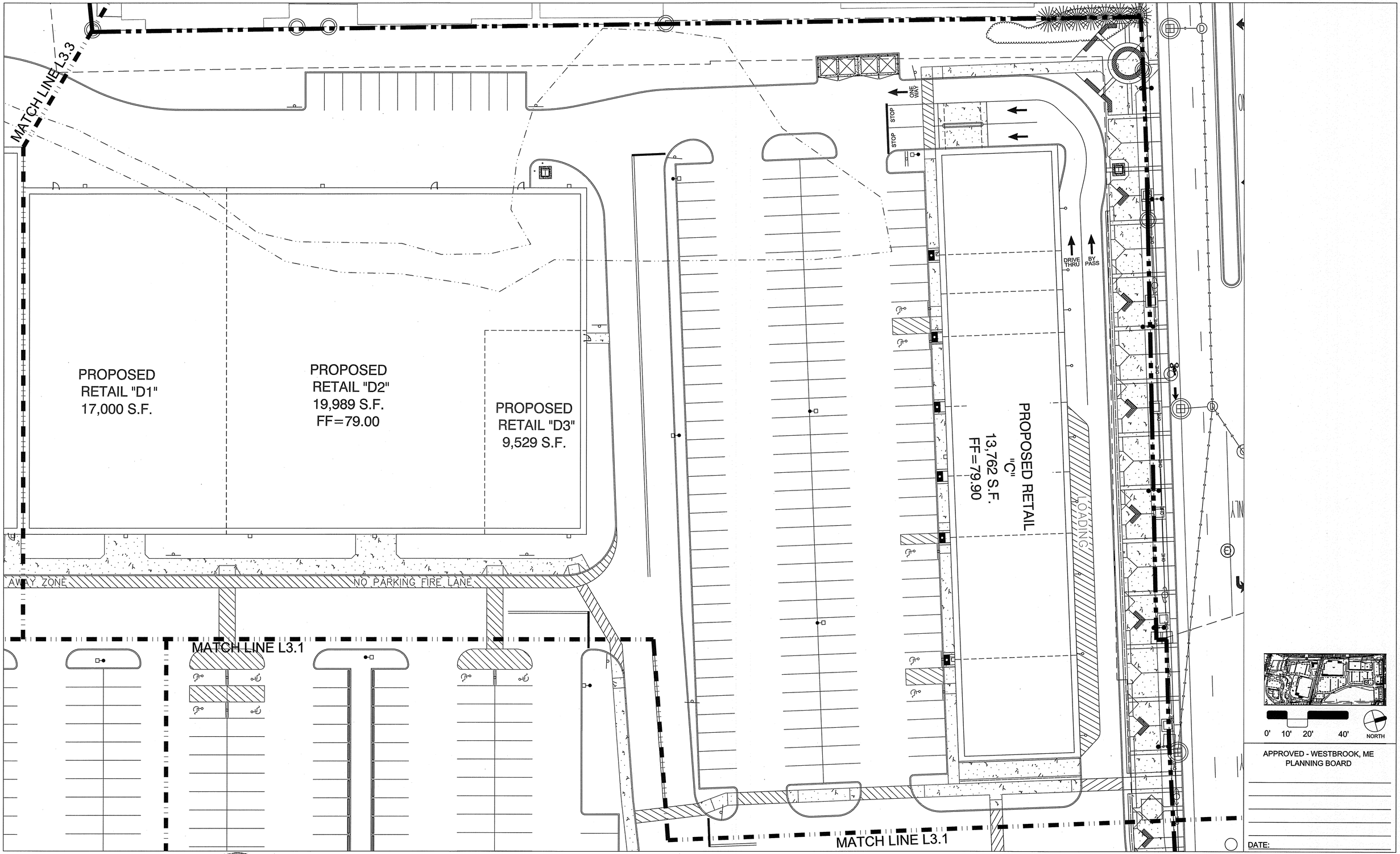
Plan Name: PLANTING PLAN - NORTH CAMPUS

Project: WESTBROOK, PIKE
LARRABEE ROAD & MAIN STREET, WESTBROOK, ME

Owner of Record: J & J GOVE DEVELOPMENT, LLC
7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-5.5
SHEET 51 OF 148
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.



APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set	Date:	08/24/2016
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ALD Project No.: 15.016			

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

Howard A. Snyder No. 4368 LICENSED LANDSCAPE ARCHITECT STATE OF MAINE

For Permit Approval Not For Construction

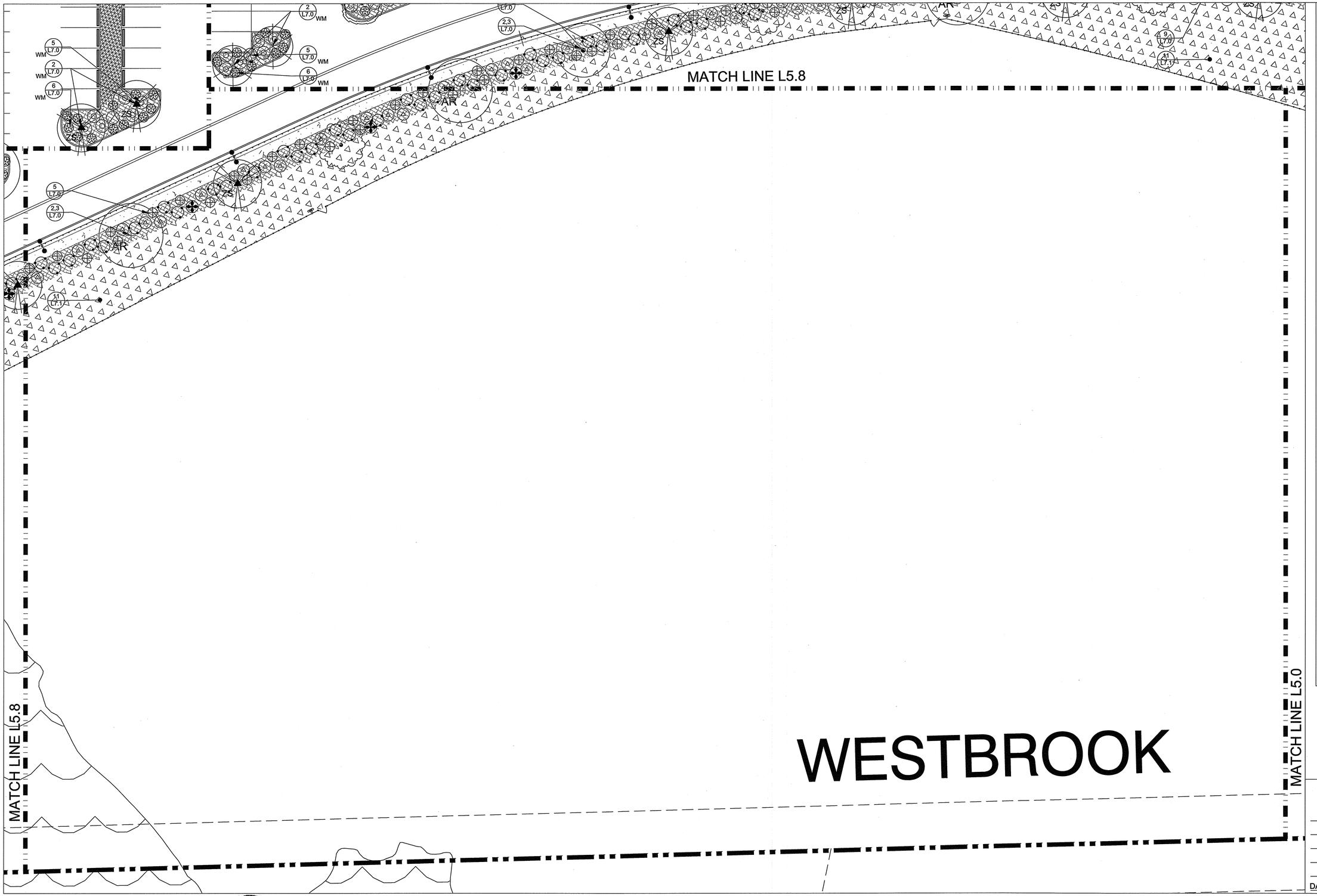
REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	HARDSCAPE PLAN
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-3.2
SHEET 43 OF 343
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.



PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.5" - 3.0" Cal. Street Tree	Zone: 4 Salt: Low	15
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal. Street Tree	Zone: 3 Salt: Tolerant	4
Catalpa speciosa Northern Catalpa	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	29
Liriodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone: 4 Salt: Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	15

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone: 2 Salt: Moderate	52
Picea omorika Serbian Spruce	6' - 8'	Zone: 5 Salt: Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone: 4 Salt: Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal.	Zone: 3 Salt: Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	57
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	34
Gleditsia triacanthos inermis 'Skyline' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Tolerant	25

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer campestre Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone: 5 Salt: Moderate	12
Amelanchier Arborea Downey Serviceberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	5
Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Low	26
Maackia amurensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	20
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone: 5 Salt: Tolerant	6

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone: 4 Salt: Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone: 4 Salt: Moderate	60
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Cornus sericea Red Osier Dogwood	2 Gallon	Zone: 6 Salt: Moderate	18
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone: 5 Salt: Moderate	64
Hypericum prolificum Shrubby St. John's Wort	3 Gallon	Zone: 4 Salt: Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone: 3 Salt: Tolerant	184
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Rhus aromatica 'Gro-low' Dwarf Fragrant Sumac	3 Gallon	Zone: 3 Salt: Tolerant	174
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Vaccinium corymbosum Highbush Blueberry	3 Gallon	Zone: 4 Salt: Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone: 2 Salt: Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone: 5 Salt: Low	47
Juniperus scopulorum 'Tripmosa' Common juniper	5 Gallon	Zone: 3 Salt: Moderate	24
Rhododendron catawbiense Rhododendron 'Grandiflorum'	5 Gallon	Zone: 6 Salt: Low	55
Viburnum x rhytidophyllum Hayleaved Viburnum	3 Gallon	Zone: 2 Salt: Moderate	66

GRASSES	SIZE	NOTES	QTY
Eragrostis spectabilis Purple lovegrass	2 Gallon	Zone: 4 Salt: Low	20
Juncus bufonius Toad Rush	2 Gallon	Zone: 3 Salt: Low	246
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone: 4 Salt: Tolerant	0

GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Bearberry	2 Gallon	Zone: 3 Salt:	174
Cornus canadensis Bunchberry Dogwood	2 Gallon	Zone: 3 Salt: Moderate	74
Cotoneaster horizontalis 'Perpusillus' Prostate Rockspray Cotoneaster	2 Gallon	Zone: 4 Salt: Tolerant	329
Hedera helix English Ivy	Flat	Zone: 5 Salt: Low	0
Juniperus chinensis 'Sargentii' Sargent Juniper	3 Gallon	Zone: 3 Salt: Low	116
Vinca minor Periwinkle	Flat	Zone: 3 Salt: Low	0

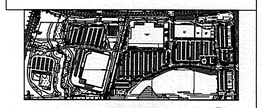
VINES	SIZE	NOTES	QTY
Aristolochia macrophylla Dutchman's Pipe	1 Gallon	Zone: 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone: 5	4

TURF AND SEED MIX	QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification	10,450 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification	48,583 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification	28,066 S.F.

LANDSCAPE MATERIALS	QTY
Bark Mulch Shredded Organic Bark Mulch	3" depth 162,870 S.F. all planting areas
Landscape Border Landscape edging material	594 LN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L8.0 for additional specifications.



0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set	Date:	08/24/2016
Checked: HAS	Scale: 1" = 20' - 0"	Project No.:	14110
ALD Project No.: 15.016			

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

Howard A. Snyder No. 4368 LICENSED LANDSCAPE ARCHITECT STATE OF MAINE

For Permit Approval Not For Construction

REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227 E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	PLANTING PLAN - NORTH CAMPUS
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-5.7
SHEET 53 OF 148 120
JBE PROJECT NO. 14110

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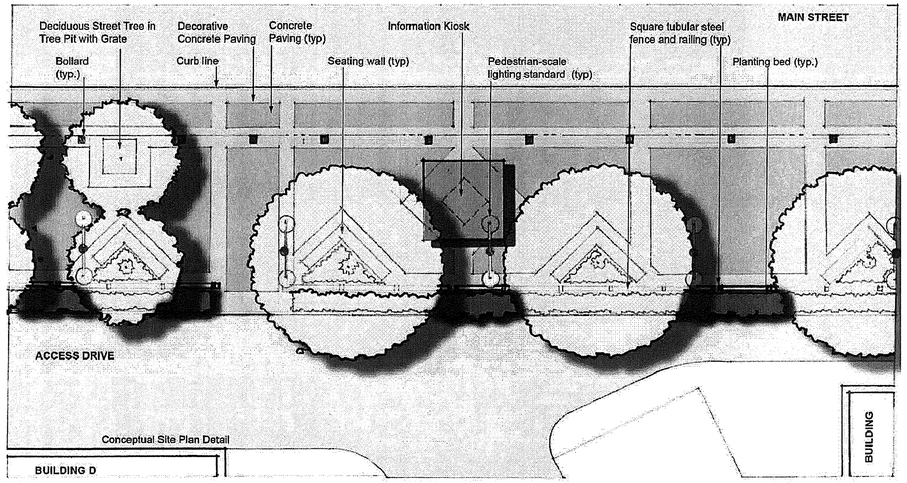
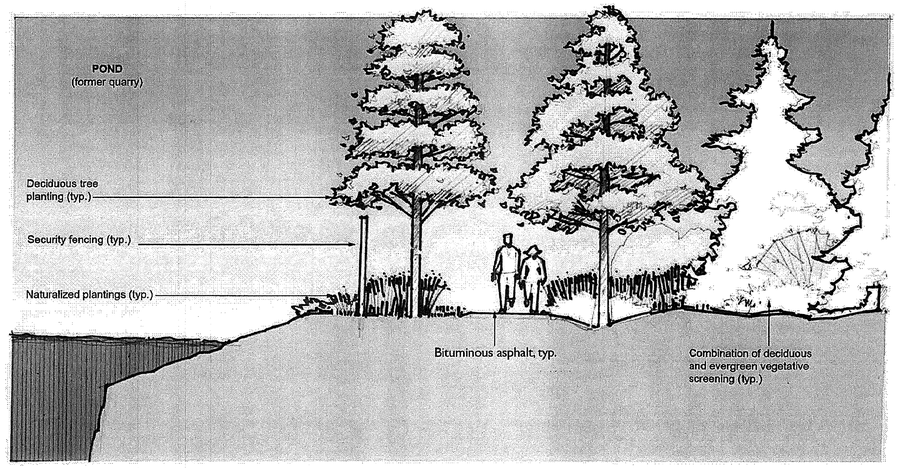


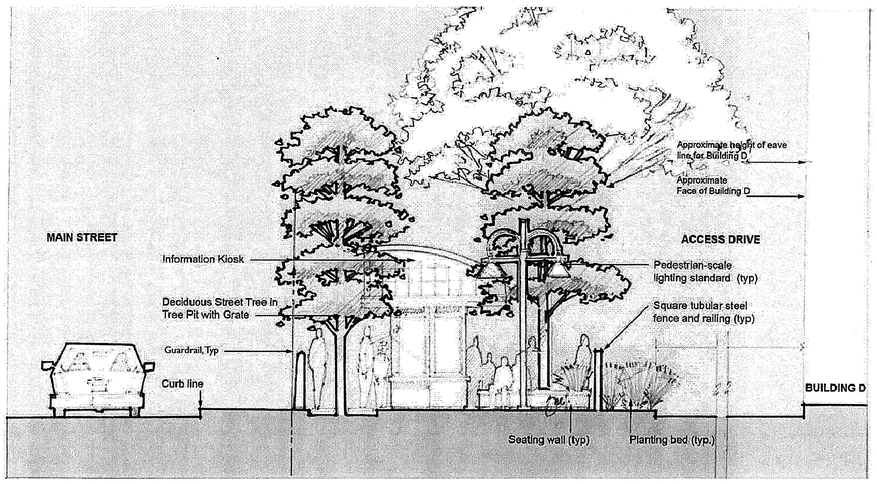
1 EAST MAIN STREET: STREETSCAPE CONCEPT - PLAN

SCALE: NTS



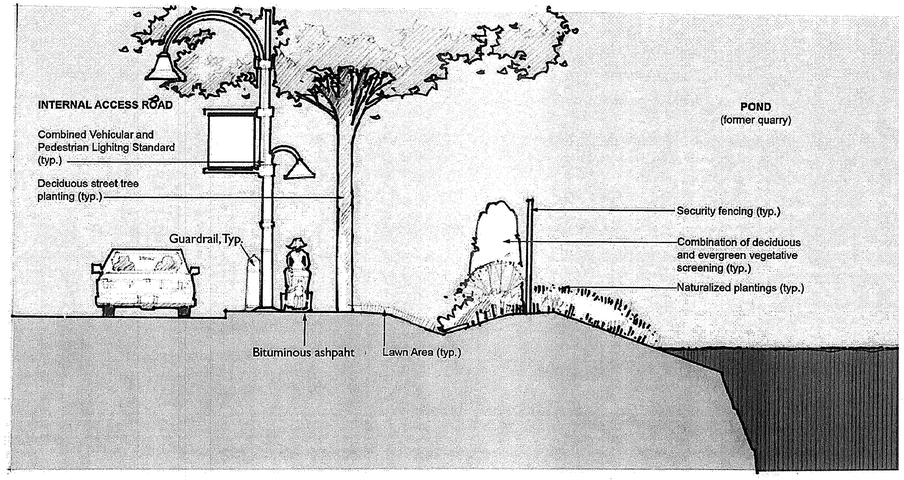
3 POND: SIDEWALK ALONG EAST SIDE - SECTION

SCALE: NTS



2 EAST MAIN STREET: STREETSCAPE CONCEPT - SECTION

SCALE: NTS



4 POND: SIDEWALK ALONG WEST SIDE - SECTION

SCALE: NTS

Design: HAS	Draft: PB Coord Set	Date: 08/24/2016	
Checked: HAS	Scale: AS-NOTED	Project No.: 14110	
ALD Project No.: 15.016			

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

For Permit Approval
LICENSED LANDSCAPE ARCHITECT
Howard A. Snyder
No. 4368
STATE OF MAINE
Not For Construction

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E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	HARDSCAPE DETAILS
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-4.0
SHEET 44 OF 113
JBE PROJECT NO. 14110

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MATCH LINE L5.3

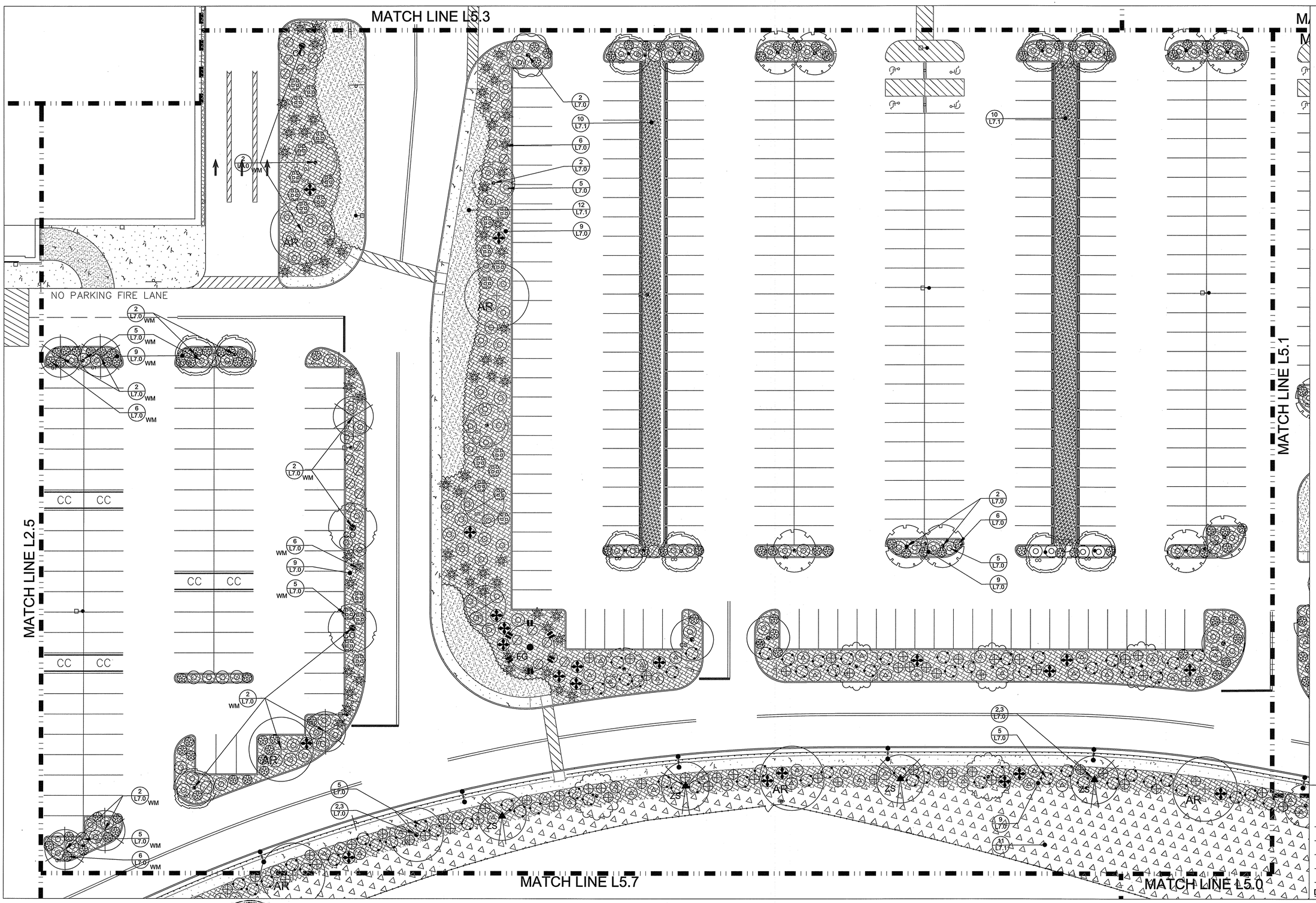
MATCH LINE L2.5

MATCH LINE L5.1

MATCH LINE L5.7

MATCH LINE L5.0

NO PARKING FIRE LANE



PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt: Low	16
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal.	Zone 3 Salt: Tolerant	4
Celtis occidentalis Northern Celtis	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt: Moderate	29
Liriodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt: Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone 4 Salt: Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt: Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal.	Zone 4 Salt: Moderate	15

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone 2 Salt: Moderate	62
Picea omorika Serbian Spruce	6' - 8'	Zone 5 Salt: Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone 4 Salt: Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal.	Zone 3 Salt: Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone 3 Salt: Moderate	37
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone 4 Salt: Moderate	34
Gleditsia triacanthos inermis 'Skyline' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone 4 Salt: Tolerant	25

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer campestre Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone 5 Salt: Moderate	12
Amelanchier Arborea Downey Serviceberry	1.5" - 2.0" Cal. Street Tree	Zone 3 Salt: Moderate	5
Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone 3 Salt: Low	26
Maackia amurensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone 4 Salt: Moderate	20
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone 3 Salt: Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone 5 Salt: Tolerant	6

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone 4 Salt: Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone 4 Salt: Moderate	60
Comptonia peregrina Sweetfern	3 Gallon	Zone 3 Salt: Tolerant	76
Cornus sericea Red Osier Dogwood	2 Gallon	Zone 5 Salt: Moderate	18
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone 5 Salt: Moderate	64
Hypericum prolificum Shrubby St. John's Wort	3 Gallon	Zone 4 Salt: Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone 3 Salt: Tolerant	164
Leucothoe fontanesiana Drooping Leucothoe	3 Gallon	Zone 5 Salt: Moderate	6
Lindera benzoin Spicebush	3 Gallon	Zone 4 Salt: Tolerant	74
Myrica gale Sweetgale	2 Gallon	Zone 3 Salt: Moderate	167
Rhus aromatica 'Gro-low' Dwarf Fragrant Sumac	3 Gallon	Zone 3 Salt: Tolerant	174
Spiraea x bumalda 'Firebelt' Dwarf Firebelt Spirea	3 Gallon	Zone 3 Salt: Moderate	237
Vaccinium corymbosum Highbush Blueberry	3 Gallon	Zone 4 Salt: Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone 2 Salt: Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone 5 Salt: Low	47
Juniperus communis 'Depressa' Common Juniper	5 Gallon	Zone 3 Salt: Moderate	24
Rhododendron catawbiense Rhododendron 'Grandiflorum'	5 Gallon	Zone 5 Salt: Low	55
Viburnum acerifolium Mapleleaf Viburnum	3 Gallon	Zone 2 Salt: Moderate	56

GRASSES	SIZE	NOTES	QTY
Eragrostis spectabilis Purple lovegrass	2 Gallon	Zone 4 Salt: Low	20
Juncus tufonius Toad Rush	2 Gallon	Zone 3 Salt: Low	245
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone 4 Salt: Tolerant	0

GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Bearberry	2 Gallon	Zone 3 Salt:	114
Cornus canadensis Bunchberry Dogwood	2 Gallon	Zone 2b Salt: Moderate	74
Cotoneaster horizontalis 'Perpendicular' Prostrate Rockspray Cotoneaster	2 Gallon	Zone 4 Salt: Tolerant	329
Hedera helix English Ivy	Flat	Zone 3 Salt: Low	0
Juniperus chinensis 'Sargentii' Sargent Juniper	3 Gallon	Zone 3 Salt: Low	115
Vinca minor Periwinkle	Flat	Zone 3 Salt: Low	0

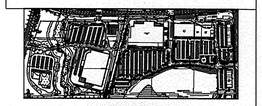
VINES	SIZE	NOTES	QTY
Actinidia kolomikta Dutchman's Pipe	1 Gallon	Zone 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone 5	4

TURF AND SEED MIX	QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification	10,450 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification	48,583 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification	28,066 S.F.

LANDSCAPE MATERIALS	QTY
Bark Mulch Shredded Organic Bark Mulch	3" depth 182,870 S.F. at planting areas
Landscape Border Landscape edging material	934 LN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of Installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L8.0 for additional specifications.



0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set	Date: 08/24/2016
Checked: HAS	Scale: 1" = 20' - 0"	Project No.: 14110
ALD Project No.: 15.016		

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

Howard A. Snyder No. 4368 — Not For Construction

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DRAWING No.
L-5.8
SHEET 54 OF 3[illegible]20
JBE PROJECT NO. 14110

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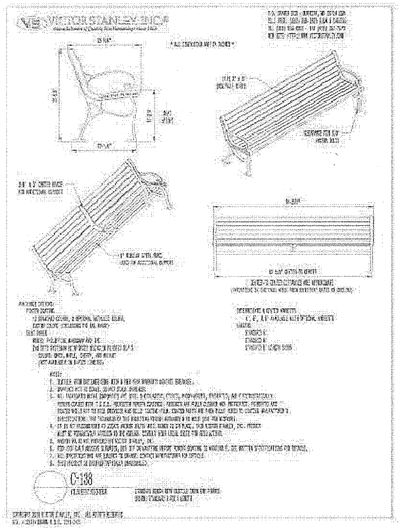
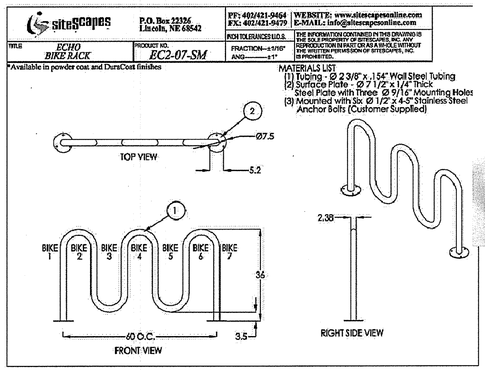
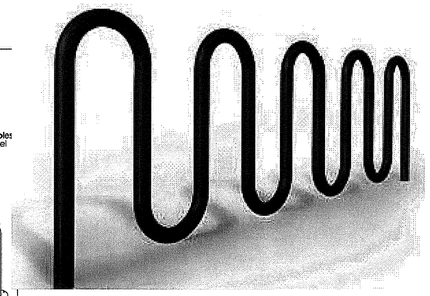


5 SITE FURNISHING: BENCH

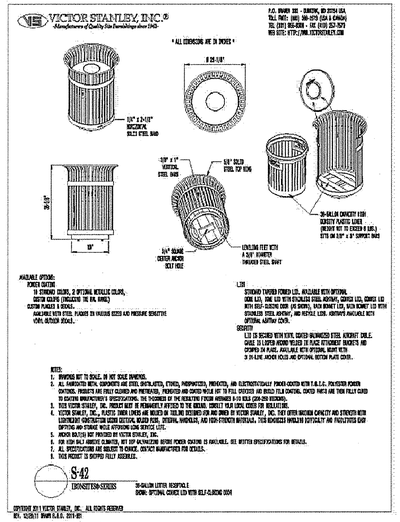
SCALE: NTS

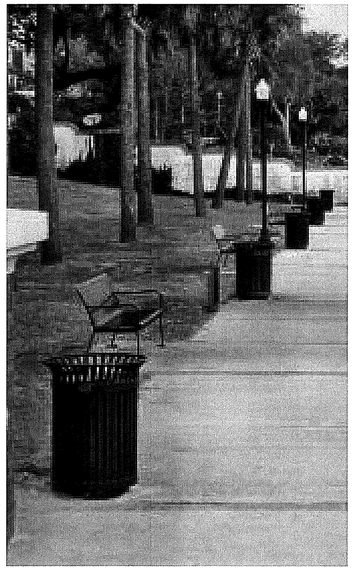




7 SITE FURNISHING: BICYCLE RACK

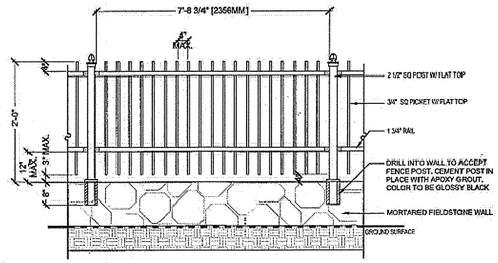
SCALE: NTS





6 SITE FURNISHING: REFUSE CONTAINER

SCALE: NTS



8 METAL FENCE

SCALE: NTS

Design: HAS	Draft: PB Coord Set	Date: 08/24/2016	
Checked: HAS	Scale: AS-NOTED	Project No.: 14110	
ALD Project No.: 15.016			

AMORY LAND DESIGN, LLC
68 WARREN STREET
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Approved
Howard A. Snyder
No. 4368
LICENSED LANDSCAPE ARCHITECT
STATE OF MAINE
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DRAWING No.
L-4.1
SHEET 45 OF ~~148~~ 120
JBE PROJECT NO. 14110

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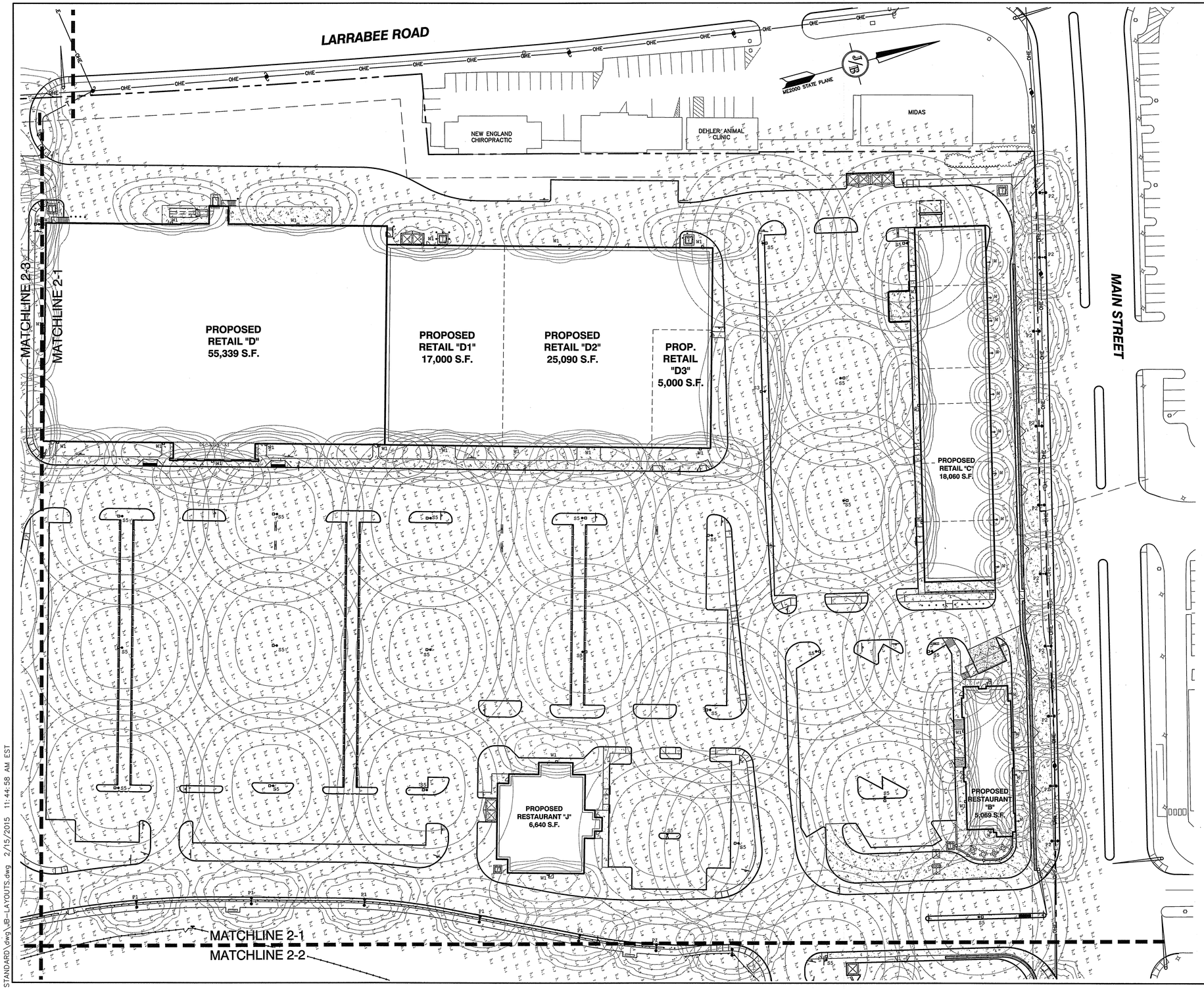

Luminaire Schedule		Filename: JBE 14110 WESTBROOK ME-rev081516.AGI	
Symbol	Qty	Label	Arrangement	Description
	14	P1	7@3	2-EMM-E01-LED-E1-SL2/BOF 10' & 16' AFG
	12	P2	BACK-BACK	2-EMM-E01-LED-E1-SL2/BOF 10' AFG
	3	P2-E	BACK-BACK	2-EMM-E01-LED-E1-SL2/BOF 10' AFG/ EMBEDDED POLE
	18	S3	SINGLE	VTS-E06-LED-E1-SL3/ 20' AFG
	1	S3T	SINGLE	VTS-E06-LED-E1-T3/ 20' AFG
	6	S4	SINGLE	VTS-E06-LED-E1-SL4/ 20' AFG
	87	S5	SINGLE	VTS-E08-LED-E1-5WQ/ 20' AFG
	4	T4	SINGLE	VTS-E02-LED-E1-SL4/ 20' AFG
	22	W	SINGLE	QS-2W-O-19LED-40K-120V-WM-XXX-LNS
	62	W1	SINGLE	ISS-E02-LED-E1-BL3/ WALL MTD 15' AFG
	5	W2	SINGLE	ISS-E02-LED-E1-BL4/ WALL MTD 15' AFG

StatArea_1

Illuminance (Fc)
Average = 2.60
Maximum = 6.0
Minimum = 0.7
Avg/Min Ratio = 3.71
Max/Min Ratio = 8.57

StatArea_2

Illuminance (Fc)
Average = 1.97
Maximum = 4.5
Minimum = 0.6
Avg/Min Ratio = 3.28
Max/Min Ratio = 7.50

StatArea_3

Illuminance (Fc)
Average = 1.95
Maximum = 6.5
Minimum = 0.5
Avg/Min Ratio = 3.90
Max/Min Ratio = 13.00

StatArea_4

Illuminance (Fc)
Average = 2.38
Maximum = 4.2
Minimum = 0.7
Avg/Min Ratio = 3.40
Max/Min Ratio = 6.00

StatArea_5

Illuminance (Fc)
Average = 1.89
Maximum = 4.8
Minimum = 0.5
Avg/Min Ratio = 3.78
Max/Min Ratio = 9.60

StatArea_6

Illuminance (Fc)
Average = 2.08
Maximum = 5.5
Minimum = 0.6
Avg/Min Ratio = 3.47
Max/Min Ratio = 9.17

StatArea_7

Illuminance (Fc)
Average = 1.78
Maximum = 4.0
Minimum = 0.5
Avg/Min Ratio = 3.56
Max/Min Ratio = 8.00

LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. CONTRACTOR SHALL INSTALL PROPOSED LIGHT POLES ACCORDING TO TOWN REGULATIONS.
3. ALL OUTDOOR LIGHTING SYSTEMS SHALL BE EQUIPPED WITH TIMERS TO REDUCE ILLUMINATION LEVELS TO NON-OPERATIONAL VALUES PER TOWN REGULATIONS.
4. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
5. ILLUMINATION READINGS SHOWN ARE BASED ON A TOTAL LLF OF 0.75 AT GRADE. ILLUMINATION READINGS SHOWN ARE IN UNITS OF FOOT-CANDLES.
6. LIGHTING CALCULATIONS SHOWN ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM AND SAFETY.
7. ALL LIGHTING FIXTURES SHALL BE FULL CUT-OFF DARK-SKY COMPLIANT, UNLESS OTHERWISE NOTED.
8. NL INDICATES THAT THIS LUMINAIRE SHALL BE ON A NIGHT LIGHT CIRCUIT. FL INDICATES THAT THIS LUMINAIRE SHALL BE A FLOOD LIGHT FIXTURE. MOUNTING BRACKET FOR THIS FL FIXTURE SHALL BE MOUNTED 25' ABOVE BOTTOM OF POLE BASE FOR ALL LIGHT POLES CLOSEST TO STOREFRONT. THESE DESIGNATIONS INDICATE WHAT PHASE LIGHTS ARE WIRED TO (TYP).
9. SEE SHEET LP1-7 FOR LIGHTING DETAILS.
10. CONTRACTOR SHALL COORDINATE WITH SIGN SUPPLIER TO INSTALL AND SUPPLY THE APPROPRIATE CONDUITS AND POWER TO PROPOSED SIGN LOCATION.
11. THE PROPOSED LIGHTING CALCULATIONS AND DESIGN WAS PERFORMED BY CHARRON, INC., P.O. BOX 4550, MANCHESTER, NH 03108, ATTENTION KEN SWEENEY. ALL LIGHTS SHOULD BE PURCHASED FROM THIS COMPANY, OR AN EQUAL LIGHTING DESIGN SHOULD BE SUBMITTED FOR REVIEW IF EQUAL SUBSTITUTIONS ARE PROPOSED BY THE CONTRACTOR OR OWNER.
12. LIGHTS ALONG THE MAIN ACCESS ROADS WITH ELECTRICAL CONNECTIONS BETWEEN THEM WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER AND WILL BE LIT FROM DUSK TO DAWN. LIGHTS WITHIN LEASED AREAS WILL BE THE RESPONSIBILITY OF THE LESSEE AND WILL REQUIRE CONDUIT TO CONNECT ALL LIGHTS WITHIN THE LEASED AREA TO AN INTERNAL SWITCH.
13. LIGHT FIXTURES SHALL BE INSTALLED AT HEIGHTS AS SHOWN IN LUMINAIRE SCHEDULE. 'AFG' = ABOVE FINISH GRADE. CONTRACTOR SHALL SUPPLY CORRECT POLE HEIGHT TO PROVIDE FIXTURE AT HEIGHT AS SHOWN IN SCHEDULE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 2/15/2015 11:44:58 AM EST

Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS SHOWN	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

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PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	LIGHTING PLAN - NORTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
LP1-1
SHEET 61 OF 120
JBE PROJECT NO. 14110

MATCH LINE L5.1

MATCH LINE L5.8

MATCH LINE L5.7

AR

ZS

2,3 L7.0

5 L7.0

11 L7.1

2,3 RT-02

5 L7.0

9 L7.0

2 L7.0

6 L7.0

SWA

DRIVE THRU

BY PASS

PROPOSED RETAIL "A"

19,440 S.F
FF=85.42

MA

2,3 L7.0

4 L7.0

PO

OV

FG

OHE

AR

PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Low	16
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal. Street Tree	Zone: 3 Salt: Tolerant	4
Catalpa speciosa Northern Catalpa	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	29
Liriodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone: 4 Salt: Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal.	Zone: 4 Salt: Moderate	15

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone: 2 Salt: Moderate	52
Picea omorika Serbian Spruce	6' - 8'	Zone: 5 Salt: Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone: 4 Salt: Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	37
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	34
Gleditsia triacanthos inermis 'Shyline' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Tolerant	25

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer campestre Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone: 5 Salt: Moderate	12
Amelanchier Arborea Downey Serviceberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	5
Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Low	26
Maackia amurensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	20
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone: 5 Salt: Tolerant	6

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone: 4 Salt: Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone: 4 Salt: Moderate	60
Comptonia peregrina Sweetfern	3 Gallon	Zone: 3 Salt: Tolerant	76
Cornus sericea Red Osier Dogwood	2 Gallon	Zone: 5 Salt: Moderate	18
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone: 5 Salt: Moderate	64
Hypericum prolificum Shrubby St. John's Wort	3 Gallon	Zone: 4 Salt: Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone: 3 Salt: Tolerant	164
Leucothoe fontanesiana Drooping Leucothoe	3 Gallon	Zone: 4 Salt: Moderate	6
Lindera benzoin Spicebush	3 Gallon	Zone: 4 Salt: Tolerant	74
Myrica gale Sweetgale	2 Gallon	Zone: 3 Salt: Moderate	167
Rhus aromatica 'Grow-low' Dwarf Fragrant Sumac	3 Gallon	Zone: 3 Salt: Tolerant	174
Spiraea x bumalda 'Froebelii' Dwarf Froebel Spirea	3 Gallon	Zone: 3 Salt: Moderate	237
Vaccinium corymbosum Highbush Blueberry	3 Gallon	Zone: 4 Salt: Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone: 2 Salt: Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone: 5 Salt: Low	47
Juniperus communis 'Depressa' Common Juniper	5 Gallon	Zone: 3 Salt: Moderate	24
Rhododendron catawbiense Rhododendron 'Chesdfhunt'	5 Gallon	Zone: 5 Salt: Low	55
Viburnum scarbifolium Mapleleaf Viburnum	3 Gallon	Zone: 2 Salt: Moderate	56

GRASSES	SIZE	NOTES	QTY
Eragrostis spectabilis Purple Lovegrass	2 Gallon	Zone: 4 Salt: Low	20
Juncus tufonius Toad Rush	2 Gallon	Zone: 3 Salt: Low	246
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone: 4 Salt: Tolerant	0

GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Bearberry	2 Gallon	Zone: 3 Salt:	114
Cornus canadensis Bunchberry Dogwood	2 Gallon	Zone: 3 Salt: Moderate	74
Cotoneaster horizontalis 'Perpusillus' Prostrate Rockspray Cotoneaster	2 Gallon	Zone: 4 Salt: Tolerant	329
Hedera helix English Ivy	Flat	Zone: 3 Salt: Low	0
Juniperus chinensis 'Sargentii' Sargent Juniper	3 Gallon	Zone: 3 Salt: Low	118
Vinca minor Periwinkle	Flat	Zone: 3 Salt: Low	0

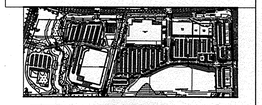
VINES	SIZE	NOTES	QTY
Aristolochia macrophylla Dutchman's Pipe	1 Gallon	Zone: 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone: 5	4

TURF AND SEED MIX	QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification	10,400 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification	48,593 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification	28,066 S.F.

LANDSCAPE MATERIALS		QTY
Bark Mulch Shredded Organic Bark Mulch	3" depth all planting areas	162,870 S.F.
Landscape Border Landscape edging material		894 LIN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L8.0 for additional specifications.



0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set
Checked: HAS	Scale: 1" = 20' - 0"
ALD Project No.: 15.016	Date: 08/24/2016 Project No.: 14110

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

For Permit Approval
Howard A. Snyder No. 4368
LICENSED LANDSCAPE ARCHITECT
STATE OF MAINE
Not For Construction

REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH

Jones & Beach Engineers, Inc.

85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885

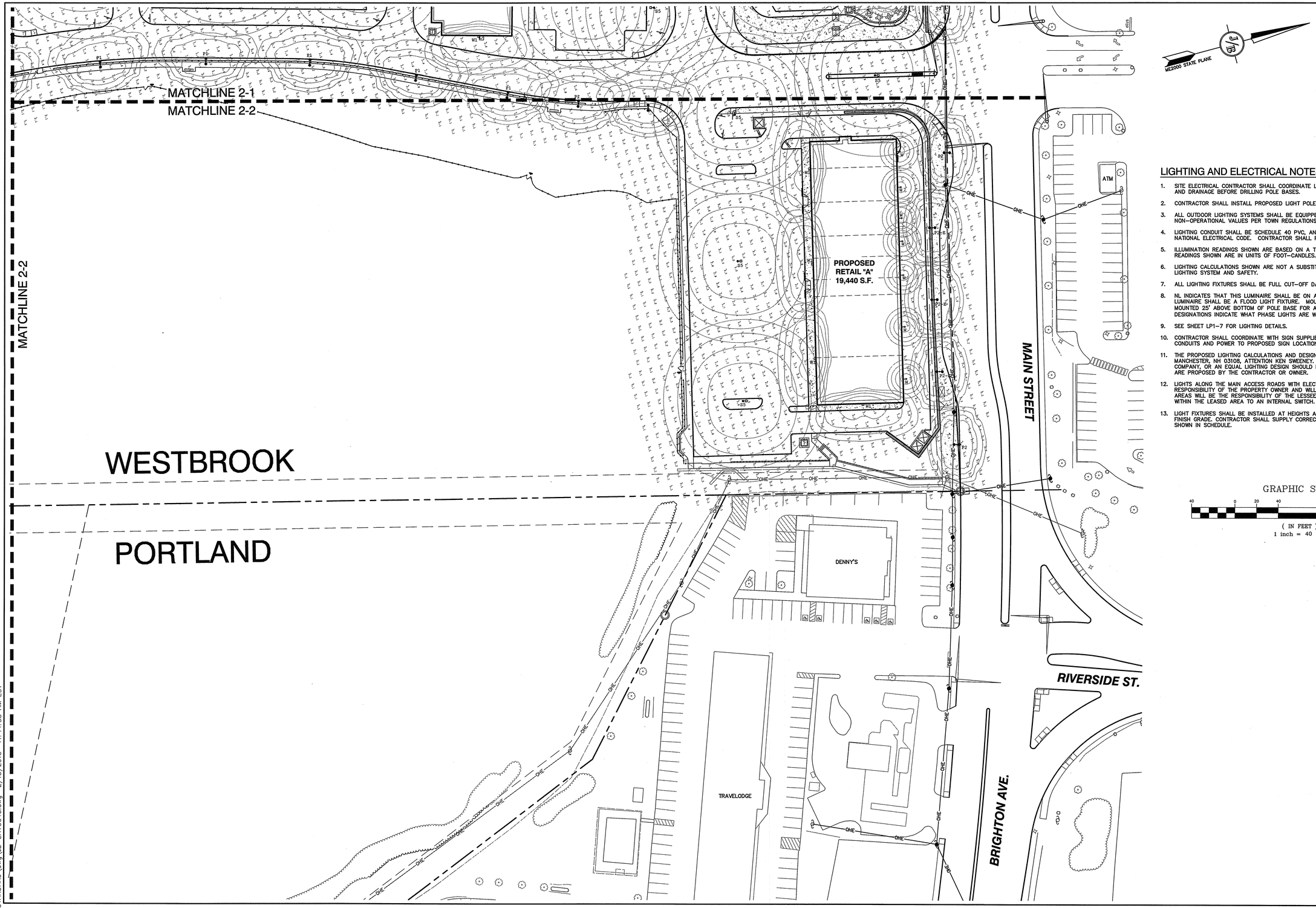
Civil Engineering Services

603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	PLANTING PLAN - NORTH CAMPUS
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-5.0
SHEET 46 OF 49
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.



LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. CONTRACTOR SHALL INSTALL PROPOSED LIGHT POLES ACCORDING TO TOWN REGULATIONS.
3. ALL OUTDOOR LIGHTING SYSTEMS SHALL BE EQUIPPED WITH TIMERS TO REDUCE ILLUMINATION LEVELS TO NON-OPERATIONAL VALUES PER TOWN REGULATIONS.
4. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
5. ILLUMINATION READINGS SHOWN ARE BASED ON A TOTAL LLF OF 0.75 AT GRADE. ILLUMINATION READINGS SHOWN ARE IN UNITS OF FOOT-CANDLES.
6. LIGHTING CALCULATIONS SHOWN ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM AND SAFETY.
7. ALL LIGHTING FIXTURES SHALL BE FULL CUT-OFF DARK-SKY COMPLIANT, UNLESS OTHERWISE NOTED.
8. NL INDICATES THAT THIS LUMINAIRE SHALL BE ON A NIGHT LIGHT CIRCUIT. FL INDICATES THAT THIS LUMINAIRE SHALL BE A FLOOD LIGHT FIXTURE. MOUNTING BRACKET FOR THIS FL FIXTURE SHALL BE MOUNTED 25' ABOVE BOTTOM OF POLE BASE FOR ALL LIGHT POLES CLOSEST TO STOREFRONT. THESE DESIGNATIONS INDICATE WHAT PHASE LIGHTS ARE WIRED TO (TYP).
9. SEE SHEET LP1-7 FOR LIGHTING DETAILS.
10. CONTRACTOR SHALL COORDINATE WITH SIGN SUPPLIER TO INSTALL AND SUPPLY THE APPROPRIATE CONDUITS AND POWER TO PROPOSED SIGN LOCATION.
11. THE PROPOSED LIGHTING CALCULATIONS AND DESIGN WAS PERFORMED BY CHARRON, INC., P.O. BOX 4550, MANCHESTER, NH 03108, ATTENTION KEN SWEENEY. ALL LIGHTS SHOULD BE PURCHASED FROM THIS COMPANY, OR AN EQUAL LIGHTING DESIGN SHOULD BE SUBMITTED FOR REVIEW IF EQUAL SUBSTITUTIONS ARE PROPOSED BY THE CONTRACTOR OR OWNER.
12. LIGHTS ALONG THE MAIN ACCESS ROADS WITH ELECTRICAL CONNECTIONS BETWEEN THEM WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER AND WILL BE LIT FROM DUSK TO DAWN. LIGHTS WITHIN LEASED AREAS WILL BE THE RESPONSIBILITY OF THE LESSEE AND WILL REQUIRE CONDUIT TO CONNECT ALL LIGHTS WITHIN THE LEASED AREA TO AN INTERNAL SWITCH.
13. LIGHT FIXTURES SHALL BE INSTALLED AT HEIGHTS AS SHOWN IN LUMINAIRE SCHEDULE. 'AFG' = ABOVE FINISH GRADE. CONTRACTOR SHALL SUPPLY CORRECT POLE HEIGHT TO PROVIDE FIXTURE AT HEIGHT AS SHOWN IN SCHEDULE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS SHOWN	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	LIGHTING PLAN - NORTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
LP1-2
SHEET 62 OF 120
JBE PROJECT NO. 14110

MATCH LINE L5.2

MATCH LINE L5.8

MATCH LINE L5.2

MATCH LINE L5.0

MATCH LINE L5.8

MATCH LINE L5.0

LOADING

PROPOSED RESTAURANT 6,640 S.F. FF=80.00

PROPOSED RESTAURANT "B" 5,069 S.F. FF=81.65

AR

FG

CC

MA

CS

LTND

Z5

2,3 L7.0

12 L7.1

10 L7.1

5 L7.0

9 L7.0

2 L7.0

6 L7.0

PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Low	16
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal.	Zone: 3 Salt: Tolerant	4
Catalpa speciosa Northern Catalpa	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	29
Liliodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone: 4 Salt: Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone: 4 Salt: Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal.	Zone: 4 Salt: Moderate	15

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone: 2 Salt: Moderate	82
Picea omorika Serbian Spruce	6' - 8'	Zone: 5 Salt: Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone: 4 Salt: Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal.	Zone: 3 Salt: Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	37
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	34
Gleditsia triacanthos inermis 'Shademaster' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Tolerant	25

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer campestre Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone: 5 Salt: Moderate	12
Amelanchier Arborea Downey Serviceberry	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Moderate	5
Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Low	26
Maackia amurensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone: 4 Salt: Moderate	30
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone: 3 Salt: Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone: 5 Salt: Tolerant	8

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone: 4 Salt: Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone: 4 Salt: Moderate	60
Comptonia peregrina Sweetfern	3 Gallon	Zone: 3 Salt: Tolerant	76
Cornus sericea Red Osier Dogwood	2 Gallon	Zone: 6 Salt: Moderate	15
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone: 5 Salt: Moderate	64
Hypericum prolificum Shrubby St. John's Wort	3 Gallon	Zone: 4 Salt: Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone: 3 Salt: Tolerant	164
Leucothoe fontanesiana Drooping Leucothoe	3 Gallon	Zone: 4 Salt: Moderate	8
Lindera benzoin Spicebush	3 Gallon	Zone: 4 Salt: Tolerant	74
Myrica gale Sweetgale	2 Gallon	Zone: 3 Salt: Moderate	167
Rhus aromatica 'Gro-low' Dwarf Fragrant Sumac	3 Gallon	Zone: 3 Salt: Tolerant	174
Spiraea x bumalda 'Froebelii' Dwarf Froebel Spirea	3 Gallon	Zone: 3 Salt: Moderate	237
Vaccinium corymbosum Highbush Blueberry	3 Gallon	Zone: 4 Salt: Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone: 2 Salt: Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone: 5 Salt: Low	47
Juniperus communis 'Depressa' Common Juniper	5 Gallon	Zone: 3 Salt: Moderate	24
Rhododendron catawbiense 'Rhododendron 'Grandiflorum'	5 Gallon	Zone: 5 Salt: Low	55
Viburnum acerifolium 'Mapleleaf' Viburnum	3 Gallon	Zone: 2 Salt: Moderate	66

GRASSES	SIZE	NOTES	QTY
Deschampsia cespitosa Purple lovegrass	2 Gallon	Zone: 4 Salt: Low	30
Juncus tufonius Tawil Rush	2 Gallon	Zone: 3 Salt: Low	246
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone: 4 Salt: Tolerant	0

GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Kinnikinnick	2 Gallon	Zone: 3 Salt:	114
Carex pensylvanica Bunchberry Dogwood	2 Gallon	Zone: 3 Salt: Moderate	74
Cotoneaster horizontalis 'Perpusillus' Pinnacle Rockspray Cotoneaster	2 Gallon	Zone: 4 Salt: Tolerant	329
Hedera helix English Ivy	Flat	Zone: 3 Salt: Low	0
Juniperus chinensis 'Sargentii' Sargent Juniper	3 Gallon	Zone: 3 Salt: Low	118
Vinca minor Periwinkle	Flat	Zone: 3 Salt: Low	0

VINES	SIZE	NOTES	QTY
Aristolochia macrophylla Dutchman's Pipe	1 Gallon	Zone: 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone: 5	4

TURF AND SEED MIX	QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification	10,488 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification	48,593 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification	26,096 S.F.

LANDSCAPE MATERIALS		QTY
Bark Mulch Shredded Organic Bark Mulch	3" depth all planting areas	152,070 S.F.
Landscape Border Landscape edging material		594 LN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L8.0 for additional specifications.

0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set | Date: 08/24/2016
Checked: HAS	Scale: 1" = 20' - 0" | Project No.: 14110
ALD Project No.: 15.016	

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

Howard A. Snyder No. 4368 — Not For Construction

REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
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PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
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E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	PLANTING PLAN - NORTH CAMPUS
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.
L-5.1
SHEET 47 OF 48
JBE PROJECT NO. 14110

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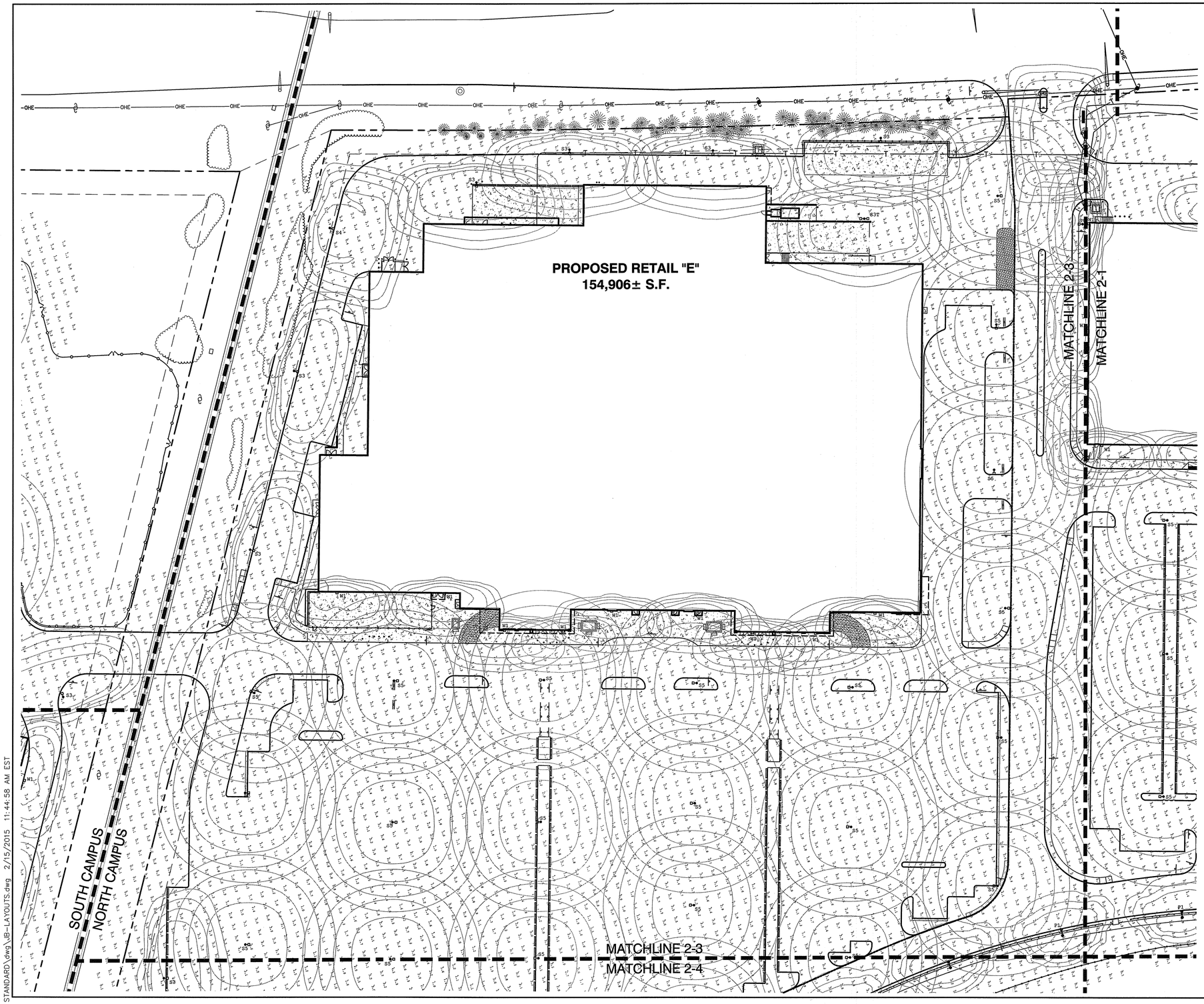

LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. CONTRACTOR SHALL INSTALL PROPOSED LIGHT POLES ACCORDING TO TOWN REGULATIONS.
3. ALL OUTDOOR LIGHTING SYSTEMS SHALL BE EQUIPPED WITH TIMERS TO REDUCE ILLUMINATION LEVELS TO NON-OPERATIONAL VALUES PER TOWN REGULATIONS.
4. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
5. ILLUMINATION READINGS SHOWN ARE BASED ON A TOTAL LLF OF 0.75 AT GRADE. ILLUMINATION READINGS SHOWN ARE IN UNITS OF FOOT-CANDLES.
6. LIGHTING CALCULATIONS SHOWN ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM AND SAFETY.
7. ALL LIGHTING FIXTURES SHALL BE FULL CUT-OFF DARK-SKY COMPLIANT, UNLESS OTHERWISE NOTED.
8. NL INDICATES THAT THIS LUMINAIRE SHALL BE ON A NIGHT LIGHT CIRCUIT. FL INDICATES THAT THIS LUMINAIRE SHALL BE A FLOOD LIGHT FIXTURE. MOUNTING BRACKET FOR THIS FL FIXTURE SHALL BE MOUNTED 25' ABOVE BOTTOM OF POLE BASE FOR ALL LIGHT POLES CLOSEST TO STOREFRONT. THESE DESIGNATIONS INDICATE WHAT PHASE LIGHTS ARE WIRED TO (TYP).
9. SEE SHEET LP1-7 FOR LIGHTING DETAILS.
10. CONTRACTOR SHALL COORDINATE WITH SIGN SUPPLIER TO INSTALL AND SUPPLY THE APPROPRIATE CONDUITS AND POWER TO PROPOSED SIGN LOCATION.
11. THE PROPOSED LIGHTING CALCULATIONS AND DESIGN WAS PERFORMED BY CHARRON, INC., P.O. BOX 4550, MANCHESTER, NH 03108, ATTENTION KEN SWEENEY. ALL LIGHTS SHOULD BE PURCHASED FROM THIS COMPANY, OR AN EQUAL LIGHTING DESIGN SHOULD BE SUBMITTED FOR REVIEW IF EQUAL SUBSTITUTIONS ARE PROPOSED BY THE CONTRACTOR OR OWNER.
12. LIGHTS ALONG THE MAIN ACCESS ROADS WITH ELECTRICAL CONNECTIONS BETWEEN THEM WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER AND WILL BE LIT FROM DUSK TO DAWN. LIGHTS WITHIN LEASED AREAS WILL BE THE RESPONSIBILITY OF THE LESSEE AND WILL REQUIRE CONDUIT TO CONNECT ALL LIGHTS WITHIN THE LEASED AREA TO AN INTERNAL SWITCH.
13. LIGHT FIXTURES SHALL BE INSTALLED AT HEIGHTS AS SHOWN IN LUMINAIRE SCHEDULE. 'AFG' = ABOVE FINISH GRADE. CONTRACTOR SHALL SUPPLY CORRECT POLE HEIGHT TO PROVIDE FIXTURE AT HEIGHT AS SHOWN IN SCHEDULE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 2/15/2015 11:44:58 AM EST

Design: BWG	Draft: BWG	Date: 10/20/15
Checked:WGM	Scale: AS SHOWN	Project No.:14110
Drawing Name: 14110-PLAN.dwg		

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REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	LIGHTING PLAN - NORTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
LP1-3
SHEET 63 OF 120
JBE PROJECT NO. 14110

MATCH LINE L5.3

PROPOSED RETAIL "D1" 17,000 S.F.

PROPOSED RETAIL "D2" 19,989 S.F. FF=79.00

PROPOSED RETAIL "D3" 9,529 S.F.

PROPOSED RETAIL "C" 13,762 S.F. FF=79.90

ONE WAY

STOP

STOP

DRIVE THRU

BY PASS

LOADING

AWAY ZONE

NO PARKING FIRE LANE

TYP. 2,3 L7.0

MATCH LINE L5.1

MATCH LINE L5.1

12 L7.1

4 L7.0

12 L7.1

2 L7.0

6 L7.0

5 L7.0

5 L7.0

10 L7.1

2,3 L7.0

12 L7.1

PLANT LEGEND

SHADE TREES	SIZE	NOTES	QTY
Acer rubrum 'Red Sunset' Red Maple	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt Low	18
Carya ovata Shagbark Hickory	2.0" - 2.5" Cal. Street Tree	Zone 3 Salt Tolerant	4
Catalpa speciosa Northern Catalpa	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt Moderate	29
Liriodendron tulipifera Tuliptree	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt Moderate	14
Magnolia acuminata Cucumbertree	2.0" - 2.5" Cal.	Zone 4 Salt Low	4
Quercus palustris 'Green Pillar' Pin Oak	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt Tolerant	6
Zelkova serrata 'Green Vase' Zelkova	2.0" - 2.5" Cal. Street Tree	Zone 4 Salt Moderate	18

CONIFER TREES	SIZE	NOTES	QTY
Juniperus virginiana Eastern Redcedar	12' - 14'	Zone 2 Salt Moderate	42
Picea omorika Serbian Spruce	6' - 8'	Zone 6 Salt Low	10
Pinus rigida Pitch Pine	12' - 14'	Zone 4 Salt Tolerant	9

MEDIUM TREES	SIZE	NOTES	QTY
Carya ovata Shagbark Hickory	1.5" - 2.0" Cal.	Zone 3 Salt Tolerant	7
Celtis occidentalis Common Hackberry	1.5" - 2.0" Cal. Street Tree	Zone 3 Salt Moderate	37
Cercidiphyllum japonicum Katsuratree	1.5" - 2.0" Cal. Street Tree	Zone 4 Salt Moderate	34
Gleditsia triacanthos inermis 'Shyflar' Thornless Honeylocust	1.5" - 2.0" Cal. Street Tree	Zone 4 Salt Tolerant	25

ORNAMENTAL TREES	SIZE	NOTES	QTY
Acer campestre Hedge Maple	1.5" - 2.0" Cal. Street Tree	Zone 5 Salt Moderate	12
Amelanchier Arbores Downey Serviceberry	1.5" - 2.0" Cal. Street Tree	Zone 3 Salt Moderate	5
Carpinus caroliniana American Hornbeam	1.5" - 2.0" Cal. Street Tree	Zone 3 Salt Low	26
Maackia amurensis Amur Maackia	1.5" - 2.0" Cal. Street Tree	Zone 4 Salt Moderate	20
Ostrya virginiana Eastern Hophornbeam	1.5" - 2.0" Cal. Street Tree	Zone 3 Salt Tolerant	11
Oxydendron arboreum Sourwood	1.5" - 2.0" Cal.	Zone 5 Salt Tolerant	6

DECIDUOUS SHRUBS	SIZE	NOTES	QTY
Aronia arbutifolia Red Chokeberry	3 Gallon	Zone 4 Salt Tolerant	128
Clethra alnifolia Summersweet Clethra	3 Gallon	Zone 4 Salt Moderate	60
Comptonia peregrina Sweetfern	3 Gallon	Zone 3 Salt Tolerant	76
Cornus sericea Red Osier Dogwood	2 Gallon	Zone 5 Salt Moderate	18
Fothergilla gardenii Dwarf Fothergilla	3 Gallon	Zone 5 Salt Moderate	64
Hypericum kalmianum Shrubby St. John's Wort	3 Gallon	Zone 4 Salt Moderate	49
Ilex verticillata 'Nana' Common Winterberry	3 Gallon	Zone 3 Salt Tolerant	184
Leucothoe fontanesiana Drooping Leucothoe	3 Gallon	Zone 4 Salt Moderate	6
Lindera benzoin Spicebush	3 Gallon	Zone 4 Salt Tolerant	74
Myrica gale Sweetgale	2 Gallon	Zone 3 Salt Moderate	187
Rhus aromatica 'Gro-low' Dwarf Fragrant Sumac	3 Gallon	Zone 3 Salt Tolerant	174
Spiraea x bumalda 'Firebelt' Dwarf Firebelt Spirea	3 Gallon	Zone 3 Salt Moderate	237
Viburnum cornutoides Highbush Blueberry	3 Gallon	Zone 4 Salt Moderate	2
Viburnum trilobum American Cranberrybush	3 Gallon	Zone 2 Salt Moderate	4

EVERGREEN SHRUBS	SIZE	NOTES	QTY
Kalmia latifolia Mountain Laurel	5 Gallon	Zone 5 Salt Low	47
Juniperus communis 'Depressa' Common Juniper	5 Gallon	Zone 3 Salt Moderate	24
Rhododendron catawbiense Rhododendron 'Grandiflorum'	5 Gallon	Zone 5 Salt Low	55
Viburnum acerifolium Mapleleaf Viburnum	3 Gallon	Zone 2 Salt Moderate	56

GRASSES	SIZE	NOTES	QTY
Eragrostis spectabilis Purple lovegrass	2 Gallon	Zone 4 Salt Low	20
Juncus tufonius Toad Rush	2 Gallon	Zone 3 Salt Low	248
Schizachyrium scoparium Little Bluestem	2 Gallon	Zone 4 Salt Tolerant	0

GROUNDCOVERS	SIZE	NOTES	QTY
Arctostaphylos uva-ursi Bearberry	2 Gallon	Zone 3 Salt	174
Cornus canadensis Bunchberry Dogwood	2 Gallon	Zone 3 Salt Moderate	74
Cotoneaster horizontalis 'Perpusillus' Pinxterbloom Rockspray Cotoneaster	2 Gallon	Zone 4 Salt Tolerant	329
Hedera helix English Ivy	Flat	Zone 3 Salt Low	0
Juniperus chinensis 'Sargentii' Sargent Juniper	3 Gallon	Zone 3 Salt Low	116
Vinca minor Periwinkle	Flat	Zone 3 Salt Low	0

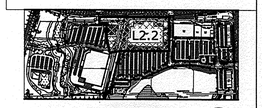
VINES	SIZE	NOTES	QTY
Aristolochia macrophylla Dutchman's Pipe	1 Gallon	Zone 4	4
Wisteria frutescens American Wisteria	1 Gallon	Zone 5	4

TURF AND SEED MIX		QTY
Conservation Seed Mix Refer Detail 10 / Sheet L-7.1 for specification		10,400 S.F.
Wetland Seed Mix Refer Detail 11 / Sheet L-7.1 for specification		48,583 S.F.
Wildflower Seed Mix Refer Detail 12 / Sheet L-7.1 for specification		28,066 S.F.

LANDSCAPE MATERIALS		QTY
Bark Mulch Shredded Organic Bark Mulch	3" depth all planting areas	182,870 S.F.
Landscape Border Landscape edging material		594 LN. FT.

NOTES:

1. Installation of an irrigation system to be determined prior to City of Westbrook approval.
2. Landscaping shall be maintained in a healthy condition. If within two years from the date of installation any plant is in a deteriorating state or is dead it shall be replaced in kind in a timely manner. Refer Sheet L8.0 for additional specifications.



0' 10' 20' 40' NORTH

APPROVED - WESTBROOK, ME
PLANNING BOARD

DATE:

Design: HAS	Draft: PB Coord Set	Date: 08/24/2016
Checked: HAS	Scale: 1" = 20' - 0"	Project No.: 14110
ALD Project No.: 15.016		

AMORY LAND DESIGN, LLC
68 WARREN STREET
NEWBURYPORT, MA
01950 - 2233

Howard A. Snyder No. 4368 — Not For Construction

REV.	DATE	REVISION	BY
4	---	REVISED PER	---
3	---	REVISED PER	---
2	---	REVISED PER	---
1	---	REVISED PER	---
0	---	REVISED PER	---

Designed and Produced in NH

Jones & Beach Engineers, Inc.

85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885

Civil Engineering Services

603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	PLANTING PLAN - NORTH CAMPUS
Project:	WESTBROOK, PIKE LARRABEE ROAD & MAIN STREET, WESTBROOK, ME
Owner of Record:	J & J GOVE DEVELOPMENT, LLC 7 SWAIN DRIVE, HAMPTON FALLS, NH 03844

DRAWING No.

L-5.2

SHEET 48 OF ~~113~~ 125
JBE PROJECT NO. 14110

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) AND AMORY LAND DESIGN (ALD) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE AND ALD.

MATCHLINE 2-3
MATCHLINE 2-4

MATCHLINE 2-4
MATCHLINE 2-2

PROPOSED BUILDING "F"

PROPOSED RESTAURANT "G" 7,200 S.F.

M2000 STATE PLANE

LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. CONTRACTOR SHALL INSTALL PROPOSED LIGHT POLES ACCORDING TO TOWN REGULATIONS.
3. ALL OUTDOOR LIGHTING SYSTEMS SHALL BE EQUIPPED WITH TIMERS TO REDUCE ILLUMINATION LEVELS TO NON-OPERATIONAL VALUES PER TOWN REGULATIONS.
4. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
5. ILLUMINATION READINGS SHOWN ARE BASED ON A TOTAL LLF OF 0.75 AT GRADE. ILLUMINATION READINGS SHOWN ARE IN UNITS OF FOOT-CANDLES.
6. LIGHTING CALCULATIONS SHOWN ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM AND SAFETY.
7. ALL LIGHTING FIXTURES SHALL BE FULL CUT-OFF DARK-SKY COMPLIANT, UNLESS OTHERWISE NOTED.
8. NL INDICATES THAT THIS LUMINAIRE SHALL BE ON A NIGHT LIGHT CIRCUIT. FL INDICATES THAT THIS LUMINAIRE SHALL BE A FLOOD LIGHT FIXTURE. MOUNTING BRACKET FOR THIS FL FIXTURE SHALL BE MOUNTED 25' ABOVE BOTTOM OF POLE BASE FOR ALL LIGHT POLES CLOSEST TO STOREFRONT. THESE DESIGNATIONS INDICATE WHAT PHASE LIGHTS ARE WIRED TO (TYP).
9. SEE SHEET LP1-7 FOR LIGHTING DETAILS.
10. CONTRACTOR SHALL COORDINATE WITH SIGN SUPPLIER TO INSTALL AND SUPPLY THE APPROPRIATE CONDUITS AND POWER TO PROPOSED SIGN LOCATION.
11. THE PROPOSED LIGHTING CALCULATIONS AND DESIGN WAS PERFORMED BY CHARRON, INC., P.O. BOX 4550, MANCHESTER, NH 03108, ATTENTION KEN SWEENEY. ALL LIGHTS SHOULD BE PURCHASED FROM THIS COMPANY, OR AN EQUAL LIGHTING DESIGN SHOULD BE SUBMITTED FOR REVIEW IF EQUAL SUBSTITUTIONS ARE PROPOSED BY THE CONTRACTOR OR OWNER.
12. LIGHTS ALONG THE MAIN ACCESS ROADS WITH ELECTRICAL CONNECTIONS BETWEEN THEM WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER AND WILL BE LIT FROM DUSK TO DAWN. LIGHTS WITHIN LEASED AREAS WILL BE THE RESPONSIBILITY OF THE LESSEE AND WILL REQUIRE CONDUIT TO CONNECT ALL LIGHTS WITHIN THE LEASED AREA TO AN INTERNAL SWITCH.
13. LIGHT FIXTURES SHALL BE INSTALLED AT HEIGHTS AS SHOWN IN LUMINAIRE SCHEDULE. 'AFG' = ABOVE FINISH GRADE. CONTRACTOR SHALL SUPPLY CORRECT POLE HEIGHT TO PROVIDE FIXTURE AT HEIGHT AS SHOWN IN SCHEDULE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS SHOWN	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	LIGHTING PLAN - NORTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
LP1-4
SHEET 64 OF 120
JBE PROJECT NO. 14110

LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. CONTRACTOR SHALL INSTALL PROPOSED LIGHT POLES ACCORDING TO TOWN REGULATIONS.
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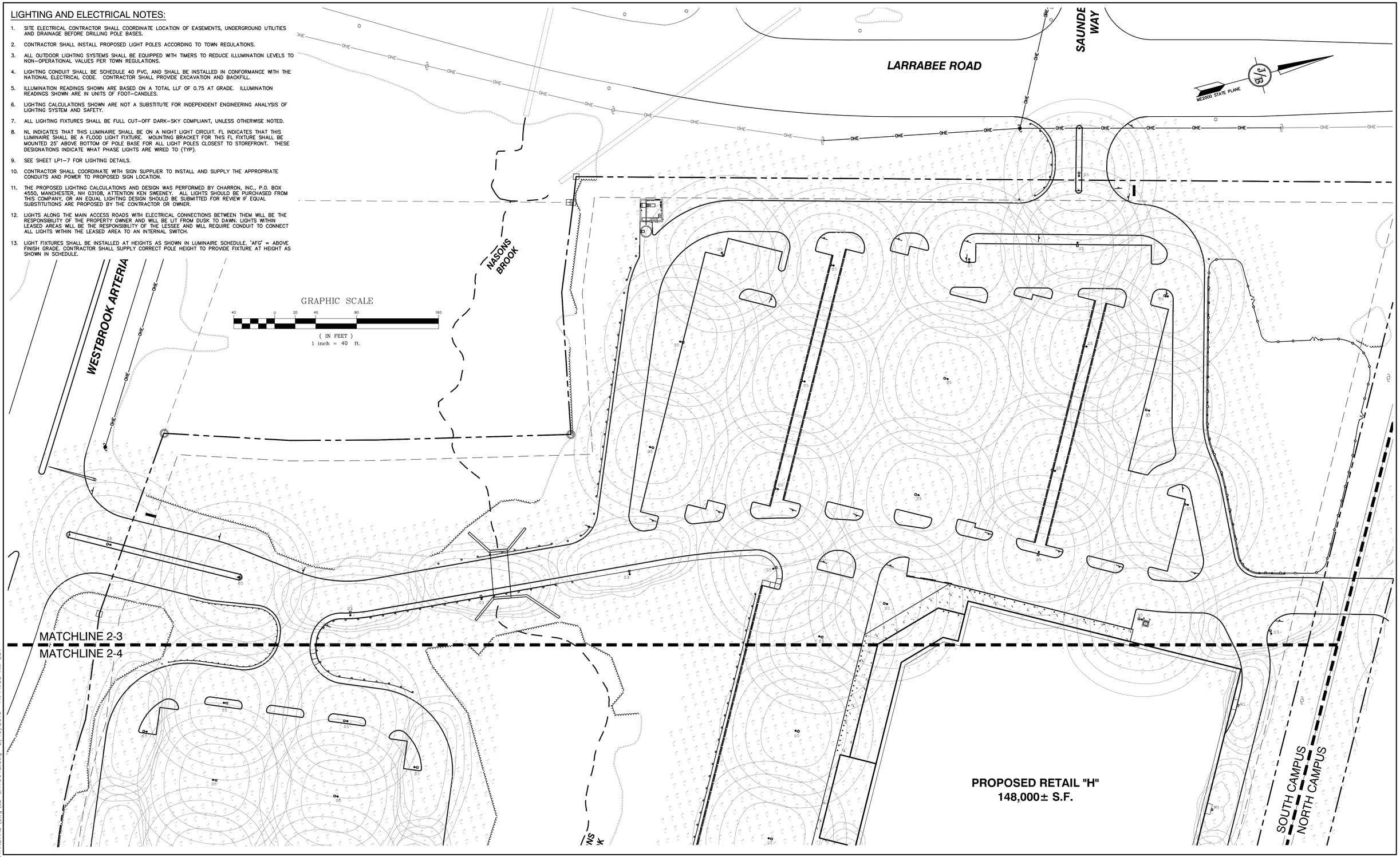

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Design: BWG	Draft: BWG	Date: 10/20/15
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FAX: 603-772-0227
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Plan Name:	LIGHTING PLAN - SOUTH CAMPUS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
LP1-5
SHEET 65 OF 120
JBE PROJECT NO. 14110

Invue

DESCRIPTION

The EPIC Collection delivers custom luminaire flexibility with high quality, yet availability expectations of standard specification grade product. The EPIC Collection can be dressed to suit any application. Recognizing evolving environmental and legislative trends, the EPIC Collection delivers world class LED optical and performance solutions to the decorative luminaire marketplace.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
TOP: Cast aluminum top housing attaches to cast aluminum mounting arm with four stainless steel fasteners. One-piece silicone gasket between mounting hub and top casting seals out moisture and contaminants. (See the mounting accessories section for a full selection of mounting arms. (Only these arms are compatible with the Epic luminaires). MIDSECTION: Continuous silicone gaskets seal lens to top casting and shade. The mid section features cast aluminum construction and stainless steel assembly. SHADES: Heavy gauge precision spun aluminum shades offer superior surface finish and consistency in form. DOORFRAME: Die-cast aluminum 1/8" thick door and doorframe seal to underside of shade with a thick wall continuous silicone gasket. Mounting hub ships attached to mounting arm.

Optics
Choice of twelve patented, high-efficiency AccuLED Optic™ technology manufactured from injection-molded acrylic. Optics are precisely designed to shape the optics, maximizing efficiency and application spacing. AccuLED Optic technology, creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and nominal 70 CRI. Optional 3000K CCT, 5000K CCT and 5700K CCT. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2, SL3 or SL4 optics.

Electrical
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less that 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – and differential – mode surge protection. LightBARs feature and IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Occupancy sensor and dimming options available.

Finish
Housing is finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. LightBAR™ cover plates are standard white and may be specified to match finish of luminaire housing. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult Outdoor Architectural Colors brochure for a complete selection.

Warranty
Five-year warranty.

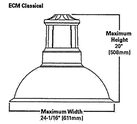
ECM/EMM
EPIC MEDIUM LED

1 - 4 LightBARs
Solid State LED

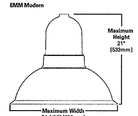
DECORATIVE AREA LUMINAIRE

DIMENSIONS

ECM Classical



EMM Modern



See configurations for more detailed information.

CERTIFICATION DATA
UL/cUL Listed
IP66 LightBARs
LM79 / LM80 Compliant
3G Vibration Tested
ISO 9001

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

EPA
Effective Projected Area: (Sq. Ft.) 0.94

SHIPPING DATA
Approximate Net Weight:
45 lbs. (20 kgs.)

EATON
Powering Business Worldwide

TD500028EN
2015-11-02 15:38:12

FIXTURE LABEL: P1, P2, P2-E

McGraw-Edison

DESCRIPTION

The Impact Elite family of wall luminaires is the ideal complement to site design. Incorporating modular LightBAR™ technology, the Impact Elite luminaire provides outstanding uniformity and energy-conscious illumination. Combined with a rugged construction, the Impact Elite luminaire is the ideal facade and security luminaire for zones surrounding schools, office complexes, apartments and recreational facilities. UL/cUL listed for wet locations.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Heavy-wall, die-cast aluminum housing and removable hinged door frame for precise tolerance control and repeatability. Hinged door inset for clean mating with housing surface and secured via two captive fasteners. Optional tamper-resistant Torx™ head fasteners offer vandal resistant access to the electrical chamber.

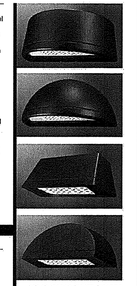
Optics
Choice of six patented, high-efficiency AccuLED Optics™ distributions. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AccuLED Optics technology creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K CCT, 5000K CCT and 5700K CCT.

Electrical
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and are suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – and differential – mode surge protection. LightBARs feature an IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Emergency egress options for -20°C ambient environments and occupancy sensor available.

Mounting
Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" J-box or wall with the Impact Elite "Hook-N-Lock" mechanism for quick installation. Secured with two captive corrosion resistant black oxide coated allen head set screws concealed but accessible from bottom of fixture.

Finish
Cast components finished in a five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty
Five-year warranty.



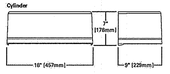
ISC/ISS/IST/ISW
IMPACT ELITE LED

1 - 2 LightBARs
Solid State LED

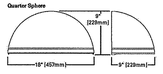
WALL MOUNT LUMINAIRE

DIMENSIONS

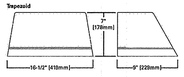
Cylinder



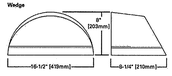
Quarter Sphere



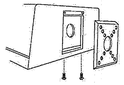
Trapezoid



Wedge



HOOK-N-LOCK MOUNTING



CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightBARs
ISO 9001
DesignLights Consortium® Qualified*

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

SHIPPING DATA
Approximate Net Weight:
19 lbs. (8 kgs.)

EATON
Powering Business Worldwide

*www.designlights.org

TD514002EN
2015-06-03 10:00:39

FIXTURE LABEL: W1, W2

McGraw-Edison

DESCRIPTION

The Ventus™ LED area luminaire provides uncompromising optical performance and outstanding versatility for a wide variety of area and roadway applications. Patent pending modular LightBAR™ technology delivers uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and any security lighting application. UL/cUL Listed for wet locations.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Die-cast aluminum frame secures thermally conductive, extruded aluminum heat sink to independent electrical chamber. Heavy-wall, die-cast aluminum housing and door isolates driver components for cooler operation. The unique construction allows for passive cooling and natural cleaning of the extruded heat sink ensuring reliable operation at 40°C high ambient conditions. Stainless steel fasteners and hinging allow access to electrical components for installation and maintenance. Optional tool-less hardware available for ease of entry into electrical chamber.

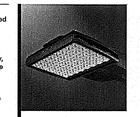
Optics
Choice of twelve patented, high-efficiency AccuLED Optics™ distributions. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AccuLED Optics technology creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K CCT, 5000K CCT and 5700K CCT. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2, SL3 or SL4 optics.

Electrical
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – and differential – mode surge protection. LightBARs feature an IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Occupancy sensor and dimming options available.

Mounting
Cast aluminum 6" arm includes bolt guides allowing for easy positioning of fixture during installation to pole or wall surface. Standard single carton packaging of housing, square pole arm and round pole adapter for contractor friendly arrival of product on site. Optional internal mast arm mount accepts a 1-1/4" to 2" O.D. horizontal tenon, while a two-bolt clamping mechanism secures fixture. Cast-in leveling guides provide +/-5° vertical leveling adjustment. Tenon adapters available to slipfit over poles equipped with 2-3/8" or 3-1/2" O.D. tenon. 3G vibration rated.

Finish
Cast components and arm finished in super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty
Five-year warranty.

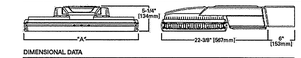


VTS
VENTUS LED

2 - 12 LightBARs
Solid State LED

AREA LUMINAIRE

DIMENSIONS



DIMENSIONAL DATA

Number of LightBars	"A" Width	Weight		EPA [Square Feet]	
		Without Arm	With Arm	Without Arm	With Arm
2-4	12-7/8" [328mm]	24 lbs. [10.91 kgs.]	29 lbs. [13.18 kgs.]	0.94	1.00
5-8	16" [406mm]	30 lbs. [13.64 kgs.]	35 lbs. [15.91 kgs.]	1.10	1.20
9-12	25-7/8" [656mm]	39 lbs. [17.73 kgs.]	44 lbs. [20.00 kgs.]	1.31	1.44

CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
3G Vibration Rated
DesignLights Consortium® Qualified*
ISO 9001

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating
50°C Ambient Temperature Rating (HA option)

SHIPPING DATA
Approximate Net Weight:
(See Tabulated Reference Data)

EATON
Powering Business Worldwide

*www.designlights.org

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2016-01-13 14:00:05

FIXTURE LABEL: S3, S4, S5, T4

valmont STRUCTURES

ROUND TAPERED STEEL
DS201
Embedded

Poles - Steel | RTS / DS201 | Embedded

Job Name:	Client Name:
Job Location - City: / State:	Created By: / Date:
Product: DS201 --- / Quote:	Customer Approval: / Date:

SPECIFICATIONS

Pole - The pole shaft conforms to ASTM A595 Grade A with a constant linear taper of 0.14 in/ft.

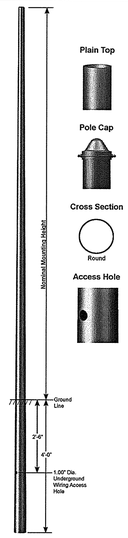
Pole Top - The pole top is held to a 3.00" OD (±0.13") for external top mount luminaire and/or bracket. For internal top mount luminaire please consult factory. A removable pole cap is provided for poles receiving drilling patterns for side-mount luminaire arm assemblies.

Underground Wiring Access - A 1.00" diameter hole is provided at 2'-6" below the ground line.

Hardware - All structural fasteners are galvanized high strength carbon steel. All non-structural fasteners are galvanized or zinc-plated carbon steel or stainless steel.

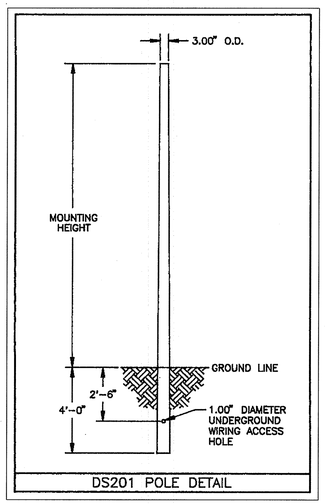
Finish - Standard finishes are galvanized, prime painted or any of Valmont's V-PRO™ Protection Systems. Additional finish options available upon request.

Design Criteria - Please reference Design Criteria Specification for appropriate design conditions.



VALMONT INDUSTRIES, INC. 28800 IDA STREET, PO BOX 358 - VALLEY, NE 68064 USA 800.825.6668 VALMONTSTRUCTURES.COM

P2-E LIGHT POLE BASE

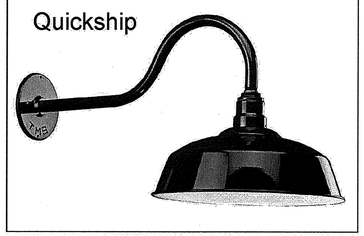


DS201 LIGHT POLE BASE DETAIL (P2-E ONLY)

Calvin Wall

TMSLIGHTING
ESTABLISHED 1923

Quickship



Features
- Provides excellent coverage and uniformity, suitable for general and localized lighting
- Versatile with several lamp types and finishes
- Quality components for extended lamp and component life
- Maintenance is simple; easy to clean and re-lamp

Applications
The Calvin wall-mount luminaire is ideal for illuminating areas where localized distribution is necessary, such as doorways and entrances, laneways, patios and could provide adequate night time security lighting. It lends itself to commercial, and industrial applications that could benefit from materials and maintenance cost reductions. Calvin could either augment the existing lighting, or illuminate a small to medium-sized area.

Calvin is also available as a pendant-style model.

IP23

Construction
High grade aluminum, with stainless steel mounting hardware.

Lamp
The Calvin Wall is designed to operate with compact fluorescent (42W max.), incandescent (150W max.), metal halide (100W max.), or Cree™ 19W LED light sources.

Incandescent and metal halide models use a medium base socket (E26).

Specify 3000°K, 3500°K or 4000°K CCT LED.

Ballast/LED Driver
Ballast are integral and electronic. They are efficient with a high power factor greater than 90%, and quiet with an "A" sound rating.

The LED source is controlled by an advanced electronic driver that delivers consistent power.

Options
Globe: Clear and prismatic, glass globes are available.

Wire Guard: A chrome-plated wire guard is available for indoors, a silver powder coat for outdoors.

Mounting
Mount directly to a standard 4" electrical junction box, with 3.5" holes c -c. Follow the installation instructions and adhere to your local electrical code.

Finish
Available in several TMS standard, brushed, and premium powder-coated finishes. A clear coat is applied to copper yet patina will form over a period. Custom or RAL finishes are available by special order. See the Finishes-Diffusers Chart TMS v1.00.pdf.

Compliances
QPS-C/US, or UL-C/US certified to UL1598 standards. Rated IP23 for use in dry to wet locations, indoor and outdoor. The Consultants Europe (CE) listing is available upon request.

FIXTURE LABEL: W

Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS SHOWN	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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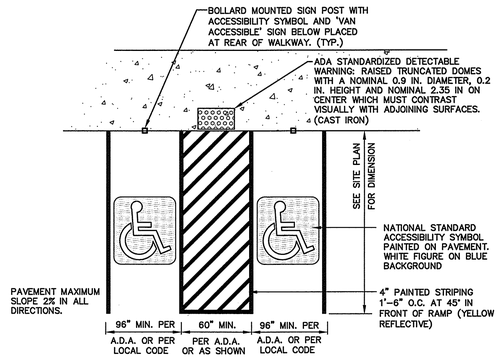
REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	LIGHTING DETAILS
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
LP1-7
SHEET 67 OF 120
JBE PROJECT NO. 14110



HANDICAP PARKING LAYOUT

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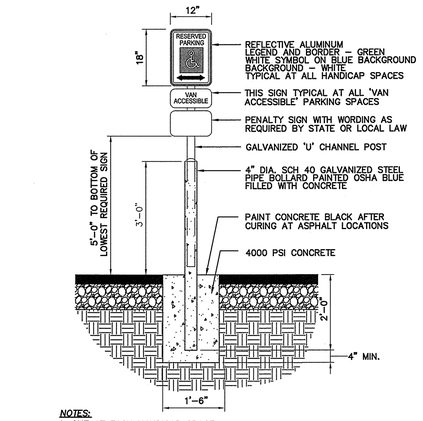
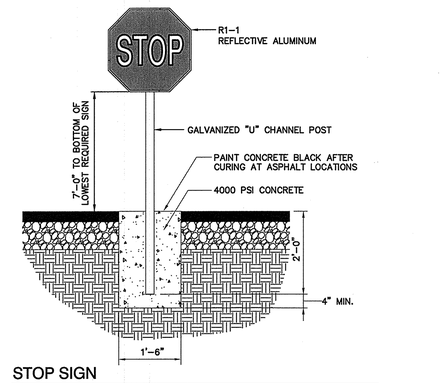


NOTES:
1. ONE AT EACH HANDICAP SPACE.
2. WHERE HANDICAP SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES.

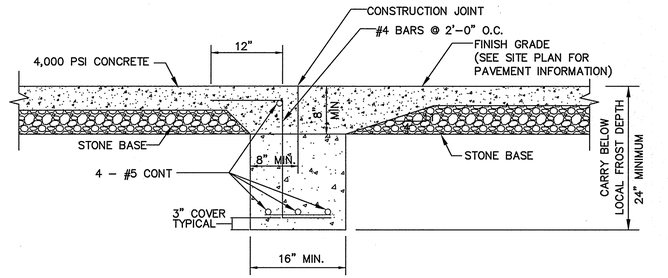
HANDICAP PARKING SIGN

NOT TO SCALE



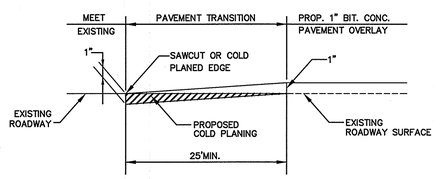
STOP SIGN

NOT TO SCALE



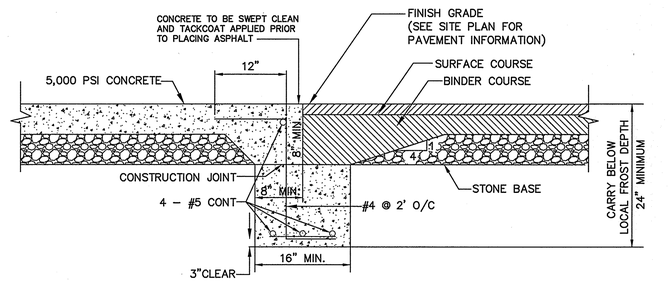
BUILDING SLAB / CONCRETE PAVEMENT JOINT DETAIL

NOT TO SCALE



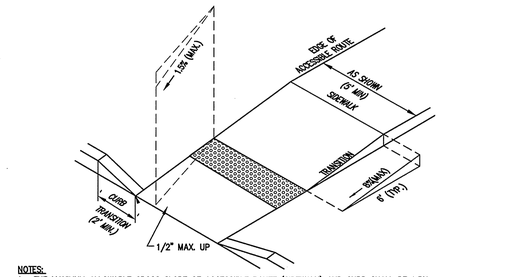
COLD PLANE DETAIL

NOT TO SCALE



CONCRETE / ASPHALT JOINT DETAIL

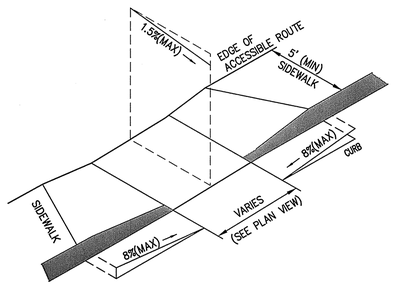
NOT TO SCALE



NOTES:
1. THE MAXIMUM ALLOWABLE CROSS SLOPE OF ACCESSIBLE ROUTE (SIDEWALK) AND CURB SHALL BE 1.5%.
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE (SIDEWALK) CURB RAMPS SHALL BE 8%.
4. A MINIMUM OF 4 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (i.e., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SECTION FOR RAMP CONSTRUCTION.

ACCESSIBLE CURB RAMP (TYPE 'B')

NOT TO SCALE



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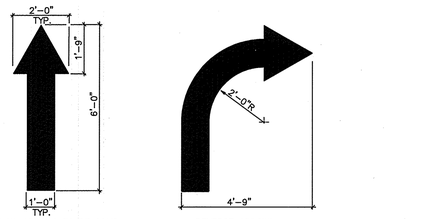
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SECTION FOR RAMP CONSTRUCTION.

ACCESSIBLE CURB RAMP (TYPE `A')

NOT TO SCALE

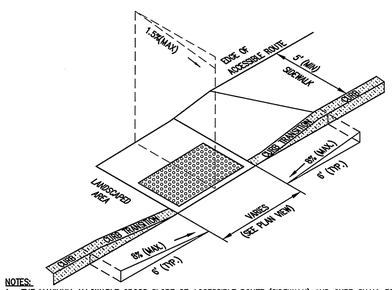


ALL FLOW ARROWS TO BE SOLID YELLOW REFLECTIVE TRAFFIC PAINT AS PER DIMENSIONS ABOVE.

REVERSE ARROWS FOR OPPOSITE DIRECTION OF FLOW.

PAINTED TRAFFIC ARROWS

NOT TO SCALE



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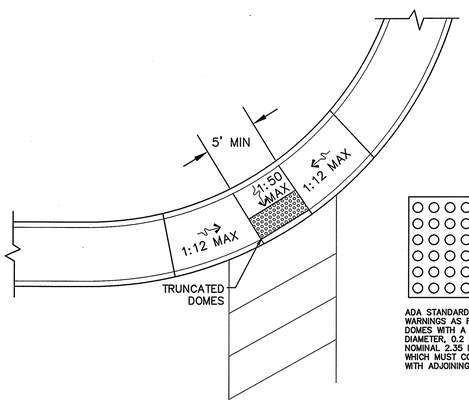
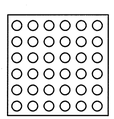
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SECTION FOR RAMP CONSTRUCTION.

ACCESSIBLE CURB RAMP (TYPE 'I')

NOT TO SCALE

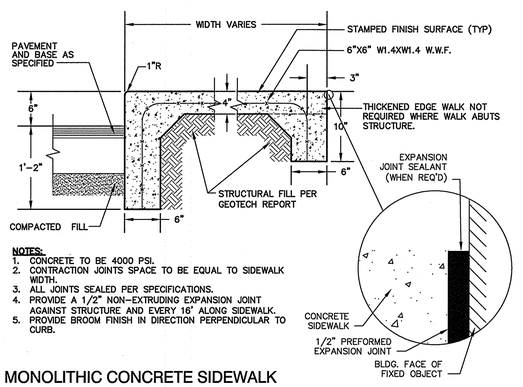




ADA STANDARDIZES DETECTABLE WARNINGS AS RAISED TRUNCATED DOMES WITH A NOMINAL 0.9 IN. DIAMETER, 0.2 IN. HEIGHT AND NOMINAL 2.35 IN ON CENTER WHICH MUST CONTRAST VISUALLY WITH ADJOINING SURFACES.

CURB RAMP WITH DETECTABLE WARNING DETAIL

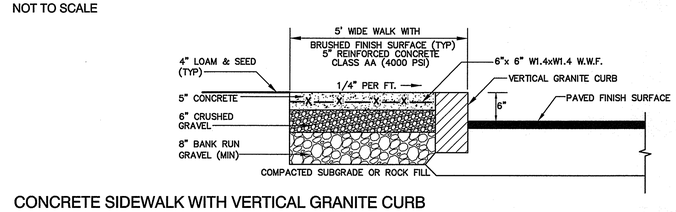
NOT TO SCALE



NOTES:
1. CONCRETE TO BE 4000 PSI.
2. CONTRACTION JOINTS SPACE TO BE EQUAL TO SIDEWALK WIDTH.
3. ALL JOINTS SEALED PER SPECIFICATIONS.
4. PROVIDE A 1/2" NON-EXTRUDING EXPANSION JOINT AGAINST STRUCTURE AND EVERY 16' ALONG SIDEWALK.
5. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.

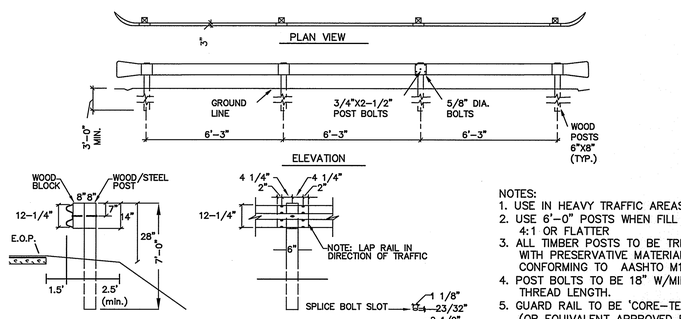
MONOLITHIC CONCRETE SIDEWALK

NOT TO SCALE



CONCRETE SIDEWALK WITH VERTICAL GRANITE CURB

NOT TO SCALE



NOTES:
1. USE IN HEAVY TRAFFIC AREAS.
2. USE 6'-0" POSTS WHEN FILL SLOPE IS 4:1 OR FLATTER
3. ALL TIMBER POSTS TO BE TREATED WITH PRESERVATIVE MATERIAL CONFORMING TO AASHTO M133
4. POST BOLTS TO BE 18" W/MIN. 2 1/2" THREAD LENGTH.
5. GUARD RAIL TO BE 'CORE-TEN' TYPE (OR EQUIVALENT APPROVED BY THE ENGINEER)
6. STEEL POSTS MAY BE UTILIZED IN PLACE OF WOOD POSTS.

STEEL GUARDRAIL

NOT TO SCALE

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Design: BWG	Draft: BWG	Date: 10/20/15	
Checked: WGM	Scale: AS NOTED	Project No.: 14110	
Drawing Name: 14110-PLAN.dwg			

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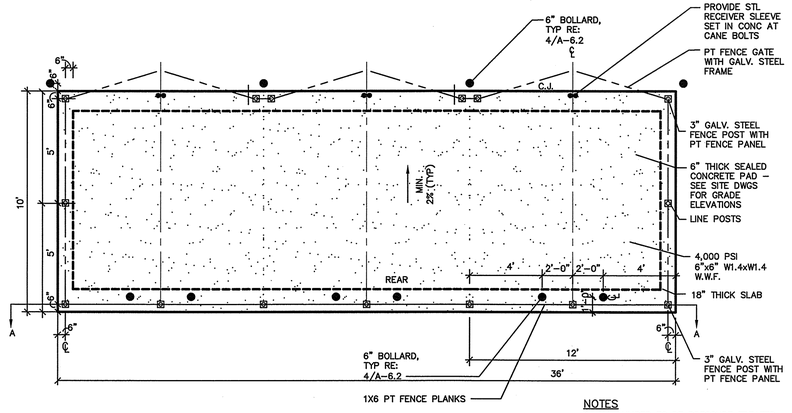
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

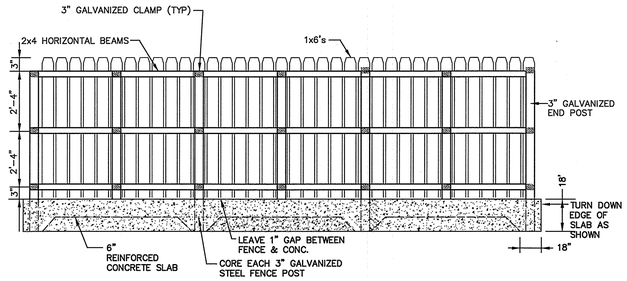
Plan Name:	SITE PLAN DETAIL SHEET
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
D2
SHEET 77 OF 120
JBE PROJECT NO. 14110



NOTES

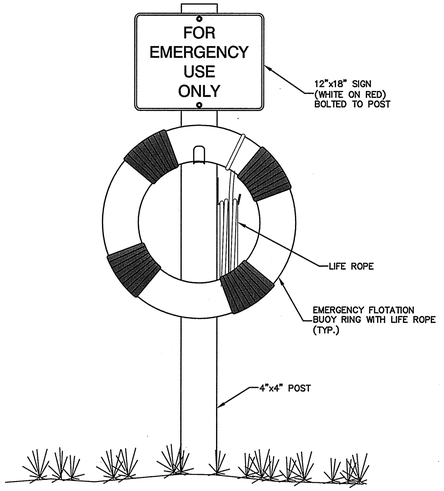
1. ALL LUMBER TO BE PRESSURE TREATED.
2. WOOD FENCE TO BE PAINTED OR STAINED TO MATCH BUILDING FOUNDATION.
3. DUMPSTER SIZE VARIES, SEE SITE PLANS FOR SCREENING SIZE



SECTION A–A

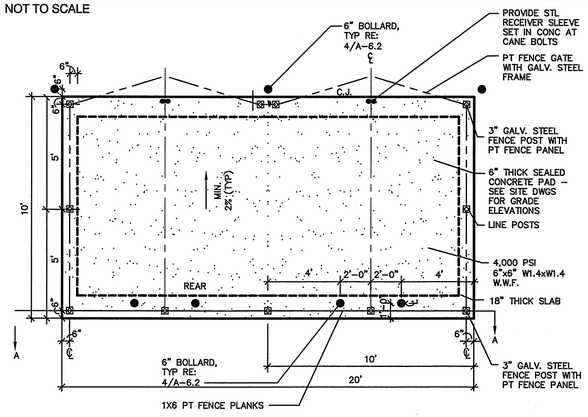
TRIPLE DUMPSTER ENCLOSURE PLAN

NOT TO SCALE



EMERGENCY FLOTATION RING BUOY

NOT TO SCALE



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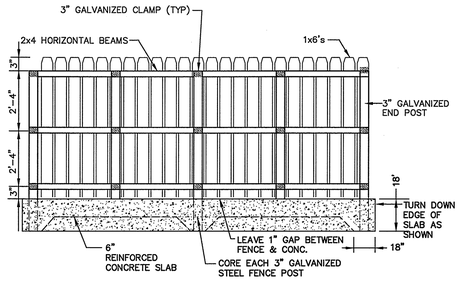
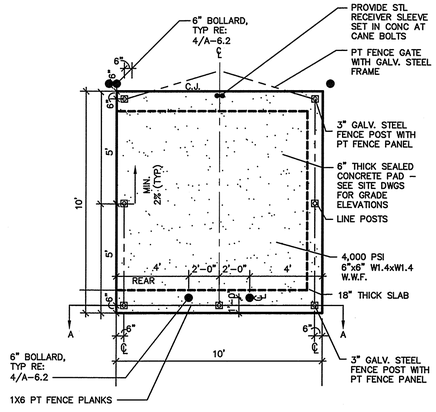
3. DUMPSTER SIZE VARIES, SEE SITE PLANS FOR SCREENING SIZE



SECTION A–A

DOUBLE DUMPSTER ENCLOSURE PLAN

NOT TO SCALE



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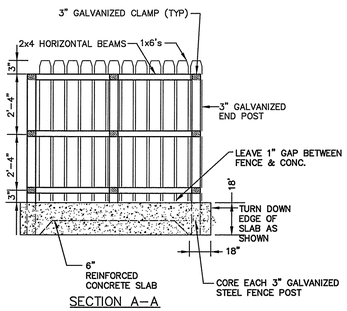
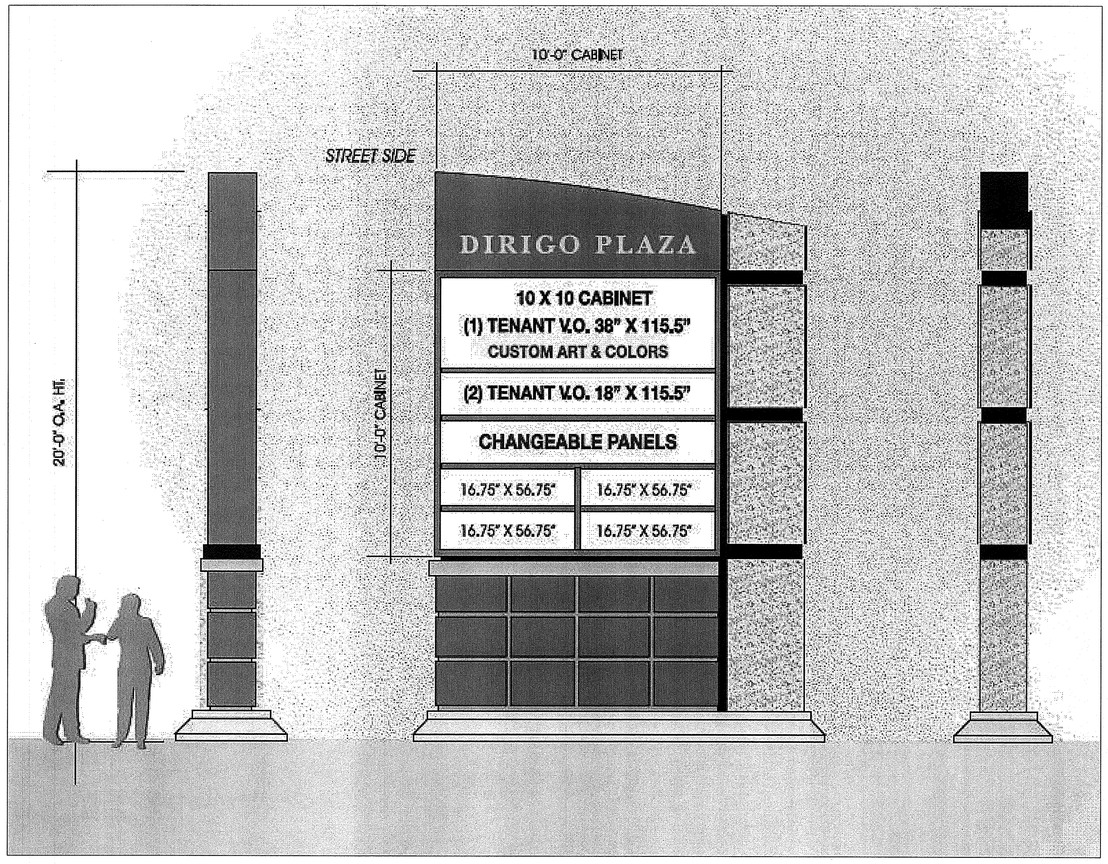
3. DUMPSTER SIZE VARIES, SEE SITE PLANS FOR SCREENING SIZE



SECTION A–A

SINGLE DUMPSTER ENCLOSURE PLAN

NOT TO SCALE



PYLON SIGN DETAIL

NOT TO SCALE

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 2/15/2015 11:44:58 AM EST

Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS NOTED	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

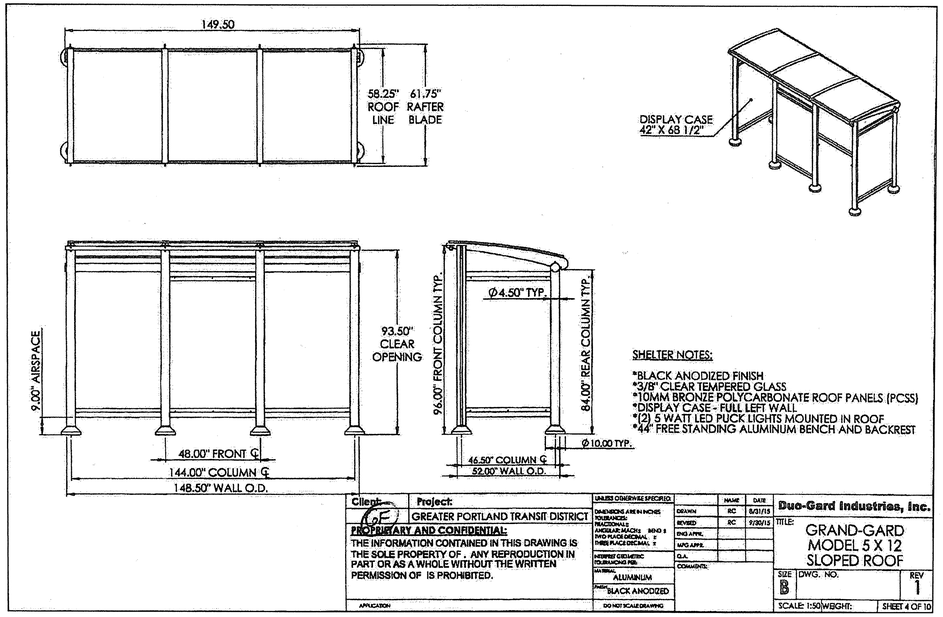
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN DETAIL SHEET
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.

D3

SHEET 78 OF 120
JBE PROJECT NO. 14110



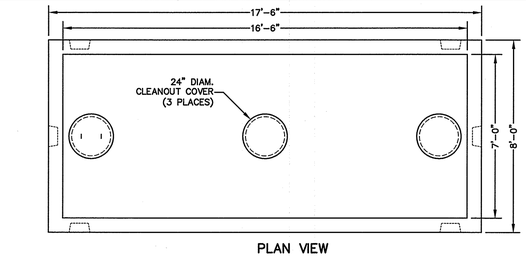
SHELTER NOTES:

*BLACK ANODIZED FINISH
*3/8" CLEAR TEMPERED GLASS
*10MM BRONZE POLYCARBONATE ROOF PANELS (PCSS)
*DISPLAY CASE - FULL LEFT WALL
*(2) 5 WATT LED PUCK LIGHTS MOUNTED IN ROOF
*44" FREE STANDING ALUMINUM BENCH AND BACKREST

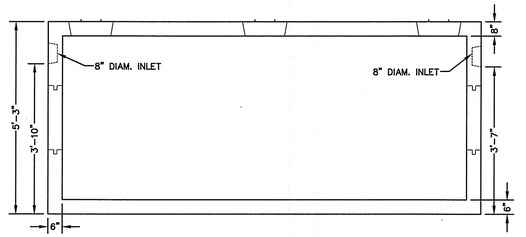
Client: GPTD	Project: GREATER PORTLAND TRANSIT DISTRICT	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES: FRACTIONAL ±; ANGULAR: MACH ± BND ±; TWO PLACE DECIMAL ±; THREE PLACE DECIMAL ±		NAME / DATE	Duo-Gard Industries, Inc.
PROPRIETARY AND CONFIDENTIAL: THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF IS PROHIBITED.		DRAWN	RC 8/31/15		
		REVISED	RC 9/20/15	TITLE: GRAND-GARD MODEL 5 X 12 SLOPED ROOF	
		ENG APPR.			
		MFG APPR.			
		Q.A.			
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:		
		MATERIAL: ALUMINUM		SIZE: B	DWG. NO.	REV: 1
APPLICATION		Finish: BLACK ANODIZED		SCALE: 1:50	WEIGHT:	SHEET 4 OF 10
		DO NOT SCALE DRAWING			

BUS SHELTER DETAIL (MAIN STREET)

NOT TO SCALE



PLAN VIEW

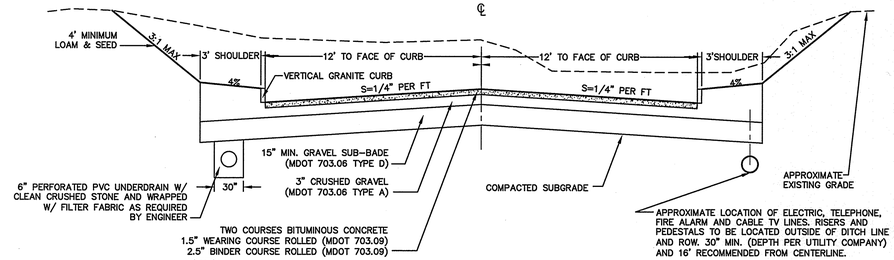


NOTES:

1. CONCRETE: 5,000 PSI MINIMUM @ 28 DAYS
2. ALL REINFORCEMENT PER ASTM C1227
3. DESIGNED FOR H-20 LOADING, COVER 1-5 FT
4. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN. INLET HEIGHT MAY INCREASE SLIGHTLY DUE TO THE BUTYL RESIN USED.
5. TEES AND BAFFLES SOLD SEPARATELY.

2,500 GALLON LEDGE TANK (IRRIGATION WATER TANK)

NOT TO SCALE

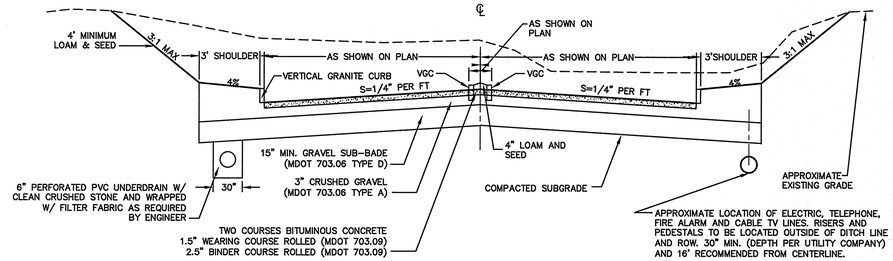


NOTES:

1. REMOVE ALL ORGANICS, TOPSOIL AND MATERIAL YIELDING TO A 10 TON ROLLER. SUBBASE AREAS THAT CONTAIN UNSUITABLE MATERIALS MUST BE EXCAVATED TO A DEPTH NO LESS THAN 36" BELOW FINISH GRADE AND BE REPLACED WITH GRAVEL COMPACTED TO 95%
2. ALL MATERIALS TO BE AS SPECIFIED PER CITY STANDARDS AND MDOT, WHICHEVER IS MOST STRINGENT. GRADATION AND COMPACTION TEST RESULTS (95% MIN.) SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TOWN OR ENGINEER MAY REQUIRE UNDERDRAIN, ADDITONAL GRAVEL AND/OR ADDITIONAL DRAINAGE IF SOIL CONDITIONS WARRANT.
4. WOVEN GEOTEXTILE FABRIC SHALL BE PLACED ABOVE SUBGRADE AT ALL WETLAND CROSSINGS.
5. MDOT 703.06 TYPE D GRAVEL MAY CONTAIN UP TO 50 BY WEIGHT RECYCLED CONCRETE AGGREGATE. THE COMBINED MATERIAL MUST HAVE A MICRO-DEVAL VALUE OF LESS THAN 25 OR A WASHINGTON DEGRADATION VALUE OF 15 OR GREATER.

TYPICAL ROADWAY SECTION W/CURBING (24' ROADWAY)

NOT TO SCALE



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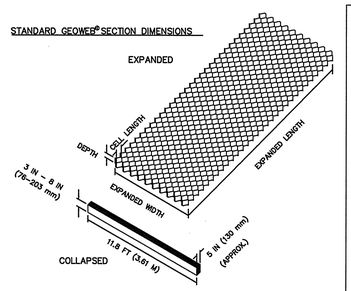


GEOWEB® SECTION SIZES

CELLS LONG	MIN EXPANSION LENGTH ft	m	WIDTH ft	m	MAX EXPANSION LENGTH ft	m	WIDTH ft	m	NOMINAL AREA ft²	m²
GW20V – 10 CELLS WIDE										
18	12.0	3.7	9.2	2.8	14.5	4.4	7.7	2.3	112	10.4
21	14.0	4.3			16.9	5.1			131	12.1
25	16.7	5.1			20.1	6.1			156	14.5
29	19.4	5.9			23.3	7.1			181	16.8
34	22.7	6.9			27.3	8.3			212	19.7
GW30V – 8 CELLS WIDE										
18	15.4	4.7	9.2	2.8	18.6	5.7	7.6	2.3	143	13.3
21	18.0	5.5			21.7	6.6			167	15.5
25	21.4	6.5			25.8	7.9			198	18.4
29	24.8	7.6			30.0	9.1			230	21.4
34	29.1	8.9			35.1	10.7			270	25.0
GW40V – 5 CELLS WIDE										
18	25.4	7.7	9.1	2.8	30.8	9.4	7.5	2.3	234	21.7
21	29.6	9.00			36.0	11.0			273	25.3
25	35.2	10.7			42.8	13.1			325	30.2
29	40.9	12.5			49.7	15.1			377	35.0
34	47.9	14.6			58.2	17.8			441	41.0

GEOWEB® CELL SIZES

	NOMINAL CELL AREA in²(dm²)	CELL EXPANSION RANGE MINIMUM LENGTH in (cm)	MINIMUM WIDTH in (cm)	MAXIMUM LENGTH in (cm)	MAXIMUM WIDTH in (cm)
CELL LENGTH / CELL WIDTH 20V	44.8 (289)	8.02 (204)	9.2 (234)	9.65 (245)	11.07 (281)
CELL LENGTH / CELL WIDTH 30V	71.3 (460)	10.25 (260)	11.39 (289)	12.39 (315)	13.77 (360)
CELL LENGTH / CELL WIDTH 40V	187.0 (1206)	16.92 (430)	18.01 (457)	20.66 (522)	21.88 (556)

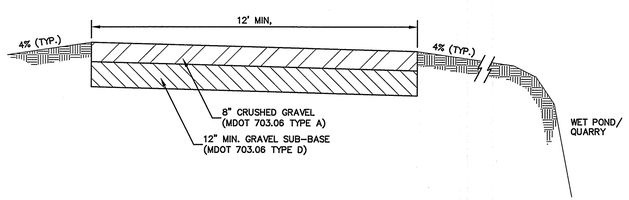
NOTE: ALL DIMENSIONS ARE NOMINAL AND ARE WITHIN MANUFACTURING TOLERANCES

GEOWEB CELLULAR CONFINEMENT SYSTEM DETAIL (BY PRESTO)

NOT TO SCALE

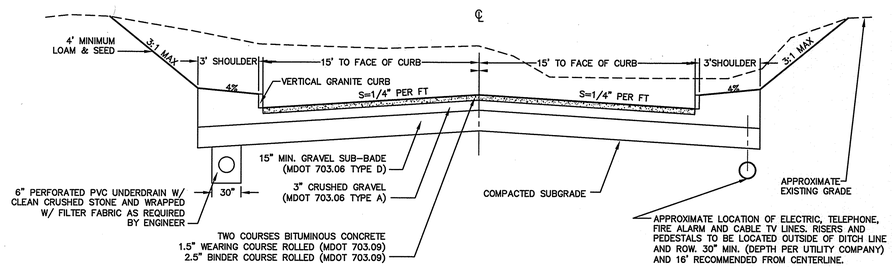
FIRE DEPARTMENT ACCESS NOTE:

- ACCESS WAY OUT OF WATER TO BE COMPACTED GRAVEL CONSTRUCTION AS DETAILED BELOW.
- ACCESS WAY SECTIONS TO BE UNDER WATER SHOULD BE CONSTRUCTED USING GEOWEB (SEE DETAIL). GEOWEB TO BE FILLED WITH CRUSHED GRAVEL (MDOT 703.06 TYPE A) AND COMPACTED.



TYPICAL GRAVEL ROAD SECTION (FIRE DEPT. ACCESS WAY)

NOT TO SCALE



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TYPICAL ROADWAY SECTION W/MEDIAN

NOT TO SCALE

TYPICAL ROADWAY SECTION W/CURBING (30' ROADWAY)

NOT TO SCALE

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 2/15/2015 11:44:58 AM EST

Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS NOTED	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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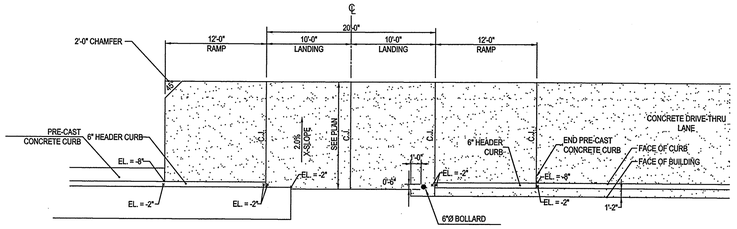
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN DETAIL SHEET
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

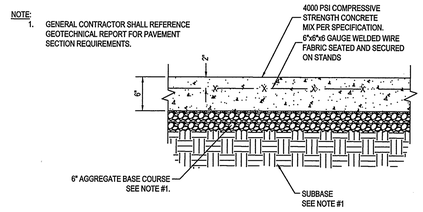
DRAWING No.
D4
SHEET 79 OF 120
JBE PROJECT NO. 14110



DRIVE-THRU PLAN - BUILDING "B"

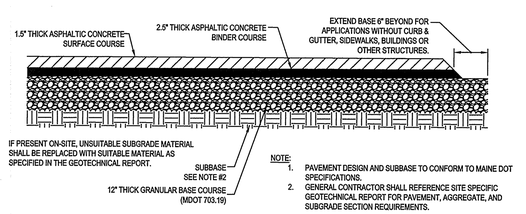
NOTE: ALL ELEVATIONS ON THIS DETAIL ARE RELATIVE TO FFE = 0'

NOT TO SCALE



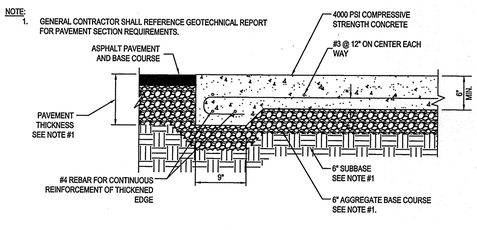
CONCRETE PAVING DRIVE-THRU LANE - BUILDING "B"

NOT TO SCALE



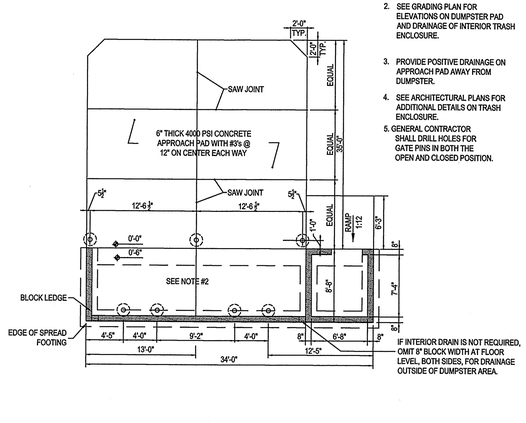
TYPICAL PAVEMENT SECTION - BUILDING "B"

NOT TO SCALE



CONCRETE APRON @ TRASH ENCLOSURE- BUILDING "B"

NOT TO SCALE

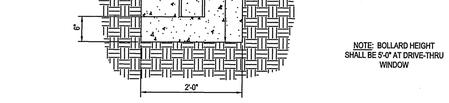


REFUSE ENCLOSURE PLANS GENERAL NOTES:

1. SEE SITE PLAN FOR LAYOUT OF CONCRETE LOADING PAD.
2. SEE GRADING PLAN FOR ELEVATIONS ON DUMPSTER PAD AND DRAINAGE OF INTERIOR TRASH ENCLOSURE.
3. PROVIDE POSITIVE DRAINAGE ON APPROACH PAD AWAY FROM DUMPSTER.
4. SEE ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS ON TRASH ENCLOSURE.
5. GENERAL CONTRACTOR SHALL DRILL HOLES FOR GATE PINS IN BOTH THE OPEN AND CLOSED POSITION.

REFUSE ENCLOSURE FOUNDATION PLAN - BUILDING "B"

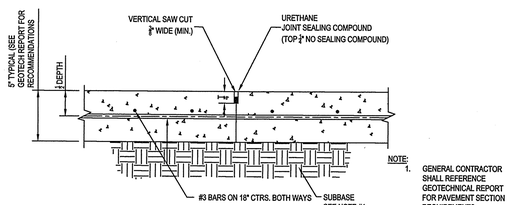
NOT TO SCALE



NOTE: BOLLARD HEIGHT SHALL BE 5'-0" AT DRIVE-THRU WINDOW

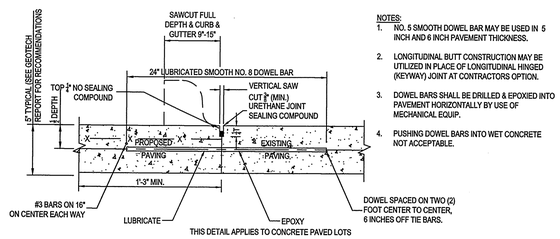
PICK UP WINDOW BOLLARD - BUILDING "B"

NOT TO SCALE



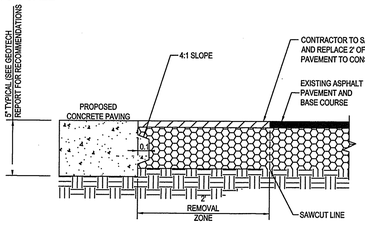
CONTRACTION JOINT - BUILDING "B"

NOT TO SCALE



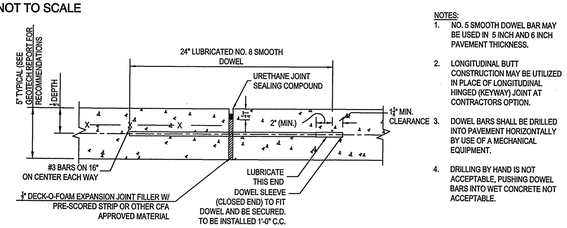
LONGITUDINAL BUTT JOINT- BUILDING "B"

NOT TO SCALE



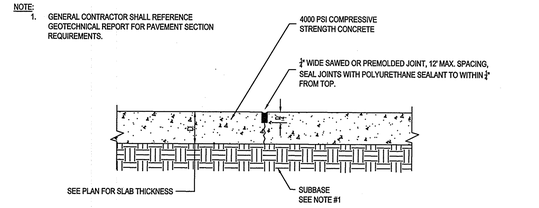
KEYED CONSTRUCTION JOINT- BUILDING "B"

NOT TO SCALE



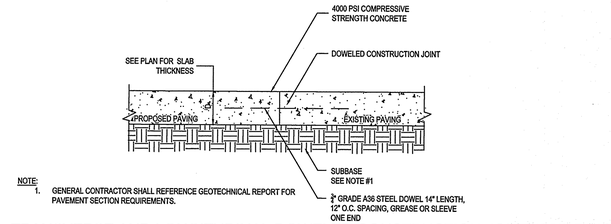
EXPANSION JOINT- BUILDING "B"

NOT TO SCALE



TRANSVERSE AND LONGITUDINAL CONTRACTION JOINT - BUILDING "B"

NOT TO SCALE



TRANSVERSE AND LONGITUDINAL DOWELED CONSTRUCTION JOINT- BUILDING "B"

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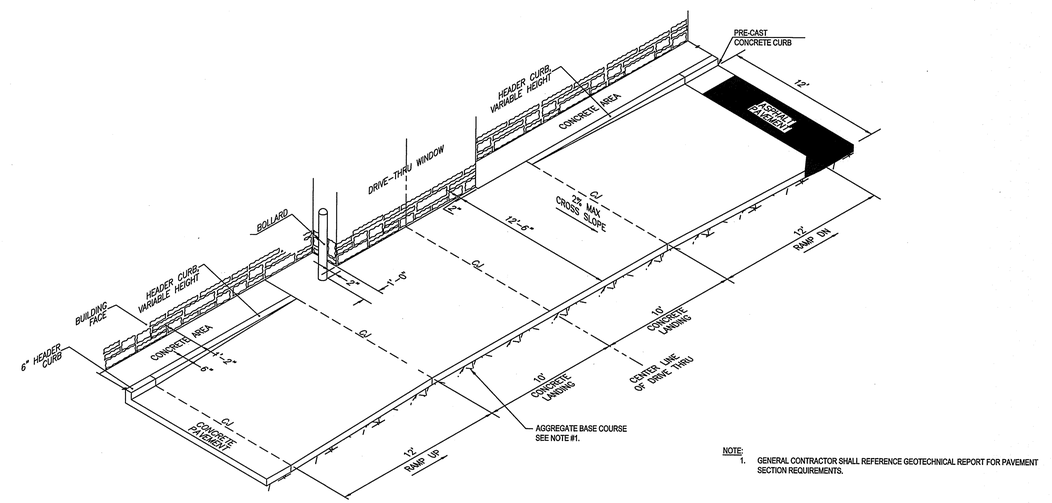

DRIVE-THRU ISOMETRIC- BUILDING "B"

NOT TO SCALE

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Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS NOTED	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
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Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

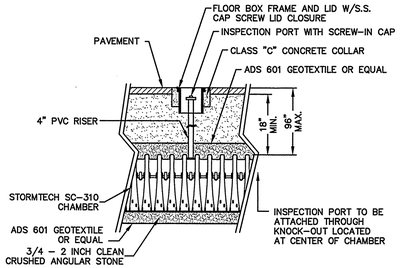
Plan Name:	BUILDING "B" DETAIL SHEET
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

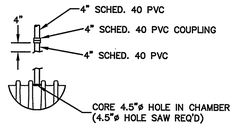
DRAWING No.

D6

SHEET 81 OF 120

JBE PROJECT NO. 14110

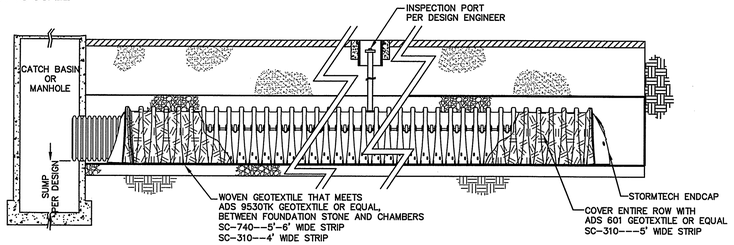




NOTES:
1. INSPECTION PORT MUST BE CONNECTED THROUGH KNOCK-OUT LOCATED AT CENTER OF CHAMBER
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED

STORMTECH INSPECTION PORT TYPICAL DETAIL

NOT TO SCALE



STORMTECH ISOLATOR ROW TYPICAL DETAIL

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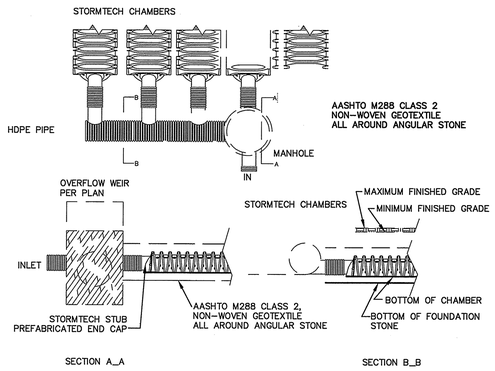
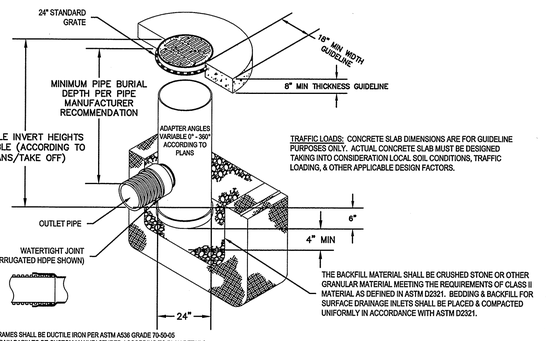


STORMTECH DETAIL FOR CHAMBERS

NOT TO SCALE



TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS.

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS II MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

1 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
4 - GRATES SHALL MEET H-20 LOAD RATING

NYLOPLAST DRAIN BASIN

NOT TO SCALE

ACCEPTABLE FILL MATERIALS
STORMTECH SC-310 AND SC-740 CHAMBER SYSTEMS

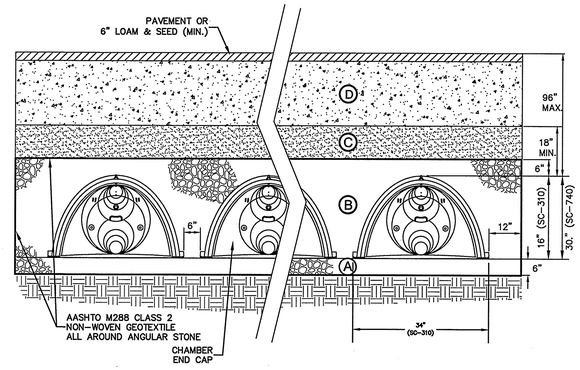
	MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION	AASHTO M145 DESIGNATION	COMPACTION/DENSITY REQUIREMENT
D	PAVEMENT SUBGRADE, DEPTH(S) PER SPECIFICATIONS	PAVEMENT SUBGRADE, MATERIALS PER SPECIFICATIONS	N/A	N/A	PREPARE PER SPECIFICATIONS AND PLANS. PAVED INSTALLATIONS HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	FILL MATERIAL FROM 6" ABOVE CHAMBERS TO BOTTOM OF PAVEMENT SUBGRADE	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	A-1 A-2 A-3	COMPACT IN 6" LIFTS TO A MINIMUM 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 LBS. DYNAMIC FORCE NOT TO EXCEED 20,000 LBS.
B	EMBEDMENT STONE SURROUNDING AND TO A 6" ELEVATION ABOVE CHAMBERS	WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN ¾ - 2 INCH	3, 357, 4, 467, 5, 56, 57	N/A	NO COMPACTION REQUIRED
A	6" FOUNDATION STONE BELOW CHAMBERS	WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN ¾ - 2 INCH	3, 357, 4, 467, 5, 56, 57	N/A	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY

PLEASE NOTE: THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE WASHED CRUSHED ANGULAR. FOR EXAMPLE, THE STONE MUST BE SPECIFIED AS WASHED, CRUSHED, ANGULAR NO. 4 STONE.

CHAMBER SYSTEM #1 ELEVATIONS (SC-740)	CHAMBER SYSTEM #2 ELEVATIONS (SC-740)	CHAMBER SYSTEM #3 ELEVATIONS (SC-310)	CHAMBER SYSTEM #4 ELEVATIONS (SC-310)	CHAMBER SYSTEM #5 ELEVATIONS (SC-310)	CHAMBER SYSTEM #6 ELEVATIONS (SC-740)	CHAMBER SYSTEM #7 ELEVATIONS (SC-740)	CHAMBER SYSTEM #8 ELEVATIONS (SC-310)	CHAMBER SYSTEM #9 ELEVATIONS (SC-310)	CHAMBER SYSTEM #10 ELEVATIONS (SC-310)
66.75	65.95	80.73	73.03	62.50	65.75	65.00	71.73	72.33	65.83
65.75	64.95	79.73	72.03	61.50	64.75	64.00	70.73	71.33	64.83
65.25	64.45	79.23	71.53	61.00	64.25	63.50	70.23	70.83	64.33
62.75	61.95	77.90	70.20	58.50	61.75	61.00	68.90	69.50	63.00
62.25	61.45	77.40	69.70	58.00	61.25	60.50	68.40	69.00	62.50

STORMTECH GENERAL NOTES

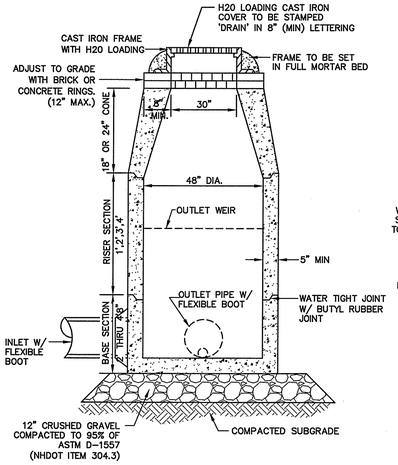
1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. STORMTECH OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICE DEPARTMENT OR LOCAL STORMTECH REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 860-529-8188 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 24 INCHES NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 6.5 FEET INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24 INCHES, MAXIMUM COVER IS 6.5 FEET.
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. CONTACT STORMTECH FOR WARRANTY INFORMATION.



STORMTECH CHAMBER DETAIL

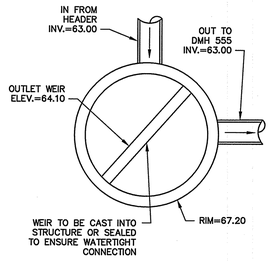
NOT TO SCALE

NOTES:
1. OUTLET WEIRS TO BE KEYED INTO SIDES AND BOTTOM OF DRAIN MANHOLE AND MADE WATERTIGHT.
2. WEIRS TO BE WATERTIGHT AND CONSTRUCTED WITH 2" THICK PLASTIC PLATE (OR APPROVED EQUAL.)



DRAIN MANHOLE WITH OUTLET WEIR

NOT TO SCALE



DMH 584 - PLAN VIEW
CHAMBER SYSTEM #10
OUTLET
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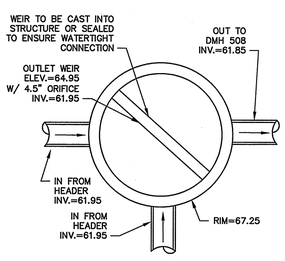

DMH 577 - PLAN VIEW
CHAMBER SYSTEM #2
OUTLET
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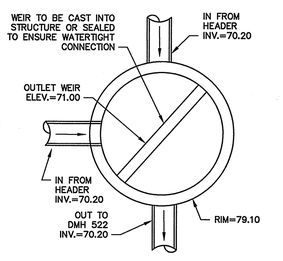

DMH 560 - PLAN VIEW
CHAMBER SYSTEM #4
OUTLET
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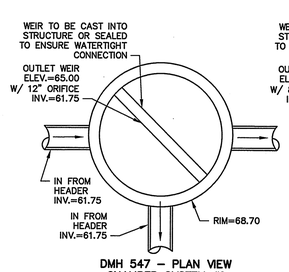
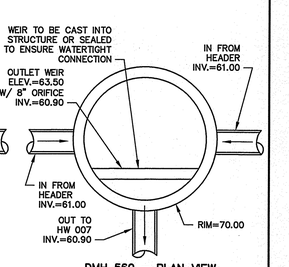


DMH 547 - PLAN VIEW
CHAMBER SYSTEM #6
OUTLET
NOT TO SCALE



DMH 569 - PLAN VIEW
CHAMBER SYSTEM #7
OUTLET
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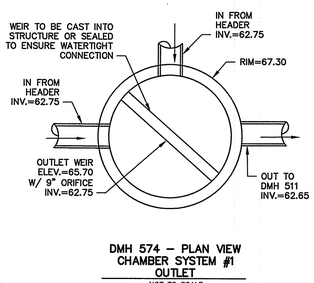
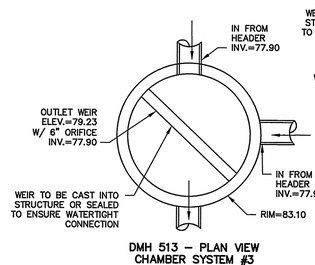
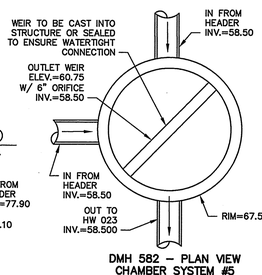


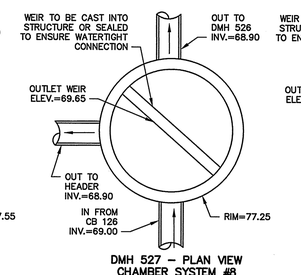
DMH 574 - PLAN VIEW
CHAMBER SYSTEM #1
OUTLET
NOT TO SCALE



DMH 513 - PLAN VIEW
CHAMBER SYSTEM #3
OUTLET
NOT TO SCALE



DMH 582 - PLAN VIEW
CHAMBER SYSTEM #5
OUTLET
NOT TO SCALE



DMH 527 - PLAN VIEW
CHAMBER SYSTEM #8
OUTLET
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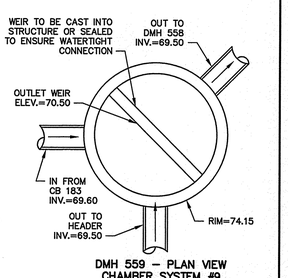

DMH 559 - PLAN VIEW
CHAMBER SYSTEM #9
OUTLET
NOT TO SCALE

Design: BWG	Draft: BWG	Date: 10/20/15	
Checked: WGM	Scale: AS NOTED	Project No.: 14110	
Drawing Name: 14110-PLAN.dwg			

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3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
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Civil Engineering Services
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FAX: 603-772-0227
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Plan Name:	DRAINAGE DETAIL SHEET
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
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DRAWING No.
D8
SHEET 83 OF 120
JBE PROJECT NO. 14110

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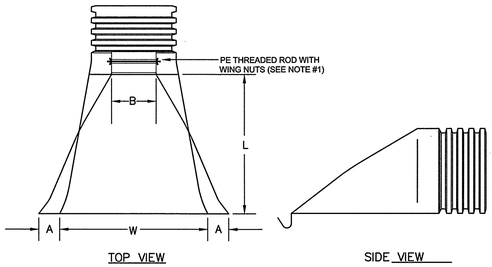


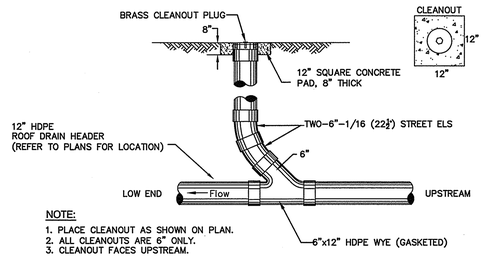
PIPE SIZE	A	B (MAX)	H	L	W
12"	6.5"	10"	6.5"	25"	29"
15"	6.5"	10"	6.5"	25"	29"
18"	7.5"	15"	6.5"	32"	35"
24"	7.5"	18"	6.5"	36"	45"
30"	10.5"	N/A	7.0"	53"	68"
36"	10.5"	N/A	7.0"	53"	68"

NOTES:

1. PE THREADED ROD WITH WING NUTS PROVIDED FOR END SECTIONS 12"–24". 30" AND 36" END SECTIONS TO BE WELDED PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL DIMENSIONS ARE NOMINAL.
3. SAFETY BARS TO BE INSTALLED ON ALL FLARED ENDS OF 15" DIAMETER OR GREATER.

SICPP FLARED END SECTION (ADS N-12 OR APPROVED EQUAL)

NOT TO SCALE

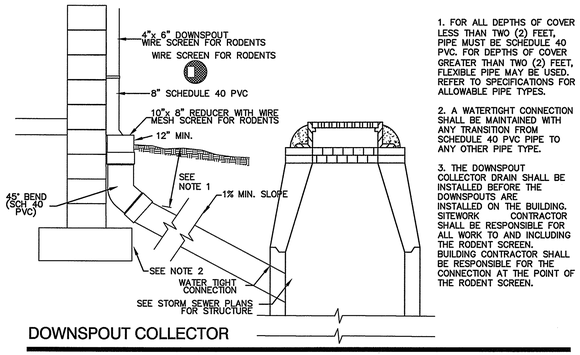


NOTE:

1. PLACE CLEANOUT AS SHOWN ON PLAN.
2. ALL CLEANOUTS ARE 6" ONLY.
3. CLEANOUT FACES UPSTREAM.

ROOF DRAIN HEADER CLEAN-OUT (C.O.) DETAIL

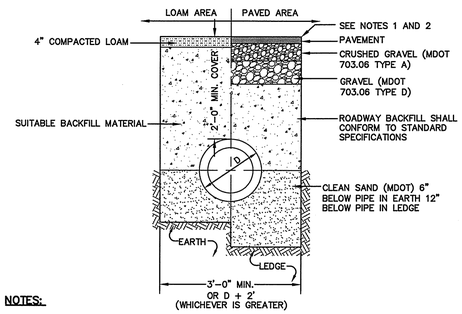
NOT TO SCALE



1. FOR ALL DEPTHS OF COVER LESS THAN TWO (2) FEET, PIPE MUST BE SCHEDULE 40 PVC. FOR DEPTHS OF COVER GREATER THAN TWO (2) FEET, FLEXIBLE PIPE MAY BE USED. REFER TO SPECIFICATIONS FOR ALLOWABLE PIPE TYPES.
2. A WATERTIGHT CONNECTION SHALL BE MAINTAINED WITH ANY TRANSITION FROM SCHEDULE 40 PVC PIPE TO ANY OTHER PIPE TYPE.
3. THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE RODENT SCREEN. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONNECTION AT THE POINT OF THE RODENT SCREEN.

DOWNSPOUT COLLECTOR

NOT TO SCALE

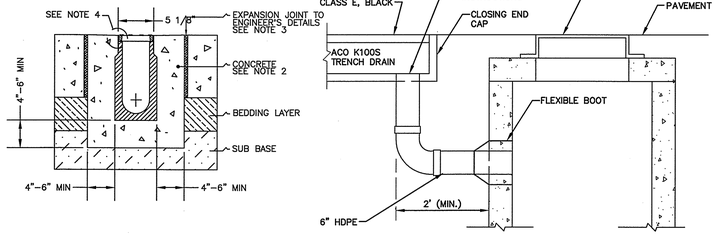


NOTES:

1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
2. NEW ROADWAY CONSTRUCTION SHALL CONFORM WITH PROJECT AND TOWN SPECIFICATIONS.
3. ALL MATERIALS ARE TO BE COMPACTED TO 95% OF ASTM D–1557.

DRAINAGE TRENCH

NOT TO SCALE



NOTES:
1. IT IS NECESSARY TO ENSURE THE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR THE EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE REQUIRED.
2. A MINIMUM CONCRETE STRENGTH OF 3000 PSI IS RECOMMENDED. THE CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CRACK CONTROL JOINTS ARE RECOMMENDED TO PROTECT THE CHANNEL AND THE CONCRETE SURROUND. ENGINEERING ADVICE MAY BE REQUIRED.
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" ABOVE THE TOP OF THE CHANNEL EDGE.
5. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR COMPLETE DETAILS.

THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K100S CHANNEL SYSTEM WITH GALVANIZED STEEL OR STAINLESS STEEL K–RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC., CHARDON, OH.

CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST–IN GALVANIZED STEEL OR STAINLESS STEEL EDGE RAIL.

THE SYSTEM SHALL BE 4 INCHES (100MM) NOMINAL INSIDE WIDTH WITH A 6.1 IN. (155MM) OVERALL WIDTH AND A BUILT–IN SLOPE OF 0.6%. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT. EACH CHANNEL SHALL HAVE PREFORMED 4 IN. (100MM) ROUND AND 6 IN. (150MM) OVAL DRILL–OUTS ON THE BOTTOM FOR VERTICAL CONNECTION WITH UNDERGROUND PIPING.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO LOAD CLASS E *(DIN 19 580). GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED BY MEANS OF EITHER A BOLTLESS LOCKING "QUICKLOK" DEVICE OR LOCKING BOLT AND BAR. CHANNEL AND GRATE SHALL BE INDEPENDENTLY CERTIFIED TO MEET THE SPECIFIED DIN 19580 LOAD CLASS.

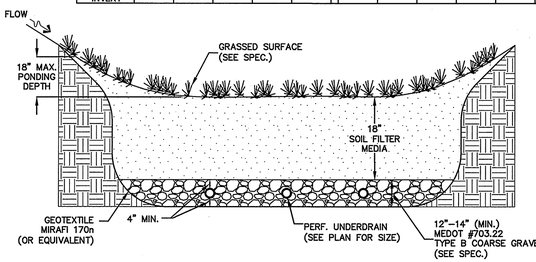
POLYMER CONCRETE SHALL HAVE MATERIAL PROPERTIES OF: COMPRESSIVE STRENGTH RANGE BETWEEN 14,000–14,500 PSI; FLEXURAL STRENGTH BETWEEN 3600–4500 PSI; TENSILE STRENGTH OF 1500 PSI. THE MATERIAL WATER ABSORPTION RATE SHALL NOT EXCEED 0.1% BY WEIGHT AND SHALL BE RESISTANT TO PROLONGED SALT EXPOSURE, REPETITIVE FROST CYCLES AND CHEMICALLY RESISTANT TO DILUTE ACIDS AND ALKALIS.

THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
*FILL IN AS REQUIRED.

TRENCH DRAIN SYSTEM

NOT TO SCALE

SOIL FILTER #	#1	#2	#3	#4	#5	#6	#7	#8	#10	#11	#12	#13	#15	#16	#18	#19	#20	#26	#27	#28	#31	#32
THROAT ELEV.	71.00	77.70	76.50	76.50	76.50	76.50	76.50	72.00	72.45	69.45	72.70	72.50	71.50	71.50	62.50	63.60	63.75	63.60	64.50	64.50	65.15	72.50
TOP OF SWALE	75.00	78.00	77.00	77.00	77.00	77.00	77.00	74.00	72.72	73.00	72.95	72.72	72.00	72.00	65.00	65.00	64.50	64.00	65.00	65.00	67.00	72.50
BOT. OF SWALE	69.50	77.00	76.00	76.00	76.00	76.00	76.00	70.50	71.50	68.00	71.63	71.50	70.00	68.00	61.00	63.00	61.60	61.85	63.50	62.00	63.65	71.00
TOP OF GRAVEL	68.00	75.50	74.50	74.50	74.50	74.50	74.50	69.00	70.00	66.50	70.13	70.00	68.50	66.50	59.50	61.50	60.10	60.35	62.00	60.50	62.15	69.50
INVERT OF UNDERDRAIN	67.35	71.60	72.50	71.35	72.50	70.25	72.50	68.33	68.45	65.83	67.35	68.50	67.83	65.83	58.83	60.83	59.43	59.68	61.33	59.83	61.48	68.83
UNDERDRAIN SIZE	4"	12"	12"	18"	18"	12"	12"	4"	18"	6"	18"	18"	4"	12"	6"	2 @ 8"	8"	6"	6"	6"	4"	4"
BOT. OF GRAVEL	67.00	71.42	72.17	71.02	72.17	69.92	72.17	68.00	68.12	65.50	67.02	68.17	67.50	65.50	58.50	60.50	59.10	59.35	61.00	59.50	61.15	68.50
OUTLET STRUCTURE	CB 153	CB 116	CB 117	CB 121	CB 122	CB 123	CB 124	CB 132	CB 135	CB 162	CB 140	CB 141	CB 146	CB 234	CB 243	CB 205	CB 239	CB 204	CB 242	CB 240	CB 203	CB 147
WEIR ELEV.	–	73.00	–	73.00	–	74.00	–	–	70.00	–	70.00	–	–	71.50	–	–	63.75	63.60	–	64.50	–	–
OUTLET ORIFICE SIZE	–	8"	–	8"	–	4"	–	–	8"	–	8"	–	–	10"–#1 9"–#2	–	–	8"–#1 8"–#2	6"–#1 6"–#2	–	6"–#1 10"–#2	–	–
OUTLET ORIFICE INVERT	–	71.60	–	71.35	–	70.25	–	–	68.45	–	67.35	–	–	65.83–#1 69.50–#2	–	–	59.43–#1 62.10–#2	59.68–#1 62.50–#2	–	59.83–#1 62.65–#2	–	–



SOIL FILTER MEDIA
SOIL MEDIA MUST CONSIST OF A SILTY SAND SOIL OR SOIL MIXTURE COMBINED WITH 20–25% BY VOLUME (NO LESS THAN 10% BY DRY WEIGHT) OF A MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH.

THE RESULTING MIXTURE MUST HAVE NO LESS THAN 8% PASSING THE #200 SEIVE AND SHALL HAVE A CLAY CONTECNT OF LESS THAN 2%.

SOIL FILTER MEDIA
–50%: SAND (MEDOT #703.01)
–20%: LOAMY TOPSOIL
–30%: COMPOSTED WOOD FIBERS AND FINE SHREDDED BARK, SUPERHUMUS, OR EQUIVALENT

MEDOT #703.22 TYPE B COARSE GRAVEL FOR UNDERDRAINS

SIEVE SIZE	% BY WEIGHT
1"	90–100
½"	75–100
#4	50–100
#20	15–80
#50	0–15
#200	0–5

DESIGN CONSIDERATIONS

1. DO NOT DIRECT RUNOFF TO THE GRASSED UNDERDRAINED SOIL FITER UNTIL IT HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
2. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUN–OFF, WATER FROM EXCAVATIONS) TO THE GRASSED UNDERDRAINED SOIL FILTER DURING ANY STAGE OF CONSTRUCTION.
3. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

MAINTENANCE REQUIREMENTS:

1. DURING THE FIRST YEAR, THE BASIN WILL BE INSPECTED SEMI–ANUALLY AND FOLLOWING MAJOR STORM EVENTS.
2. DEBRIS AND SEDIMENT BUILDUP SHALL BE REMOVED FROM THE BASIN AS NEEDED.
3. MOWING OF A GRASSED BASIN CAN OCCUR SEMI–ANNUALLY TO BE A HEIGHT NO LESS THAN SIX (6) INCHES. ONLY HAND–HELD TRIMMERS OR PUSH–MOWERS ARE ALLOWED ON THE FILTER (NO TRACTORS) AND THE GRASS BED SHOULD BE MOWED NO MORE THAN TWO (2) TIMES PER GROWING SEASON.
4. ANY BARE AREA OR EROSION RILLS SHALL BE REPAIRED WITH NEW FILTER MEDIA OR SANDY LOAM THEN SEEDED AND MULCHED.
5. MAINTAINING GOO GRASS COVER WILL MINIMIZE CLOGGING WITH FINE SEDIMENTS AND IF PONDING EXCEEDS 48 HOURS, THE TOP OF THE FILTER BED MUST BE ROTOTILLED TO REESTABLISH THE SOIL'S FILTRATION CAPACITY. THE TOP SEVERAL INCHES OF TEH FILTER SHALL BE REPLACED WITH FRESH MATERIAL WHEN WATER PONDS ON THE SURFACE OF THE BED OF MORE THAN 72 HOURS.

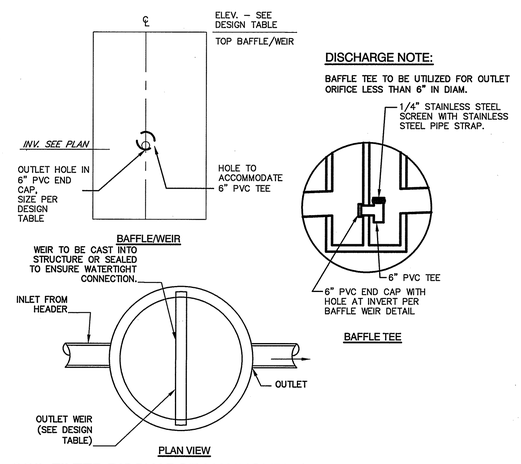
CONSTRUCTION OVERSIGHT

ALL MATERIALS USED FOR CONSTRUCTION OF THE FILTER BED SHALL BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER PRIOR TO PLACEMENT. TESTING SHALL BE DONE BY A CERTIFIED LABORATORY TO SHOW THAT THE MATERIALS MEET MAINE DEP SPECIFICATIONS. INSPECTION DURING CONSTRUCTION BY A PROFESSIONAL ENGINEER SHALL OCCUR AT A MINIMUM:

- AFTER THE PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED, BUT PRIOR TO BACKFILL;
- AFTER THE SAND FILTER MEDIA HAS BEEN INSTALLED;
- AFTER THE PREFABRICATED STORAGE CHAMBERS HAVE BEEN INSTALLED;
- AFTER FINAL SEEDING; AND
- AFTER ONE YEAR TO INSPECT HEALTH OF VEGETATION AND MAKE CORRECTIONS.

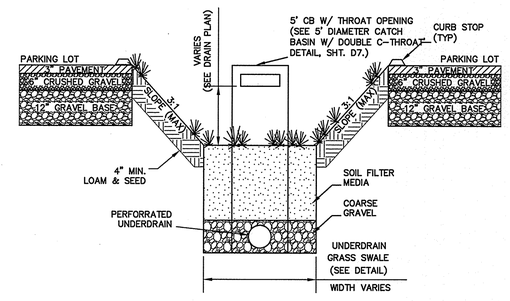
GRASSED UNDERDRAINED SOIL FILTER (ME)

NOT TO SCALE



SOIL FILTER DISCHARGE MANHOLE W/ WEIR

NOT TO SCALE



PARKING LOT - GRASSED UNDERDRAINED SOIL FILTER

NOT TO SCALE

Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS NOTED	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

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Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name: DRAINAGE DETAIL SHEET
Project: "DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No. D9
SHEET 84 OF 120
JBE PROJECT NO. 14110

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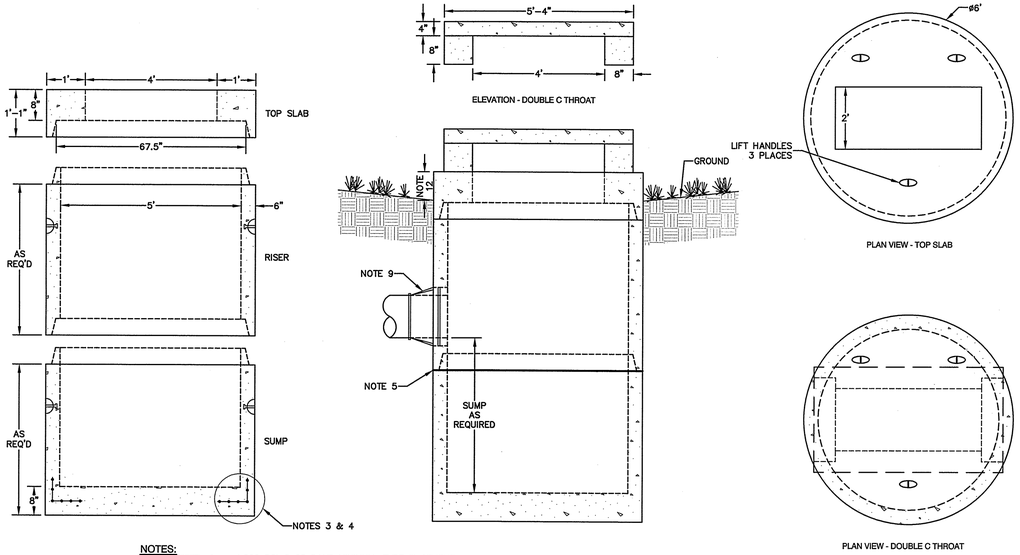
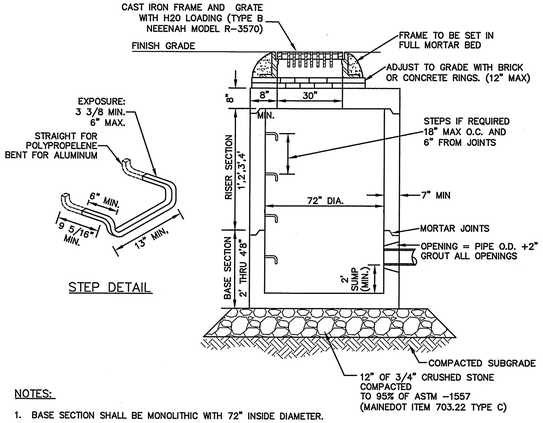


NOTES:
1. CONCRETE: fc = 4,000 PSI @ 28 DAYS MINIMUM, TYPE III CEMENT
2. HS-20 DESIGN LOADING CONFORMS TO THE LATEST SPECIFICATONS ASTM C478, AASHTO M199 PRECAST REINFORCED CONCRETE MANHOLE SECTIONS
3. ONE POUR MONOLITHIC BASE SECTION
4. STEEL REINFORCEMENT CONFORMS TO LATEST ASTM SPECIFICATION: ASTM A-615, GRADE 60 BLACK DEFORMED BARS; ASTM A-185 WELDED WIRE FABRIC, 0.15 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM
5. BUTYL RUBBER JOINT SEALANT PROVIDED CONFORMS TO ASTM C-990 AND FEDERAL SPEC SS-S-210A
6. 147 GALLONS/VF
7. HOLES & ELEVATION TBD
8. SECTIONS AVAILABLE IN INCREMENTS OF 6"
9. BOOTED PIPE CONNECTIONS (IF USED) CONFORM TO ASTM C-923. MAXIMUM BOOTED CONNECTION PIPE SIZE IS 30"
10. MAXIMUM PIPE O.D. IS 44" (36" RCP)
11. PLASTIC MANHOLE STEPS (IF REQUIRED) ARE STEEL REINFORCED CONFORMING TO ASTM C-478
12. SEE TABLE FOR ELEVATION OF TOP SLAB IN RELATION TO FINISH GROUND

5' DIAMETER CATCH BASIN w/ DOUBLE C-THROAT

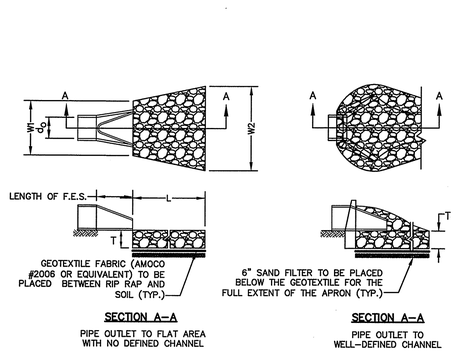
NOT TO SCALE



NOTES:
1. BASE SECTION SHALL BE MONOLITHIC WITH 72" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H20 LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H20 LOADING
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL CATCH BASIN FRAMES AND GRATES SHALL BE NEENAH R-3570 OR APPROVED EQUAL (24"x24" TYPICAL).
8. STANDARD CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.
9. CATCH BASINS IN EXCESS OF 8' IN DEPTH SHALL BE PROVIDED WITH STEPS SIMILAR TO THOSE DETAILED.

CATCH BASIN WITH GREASE HOOD (6' DIAM.)

NOT TO SCALE



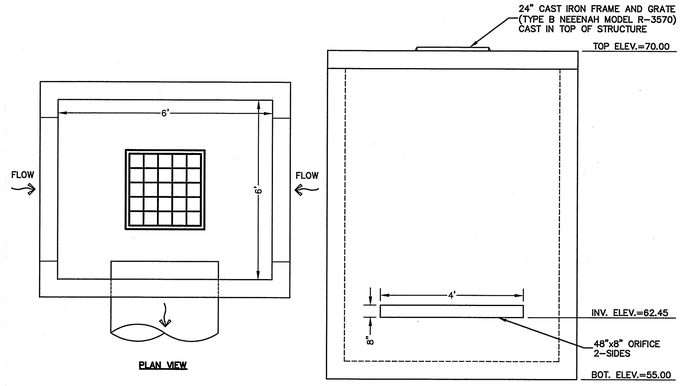
SECTION A-A
PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

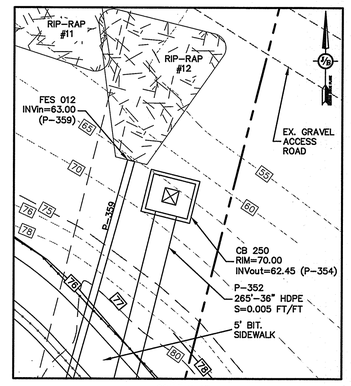
SECTION A-A
PIPE OUTLET TO WELL-DEFINED CHANNEL

NOTES:
1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.
6. MAINTENANCE: THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO OUTLET PROTECTION.

RIP RAP OUTLET PROTECTION APRON

NOT TO SCALE





POND OUTLET STRUCTURE DETAIL (CB 250)

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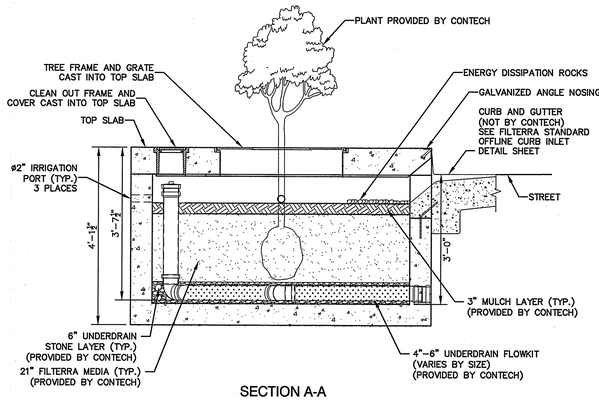
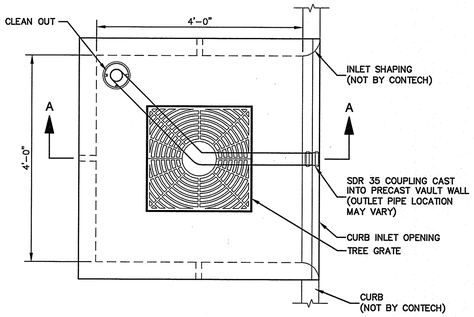


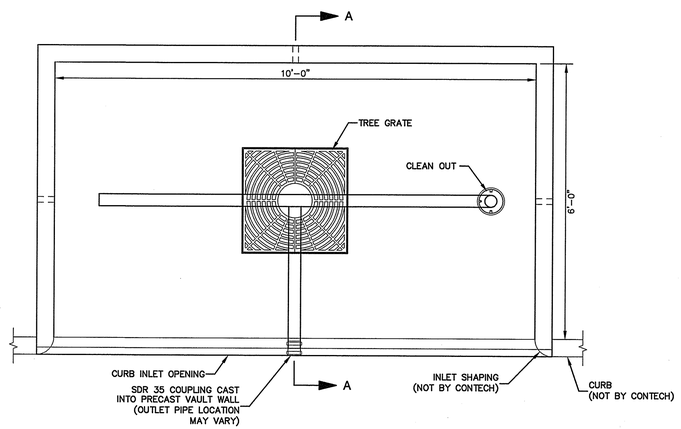
SECTION A-A



PLAN VIEW

4' x 4' TREEWELL FILTER DETAIL (FILTERRA BIORETENTION SYSTEM)

NOT TO SCALE



10' x 6' TREEWELL FILTER DETAIL (FILTERRA BIORETENTION SYSTEM)

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Design: BWG	Draft: BWG
Checked: WGM	Scale: AS NOTED
Drawing Name: 14110-PLAN.dwg	

Date: 10/20/15
Project No.: 14110

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Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
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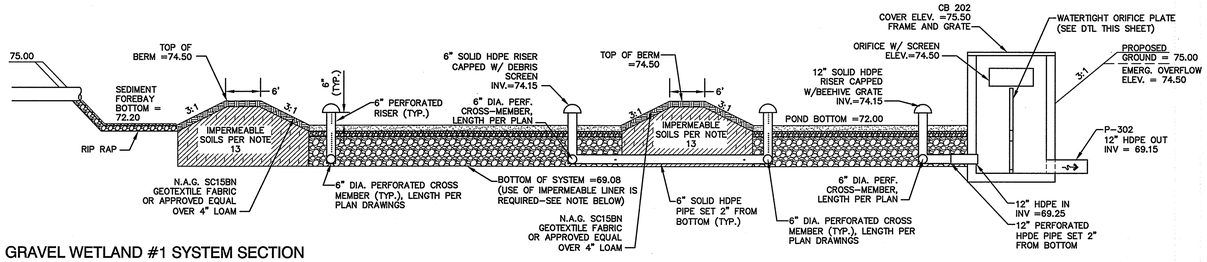
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

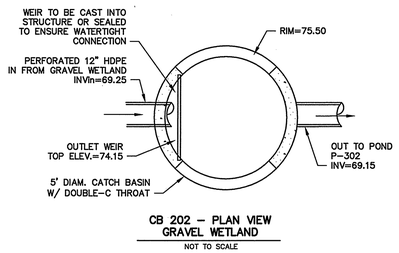
Plan Name:	DRAINAGE DETAIL SHEET
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
D10
SHEET 85 OF 120
JBE PROJECT NO. 14110



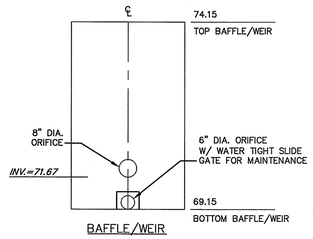
GRAVEL WETLAND #1 SYSTEM SECTION

NOT TO SCALE



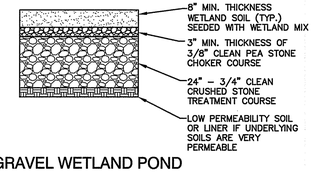
CB 202 – PLAN VIEW
GRAVEL WETLAND

NOT TO SCALE



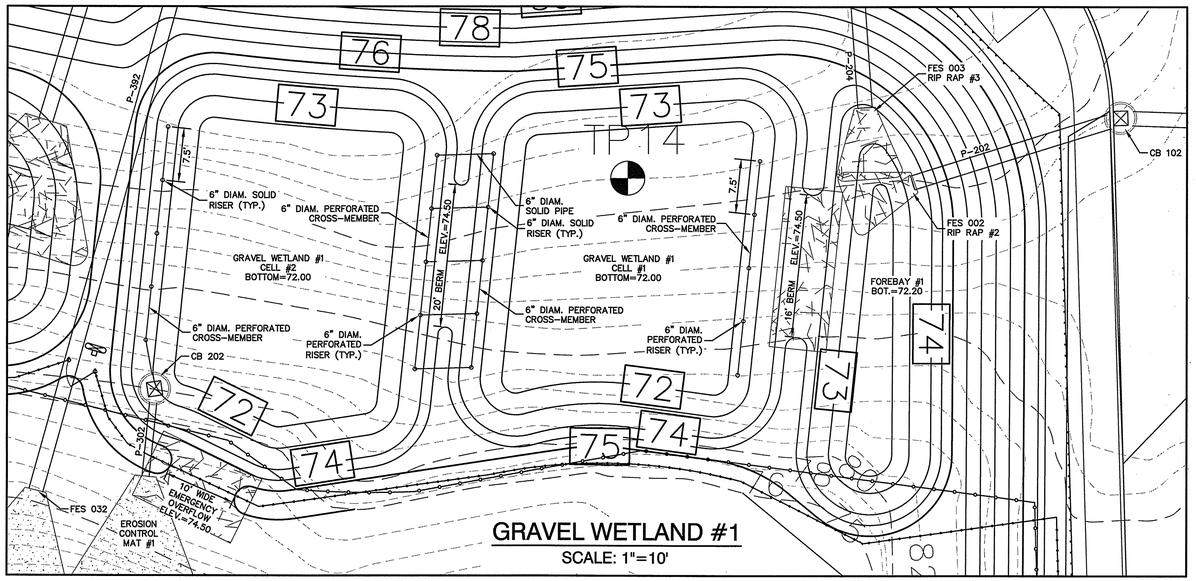
GRAVEL WETLAND SYSTEM #1 - INLET/OUTLET DETAILS

NOT TO SCALE



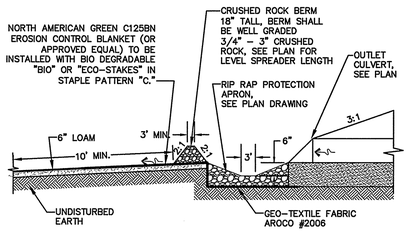
GRAVEL WETLAND POND BOTTOM CROSS SECTION (FIG-2)

NOT TO SCALE



GRAVEL WETLAND #1

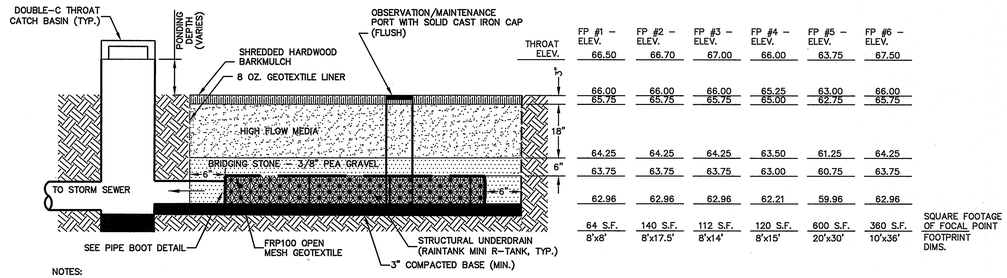
SCALE: 1"=10'



LEVEL SPREADER DETAIL

NOT TO SCALE

1. CONSTRUCT THE LEVEL SPREADER LIP ON A ZERO PERCENT GRADE TO INSURE UNIFORM SPREADING OF RUNOFF.
2. LEVEL SPREADER LENGTH SHALL BE PER PLAN
3. THE RIP RAP APRON PRIOR TO THE LEVEL SPREADER SHALL NOT EXCEED A 0 PERCENT GRADE.
4. THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER SHOULD NOT RE-CONCENTRATE IMMEDIATELY BELOW THE SPREADER.
5. PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.
6. MAINTENANCE: THE LEVEL SPREADER SHOULD BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE LIP HAS BEEN DAMAGED AND THE DESIGN CONDITIONS HAVE NOT CHANGED. ANY DETRIMENTAL SEDIMENT ACCUMULATION SHOULD BE REMOVED. IF RILLING HAS TAKEN PLACE ON THE LIP, THEN THE DAMAGE SHOULD BE REPAIRED AND REVEGETATED. THE VEGETATION SHOULD BE MOWED OCCASIONALLY TO CONTROL WEEDS AND THE ENCROACHMENT OF WOODY VEGETATION. CLIPPINGS SHOULD BE REMOVED AND DISPOSED OF OUTSIDE THE SPREADER AND AWAY FROM OUTLET AREA. FERTILIZATION SHOULD BE DONE AS NECESSARY TO KEEP THE VEGETATION HEALTHY AND DENSE.



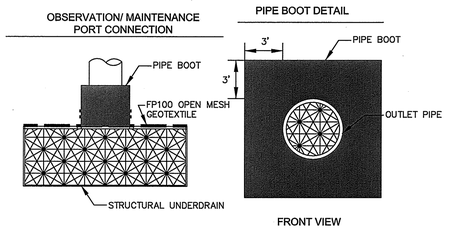
	THROAT ELEV.	FP #1 – ELEV.	FP #2 – ELEV.	FP #3 – ELEV.	FP #4 – ELEV.	FP #5 – ELEV.	FP #6 – ELEV.	
	66.50	66.70	67.00	66.00	63.75	67.50	
6"	66.00	66.00	66.00	65.25	63.00	66.00	
	65.75	65.75	65.75	65.00	62.75	65.75	
18"	64.25	64.25	64.25	63.50	61.25	64.25	
6"	63.75	63.75	63.75	63.00	60.75	63.75	
	62.96	62.96	62.96	62.21	59.96	62.96	
		64 S.F. 8'x8'	140 S.F. 8'x17.5'	112 S.F. 8'x14'	120 S.F. 8'x15'	600 S.F. 20'x30'	360 S.F. 10'x36'	SQUARE FOOTAGE OF FOCAL POINT FOOTPRINT DIMS.

NOTES:

1. HIGH FLOW MEDIA SHALL BE FOCALPOINT HIGH FLOW MEDIA AS PRODUCED BY CONVERGENT WATER TECHNOLOGIES.
2. WITHIN 90 DAYS OF PROJECT COMPLETION, THE INFILTRATION RATE SHALL BE CONFIRMED AT THE MANUFACTURER'S OR INSTALLERS EXPENSE, BY A WETTED CONDITION HYDRAULIC CONDUCTIVITY TEST.
   2.1. FAILURE TO PASS THIS TEST WILL RESULT IN REMOVAL AND REPLACEMENT OF ALL MEDIA IN THE SYSTEM AT NO COST TO THE PROJECT OWNER/OPERATOR.
   2.2. TEST MUST UTILIZE THE EQUIPMENT AND FOLLOW THE STANDARD OPERATING PROCEDURES FOUND IN THE HARRIS COUNTY TEXAS MANUAL ENTITLED, LOW IMPACT DEVELOPMENT AND GREEN INFRASTRUCTURE DESIGN CRITERIA FOR STORMWATER MANAGEMENT (2011.)
   2.3. REPLACEMENT MEDIA, IF REQUIRED, MUST BE TAKEN FROM A DIFFERENT BATCH THAN THE ORIGINAL.
3. FOCAL POINT BY ACF/FABCO INDUSTRIES, 207-831-2795

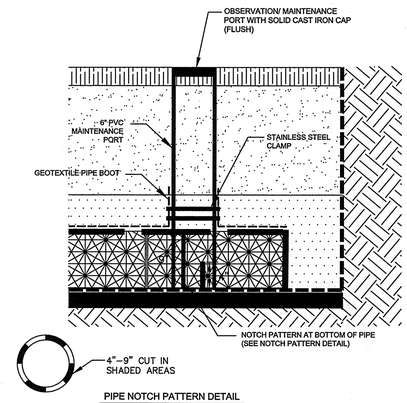
FOCALPOINT BIOFILTRATION SYSTEM HP SECTION X-X

NOT TO SCALE



FOCALPOINT PIPE CONNECTION

NOT TO SCALE



FOCALPOINT OBSERVATION/ MAINTENANCE PORT

NOT TO SCALE

INSPECTION AND MAINTENANCE (GRAVEL WETLAND)

1. THE CONTRACTOR WILL NOTIFY JONES AND BEACH ENGINEERS AFTER EACH OF THE GRAVEL WETLAND PONDS HAVE BEEN EXCAVATED TO THE BOTTOM OF THE SYSTEM FOR A MANDATORY INSPECTION PRIOR TO BUILDING BERMS, PLACING STONE OR INSTALLING PIPE SYSTEM.
2. 1ST YEAR POST-CONSTRUCTION: INSPECTION FREQUENCY SHOULD BE AFTER EVERY MAJOR STORM IN THE FIRST YEAR FOLLOWING CONSTRUCTION.
   - INSPECT TO BE CERTAIN SYSTEM DRAINS WITHIN 24–72 HRS (WITHIN THE DESIGN PERIOD, BUT ALSO NOT SO QUICKLY AS TO MINIMIZE STORMWATER TREATMENT)).
   - WATERING PLANTS AS NECESSARY DURING THE FIRST GROWING SEASON
   - RE-VEGETATING POORLY ESTABLISHED AREAS AS NECESSARY
   - TREATING DISEASED VEGETATION AS NECESSARY
   - QUARTERLY INSPECTION OF SOIL AND REPAIRING ERODED AREAS, ESPECIALLY ON SLOPES
   - CHECKING INLETS, OUTLETS, AND OVERFLOW SPILLWAY FOR BLOCKAGE, STRUCTURAL INTEGRITY, AND EVIDENCE OF EROSION.
3. POST-CONSTRUCTION: INSPECTION FREQUENCY SHOULD BE AT LEAST EVERY 6 MONTHS THEREAFTER, AS PER USEPA GOOD HOUSE-KEEPING REQUIREMENTS. INSPECTION FREQUENCY CAN BE REDUCED TO ANNUAL FOLLOWING 2 YEARS OF MONITORING THAT INDICATES THE RATE OF SEDIMENT ACCUMULATION IS LESS THAN THE CLEANING CRITERIA LISTED BELOW. INSPECTIONS SHOULD FOCUS ON:
   - CHECKING THE FILTER SURFACE FOR DENSE, COMPLETE, ROOT MAT ESTABLISHMENT ACROSS THE WETLAND SURFACE. THOROUGH REVEGETATION WITH GRASSES, FORBS, AND SHRUBS IS NECESSARY. UNLIKE BIORETENTION, WHERE MULCH IS COMMONLY USED, COMPLETE SURFACE COVERAGE WITH VEGETATION IS NEEDED.
   - CHECKING THE GRAVEL WETLAND SURFACE FOR STANDING WATER OR OTHER EVIDENCE OF RISER CLOGGING, SUCH AS DISCOLORED OR ACCUMULATED SEDIMENTS.
   - CHECKING THE SEDIMENTATION CHAMBER OR FOREBAY FOR SEDIMENT ACCUMULATION, TRASH, AND DEBRIS.
   - INSPECT TO BE CERTAIN THE SEDIMENTATION FOREBAY DRAINS WITHIN 24 TO 72 HRS.
   - CHECKING INLETS, OUTLETS, AND OVERFLOW SPILLWAY FOR BLOCKAGE, STRUCTURAL INTEGRITY, AND EVIDENCE OF EROSION.
   - REMOVAL OF DECAYING VEGETATION, LITTER, AND DEBRIS.
   - MOW GRASS AREAS PERIODICALLY SO THAT GRASS DOES NOT EXCEED 4" IN HEIGHT.
4. CLEANING CRITERIA FOR ALL SEDIMENTATION FOREBAYS: SEDIMENT SHOULD BE REMOVED FROM THE SEDIMENTATION CHAMBER (FOREBAY) WHEN IT ACCUMULATES TO A DEPTH OF MORE THAN 12 INCHES (30 CM) OR 10 PERCENT OF THE PRETREATMENT VOLUME. THE SEDIMENTATION FOREBAY SHOULD BE CLEANED OF VEGETATION IF PERSISTENT STANDING WATER AND WETLAND VEGETATION BECOMES DOMINANT. THE CLEANING INTERVAL IS ONCE EVERY YEAR. A DRY SEDIMENTATION FOREBAY IS THE OPTIMAL CONDITION WHILE IN PRACTICE THIS CONDITION IS RARELY ACHIEVED. THE SEDIMENTATION CHAMBER, FOREBAY, AND TREATMENT CELL OUTLET DEVICES SHOULD BE CLEANED WHEN DRAWDOWN TIMES EXCEED 60 TO 72 HOURS. MATERIALS CAN BE REMOVED WITH HEAVY CONSTRUCTION EQUIPMENT; HOWEVER THIS EQUIPMENT SHOULD NOT TRACK ON THE WETLAND SURFACE. REVEGETATION OF DISTURBED AREAS AS NECESSARY. REMOVED SEDIMENTS SHOULD BE DEWATERED (IF NECESSARY) AND DISPOSED OF IN AN ACCEPTABLE MANNER.
5. CLEANING CRITERIA FOR GRAVEL WETLAND TREATMENT CELLS: SEDIMENT SHOULD BE REMOVED FROM THE GRAVEL WETLAND SURFACE WHEN IT ACCUMULATES TO A DEPTH OF SEVERAL INCHES (>10 CM) ACROSS THE WETLAND SURFACE. MATERIALS SHOULD BE REMOVED WITH RAKES RATHER THAN HEAVY CONSTRUCTION EQUIPMENT TO AVOID COMPACTION OF THE GRAVEL WETLAND SURFACE. HEAVY EQUIPMENT COULD BE USED IF THE SYSTEM IS DESIGNED WITH DIMENSIONS THAT ALLOW EQUIPMENT TO BE LOCATED OUTSIDE THE GRAVEL WETLAND, WHILE A BACKHOE SHOVEL REACHES INSIDE THE GRAVEL WETLAND TO REMOVE SEDIMENT. REMOVED SEDIMENTS SHOULD BE DEWATERED (IF NECESSARY) AND DISPOSED OF IN AN ACCEPTABLE MANNER.
6. DRAINING AND FLUSHING GRAVEL WETLAND TREATMENT CELLS: FOR MAINTENANCE IT MAY BE NECESSARY TO DRAIN OR FLUSH THE TREATMENT CELLS. THE OPTIONAL DRAINS WILL PERMIT SIMPLER MAINTENANCE OF THE SYSTEM IF NEEDED. THE DRAINS NEED TO BE CLOSED DURING STANDARD OPERATION. FLUSHING OF THE RISERS AND HORIZONTAL SUBDRAINS IS MOST EFFECTIVE WITH THE ENTIRE SYSTEM DRAINED. FLUSHED WATER AND SEDIMENT SHOULD BE COLLECTED AND PROPERLY DISPOSED.

GRAVEL WETLAND CONSTRUCTION NOTES

1. THE CONTRACTOR WILL NOTIFY JONES AND BEACH ENGINEERS AFTER EACH OF THE GRAVEL WETLAND PONDS HAVE BEEN EXCAVATED TO THE BOTTOM OF THE SYSTEM FOR A MANDATORY INSPECTION PRIOR TO BUILDING BERMS, PLACING STONE OR INSTALLING PIPE SYSTEM.
2. NO-GEOTEXTILE OR GEOFABRIC LAYERS ARE USED WITHIN THIS SYSTEM, BUT MAY BE USED TO LINE WALLS.
3. IF A NATIVE LOW HYDRAULIC CONDUCTIVITY SOIL IS NOT PRESENT BELOW THE DESIRED LOCATION OF THE SGW, A LOW PERMEABILITY LINER OR SOIL (HYDRAULIC CONDUCTIVITY LESS THAN 0.03 FT/DAY) BELOW THE GRAVEL LAYER SHOULD BE USED TO MINIMIZE INFILTRATION, PRESERVE HORIZONTAL FLOW IN THE GRAVEL, AND MAINTAIN THE WETLAND PLANTS (FIGURE 2).
4. 8 IN. MINIMUM THICKNESS OF A WETLAND SOIL AS THE TOP LAYER. (SEE DESCRIPTION IN SURFACE INFILTRATION RATES SECTION FOR DETAILS (FIGURE 2)). THIS LAYER IS LEVELED (CONSTRUCTED WITH A SURFACE SLOPE OF ZERO)
5. 3 IN. MINIMUM THICKNESS OF AN INTERMEDIATE LAYER OF A GRADED AGGREGATE FILTER IS NEEDED TO PREVENT THE WETLAND SOIL FROM MOVING DOWN INTO THE GRAVEL SUB-LAYER. MATERIAL COMPATIBILITY BETWEEN LAYERS NEEDS TO BE EVALUATED.
6. 24 IN. (0.6 M) MINIMUM THICKNESS OF 3/4" CRUSHED-STONE SUB-LAYER. THIS IS THE ACTIVE ZONE WHERE TREATMENT OCCURS (FIGURE 2).
7. THE PRIMARY OUTLET INVERT SHALL BE LOCATED 4" BELOW THE ELEVATION OF THE WETLAND SOIL SURFACE TO CONTROL GROUNDWATER ELEVATION. CARE SHOULD BE TAKEN TO NOT DESIGN A SIPHON THAT WOULD DRAIN THE WETLAND: THE PRIMARY OUTLET LOCATION MUST BE OPEN OR VENTED. IN CONTRAST TO FIGURE 1, THE PRIMARY OUTLET CAN BE A SIMPLE PIPE.
8. AN OPTIONAL HIGH CAPACITY OUTLET AT EQUAL ELEVATION OR LOWER TO THE PRIMARY OUTLET MAY BE INSTALLED FOR MAINTENANCE. THUS OUTLET WOULD NEED TO BE PLUGGED DURING REGULAR OPERATION. THIS OPTIONAL OUTLET ALLOWS FOR FLUSHING OF THE TREATMENT CELLS AT HIGHER FLOW RATES. IF IT IS LOCATED LOWER, IT CAN BE USED TO DRAIN THE SYSTEM FOR MAINTENANCE OR REPAIRS.
9. THE PRIMARY OUTLET STRUCTURE AND ITS HYDRAULIC RATING CURVE ARE BASED ON A CALCULATED RELEASE RATE BY ORIFICE CONTROL TO DRAIN THE WQV IN 24–48 HRS.
10. THE MINIMUM SPACING BETWEEN THE SUBSURFACE PERFORATED DISTRIBUTION LINE AND THE SUBSURFACE PERFORATED COLLECTION DRAIN (SEE FIGURE 1) AT EITHER END OF THE GRAVEL IN EACH TREATMENT CELL IS 15 FT. THERE SHOULD BE A MINIMUM HORIZONTAL TRAVEL DISTANCE OF 15 FT WITHIN THE GRAVEL LAYER IN EACH CELL.
11. VERTICAL PERFORATED OR SLOTTED RISER PIPES DELIVER WATER FROM THE SURFACE DOWN TO THE SUBSURFACE, PERFORATED OR SLOTTED DISTRIBUTION LINES. THESE RISERS SHALL HAVE A MAXIMUM SPACING OF 15 FEET (FIGURE 1). OVERSIZING OF THE PERFORATED OR SLOTTED VERTICAL RISERS IS USEFUL TO ALLOW A MARGIN OF SAFETY AGAINST CLOGGING WITH A MINIMUM RECOMMENDED DIAMETER OF 12" FOR THE CENTRAL RISER AND 6" FOR END RISERS. THE VERTICAL RISERS SHALL NOT BE CAPPED, BUT RATHER COVERED WITH AN INLET GRATE TO ALLOW FOR AN OVERFLOW WHEN THE WATER LEVEL EXCEEDS THE WQV.
12. VERTICAL CLEANOUTS CONNECTED TO THE DISTRIBUTION AND COLLECTION SUBDRAINS, AT EACH END, SHALL BE PERFORATED OR SLOTTED ONLY WITHIN THE GRAVEL LAYER, AND SOLID WITHIN THE WETLAND SOIL AND STORAGE AREA ABOVE. THIS IS IMPORTANT TO PREVENT SHORT-CIRCUITING AND SOIL PIPING.
13. BERMS AND WEIRS SEPARATING THE FOREBAY AND TREATMENT CELLS SHOULD BE CONSTRUCTED WITH CLAY, OR NON-CONDUCTIVE SOILS, AND/OR A FINE GEOTEXTILE, OR SOME COMBINATION THEREOF, TO AVOID WATER SEEPAGE AND SOIL PIPING THROUGH THESE EARTHEN DIVIDERS.
14. THE SYSTEM SHOULD BE PLANTED TO ACHIEVE A RIGOROUS ROOT MAT WITH GRASSES, FORBS, AND SHRUBS WITH OBLIGATE AND FACULTATIVE WETLAND SPECIES. IN NORTHERN CLIMATES REFER TO THE NH STORMWATER MANUAL OR APPROVED EQUIVALENT LOCAL GUIDANCE FOR DETAILS ON LOCAL WETLAND PLANTINGS.
15. SIDE SLOPES, EROSION CONTROL, USE OF RIP RAP FOR STABILIZED REGIONS AT OUTLETS AND OTHER LOCATIONS OF CONCENTRATED FLOW. ETC.

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Design: BWG	Draft: BWG	Date: 10/20/15
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Drawing Name: 14110-PLAN.dwg		

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7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

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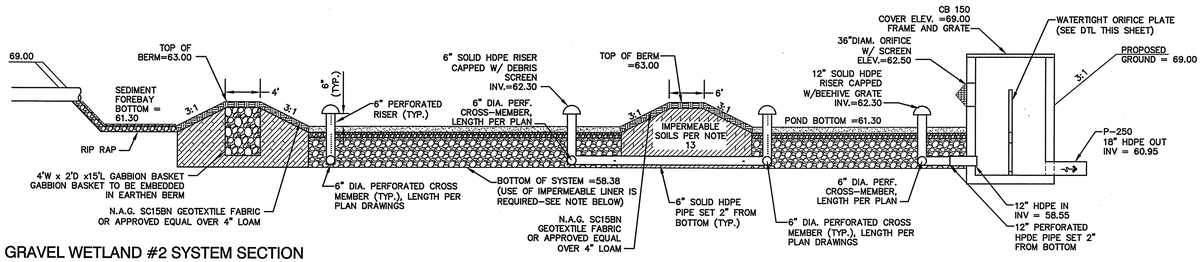
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

Plan Name:	DRAINAGE DETAIL SHEET
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.

D11

SHEET 86 OF 120
JBE PROJECT NO. 14110



GRAVEL WETLAND #2 SYSTEM SECTION

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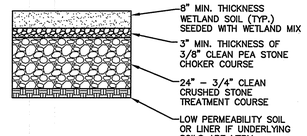
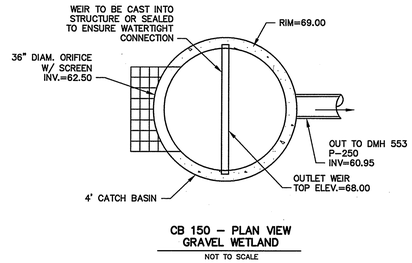


GRAVEL WETLAND POND BOTTOM CROSS SECTION (FIG-2)

NOT TO SCALE



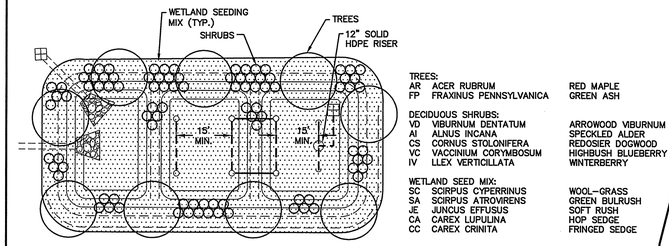
CB 150 – PLAN VIEW
GRAVEL WETLAND
NOT TO SCALE

BAFFLE TEE

BAFFLE/WEIR

GRAVEL WETLAND SYSTEM #2 - INLET/OUTLET DETAILS

NOT TO SCALE



TREES:

AR	ACER RUBRUM	RED MAPLE
FP	FRAXINUS PENNSYLVANICA	GREEN ASH

DECIDUOUS SHRUBS:

VD	VIBURNUM DENTATUM	ARROWOOD VIBURNUM
AI	ALNUS INCANA	SPECKLED ALDER
CS	CORNUS STOLONIFERA	REDOSIER DOGWOOD
VC	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY
IV	LLEX VERTICILLATA	WINTERBERRY

WETLAND SEED MIX:

SC	SCIRPUS CYPERRINUS	WOOL-GRASS
SA	SCIRPUS ATROVIRENS	GREEN BULRUSH
JE	JUNCUS EFFUSUS	SOFT RUSH
CA	CAREX LUPULINA	HOP SEDGE
CC	CAREX CRINITA	FRINGED SEDGE

GRAVEL WETLAND PLANTING SCHEDULE (FIG-1)

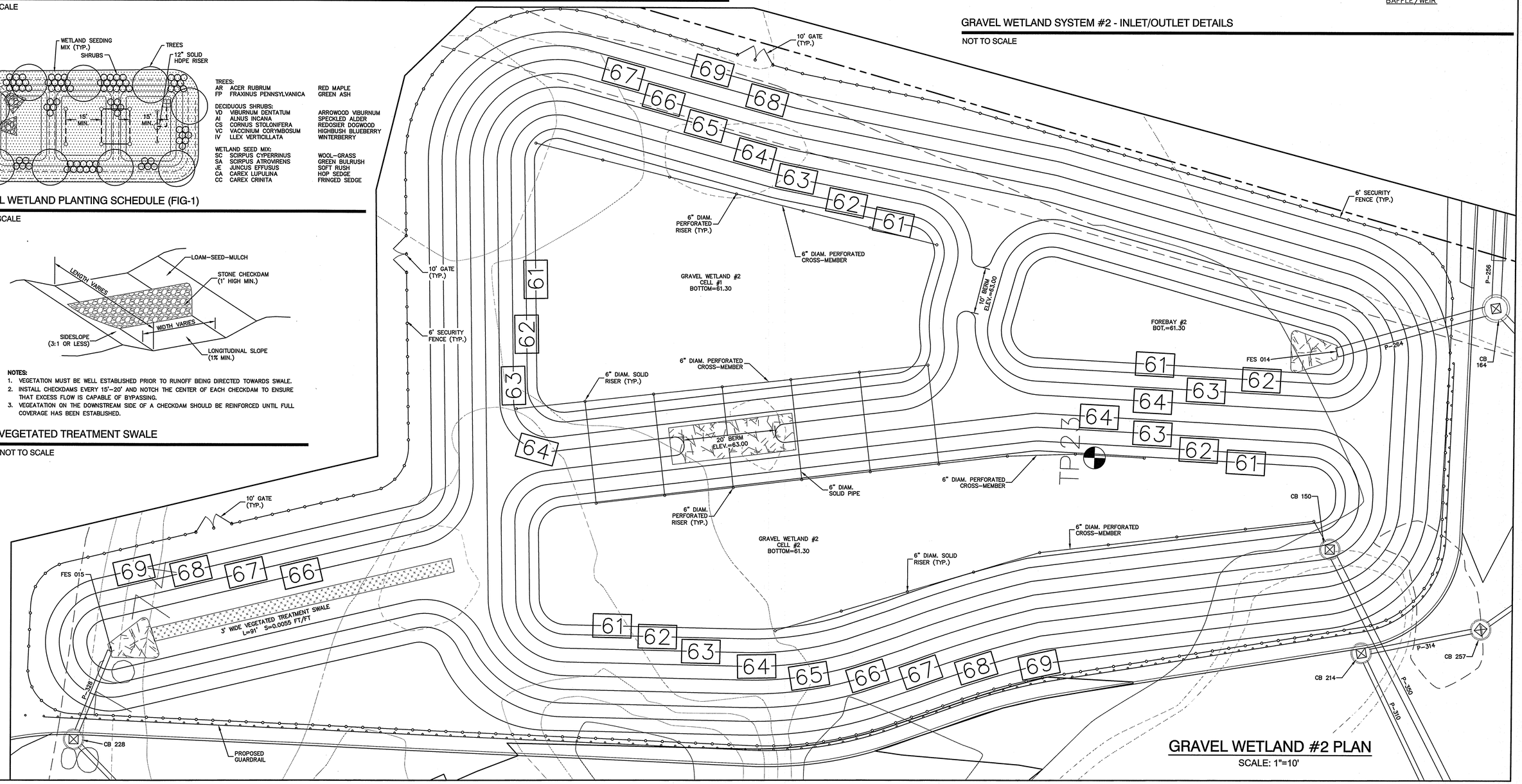
NOT TO SCALE

NOTES:

1. VEGETATION MUST BE WELL ESTABLISHED PRIOR TO RUNOFF BEING DIRECTED TOWARDS SWALE.
2. INSTALL CHECKDAMS EVERY 15'–20' AND NOTCH THE CENTER OF EACH CHECKDAM TO ENSURE THAT EXCESS FLOW IS CAPABLE OF BYPASSING.
3. VEGEATATION ON THE DOWNSTREAM SIDE OF A CHECKDAM SHOULD BE REINFORCED UNTIL FULL COVERAGE HAS BEEN ESTABLISHED.

VEGETATED TREATMENT SWALE

NOT TO SCALE



GRAVEL WETLAND #2 PLAN

SCALE: 1"=10'

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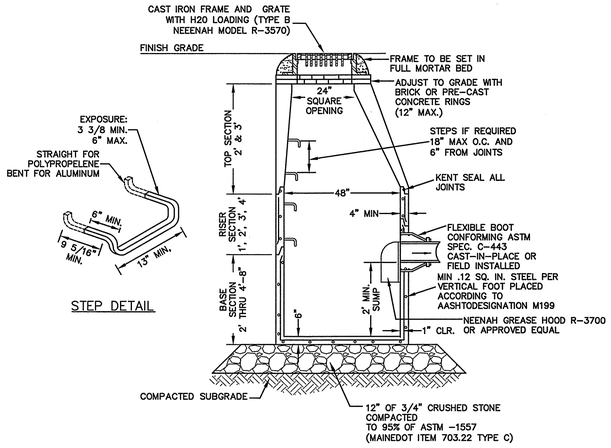
DRAWING No.
D12
SHEET 87 OF 120
JBE PROJECT NO. 14110

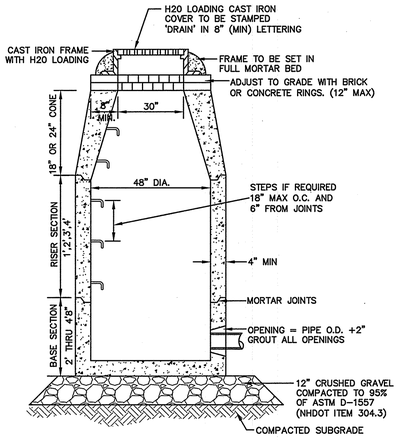


NOTES:

1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H20 LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H20 LOADING
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL CATCH BASIN FRAMES AND GRATES SHALL BE NEENAH R-3570 OR APPROVED EQUAL (24"x24" TYPICAL).
8. STANDARD CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.
9. CATCH BASINS IN EXCESS OF 8' IN DEPTH SHALL BE PROVIDED WITH STEPS SIMILAR TO THOSE DETAILED.

CATCH BASIN WITH GREASE HOOD

NOT TO SCALE



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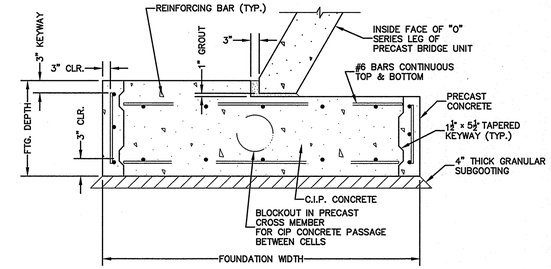
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H20 LOADING.
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL DRAIN MANHOLE FRAMES AND GRATES SHALL BE NEENAH R-1798 OR APPROVED EQUAL (30" DIA. TYPICAL).
8. STANDARD FRAME(S) AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.

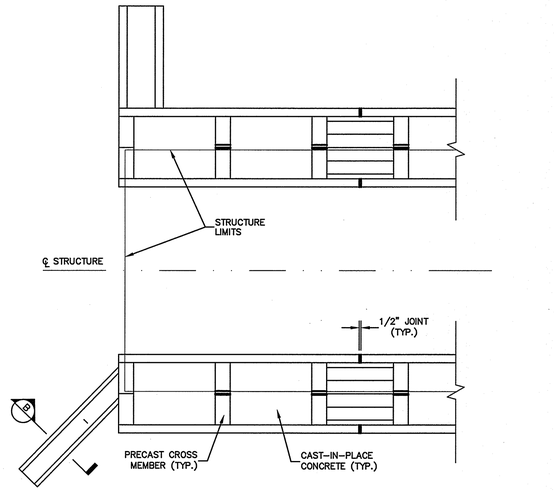
DRAIN MANHOLE

NOT TO SCALE



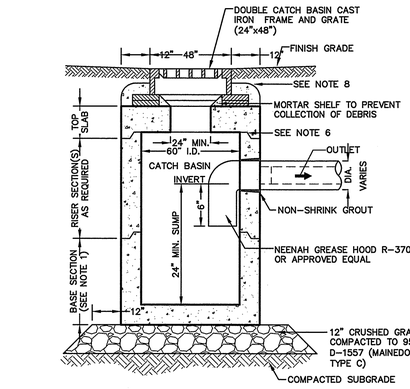
CONTECH BRIDGE SYSTEM - FOOTING DETAIL (SECT. A)

NOT TO SCALE



CONTECH BRIDGE SYSTEM - PARTIAL FOUNDATION PLAN

NOT TO SCALE

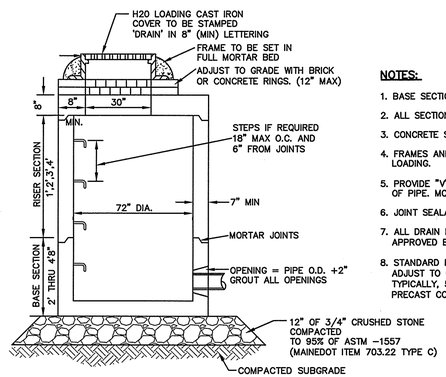


NOTES:

1. BASE SECTION SHALL BE MONOLITHIC WITH 60" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H20 LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H20 LOADING.
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL DOUBLE CATCH BASIN FRAMES AND GRATES SHALL BE NEENAH R-3571 (3 FLANGE) OR APPROVED EQUAL (24"x48" TYPICAL).
8. STANDARD DOUBLE CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM), OR PRECAST CONCRETE 'DONUTS'.
9. ALL CATCH BASINS ARE TO BE FITTED WITH GREASE HOODS.

DOUBLE GRATE CATCH BASIN

NOT TO SCALE

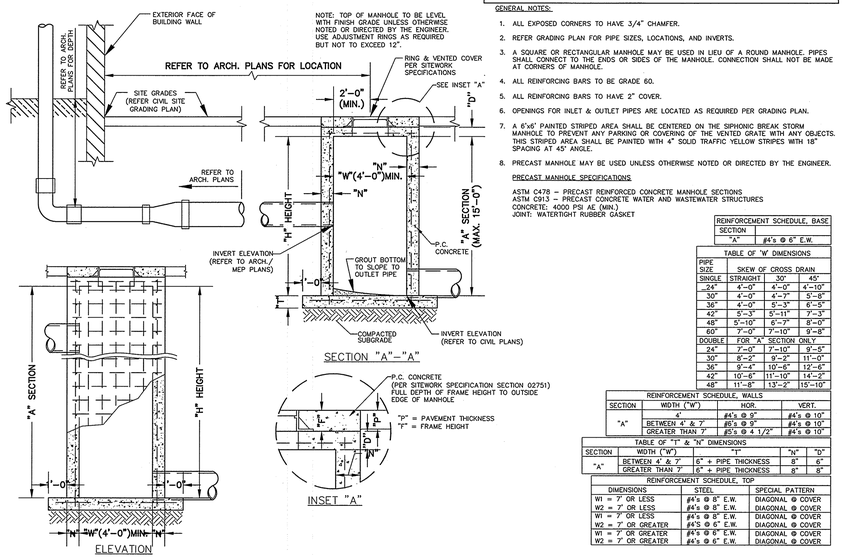


NOTES:

1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H20 LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H20 LOADING.
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL DRAIN MANHOLE FRAMES AND GRATES SHALL BE NEENAH R-1798 OR APPROVED EQUAL (30" DIA. TYPICAL).
8. STANDARD FRAME(S) AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.

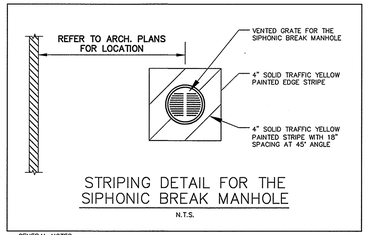
DRAIN MANHOLE

NOT TO SCALE



SIPHONIC BREAK CONCRETE STORM MANHOLE DETAIL

NOT TO SCALE



STRIPING DETAIL FOR THE SIPHONIC BREAK MANHOLE

N.T.S.

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. REFER GRADING PLAN FOR PIPE SIZES, LOCATIONS, AND INVERTS.
3. A SQUARE OR RECTANGULAR MANHOLE MAY BE USED IN LIEU OF A ROUND MANHOLE. PIPES SHALL CONNECT TO THE ENDS OR SIDES OF THE MANHOLE. CONNECTION SHALL NOT BE MADE AT CORNERS OF MANHOLE.
4. ALL REINFORCING BARS TO BE GRADE 60.
5. ALL REINFORCING BARS TO HAVE 2" COVER.
6. OPENINGS FOR INLET & OUTLET PIPES ARE LOCATED AS REQUIRED PER GRADING PLAN.
7. A 6'x6' PAINTED STRIPED AREA SHALL BE CENTERED ON THE SIPHONIC BREAK STORM MANHOLE TO PREVENT ANY PARKING OR COVERING OF THE VENTED GRATE WITH ANY OBJECTS. THIS STRIPED AREA SHALL BE PAINTED WITH 4" SOLID TRAFFIC YELLOW STRIPES WITH 18" SPACING AT 45° ANGLE.
8. PRECAST MANHOLE MAY BE USED UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.

PRECAST MANHOLE SPECIFICATIONS

ASTM C478 – PRECAST REINFORCED CONCRETE MANHOLE SECTIONS
ASTM C913 – PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES
CONCRETE: 4000 PSI AE (MIN.)
JOINT: WATERTIGHT RUBBER GASKET

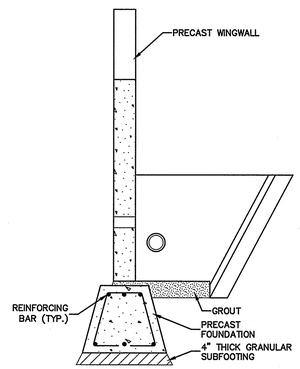
REINFORCEMENT SCHEDULE, BASE SECTION	
"A"	#4's @ 6" E.W.

TABLE OF 'W' DIMENSIONS			
PIPE SIZE	SKEW OF CROSS DRAIN		
SINGLE	STRAIGHT	30°	45°
24"	4'-0"	4'-0"	4'-10"
30"	4'-0"	4'-3"	5'-8"
36"	4'-0"	5'-3"	6'-5"
42"	5'-3"	5'-11"	7'-3"
48"	5'-10"	6'-7"	8'-0"
60"	7'-0"	7'-10"	9'-8"
DOUBLE	FOR "A" SECTION ONLY		
24"	7'-0"	7'-10"	9'-5"
30"	8'-2"	9'-2"	11'-0"
36"	9'-4"	10'-6"	12'-6"
42"	10'-6"	11'-10"	14'-2"
48"	11'-8"	13'-2"	15'-10"

REINFORCEMENT SCHEDULE, WALLS				
SECTION	WIDTH ("W")	HOR.	VERT.	
"A"	4'	#4's @ 9"	#4's @ 10"	
	BETWEEN 4' & 7'	#5's @ 9"	#4's @ 10"	
	GREATER THAN 7'	#5's @ 4 1/2"	#4's @ 10"	

TABLE OF "T" & "N" DIMENSIONS			
SECTION	WIDTH ("W")	"T"	"N" "D"
"A"	BETWEEN 4' & 7'	6" + PIPE THICKNESS	8" 6"
	GREATER THAN 7'	6" + PIPE THICKNESS	8" 8"

REINFORCEMENT SCHEDULE, TOP		
DIMENSIONS	STEEL	SPECIAL PATTERN
W1 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W2 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W1 = 7' OR LESS	#4's @ 8" E.W.	DIAGONAL @ COVER
W2 = 7' OR GREATER	#4'S @ 6" E.W.	DIAGONAL @ COVER
W1 = 7' OR GREATER	#4's @ 6" E.W.	DIAGONAL @ COVER
W2 = 7' OR GREATER	#4's @ 6" E.W.	DIAGONAL @ COVER



CONTECH BRIDGE SYSTEM WINGWALL DETAIL (SECT. B)

NOT TO SCALE

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Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS NOTED	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

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603-772-4746
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E-Mail: JBE@JONESANDBEACH.COM

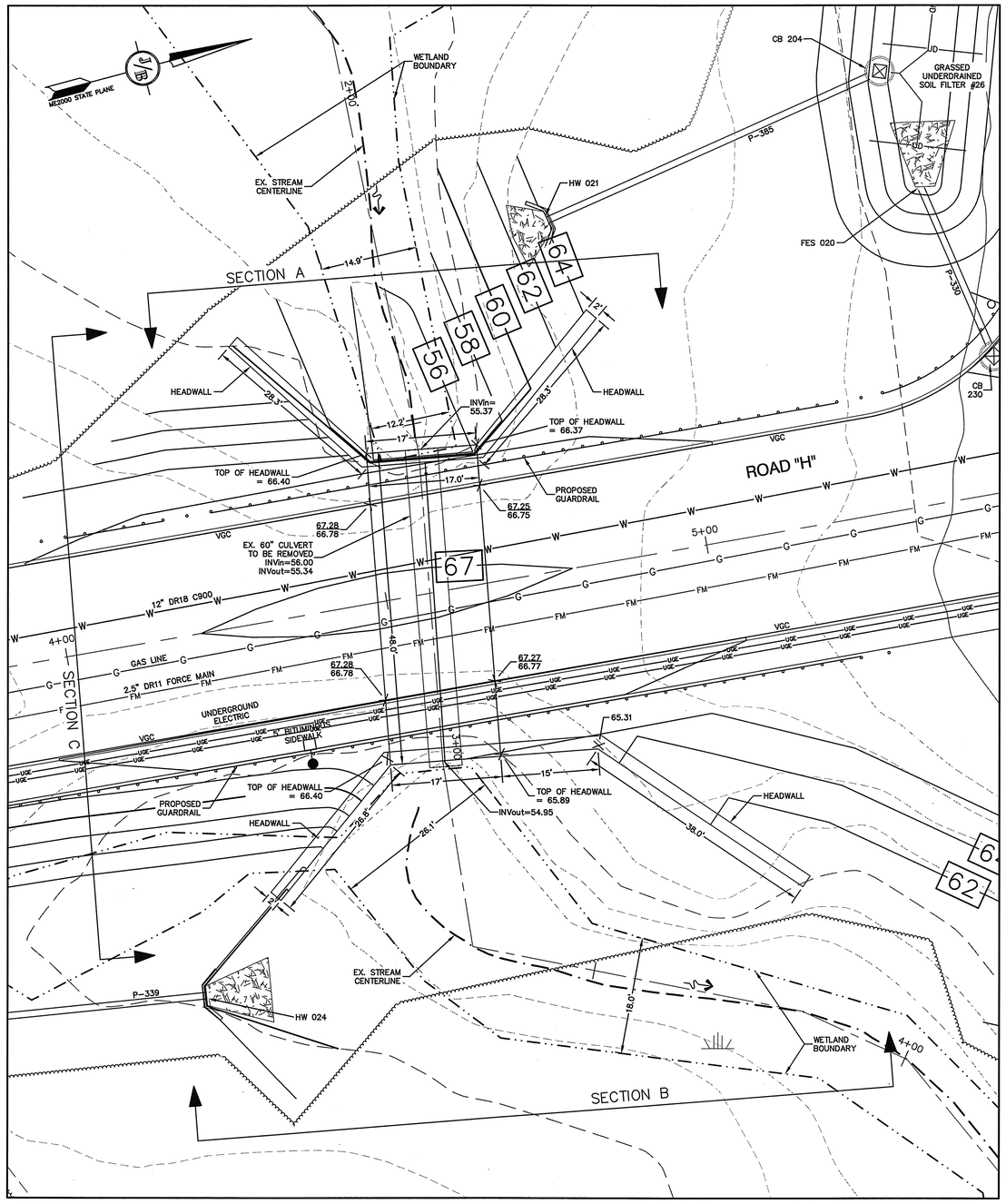
Plan Name: DRAINAGE DETAIL SHEET

Project: "DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092

Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No. D13

SHEET 88 OF120
JBE PROJECT NO. 14110



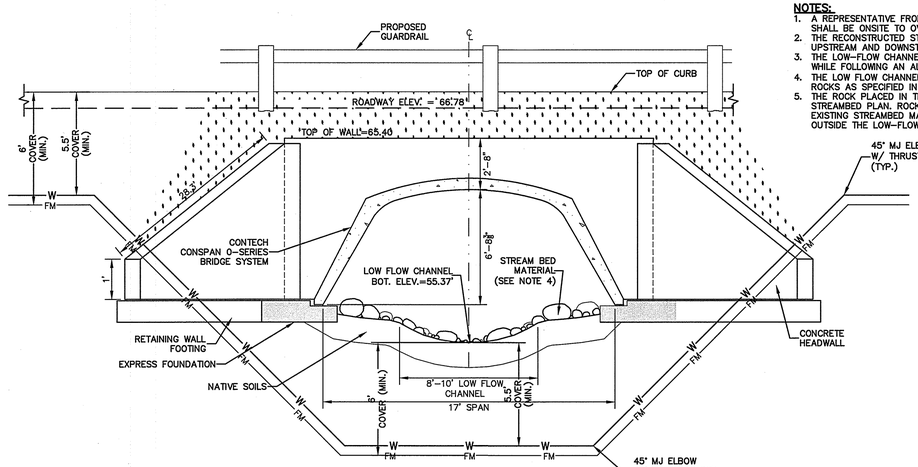
STREAM CROSSING ROAD DETAIL (PLAN VIEW)

1"=10'

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

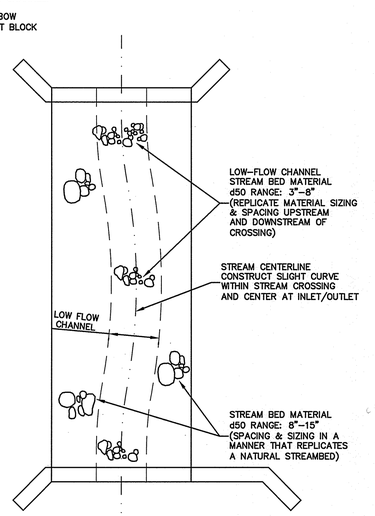


STREAM CROSSING DETAIL (SECTION A - UPSTREAM)

NOT TO SCALE

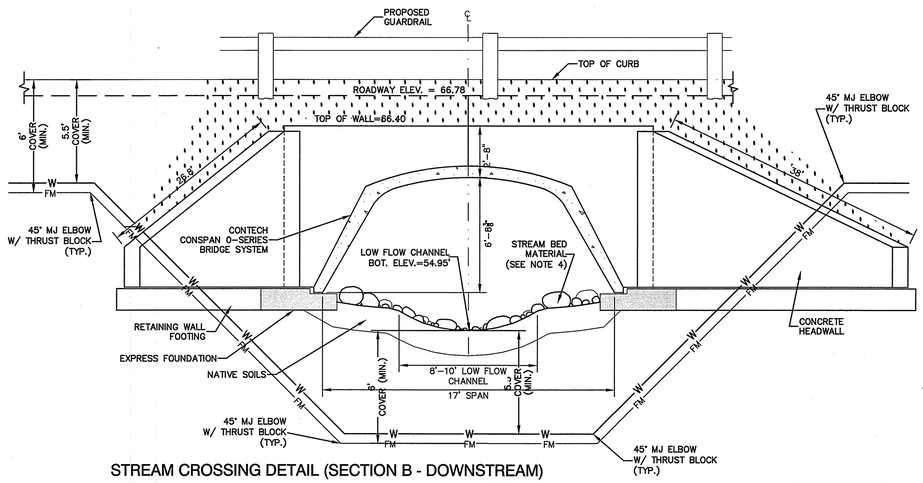
NOTES:

1. A REPRESENTATIVE FROM GOVE ENVIROMENTAL SERVICES, INC. OR ANOTHER APPROVED INSPECTOR SHALL BE ONSITE TO OVERSEE THE PLACEMENT OF ALL STREAM CROSSING BED MATERIAL.
2. THE RECONSTRUCTED STREAM CROSSING SHALL BE CONSTRUCTED IN A MANNER THAT MIMICS THE UPSTREAM AND DOWNSTREAM STREAMBED CONDITIONS.
3. THE LOW-FLOW CHANNEL SHALL BE CONSTRUCTED WITHIN THE MIDDLE THIRD OF THE STREAM CROSSING WHILE FOLLOWING AN ALIGNMENT AS DEPICTED BELOW IN THE STREAMBED PLAN.
4. THE LOW FLOW CHANNEL SHOULD BE VOID OF LARGE ROCKS (DIAM.>8") EXCEPT FOR BANDS OF LARGER ROCKS AS SPECIFIED IN THE STREAM CROSSING PLAN OR APPROVED BY THE ONSITE INSPECTOR.
5. THE ROCK PLACED IN THE STREAM CROSSING SHOULD FOLLOW THE d50 RANGES SHOWN IN THE STREAMBED PLAN. ROCK AND GRAVEL SHOULD BE ACCOMPANIED BY FINE SOILS CONSISTENT WITH THE EXISTING STREAMBED MATERIAL. DESIGN ENGINEER TO APPROVE THE GRADIENTS USED WITHIN AND OUTSIDE THE LOW-FLOW CHANNEL.



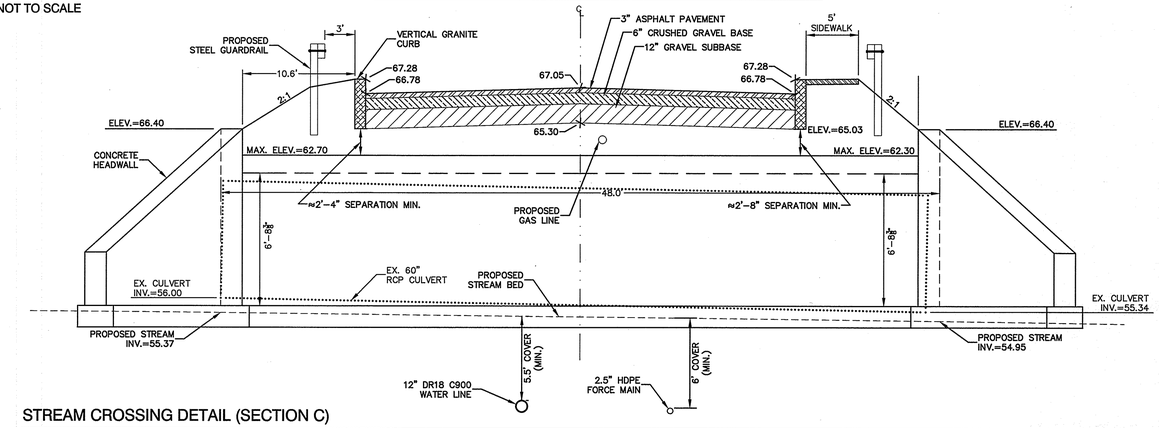
STREAMBED PLAN

NOT TO SCALE



STREAM CROSSING DETAIL (SECTION B - DOWNSTREAM)

NOT TO SCALE



STREAM CROSSING DETAIL (SECTION C)

NOT TO SCALE

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Design: BWG	Draft: BWG	Date: 10/20/15
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Drawing Name: 14110-PLAN.dwg		

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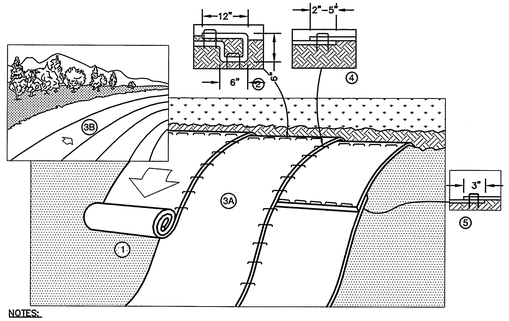
Plan Name:	STREAM CROSSING DETAIL SHEET
Project:	"DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record:	PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220 LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.

D14

SHEET 89 OF 120
JBE PROJECT NO. 14110



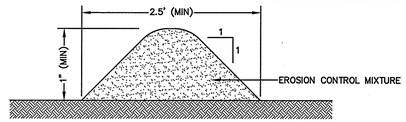
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET 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 COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™ STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

NORTH AMERICAN GREEN
14649 HIGHWAY 41 NORTH
EVANSVILLE, INDIANA 47725
1-800-772-2040

EROSION CONTROL BLANKET SLOPE INSTALLATION
(North American Green)

NOT TO SCALE

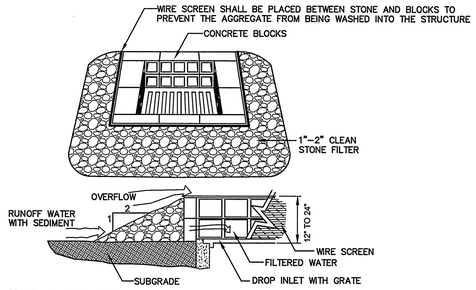


NOTES:

1. ORGANIC FILTER BERMS MAY BE UTILIZED IN LIEU OF SILT FENCE, UNLESS OTHERWISE SPECIFIED.
2. THE EROSION CONTROL MIX USED IN THE FILTER BERMS SHALL BE A WELL-GRADED MIXTURE OF PARTICLE SIZES, MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER, STUMP GRINDINGS, SHREDDED OR COMPOSTED BARK, OR ACCEPTABEL MANUFACTURED PRODUCTS, AND SHALL BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH, AND SHALL MEET THE FOLLOWING STANDARDS:
   a) THE ORGANIC CONTENT SHALL BE 80-100% OF DRY WEIGHT.
   b) PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN, AND 70-85% PASSING A 0.75" SCREEN.
   c) THE ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED.
   d) LARGE PORTIONS OF SILTS, CLAYS, OR FINE SANDS SHALL NOT BE INCLUDED IN THE MIXTURE.
   e) SOLUBLE SALTS CONTENT SHALL BE >4.0mmhos/cm.
   f) THE pH SHALL BE BETWEEN 5.0 AND 8.0.
3. ORGANIC FILTER BERMS SHALL BE INSTALLED ALONG A RELATIVELY LEVEL CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BERM.
4. ON SLOPES LESS THAN 5% OR AT THE BOTTOM OF SLOPES STEEPER THAN 3:1, UP TO 20' LONG, THE BERM SHALL BE A MINIMUM OF 12" HIGH (AS MEASURED ON THE UPHILL SIDE), AND A MINIMUM OF 36" WIDE. ON LONGER OR STEEPER SLOPES, THE BERM SHALL BE WIDER TO ACCOMMODATE THE POTENTIAL ADDITIONAL RUNOFF.
5. FROZEN GROUND, OUTCROPS OF BEDROCK, AND VERY ROOTED FORESTED AREAS PRESENT THE MOST PRACTICAL AND EFFECTIVE LOCATIONS FOR ORGANIC FILTER BERMS. OTHER BMP'S SHOULD BE USED AT LOW POINTS OF CONCENTRATED RUNOFF, BELOW CULVERT OUTLET APRONS, AROUND CATCH BASINS, AND AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT HAVE A LARGE CONTRIBUTING AREA.
6. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE STRUCTURE.
7. STRUCTURES MAY BE LEFT IN PLACE ONCE THE SITE IS STABILIZED.

ORGANIC FILTER BERM

NOT TO SCALE

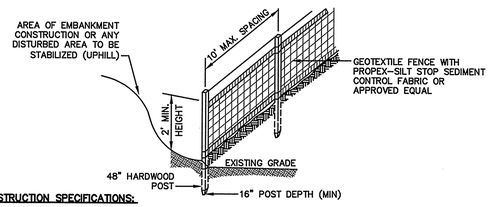


MAINTENANCE NOTE:

1. ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINFALL AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED IN A SUITABLE UPLAND AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURE OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.

TEMPORARY CATCH BASIN INLET PROTECTION
(Block and Gravel Drop Inlet Sediment Filter)

NOT TO SCALE

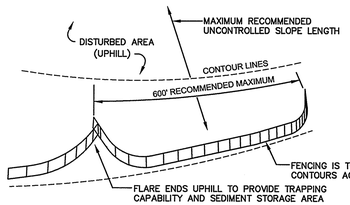


CONSTRUCTION SPECIFICATIONS:

1. WOVEN FABRIC FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. FILTER CLOTH SHALL BE FASTENED TO WOVEN WIRE EVERY 24" AT TOP, MID AND BOTTOM AND EMBEDDED IN THE GROUND A MINIMUM OF 8" AND THEN COVERED WITH SOIL.
2. THE FENCE POSTS SHALL BE A MINIMUM OF 48" LONG, SPACED A MAXIMUM 10' APART, AND DRIVEN A MINIMUM OF 16" INTO THE GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THE ENDS OF THE FABRIC SHALL BE OVERLAPPED 6", FOLDED AND STAPLED TO PREVENT SEDIMENT FROM BY-PASSING.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED AND PROPERLY DISPOSED OF WHEN IT IS 6" DEEP OR VISIBLE 'BULGES' DEVELOP IN THE SILT FENCE.
5. PLACE THE ENDS OF THE SILT FENCE UP CONTOUR TO PROVIDE FOR SEDIMENT STORAGE.
6. SILT FENCE SHALL REMAIN IN PLACE FOR 24 MONTHS.

SILT FENCE

NOT TO SCALE



7. SILT FENCES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE DISPOSED AS DIRECTED BY THE ENGINEER. THE AREA DISTURBED BY THE REMOVAL SHALL BE SMOOTHED AND REVEGETATED.

MAINTENANCE:

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE DONE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.
4. SEDIMENT DEPOSITS THAT ARE REMOVED, OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED, SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

SEEDING SPECIFICATIONS

1. GRADING AND SHAPING
   A. SLOPES SHALL NOT BE STEEPER THAN 2:1 WITHOUT APPROPRIATE EROSION CONTROL MEASURES AS SPECIFIED ON THE PLANS (3:1 SLOPES OR FLATTER ARE PREFERRED).
   B. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
2. SEEDBED PREPARATION
   A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
   B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND FERTILIZER AND LIME MIXED INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
3. ESTABLISHING A STAND
   A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. TYPES AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
      AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ.FT.
      NITROGEN(N), 50 LBS. PER ACRE OR 1.1 LBS. PER 1,000 SQ.FT.
      PHOSPHATE(P205), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
      POTASH(K20), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
      (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10.)
   B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
   C. REFER TO THE 'SEEDING GUIDE' AND 'SEEDING RATES' TABLES ON THIS SHEET FOR APPROPRIATE SEED MIXTURES AND RATES OF SEEDING. ALL LEGUMES (CROWNVETCH, BIRDSFOOT, TREFOIL AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT PRIOR TO THEIR INTRODUCTION TO THE SITE.
   D. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20th OR FROM AUGUST 10th TO SEPTEMBER 1st.
4. MULCH
   A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
   B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90 LBS PER 1000 S.F.
5. MAINTENANCE TO ESTABLISH A STAND
   A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
   B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED.
   C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, ANNUAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

USE	SEEDING MIXTURE 1/	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER.	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUISED LANDS, AND LOW INTENSITY USE RECREATION SITES.	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	E	FAIR	EXCELLENT	EXCELLENT	2/
	F	FAIR	EXCELLENT	EXCELLENT	2/

GRAVEL PIT, SEE NH-PM-24 IN APPENDIX FOR RECOMMENDATION REGARDING RECLAMATION OF SAND AND GRAVEL PITS.

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE BELOW.
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS.

NOTE: TEMPORARY SEED MIX FOR STABILIZATION OF TURF SHALL BE WINTER RYE OR OATS AT A RATE OF 2.5 LBS. PER 1000 S.F. AND SHALL BE PLACED PRIOR TO OCTOBER 15th, IF PERMANENT SEEDING NOT YET COMPLETE.

SEEDING GUIDE

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 Sq. Ft.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH	15	0.35
OR		
FLAT PEA	30	0.75
TOTAL	40 OR 55	0.95 OR 1.35
* C. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDS FOOT TREFOIL	8	0.20
TOTAL	48	1.10
D. TALL FESCUE	20	0.45
FLAT PEA	30	0.75
TOTAL	50	1.20
E. CREEPING RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/	50	1.15
TOTAL	100	2.30
F. TALL FESCUE 1	150	3.60

1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

SEEDING RATES

TEMPORARY EROSION CONTROL NOTES

1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME. AT NO TIME SHALL AN AREA IN EXCESS OF THAT REQUIRED FOR CONSTRUCTION BE EXPOSED.
2. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED OR DIRECTED BY THE ENGINEER.
3. ALL DISTURBED AREAS (INCLUDING POND AREAS BELOW THE PROPOSED WATERLINE) SHALL BE RETURNED TO PROPOSED GRADES AND ELEVATIONS. DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 6" OF SCREENED ORGANIC LOAM AND SEEDED WITH SEED MIXTURE 'C' AT A RATE NOT LESS THAN 1.10 POUNDS OF SEED PER 1,000 S.F. OF AREA (48 LBS. / ACRE).
4. SILT FENCES AND OTHER BARRIERS SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 0.5" OR GREATER. ALL DAMAGED AREAS SHALL BE REPAIRED, AND SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED.
5. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND REVEGETATED.
6. AREAS MUST BE SEEDED AND MULCHED OR OTHERWISE PERMANENTLY STABILIZED WITHIN 3 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 14 DAYS OF THE INITIAL DISTURBANCE OF SOIL.
7. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER) ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
8. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
9. AFTER NOVEMBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER MDOT.
10. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
    B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED; OR
    D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
11. IN ORDER TO ENSURE THE STABILITY OF THE SITE AND EFFECTIVE IMPLEMENTATION OF THE SEDIMENT AND EROSION CONTROL MEASURES SPECIFIED IN THE PLANS FOR THE DURATION OF CONSTRUCTION, THE CONTRACTOR SHALL BE IN STRICT COMPLIANCE WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS IN ADDITION TO THOSE CALLED FOR IN THE SWPPP:
    A. A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE MAINE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
    B. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY ½ INCH OR GREATER RAIN EVENT (I.E. ½ INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
    C. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATIONS TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS AND ALL APPLICABLE DEP PERMIT CONDITIONS.
    D. PRIOR TO CONSTRUCTION, A PHASING PLAN THAT DELINEATES EACH PHASE OF THE PROJECT SHALL BE SUBMITTED. ALL TEMPORARY SEDIMENT BASINS THAT WILL BE NEEDED FOR DEWATERING WORK AREAS SHALL BE LOCATED AND IDENTIFIED ON THIS PLAN.

CONSTRUCTION SEQUENCE

1. PRIOR TO THE START OF ANY ACTIVITY, IT IS THE RESPONSIBILITY OF THE SITE'S SITE DEVELOPER (OR OWNER) TO FILE A NOTICE OF INTENT (NOI) FORM WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) IN ORDER TO GAIN COVERAGE UNDER THE NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. A PRE CONSTRUCTION MEETING IS TO BE HELD WITH ALL DEPARTMENT HEADS PRIOR TO THE START OF CONSTRUCTION.
2. WETLAND BOUNDARIES ARE TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION. AT LEAST A TEMPORARY CULVERT OR ROADBED TO BE IN PLACE PRIOR TO THE START OF CONSTRUCTION.
3. CUT AND REMOVE TREES IN CONSTRUCTION AREA AS REQUIRED OR DIRECTED.
4. INSTALL SILT FENCING, HAY BALES AND CONSTRUCTION ENTRANCES PRIOR TO THE START OF CONSTRUCTION. THESE ARE TO BE MAINTAINED UNTIL THE FINAL PAVEMENT SURFACING AND LANDSCAPING AREAS ARE ESTABLISHED.
5. CLEAR, CUT, GRUB AND DISPOSE OF DEBRIS IN APPROVED FACILITIES. THIS INCLUDES ANY REQUIRED DEMOLITION OF EXISTING STRUCTURES, UTILITIES, ETC.
6. CONSTRUCT AND/OR INSTALL TEMPORARY OR PERMANENT SEDIMENT AND/OR DETENTION BASIN(S) AS REQUIRED. THESE FACILITIES SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING RUN-OFF TO THEM.
7. STRIP LOAM AND PAVEMENT, OR RECLAIM EXISTING PAVEMENT WITHIN LIMITS OF WORK PER THE RECOMMENDATIONS OF THE PROJECT ENGINEER AND STOCKPILE EXCESS MATERIAL. STABILIZE STOCKPILE AS NECESSARY.
8. PERFORM PRELIMINARY SITE GRADING IN ACCORDANCE WITH THE PLANS, INCLUDING THE CONSTRUCTION OF ANY RETAINING WALLS AND SOUND WALLS.
9. PREPARE BUILDING PAD(S) TO ENABLE BUILDING CONSTRUCTION TO BEGIN.
10. INSTALL THE SEWER AND DRAINAGE SYSTEMS FIRST, THEN ANY OTHER UTILITIES IN ACCORDANCE WITH THE PLAN AND DETAILS. ANY CONFLICTS BETWEEN UTILITIES ARE TO BE RESOLVED WITH THE INVOLVEMENT AND APPROVAL OF THE ENGINEER.
11. INSTALL INLET PROTECTION AT ALL CATCH BASINS AS THEY ARE CONSTRUCTED IN ACCORDANCE WITH DETAILS.
12. ALL SWALES AND DRAINAGE STRUCTURES ARE TO BE CONSTRUCTED AND STABILIZED PRIOR TO HAVING RUN-OFF DIRECTED TO THEM.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINAGE DITCHES, CHECK DAMS, SEDIMENT TRAPS, ETC., TO PREVENT EROSION ON THE SITE AND PREVENT ANY SILTATION OF ABUTTING WATERS AND/OR PROPERTY.
14. PERFORM FINAL FINE GRADING, INCLUDING PLACEMENT OF 'SELECT' SUBGRADE MATERIALS.
15. PAVE ALL PARKING LOTS AND ROADWAYS WITH INITIAL 'BASE COURSE'.
16. PERFORM ALL REMAINING SITE CONSTRUCTION (I.e. BUILDING, CURBING, UTILITY CONNECTIONS, ETC.).
17. LOAM AND SEED ALL DISTURBED AREAS AND INSTALL ANY REQUIRED SEDIMENT AND EROSION CONTROL FACILITIES (I.e. RIP RAP, EROSION CONTROL BLANKETS, ETC.).
18. FINISH PAVING ALL ROADWAYS AND PARKING AREAS WITH 'FINISH' COURSE.
19. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
21. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
22. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDING AREAS HAVE BEEN 75%-85% ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE. SMOOTH AND RE-VEGETATE ALL DISTURBED AREAS.
23. CLEAN SITE AND ALL DRAINAGE STRUCTURES, PIPES AND SUMPS OF ALL SILT AND DEBRIS.
24. INSTALL ALL PAINTED PAVEMENT MARKINGS AND SIGNAGE PER THE PLANS AND DETAILS.
25. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
26. UPON COMPLETION OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ANY RELEVANT PERMITTING AGENCIES THAT THE CONSTRUCTION HAS BEEN FINISHED IN A SATISFACTORY MANNER.

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Checked: WGM	Scale: AS NOTED
Drawing Name: 14110-PLAN.dwg	Date: 10/20/15
Project No.: 14110	

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REV.	DATE	REVISION	BY
7	9/13/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

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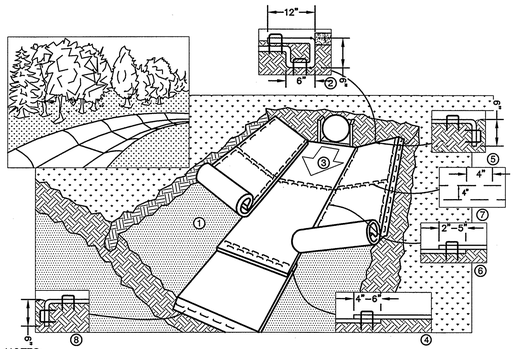
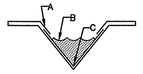
Plan Name: EROSION AND SEDIMENT CONTROL DETAILS
Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
E1
SHEET 97 OF 120
JBE PROJECT NO. 14110



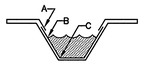
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET 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 COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (DEPENDING ON BLANKET TYPE) AND STAPLED. TO INSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



CRITICAL POINTS:

A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES



NOTES:

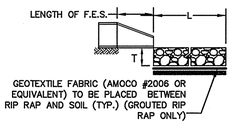
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

NORTH AMERICAN GREEN
14649 HIGHWAY 41 NORTH
EVANSVILLE, INDIANA 47725
1-800-772-2040

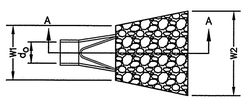
EROSION CONTROL BLANKET SWALE INSTALLATION (North American Green)

NOT TO SCALE



SECTION A-A

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

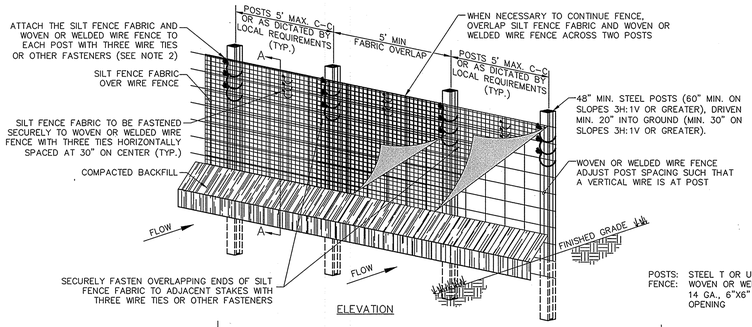


NOTES:

1. EROSION CONTROL MAT MAY BE EITHER GROUTED RIP-RAP OR LOW SLUMP CONCRETE.
2. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
3. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.

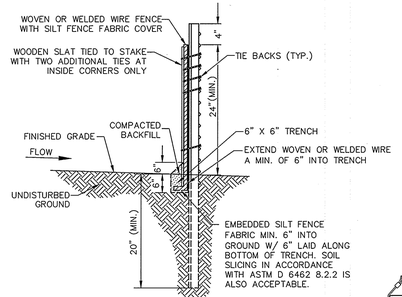
EROSION CONTROL MAT

NOT TO SCALE



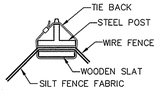
ELEVATION

POSTS: STEEL T OR U TYPE.
FENCE: WOVEN OR WELDED WIRE, 14 GA., 6"X6" MAX. MESH OPENING

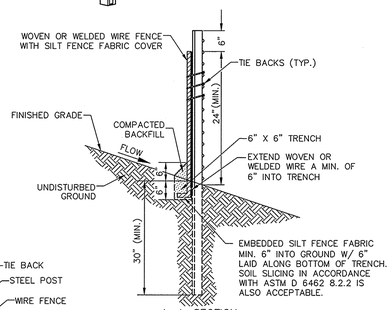


A-A-SECTION

(FOR SLOPES LESS THAN 3:1)



INSIDE CORNER - PLAN VIEW



A-A-SECTION

(FOR SLOPES 3:1 AND GREATER)

SPECIFICATIONS FOR SILT FENCE INSTALLATION

1. MATERIALS AND INSTALLATION SHALL COMPLY WITH ASTM D 6462 LATEST EDITION.
2. INSTALL SILT FENCE AT A FAIRLY LEVEL GRADE ALONG THE CONTOUR WITH THE ENDS CURVED UPHILL TO PROVIDE SUFFICIENT UPSTREAM STORAGE VOLUME FOR THE ANTICIPATED RUNOFF.
3. ATTACH THE GEOTEXTILE OR FABRIC TO THE WOVEN OR WELDED WIRE FENCE WITH THREE WIRE TIES OR OTHER FASTENERS (HORIZONTALLY SPACED EVERY 30"), ALL SPACED WITHIN THE TOP 8" OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1" VERTICALLY APART. AT EACH POST, ATTACH THE GEOTEXTILE OR FABRIC AND THE WOVEN OR WELDED WIRE FENCE TO THE POST AS PREVIOUSLY STATED. IN ADDITION, EACH TIE PLACED ON A POST SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENED TO PREVENT SAGGING.
4. WHEN TWO SECTIONS OF SILT FENCE FABRIC ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED A MINIMUM OF 60" ACROSS TWO POSTS, AS SHOWN.
5. ALL SILT FENCE SHALL INCLUDE WIRE SUPPORT UNLESS THE STATIC SLICING EQUIPMENT IS UTILIZED TO INSTALL THE FENCE PER DETAIL, "SILT FENCE INSTALLATION (SLICING METHOD)".
6. WRAP APPROXIMATELY 6" OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.
7. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQ. INCH. COMPACT THE UPSTREAM SIDE FIRST. COMPACT EACH SIDE TWICE FOR A TOTAL OF FOUR TRIPS.
8. ADD POST CAPS AS NEEDED BASED ON SITE CONDITIONS AND APPLICABLE AGENCY REQUIREMENTS.

MAINTENANCE NOTES

1. SILT FENCES SHALL BE INSPECTED ALONG ITS ENTIRETY AND MUST BE CLEANED WHEN SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE SILT FENCE. MAINTENANCE CLEANOUT MUST BE CONDUCTED REGULARLY TO PREVENT ACCUMULATED SEDIMENTS FROM REACHING ON-THIRD THE HEIGHT OF THE SILT FENCE.
2. ALL MATERIAL EXCAVATED FROM BEHIND SILT FENCE SHALL BE STOCKPILED ON AN UPLAND PORTION OF THE SITE IF SUITABLE FOR REUSE.
3. SPECIAL ATTENTION SHOULD BE PAID TO ENSURE THAT NO UNDERMINING OF SILT FENCE HAS OCCURRED AND THAT NO BYPASS IS OCCURRING AT JOINING SECTIONS.
4. IF EXCESS SEDIMENT IS ACCUMULATING IN ANY SECTION OF SILT FENCE, THE CONTRACTOR SHOULD IMPLEMENT ADDITIONAL UPSTREAM STABILIZATION MEASURES OR ADDITIONAL BMPS (PENDING CEC APPROVAL) TO PREVENT EXCESSIVE BUILDUP ON SILT FENCE.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED.

TABLE 1 Temporary Silt Fence Material Property Requirements

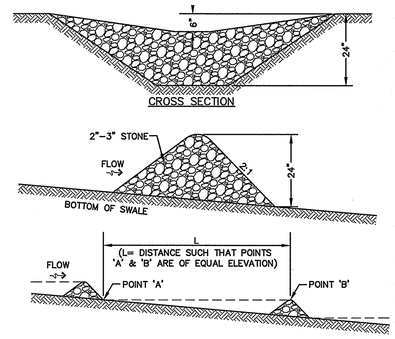
		Test Method	Units	Supported[A] Silt Fence	Unsupported[A] Silt Fence	Type of Value
Grab Strength		ASTM D 4632	N (lbs)			
	Machine Direction			400 (90)	550 (90)	MARV
	X-Machine Direction			400 (90)	450 (90)	MARV
Permittivity[B]		ASTM D 4491	sec-1	0.05	0.05	MARV
Apparent Opening Size[B]		ASTM D 4751	mm (US Sieve #)	0.60 (30)	0.60 (30)	Max. ARV[C]
Ultraviolet Stability		ASTM D 4355	% Retained Strength	70% after 500 h of exposure	70% after 500 h of exposure	Typical

[A]Silt fence support shall consist of 14 gage steel wire with a mesh spacing of 150 mm (6 in.) or prefabricated polymer mesh of equivalent strength.
[B]These default values are based on empirical evidence with a variety of sediments. For environmentally sensitive areas, a review of previous experience and/or site or regionally specific geotextile tests in accordance with Test Method D 5141 should be performed by the agency to confirm suitability of these requirements.
[C]As measured in accordance with Test Method D 4632.

TABLE 1 TAKEN FROM ASTM D 6461-99 (2007)

SEDIMENTATION/SILT FENCE WITH WIRE BACKING (AROUND BUILDING "E" LOT)

NOT TO SCALE

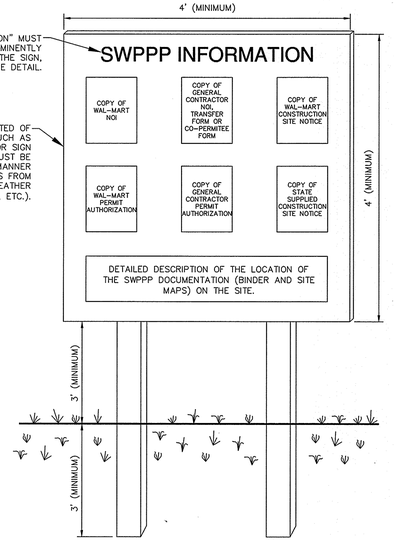


MAINTENANCE NOTE:

1. STONE CHECK DAMS SHOULD BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY. PARTICULAR ATTENTION SHOULD BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE. WHEN THE STRUCTURES ARE REMOVED, THE DISTURBED PORTION SHOULD BE BROUGHT TO THE EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDED AND MULCHED. WHILE THIS PRACTICE IS NOT INTENDED TO BE USED PRIMARILY FOR SEDIMENT TRAPPING, SOME SEDIMENT WILL ACCUMULATE BEHIND THE STRUCTURES. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE.

STONE CHECK DAM

NOT TO SCALE



NOTES:

1. THE SWPPP INFORMATION SIGN MUST BE LOCATED IN A PROMINENT, PUBLICLY ACCESSIBLE LOCATION NEAR THE MAIN ENTRANCE OF THE SITE, SUCH THAT THE DOCUMENTATION CAN BE READ WITHOUT ACCESSING THE JOBSITE, BUT NOT OBSTRUCTING VIEWS AS TO CAUSE A TRAFFIC SAFETY HAZARD.
2. ALL POSTED DOCUMENTS MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE-OF-TERMINATION (NOT) IS FILED FOR THE PERMIT.
3. ALL PAGES OF NOTICES OF INTENT AND PERMIT AUTHORIZATIONS MUST BE POSTED. THE CONTRACTOR MAY UTILIZE ACCESSIBLE WATERPROOF FOLDERS TO STORE THESE DOCUMENTS IF IT WILL BE DIFFICULT TO POST ALL PAGES INDIVIDUALLY.
4. CONTRACTOR SHALL POST OTHER STORMWATER AND/OR EROSION AND SEDIMENT CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE GOVERNING AGENCIES.
5. SUBSEQUENT PERMIT MODIFICATION REQUESTS OR RENEWAL APPLICATIONS AND THEIR ASSOCIATED AUTHORIZATIONS OR RESPONSES SHALL BE POSTED ON THE SWPPP SIGN.
6. SIGN SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.
7. CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THE SWPPP INFORMATION SIGN.

SWPPP INFORMATION SIGN

NOT TO SCALE

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Design: BWG	Draft: BWG	Date: 10/20/15
Checked: WGM	Scale: AS NOTED	Project No.: 14110
Drawing Name: 14110-PLAN.dwg		

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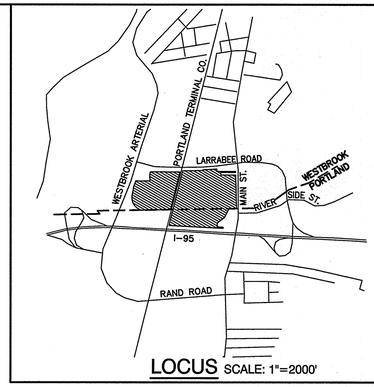
Plan Name: EROSION AND SEDIMENT CONTROL DETAILS
Project: "DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
E2
SHEET 98 OF 120
JBE PROJECT NO. 14110



LOCUS SCALE: 1"=2000'

PHASING NOTES:

1. NO STORMWATER WILL BE DIRECTED TOWARDS ANY STORMWATER TREATMENT SYSTEM UNTIL TEH FEATURE HAS BEEN STABILIZES AND THE AREAS DIRECTING STORMWATER TO THE FEATURE HAVE BEEN STABILIZED AND THE PAVEMENT BASE COARSE LAID.
2. IN AREAS WHERE SEDIMENT IS LIKELY TO ACCUMULATE A DOUBLE SILTFENCE SHOULD BE INSTALLED IN A "J"-SHAPE TO TRAP SEDIMENT. ACCUMULATED SEDIMENT SHOULD BE COLLECTED AND SPREAD IN AN APPROPRIATE AREA ON-SITE. THE RECOMMENDED SEPARATION IS 5 FEET.
3. FILTREXX RUNOFF DIVERSION SOXX SHOULD BE PLACED TO DIRECT RUNOFF TOWARDS A TEMPORARY SEDIMENT BASIN. RUNOFF DIVERSIONS MAY NEED TO BE MOVED THROUGHOUT THE PROJECT TO ENSURE PROPER CONVEYANCE OF STORMWATER RUNOFF.
4. ALL SEDIMENT MUST BE REMOVED FROM ANY PERMANENT STORMWATER TREATMENT FEATURES USED AS TEMPORARY SEDIMENT BASINS BEFORE THE CONSTRUCTION OF PERMANENT UNDERDRAINS AND BASE SOILS/GRAVELS.

CONSTRUCTION PHASING NOTES:

1. LAND DISTURBANCE SHOULD BE LIMITED TO FIVE (5) ACRES AT ANY ONE TIME UNLESS MORE AREA IS REQUIRED FOR BUILDING OR UTILITY CONSTRUCTION. SEDIMENT & EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN AND AROUND DISTURBED AREAS.
2. DISTURBED LAND THAT IS TO REMAIN UNTOUCHED FOR MORE THAN 14 DAYS AT ANY TIME SHOULD BE STABILIZED AND APPROPRIATE SEDIMENT & EROSION CONTROL MEASURES INSTALLED.

EROSION CONTROL NOTES:

1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. NO GRUBBING, GRADING, OR OTHER EARTHWORK SHALL BEGIN UNTIL ALL APPROPRIATE EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
3. ALL EXPOSED AREAS SHALL BE SEEDED, MULCHED, AND/OR EROSION BLANKETS INSTALLED AS SPECIFIED WITHIN 7 DAYS OF FINAL GRADING. AREAS WITHIN 75 FEET OF WETLANDS SHALL BE STABILIZED WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
4. SHOULD CONSTRUCTION STOP FOR LONGER THAN 7 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED. SEE SHEET E1 FOR SEEDING SPECIFICATIONS.
5. INSPECT EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDER DAYS AND BEFORE AND AFTER A RAIN EVENT OF 0.1" OR GREATER AND MAKE ANY REQUIRED REPAIRS. SUCH MEASURES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES.
6. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
7. ALL CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCES TO ACCESS THE SITE DURING CONSTRUCTION.
8. COMPACT & MAINTAIN 30,000SF LAYDOWN AREA AND 25' WIDE ACCESS ROAD TO THE STABILIZED CONDTRUCTION ENTRANCE WITH 6"-THICK STONE MATERIAL (TYPE 'D' GRAVEL). LAYDOWN AREA TO BE LOCATED AS SHOWN ON THIS SHEET.
9. ALL WORK TO BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
10. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
11. SEE EROSION AND SEDIMENT CONTROL SPECIFICATIONS AND DETAILS, SHEETS E1.
12. ALL WORK TO BE DONE IN STRICT ACCORDANCE WITH STANDARD SITE SPECIFICATIONS.
13. SEE SHEET E1 FOR CONSTRUCTION SEQUENCE.
14. SEDIMENT LOGS MAY BE UTILIZED IN LIEU OF BLOCK AND GRAVEL CATCH BASIN INLET FILTERS OR CULVERT INLET CHECK DAMS AT THE DISCRETION OF THE CONTRACTOR.
15. THE SOIL EROSION AND SEDIMENTATION CONTROL PLAN FOR THE PROPOSED DEVELOPMENT SHALL CONFORM WITH WESTBROOK'S WATER PROTECTION ORDINANCE.
16. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SWALES AND/OR BERMS AS NECESSARY TO DIRECT RUNOFF TO THE POND AND/OR ANOTHER STABILIZED OUTLET DURING CONSTRUCTION SO AS TO PREVENT PONDING AND/OR EROSION ON THE SITE.
17. IF TEMPORARY SEDIMENT BASINS WILL USED IN DEWATERING OR SEDIMENT CONTROL, THEIR LOCATION AND DELINEATION MUST BE SHOWN ON THE SWPPP PLANS KEPT WITH THE ONSITE SWPPP BINDER. ALL TEMPORARY SEDIMENT BASINS SHALL BE INSTALLED AND MAINTAINED PER THE MAINE EROSION AND SEDIMENT CONTROL BMP'S AND LOWE'S STANDARD SPECIFICATIONS. THE CONTRACTOR ALSO HAS THE OPTION TO UTILIZE THE EXISTING DETENTION POND AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION PROVIDED THAT APPROPRIATE MEASURES ARE TAKEN TO ENSURE PROPER FILTRATION OF RUNOFF PRIOR TO DISCHARGE AND THAT THE FACILITY IS CLEANED OF ALL SEDIMENT DEPOSITS ONCE THIS USE IS DISCONTINUED.
18. THE CONTRACTOR SHALL INSTALL, INSPECT, AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES AND PRACTICES AS SPECIFIED IN THE MAINE EROSION AND SEDIMENT CONTROL BMP'S, PUBLISHED BY THE MAINE DEP AND AVAILABLE ONLINE AT: http://www.maine.gov/dep/blwq/docstand/escbmps/index.htm
19. WINTER CONSTRUCTION (NOVEMBER 1-APRIL 15) EROSION AND SEDIMENT CONTROL MEASURES SHALL ADHERE TO THE STEPS LAID OUT IN THE "MAINE EROSION AND SEDIMENT CONTROL BMPs" MANUAL. SEE NOTE 19.
20. CONTRACTOR SHALL ADHERE TO AND FOLLOW THE PROCEDURES FOR SEDIMENT AND EROSION CONTROL LAID OUT IN MAINE DEP, STORMWATER MANAGEMENT LAW, CHAPTER 500, APPENDIX A.

LEGEND

- SITE PROPERTY LINE
- ABUTTER PROPERTY LINE
- GC / IL/B4 — ZONE LINE
- 250 — EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING DRAINAGE EASEMENT
- EXISTING EDGE OF PAVEMENT
- PROPOSED SILT FENCE
- PROPOSED CLEARING LIMITS
- EXISTING SEWER LINE / MANHOLE
- EXISTING SEWER FORCE MAIN
- EXISTING DRAINALINE / CATCH BASIN (CB)
- EXISTING WATER MAIN
- EXISTING HYDRANT / GATE VALVE (WGV)
- PROPOSED DRAINLINE / DMH
- EXISTING / PROPOSED DRAIN FLOW
- EXISTING WETLAND
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED RIPRAP OR OTHER EROSION STONE

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPER, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

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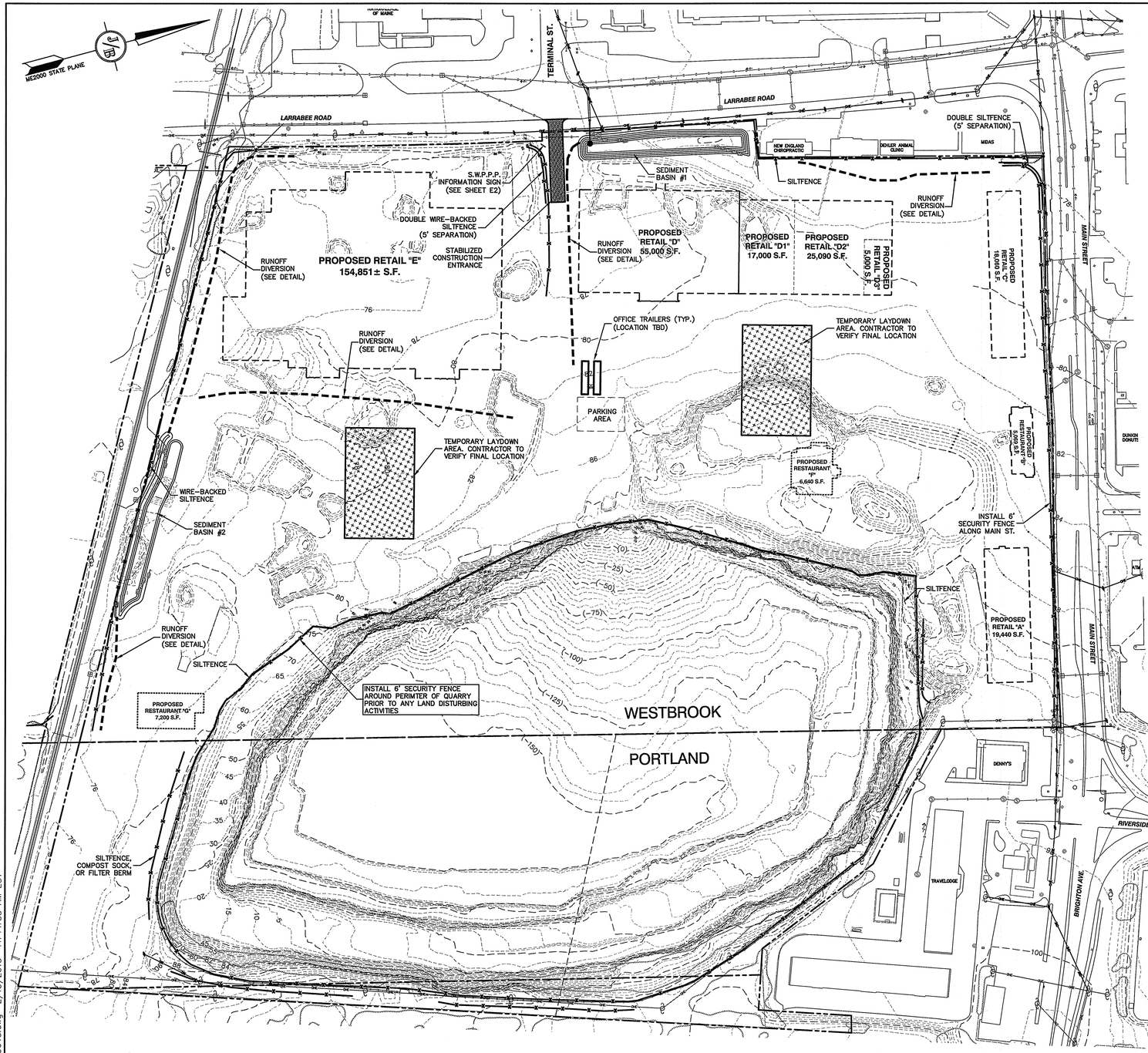
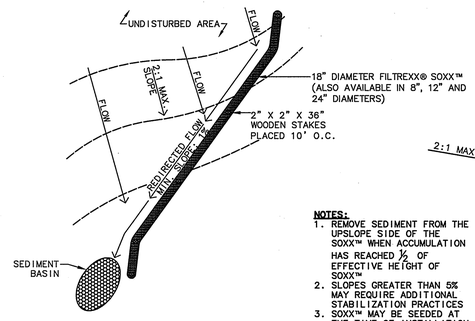
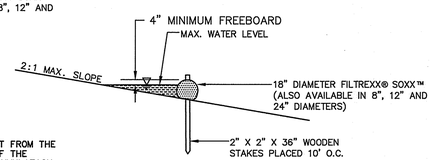
DRAWING No.
EC-1
SHEET 99 OF 120
JBE PROJECT NO. 14110



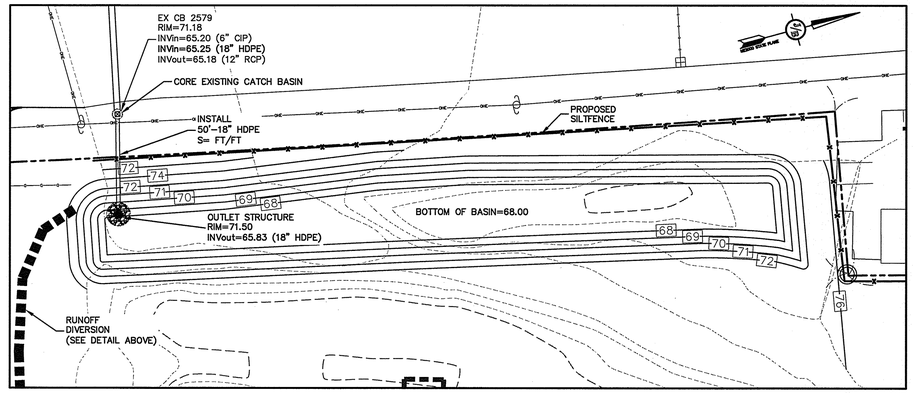


NOTES:
1. REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF THE SOXX™ WHEN ACCUMULATION HAS REACHED ½ OF EFFECTIVE HEIGHT OF SOXX™
2. SLOPES GREATER THAN 5% MAY REQUIRE ADDITIONAL STABILIZATION PRACTICES
3. SOXX™ MAY BE SEEDED AT THE TIME OF INSTALLATION

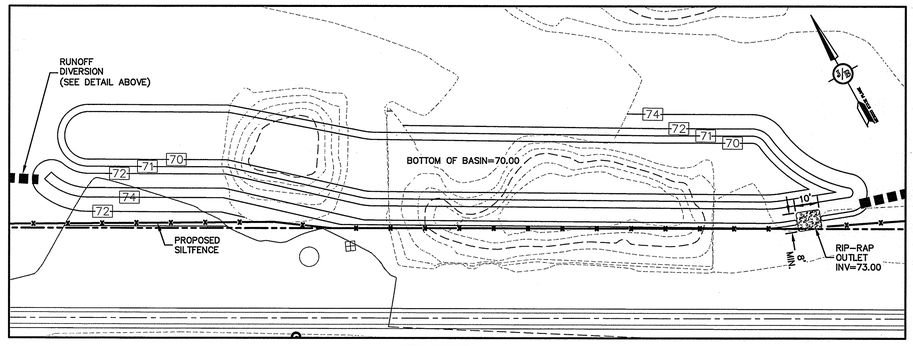


FILTREXX SOXX RUNOFF DIVERSION DETIAL

NOT TO SCALE



SEDIMENT BASIN #1
(SCALE: 1"=30')



SEDIMENT BASIN #2
(SCALE: 1"=30')

CONSTRUCTION PHASING NOTES:

1. LAND DISTURBANCE SHOULD BE LIMITED TO FIVE (5) ACRES AT ANY ONE TIME UNLESS MORE AREA IS REQUIRED FOR BUILDING OR UTILITY CONSTRUCTION. SEDIMENT & EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN AND AROUND DISTURBED AREAS.
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GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
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APPLICANT/OWNER
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7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

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81.78 ACRES

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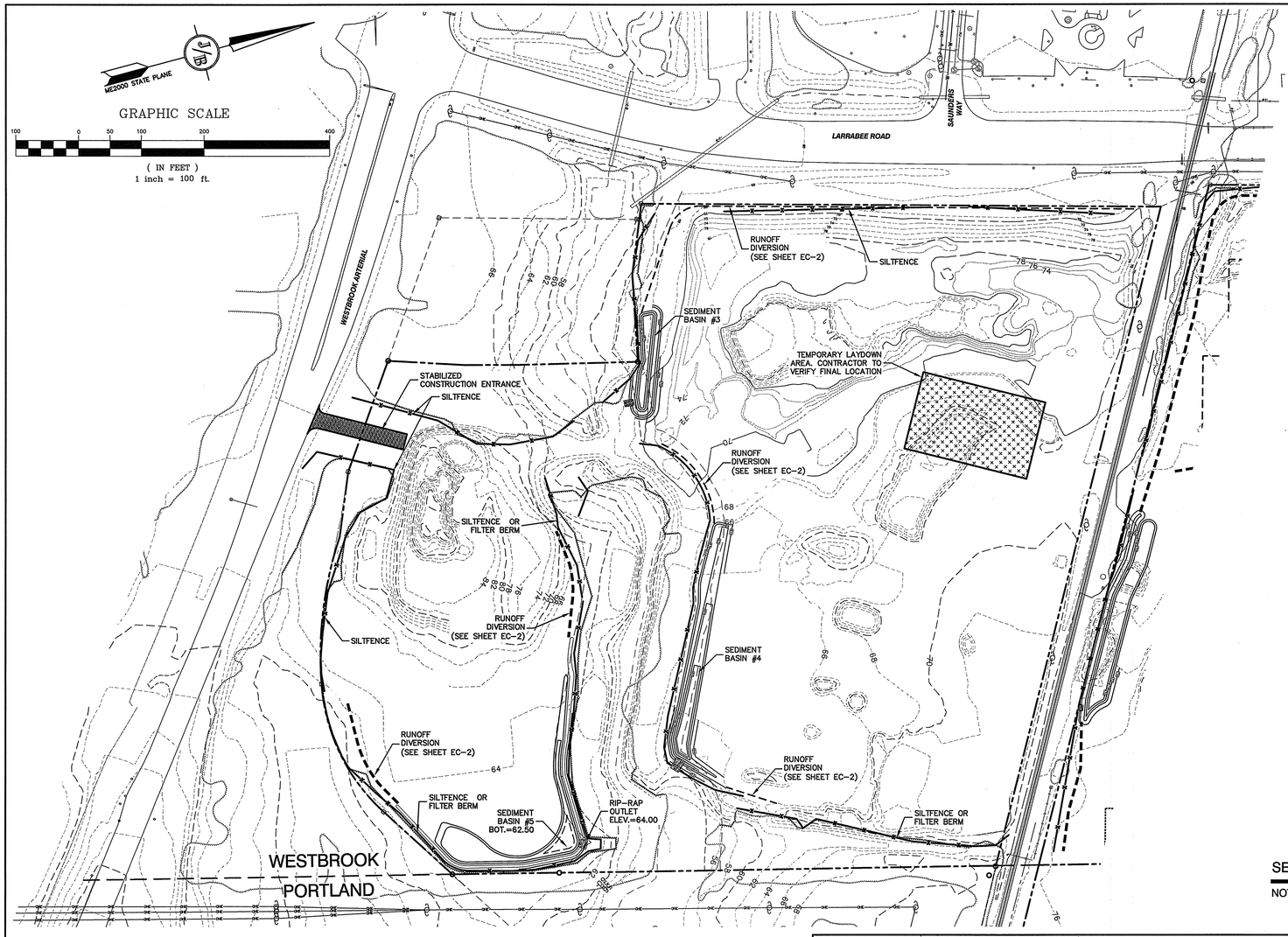
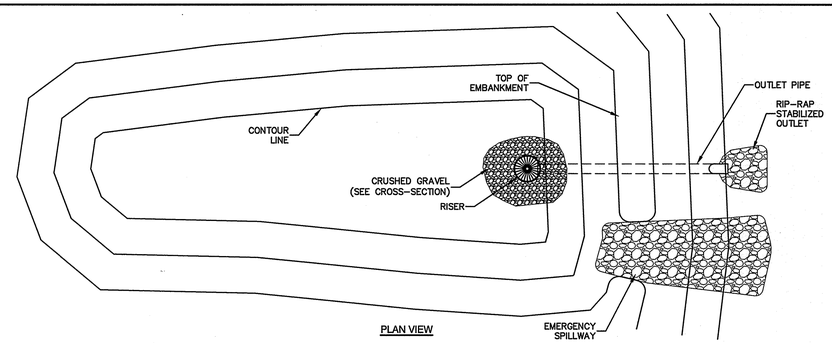
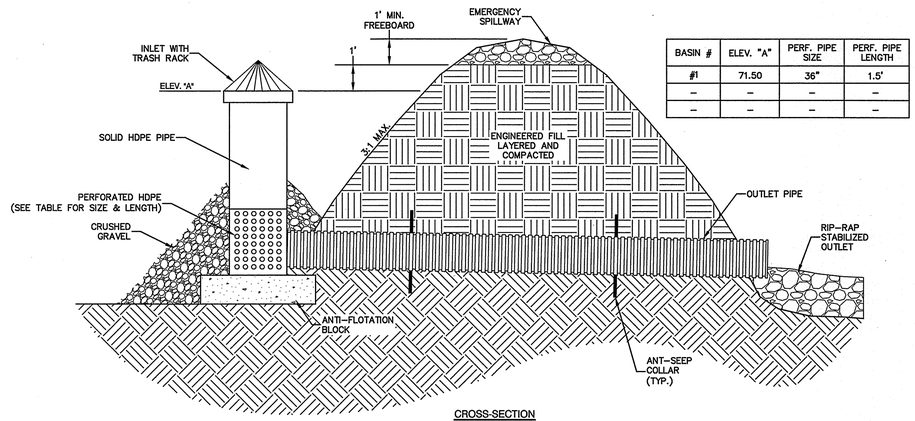




PLAN VIEW



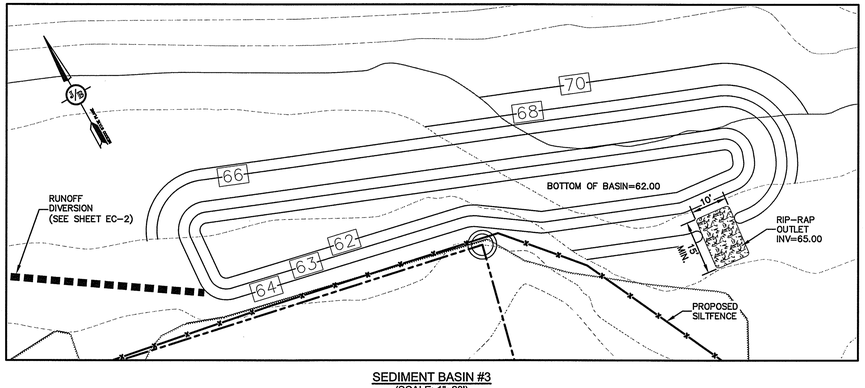
BASIN #	ELEV. "A"	PERF. PIPE SIZE	PERF. PIPE LENGTH
#1	71.50	36"	1.5'
–	–	–	–
–	–	–	–

CROSS-SECTION

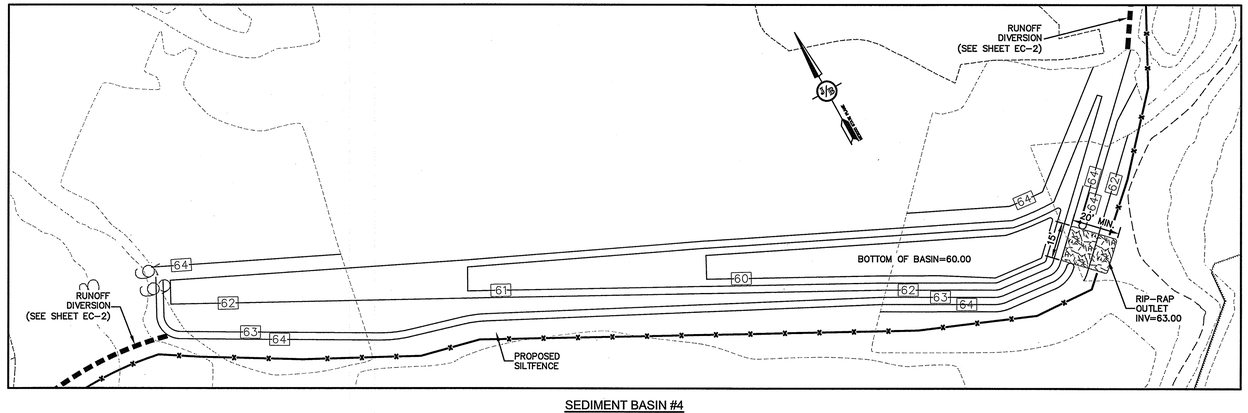
NOTES:
1. THE EMBANKMENT FOUNDATION AREA SHOULD BE CLEARED OF STUMPS, ROOTS, BRUSH, BOULDERS, ETC. TO PROVIDE GOOD CONTACT.
2. THE NATIVE SOIL SHOULD BE SCARIFIED AND HAVE SUFFICIENT MOISTURE FOR THE FIRST LAYER OF FILL.
3. AN OVERFLOW OUTLET OR SPILLWAY SHOULD BE CONSTRUCTED WITHIN THE EMBANKMENT, AND BE PROTECTED WITH GEOTEXTILE FABRIC AND RIPRAP. THE CENTER OF THE SPILLWAY SHOULD BE AT LEAST 6 INCHES LOWER THAN ITS OUTER EDGES. A ROCK OUTLET MAY BE NECESSARY FOR VELOCITY DISSIPATION.
4. BASINS SHOULD HAVE A MINIMUM DEPTH OF 2 FEET, WITH EMBANKMENTS THAT ARE STABILIZED (EROSION CONTROL MIX, RIPRAP OR SAND BAGS).
5. FILL MATERIAL SHOULD BE FREE OF ROOTS, FROZEN SOIL AND STONES. FILL SHOULD BE PLACED IN 6-INCH LIFTS BEFORE COMPACTION TO INSURE A GOOD BOND BETWEEN LAYERS.
6. THE MOISTURE CONTENT OF THE FILL MATERIAL SHOULD BE ADEQUATE FOR COMPACTION.
7. THE TOP OF THE EMBANKMENT SHOULD BE AT LEAST 18-INCHES ABOVE THE CREST OF THE RISER.
8. FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTI-SEEP COLLARS SHOULD BE COMPACTED TO 95% STANDARD PROCTOR. FILL ADJACENT TO POURED IN-PLACE CONCRETE STRUCTURES SHOULD NOT BE COMPACTED UNTIL THE CONCRETE HAS GAINED THE STRENGTH TO SUPPORT THE LOAD.
9. A PIPED OUTLET CAN BE FITTED TO A BASIN INSTEAD OF AN OVERFLOW SPILLWAY. THE CAPACITY OF THE OUTLET SHOULD BE ADEQUATE TO DISCHARGE ANTICIPATED FLOWS.
10. THE PERFORATED RIDER SHOULD HAVE ITS TP 2/3RD PERFORATED OR SLOTTED TO THE TOP 6 INCHES OF THE BARREL. THE OUTLET SHOULD BE SURROUNDED WITH GEOTEXTILE AND A CONE OF GRAVEL TO FILTER THE FINE SEDIMENT PARTICLES.
11. THE RISER SHOULD B WEIGHTED BY A BASE AND GRAVEL TO PREVENT FLOTATION.
12. ALL PIPE JOINTS SHOULD BE WATERTIGHT USING COUPLINGS, GASKETS, CAULKING, OR WELDING.

SEDIMENT BASIN DETAIL

NOT TO SCALE



SEDIMENT BASIN #3
(SCALE: 1"=20')



SEDIMENT BASIN #4
(SCALE: 1"=30')

CONSTRUCTION PHASING NOTES:

1. LAND DISTURBANCE SHOULD BE LIMITED TO FIVE (5) ACRES AT ANY ONE TIME UNLESS MORE AREA IS REQUIRED FOR BUILDING OR UTILITY CONSTRUCTION. SEDIMENT & EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN AND AROUND DISTURBED AREAS.
2. DISTURBED LAND THAT IS TO REMAIN UNTOUCHED FOR MORE THAN 14 DAYS AT ANY TIME SHOULD BE STABILIZED AND APPROPRIATE SEDIMENT & EROSION CONTROL MEASURES INSTALLED.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPER, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 2/15/2015 11:44:58 AM EST

Design: BWG	Draft: ISM	Date: 10/20/15
Checked:WGM	Scale: AS SHOWN	Project No.:14110
Drawing Name: 14110-PLAN-EC-1.DWG		

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5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
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85 Portsmouth Ave.
PO Box 219
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603-772-4746
FAX: 603-772-0227
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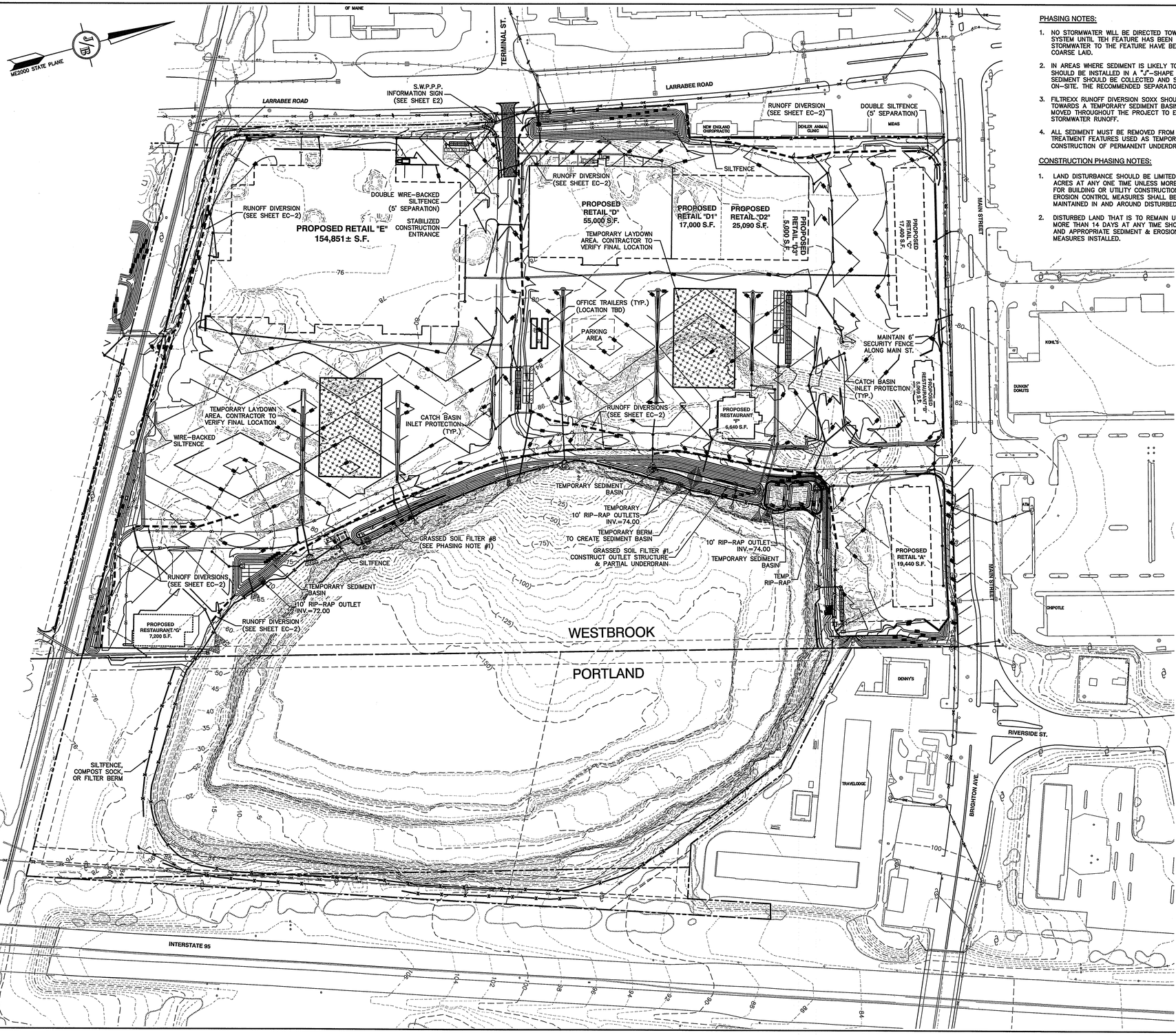
Plan Name: EROSION CONTROL - SOUTH CAMPUS - PHASE 1
Project: "DIRIGO PLAZA" 80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
EC-3
SHEET 101 OF 120
JBE PROJECT NO. 14110

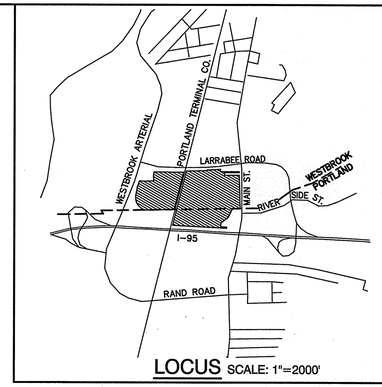


PHASING NOTES:

1. NO STORMWATER WILL BE DIRECTED TOWARDS ANY STORMWATER TREATMENT SYSTEM UNTIL TEH FEATURE HAS BEEN STABILIZES AND THE AREAS DIRECTING STORMWATER TO THE FEATURE HAVE BEEN STABILIZED AND THE PAVEMENT BASE COARSE LAID.
2. IN AREAS WHERE SEDIMENT IS LIKELY TO ACCUMULATE A DOUBLE SILTFENCE SHOULD BE INSTALLED IN A "J"-SHAPE TO TRAP SEDIMENT. ACCUMULATED SEDIMENT SHOULD BE COLLECTED AND SPREAD IN AN APPROPRIATE AREA ON-SITE. THE RECOMMENDED SEPARATION IS 5 FEET.
3. FILTREXX RUNOFF DIVERSION SOXX SHOULD BE PLACED TO DIRECT RUNOFF TOWARDS A TEMPORARY SEDIMENT BASIN. RUNOFF DIVERSIONS MAY NEED TO BE MOVED THROUGHOUT THE PROJECT TO ENSURE PROPER CONVEYANCE OF STORMWATER RUNOFF.
4. ALL SEDIMENT MUST BE REMOVED FROM ANY PERMANENT STORMWATER TREATMENT FEATURES USED AS TEMPORARY SEDIMENT BASINS BEFORE THE CONSTRUCTION OF PERMANENT UNDERDRAINS AND BASE SOILS/GRAVELS.

CONSTRUCTION PHASING NOTES:

1. LAND DISTURBANCE SHOULD BE LIMITED TO FIVE (5) ACRES AT ANY ONE TIME UNLESS MORE AREA IS REQUIRED FOR BUILDING OR UTILITY CONSTRUCTION. SEDIMENT & EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN AND AROUND DISTURBED AREAS.
2. DISTURBED LAND THAT IS TO REMAIN UNTOUCHED FOR MORE THAN 14 DAYS AT ANY TIME SHOULD BE STABILIZED AND APPROPRIATE SEDIMENT & EROSION CONTROL MEASURES INSTALLED.



LOCUS SCALE: 1"=2000'

EROSION CONTROL NOTES:

1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
2. NO GRUBBING, GRADING, OR OTHER EARTHWORK SHALL BEGIN UNTIL ALL APPROPRIATE EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
3. ALL EXPOSED AREAS SHALL BE SEEDED, MULCHED, AND/OR EROSION BLANKETS INSTALLED AS SPECIFIED WITHIN 7 DAYS OF FINAL GRADING. AREAS WITHIN 75 FEET OF WETLANDS SHALL BE STABILIZED WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
4. SHOULD CONSTRUCTION STOP FOR LONGER THAN 7 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED. SEE SHEET E1 FOR SEEDING SPECIFICATIONS.
5. INSPECT EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDER DAYS AND BEFORE AND AFTER A RAIN EVENT OF 0.1" OR GREATER AND MAKE ANY REQUIRED REPAIRS. SUCH MEASURES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES.
6. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
7. ALL CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCES TO ACCESS THE SITE DURING CONSTRUCTION.
8. COMPACT & MAINTAIN 30,000SF LAYDOWN AREA AND 25' WIDE ACCESS ROAD TO THE STABILIZED CONDTRUCTION ENTRANCE WITH 6"-THICK STONE MATERIAL (TYPE 'D' GRAVEL). LAYDOWN AREA TO BE LOCATED AS SHOWN ON THIS SHEET.
9. ALL WORK TO BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
10. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
11. SEE EROSION AND SEDIMENT CONTROL SPECIFICATIONS AND DETAILS, SHEETS E1.
12. ALL WORK TO BE DONE IN STRICT ACCORDANCE WITH STANDARD SITE SPECIFICATIONS.
13. SEE SHEET E1 FOR CONSTRUCTION SEQUENCE.
14. SEDIMENT LOGS MAY BE UTILIZED IN LIEU OF BLOCK AND GRAVEL CATCH BASIN INLET FILTERS OR CULVERT INLET CHECK DAMS AT THE DISCRETION OF THE CONTRACTOR.
15. THE SOIL EROSION AND SEDIMENTATION CONTROL PLAN FOR THE PROPOSED DEVELOPMENT SHALL CONFORM WITH WESTBROOK'S WATER PROTECTION ORDINANCE.
16. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SWALES AND/OR BERMS AS NECESSARY TO DIRECT RUNOFF TO THE POND AND/OR ANOTHER STABILIZED OUTLET DURING CONSTRUCTION SO AS TO PREVENT PONDING AND/OR EROSION ON THE SITE.
17. IF TEMPORARY SEDIMENT BASINS WILL USED IN DEWATERING OR SEDIMENT CONTROL, THEIR LOCATION AND DELINEATION MUST BE SHOWN ON THE SWPPP PLANS KEPT WITH THE ONSITE SWPPP BINDER. ALL TEMPORARY SEDIMENT BASINS SHALL BE INSTALLED AND MAINTAINED PER THE MAINE EROSION AND SEDIMENT CONTROL BMP'S AND LOWE'S STANDARD SPECIFICATIONS. THE CONTRACTOR ALSO HAS THE OPTION TO UTILIZE THE EXISTING DETENTION POND AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION PROVIDED THAT APPROPRIATE MEASURES ARE TAKEN TO ENSURE PROPER FILTRATION OF RUNOFF PRIOR TO DISCHARGE AND THAT THE FACILITY IS CLEANED OF ALL SEDIMENT DEPOSITS ONCE THIS USE IS DISCONTINUED.
18. THE CONTRACTOR SHALL INSTALL, INSPECT, AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES AND PRACTICES AS SPECIFIED IN THE MAINE EROSION AND SEDIMENT CONTROL BMP'S, PUBLISHED BY THE MAINE DEP AND AVAILABLE ONLINE AT: http://www.maine.gov/dep/blwq/docstand/escbmps/index.htm
19. WINTER CONSTRUCTION (NOVEMBER 1-APRIL 15) EROSION AND SEDIMENT CONTROL MEASURES SHALL ADHERE TO THE STEPS LAID OUT IN THE "MAINE EROSION AND SEDIMENT CONTROL BMPs" MANUAL. SEE NOTE 19.
20. CONTRACTOR SHALL ADHERE TO AND FOLLOW THE PROCEDURES FOR SEDIMENT AND EROSION CONTROL LAID OUT IN MAINE DEP, STORMWATER MANAGEMENT LAW, CHAPTER 500, APPENDIX A.

LEGEND

- SITE PROPERTY LINE
- ABUTTER PROPERTY LINE
- GC / IL/B4 — ZONE LINE
- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING DRAINAGE EASEMENT
- EXISTING EDGE OF PAVEMENT
- PROPOSED SILT FENCE
- PROPOSED CLEARING LIMITS
- EXISTING SEWER LINE / MANHOLE
- EXISTING SEWER FORCE MAIN
- EXISTING DRAINALINE / CATCH BASIN
- EXISTING WATER MAIN
- EXISTING HYDRANT / GATE VALVE
- PROPOSED DRAINLINE / DMH
- EXISTING / PROPOSED DRAIN FLOW
- EXISTING WETLAND
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED RIPRAP OR OTHER EROSION STONE

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
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DRAWING No.
EC-4
SHEET 102 OF 120
JBE PROJECT NO. 14110

LEGEND

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- ABUTTER PROPERTY LINE
- GC / IL/B4 — ZONE LINE
- EXISTING CONTOUR
- EXISTING TREELINE
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- EXISTING EDGE OF PAVEMENT
- PROPOSED SILT FENCE
- PROPOSED CLEARING LIMITS
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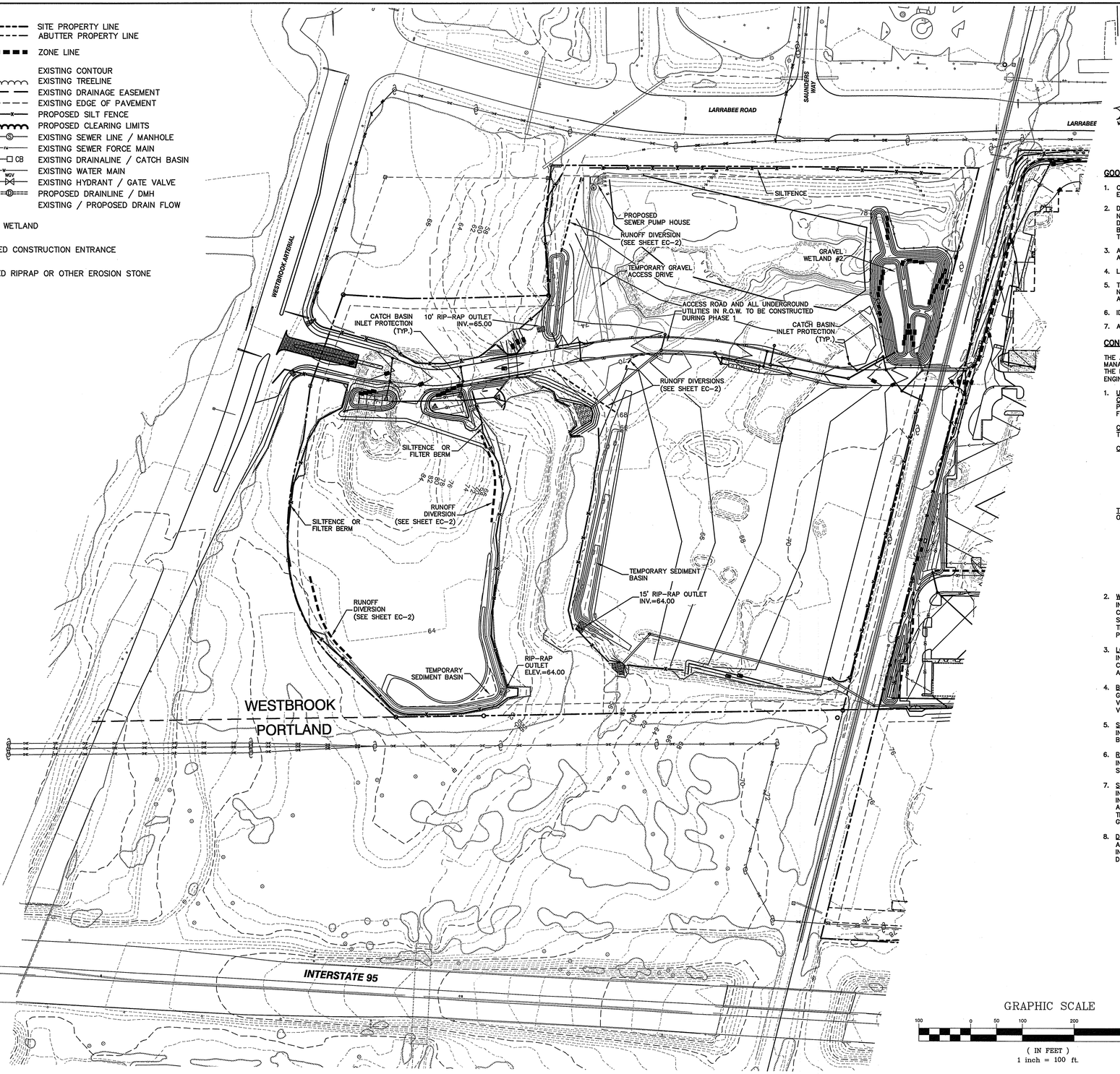
- EXISTING SEWER FORCE MAIN
- EXISTING DRAINALINE / CATCH BASIN (CB)
- EXISTING WATER MAIN
- EXISTING HYDRANT / GATE VALVE (WGV)
- PROPOSED DRAINLINE / DMH (D)
- EXISTING / PROPOSED DRAIN FLOW
- EXISTING WETLAND
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED RIPRAP OR OTHER EROSION STONE



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

ME2000 STATE PLANE

CONSTRUCTION PHASING NOTES:

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2. DISTURBED LAND THAT IS TO REMAIN UNTOUCHED FOR MORE THAN 14 DAYS AT ANY TIME SHOULD BE STABILIZED AND APPROPRIATE SEDIMENT & EROSION CONTROL MEASURES INSTALLED.

GOOD HOUSEKEEPING:

1. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.
2. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.
3. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL.
4. LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
5. TRENCH DE-WATERING WATER MUST BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE.
6. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.
7. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

CONSTRUCTION OVERSIGHT & INSPECTION:

THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY THE DEPARTMENT IN WRITING WITHIN 30 DAYS TO STATE THAT THE POND HAS BEEN COMPLETED. ACCOMPANYING THIS NOTIFICATION MUST BE A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE AND TIME OF EACH INSPECTION AND THE ITEMS INSPECTED ON EACH VISIT.

1. UNDERDRAINED FILTER BASINS:
   CONSTRUCTION SEQUENCE: THE SOIL FILTER MEDIA AND VEGETATION MUST NOT BE INSTALLED UNTIL THE AREA THAT DRAINS TO THE FILTER HAS BEEN PERMANENTLY STABILIZED WITH PAVEMENT OR OTHER STRUCTURE, 90% VEGETATION COVER, OR OTHER PERMANENT STABILIZATION UNLESS THE RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA IS DIVERTED AROUND THE FILTER UNTIL STABILIZATION IS COMPLETE.

   COMPACTION OF SOIL FILTER: FILTER SOIL MEDIA AND UNDERDRAIN BEDDING MATERIAL MUST BE COMPACTED BETWEEN 90% TO 92% STANDARD PROCTOR. THE BED SHOULD BE INSTALLED IN AT LEAST 2 LIFTS OF 9 INCHES TO PREVENT POCKETS OF LOOSE MEDIA.

   CONSTRUCTION OVERSIGHT: INSPECTION BY A PROFESSIONAL ENGINEER WILL OCCUR AT A MINIMUM:
   a. AFTER THE 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,
   c. AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED. BIO-RETENTION CELLS MUST BE STABILIZED PER THE PROVIDED PLANTING SCHEME AND DENSITY FOR THE CANOPY COVERAGE OF 30% AND 50%.
   d. AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS, AND
   e. ALL THE MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY TO SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.

   TESTING AND SUBMITTALS: THE CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE OF EACH COMPONENT OF THE FILTER MEDIA. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. THE CONTRACTOR SHALL:
   a. SELECT SAMPLES FOR SAMPLING OF EACH TYPE OF MATERIAL TO BE BLENDED FOR THE MIXED FILTER MEDIA AND SAMPLES OF THE UNDERDRAIN BEDDING MATERIAL. SAMPLES MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY.
   b. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A) ON EACH TYPE OF THE SAMPLE MATERIAL. THE RESULTING SOIL FILTER MEDIA MIXTURE MUST HAVE 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE, A CLAY CONTENT OF LESS THAN 2% (DETERMINED HYDROMETER GRAIN SIZE ANALYSIS) AND HAVE 10% DRY WEIGHT OF ORGANIC MATTER.
   c. PERFORM A PERMEABILITY TEST ON THE SOIL FILTER MEDIA MIXTURE CONFORMING TO ASTM 02434 WITH THE MIXTURE COMPACTED TO 90-92% OF MAXIMUM DRY DENSITY BASED ON ASTM 0698.

2. WET PONDS:
   INSPECTION BY A PROFESSIONAL ENGINEER WILL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT THE INSTALLATION OF EACH POND'S EMBANKMENT CONSTRUCTION, STORMWATER INLET, UNDERDRAINED GRAVEL OUTLET, GRAVEL OUTLET FILTER MATERIAL MAKEUP AND PLACEMENT, OUTLET CONTROL STRUCTURE, CLAY LINER (IF APPLICABLE), AND EMERGENCY SPILLWAY CONSTRUCTION FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE POND. AN INSPECTION OF THE UNDERDRAINED GRAVEL OUTLET SHALL ALSO BE PERFORMED ONE YEAR AFTER THE FINAL STABILIZATION OF THE POND.
3. LOT GRADING AND DRIVEWAY LOCATION:
   INSPECTIONS A PROFESSIONAL ENGINEER WILL CONSIST OF. A VISIT TO THE SITE PRIOR TO CONSTRUCTION TO CONSULT WITH THE EARTHWORK CONTRACTOR AND A POST-CONSTRUCTION MEETING TO CONFIRM GRADING ON JOTS AND FOR ALL DRIVEWAYS TO ENSURE RUNOFF IS DIRECTED ACCORDING TO PLANS AND TO OVERSEE THE RE-STABILIZATION OF THE LOT INTO A VEGETATED COVER.
4. BUFFERS - GENERAL:
   GENERAL FOREST USE MEANS THAT THE LAND MUST BE MAINTAINED WITH A FOREST COVER AND UNDISTURBED SOIL, DUFF LAYER GROUND COVER VEGETATION, AND UNDERSTORY VEGETATION. TIMBER MAY BE HARVESTED ON A SELECTIVE BASIS PROVIDED THAT NO MORE THAN 40% OF THE VOLUME IS HARVESTED WITHIN ANY 10 YEAR PERIOD.
5. STONE BERMED LEVEL LIP SPREADER:
   INSPECTIONS BY A PROFESSIONAL ENGINEER SHALL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT EACH LEVEL SPREADERS CONSTRUCTION, STONE BERM MATERIAL AND PLACEMENT, SETTLING BASIN FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE LEVEL SPREADER.
6. ROAD DITCH TURNOUTS:
   INSPECTIONS BY A. PROFESSIONAL ENGINEER SHALL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT EACH TURNOUT CONSTRUCTION, TURNOUT'S STONE BERM MATERIAL AND PLACEMENT, FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE LEVEL SPREADER.
7. STORMTECH MANUFACTURED SYSTEMS:
   INSPECTION BY A PROFESSIONAL ENGINEER APPROVED BY THE MANUFACTURER SHALL CONSIST OF AN APPROPRIATE NUMBER OF VISITS TO THE SITE TO INSPECT THE SUBGRADE PREPARATION, GENERAL CONSTRUCTION, FILTER MATERIAL PLACEMENT AND COMPACTION, CHAMBER PLACEMENT, FABRIC LAYMENT, AND STORMWATER OVERFLOW BYPASS CONSTRUCTION FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE MEASURE. IN THE CASE OF THE STORMTECH SYSTEMS AN ADDITIONAL VISIT WILL BE NECESSARY TO SET THE UNIT'S PEAK OUTFLOW RATE APPROPRIATELY TO NO MORE THAN ONE GALLON PER MINUTE.
8. DEWATERING:
   A DEWATERING PLAN IS NEEDED TO ADDRESS EXCAVATION DE-WATERING FOLLOWING HEAVY RAINFALL EVENTS OR WHERE THE EXCAVATION MAY INTERCEPT THE GROUNDWATER TABLE DURING CONSTRUCTION. THE COLLECTED WATER NEEDS TREATMENT AND A DISCHARGE POINT THAT WILL NOT CAUSE DOWNGRADIENT EROSION AND OFFSITE SEDIMENTATION OR WITHIN A RESOURCE. PLEASE FOLLOW THE DETAILS OF SUCH A PLAN.

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DRAWING No.
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SHEET 103 OF 120
JBE PROJECT NO. 14110

LEGEND

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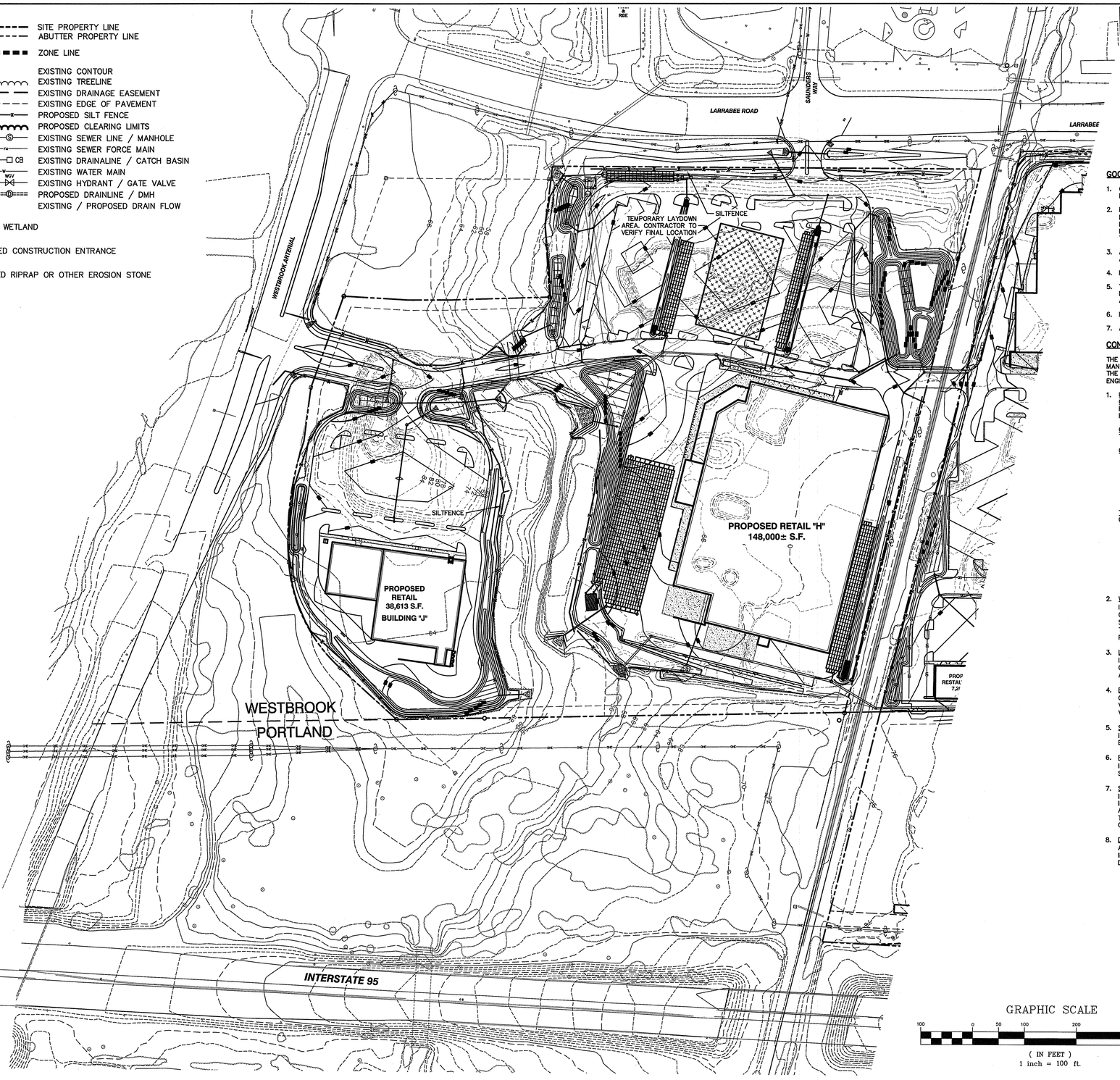
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED RIPRAP OR OTHER EROSION STONE



CONSTRUCTION PHASING NOTES:

1. LAND DISTURBANCE SHOULD BE LIMITED TO FIVE (5) ACRES AT ANY ONE TIME UNLESS MORE AREA IS REQUIRED FOR BUILDING OR UTILITY CONSTRUCTION. SEDIMENT & EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN AND AROUND DISTURBED AREAS.
2. DISTURBED LAND THAT IS TO REMAIN UNTOUCHED FOR MORE THAN 14 DAYS AT ANY TIME SHOULD BE STABILIZED AND APPROPRIATE SEDIMENT & EROSION CONTROL MEASURES INSTALLED.

GOOD HOUSEKEEPING:

1. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.
2. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.
3. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL.
4. LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
5. TRENCH DE-WATERING WATER MUST BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE.
6. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.
7. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

CONSTRUCTION OVERSIGHT & INSPECTION:

THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY THE DEPARTMENT IN WRITING WITHIN 30 DAYS TO STATE THAT THE POND HAS BEEN COMPLETED. ACCOMPANYING THIS NOTIFICATION MUST BE A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE AND TIME OF EACH INSPECTION AND THE ITEMS INSPECTED ON EACH VISIT.

1. UNDERDRAINED FILTER BASINS:
   CONSTRUCTION SEQUENCE: THE SOIL FILTER MEDIA AND VEGETATION MUST NOT BE INSTALLED UNTIL THE AREA THAT DRAINS TO THE FILTER HAS BEEN PERMANENTLY STABILIZED WITH PAVEMENT OR OTHER STRUCTURE, 90% VEGETATION COVER, OR OTHER PERMANENT STABILIZATION UNLESS THE RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA IS DIVERTED AROUND THE FILTER UNTIL STABILIZATION IS COMPLETE.

   COMPACTION OF SOIL FILTER: FILTER SOIL MEDIA AND UNDERDRAIN BEDDING MATERIAL MUST BE COMPACTED BETWEEN 90% TO 92% STANDARD PROCTOR. THE BED SHOULD BE INSTALLED IN AT LEAST 2 LIFTS OF 9 INCHES TO PREVENT POCKETS OF LOOSE MEDIA.

   CONSTRUCTION OVERSIGHT: INSPECTION BY A PROFESSIONAL ENGINEER WILL OCCUR AT A MINIMUM:
   a. AFTER THE 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,
   c. AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED. BIO-RETENTION CELLS MUST BE STABILIZED PER THE PROVIDED PLANTING SCHEME AND DENSITY FOR THE CANOPY COVERAGE OF 30% AND 50%.
   d. AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS, AND
   e. ALL THE MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY TO SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.

   TESTING AND SUBMITTALS: THE CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE OF EACH COMPONENT OF THE FILTER MEDIA. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. THE CONTRACTOR SHALL:
   a. SELECT SAMPLES FOR SAMPLING OF EACH TYPE OF MATERIAL TO BE BLENDED FOR THE MIXED FILTER MEDIA AND SAMPLES OF THE UNDERDRAIN BEDDING MATERIAL. SAMPLES MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY.
   b. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A) ON EACH TYPE OF THE SAMPLE MATERIAL. THE RESULTING SOIL FILTER MEDIA MIXTURE MUST HAVE 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE, A CLAY CONTENT OF LESS THAN 2% (DETERMINED HYDROMETER GRAIN SIZE ANALYSIS) AND HAVE 10% DRY WEIGHT OF ORGANIC MATTER.
   c. PERFORM A PERMEABILITY TEST ON THE SOIL FILTER MEDIA MIXTURE CONFORMING TO ASTM 02434 WITH THE MIXTURE COMPACTED TO 90-92% OF MAXIMUM DRY DENSITY BASED ON ASTM 0698.

2. WET PONDS:
   INSPECTION BY A PROFESSIONAL ENGINEER WILL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT THE INSTALLATION OF EACH POND'S EMBANKMENT CONSTRUCTION, STORMWATER INLET, UNDERDRAINED GRAVEL OUTLET, GRAVEL OUTLET FILTER MATERIAL MAKEUP AND PLACEMENT, OUTLET CONTROL STRUCTURE, CLAY LINER (IF APPLICABLE), AND EMERGENCY SPILLWAY CONSTRUCTION FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE POND. AN INSPECTION OF THE UNDERDRAINED GRAVEL OUTLET SHALL ALSO BE PERFORMED ONE YEAR AFTER THE FINAL STABILIZATION OF THE POND.
3. LOT GRADING AND DRIVEWAY LOCATION:
   INSPECTIONS A PROFESSIONAL ENGINEER WILL CONSIST OF A VISIT TO THE SITE PRIOR TO CONSTRUCTION TO CONSULT WITH THE EARTHWORK CONTRACTOR AND A POST-CONSTRUCTION MEETING TO CONFIRM GRADING ON JOTS AND FOR ALL DRIVEWAYS TO ENSURE RUNOFF IS DIRECTED ACCORDING TO PLANS AND TO OVERSEE THE RE-STABILIZATION OF THE LOT INTO A VEGETATED COVER.
4. BUFFERS - GENERAL:
   GENERAL FOREST USE MEANS THAT THE LAND MUST BE MAINTAINED WITH A FOREST COVER AND UNDISTURBED SOIL, DUFF LAYER GROUND COVER VEGETATION, AND UNDERSTORY VEGETATION. TIMBER MAY BE HARVESTED ON A SELECTIVE BASIS PROVIDED THAT NO MORE THAN 40% OF THE VOLUME IS HARVESTED WITHIN ANY 10 YEAR PERIOD.
5. STONE BERMED LEVEL LIP SPREADER:
   INSPECTIONS BY A PROFESSIONAL ENGINEER SHALL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT EACH LEVEL SPREADERS CONSTRUCTION, STONE BERM MATERIAL AND PLACEMENT, SETTLING BASIN FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE LEVEL SPREADER.
6. ROAD DITCH TURNOUTS:
   INSPECTIONS BY A. PROFESSIONAL ENGINEER SHALL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT EACH TURNOUT CONSTRUCTION, TURNOUT'S STONE BERM MATERIAL AND PLACEMENT, FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE LEVEL SPREADER.
7. STORMTECH MANUFACTURED SYSTEMS:
   INSPECTION BY A PROFESSIONAL ENGINEER APPROVED BY THE MANUFACTURER SHALL CONSIST OF AN APPROPRIATE NUMBER OF VISITS TO THE SITE TO INSPECT THE SUBGRADE PREPARATION, GENERAL CONSTRUCTION, FILTER MATERIAL PLACEMENT AND COMPACTION, CHAMBER PLACEMENT, FABRIC LAYMENT, AND STORMWATER OVERFLOW BYPASS CONSTRUCTION FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE MEASURE. IN THE CASE OF THE STORMTECH SYSTEMS AN ADDITIONAL VISIT WILL BE NECESSARY TO SET THE UNIT'S PEAK OUTFLOW RATE APPROPRIATELY TO NO MORE THAN ONE GALLON PER MINUTE.
8. DEWATERING:
   A DEWATERING PLAN IS NEEDED TO ADDRESS EXCAVATION DE-WATERING FOLLOWING HEAVY RAINFALL EVENTS OR WHERE THE EXCAVATION MAY INTERCEPT THE GROUNDWATER TABLE DURING CONSTRUCTION. THE COLLECTED WATER NEEDS TREATMENT AND A DISCHARGE POINT THAT WILL NOT CAUSE DOWNGRADIENT EROSION AND OFFSITE SEDIMENTATION OR WITHIN A RESOURCE. PLEASE FOLLOW THE DETAILS OF SUCH A PLAN.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PROJECT PARCEL
CITY OF WESTBROOK
TAX MAP 42B, LOTS 9, 10, 11 & 14
CITY OF PORTLAND
TAX MAP 264, LOTS A002 & A004
TAX MAP 265, LOTS A003 & A005

APPLICANT/OWNER
DIRIGO CENTER DEVELOPERS, LLC
7 SWAIN DRIVE
HAMPTON FALLS, NH 03844

TOTAL LOT AREA
3,562,203 SQ. FT.
81.78 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 2/15/2015 11:44:58 AM EST

Design: BWG	Draft: ISM	Date: 10/20/15
Checked: WGM	Scale: AS SHOWN	Project No.: 14110
Drawing Name: 14110-PLAN-EC-2.DWG		

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REV.	DATE	REVISION	BY
7	9/12/16	REVISED PER REVIEW COMMENTS	ISM
6	8/23/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
5	6/27/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
4	6/16/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM
3	6/10/16	REVISED PER PLANNING BOARD & MEDEP COMMENTS	ISM

Designed and Produced in NH
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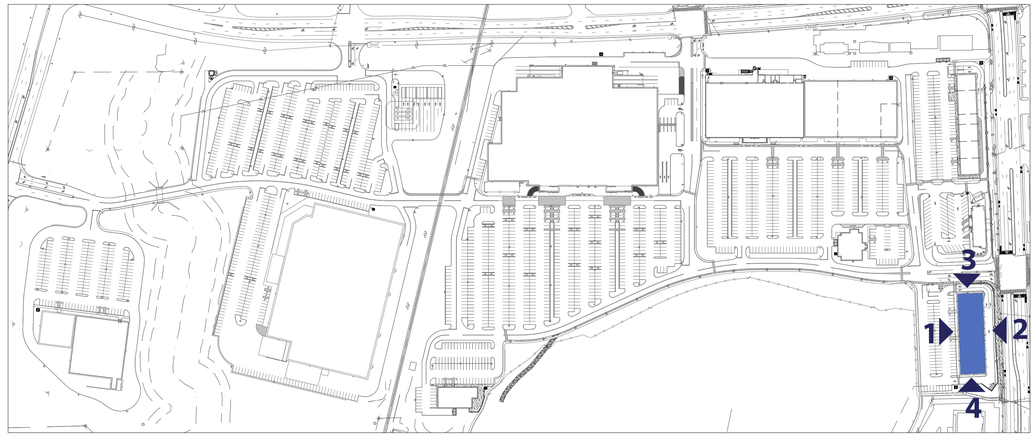
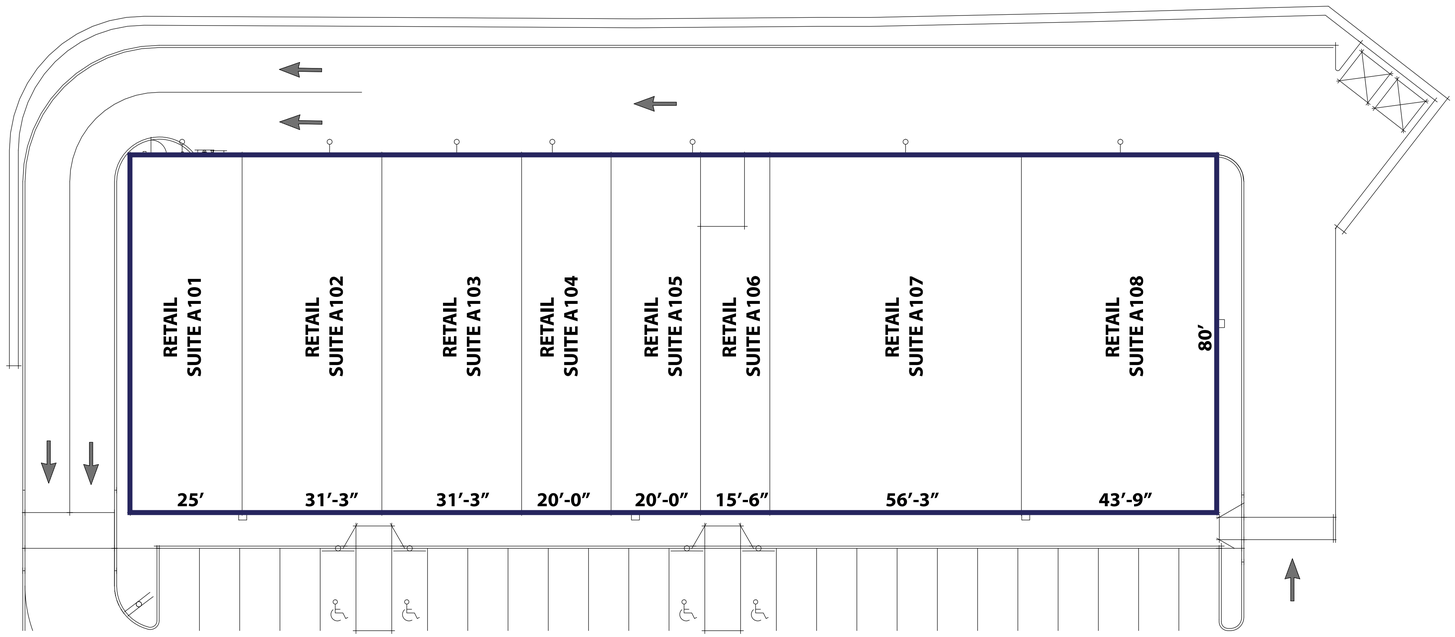
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@JONESANDBEACH.COM

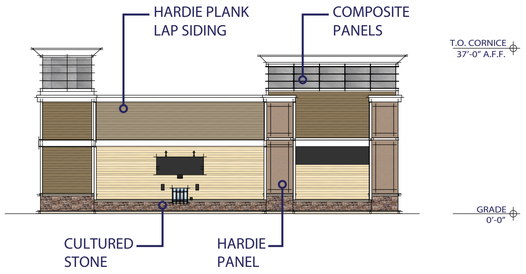
Plan Name: EROSION CONTROL - SOUTH CAMPUS - PHASE 2
Project: "DIRIGO PLAZA"
80 MAIN ST. & 11 LARRABEE RD., WESTBROOK, ME 04092
Owner of Record: PIKE INDUSTRIES, INC. - 3 EASTGATE PARK ROAD, BELMONT, NH 03220
LL LATHROP LLC - 10 MOULTON STREET SUITE 4, PORTLAND, ME 04101

DRAWING No.
EC-6
SHEET 104 OF 120
JBE PROJECT NO. 14110

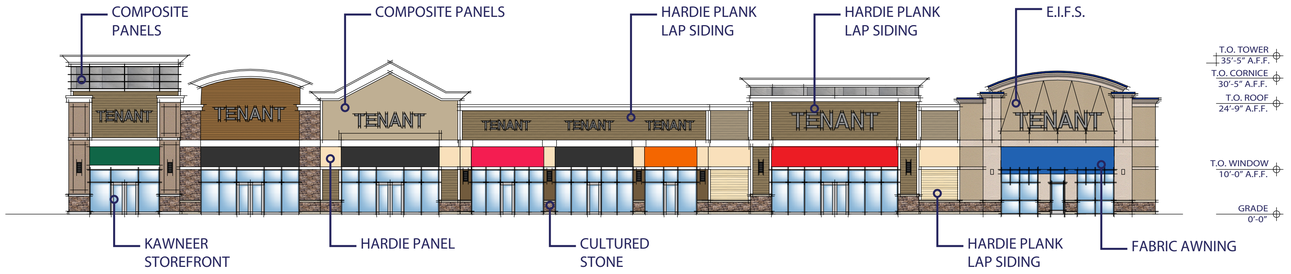


SITE PLAN





EXTERIOR ELEVATION 3



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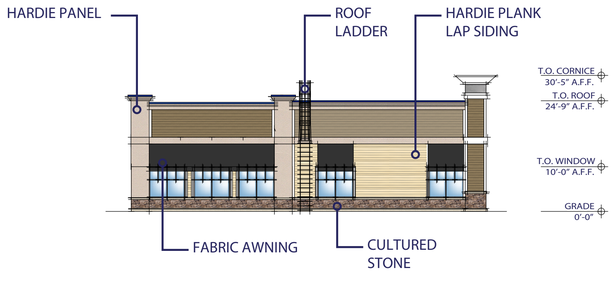

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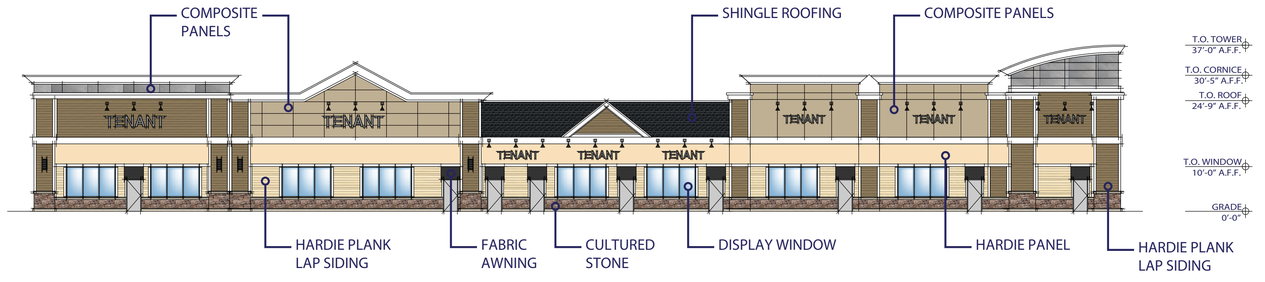


EXTERIOR (STREET) ELEVATION 2

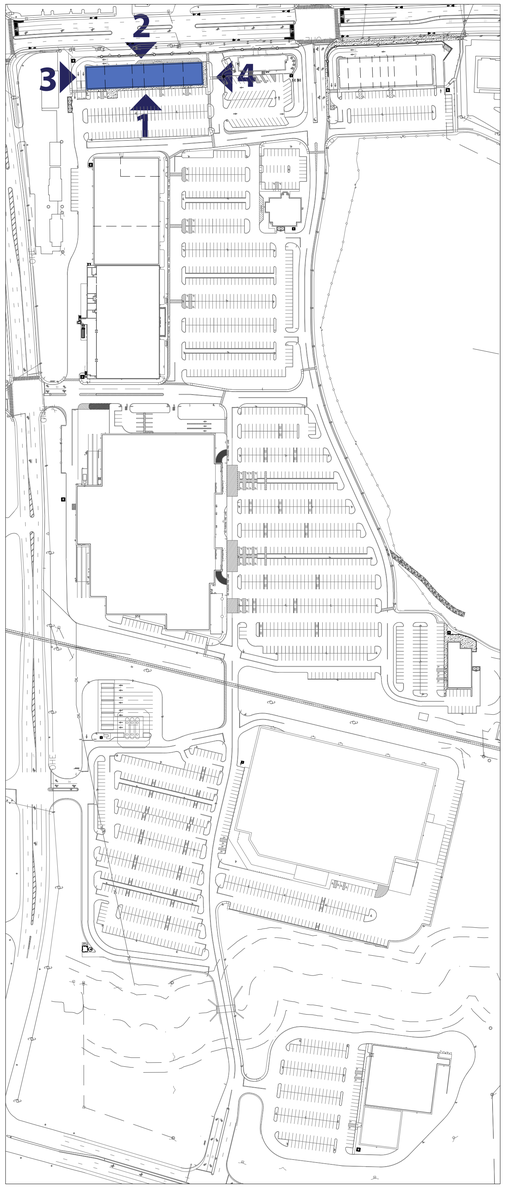
J & J GOVE DEVELOPMENT

PROPOSED WESTBROOK PIKE

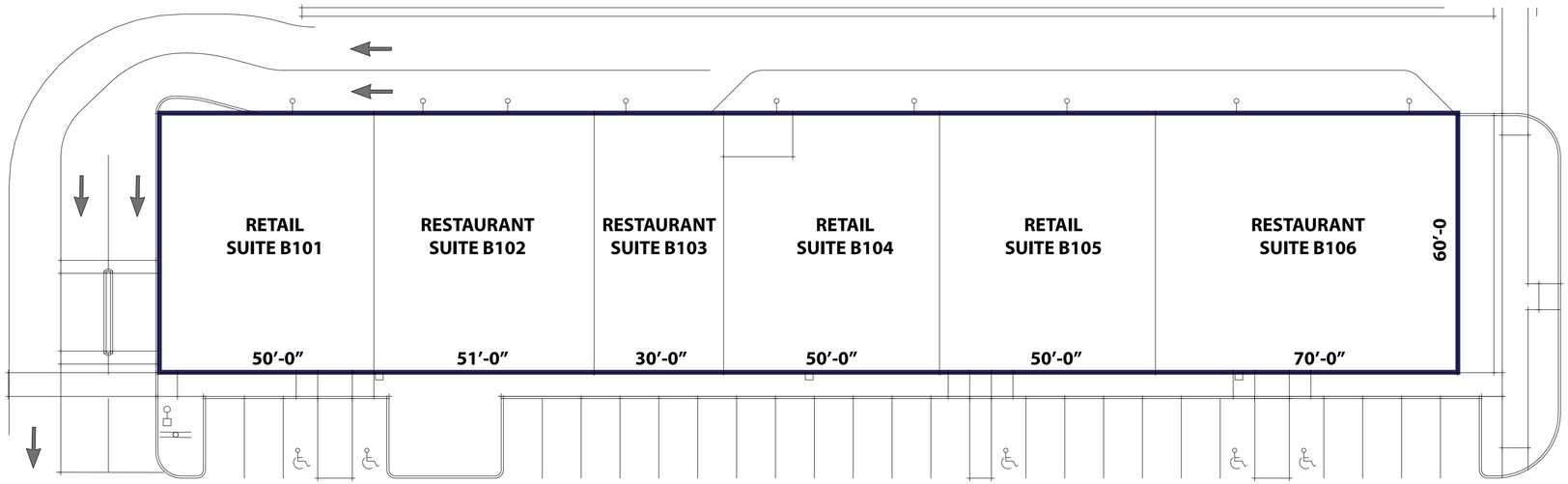
58 MAIN STREET
WESTBROOK, ME

PROPOSED EXTERIOR ELEVATIONS
BUILDING A
JUNE 23, 2016

phase zero design



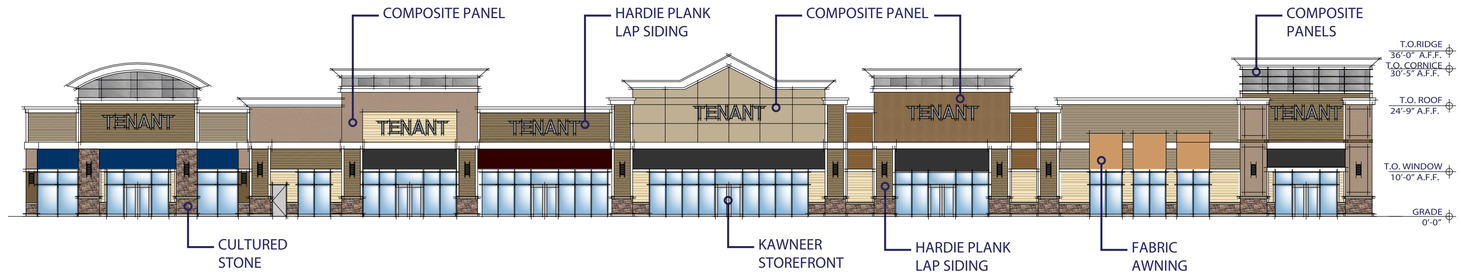
SITE PLAN



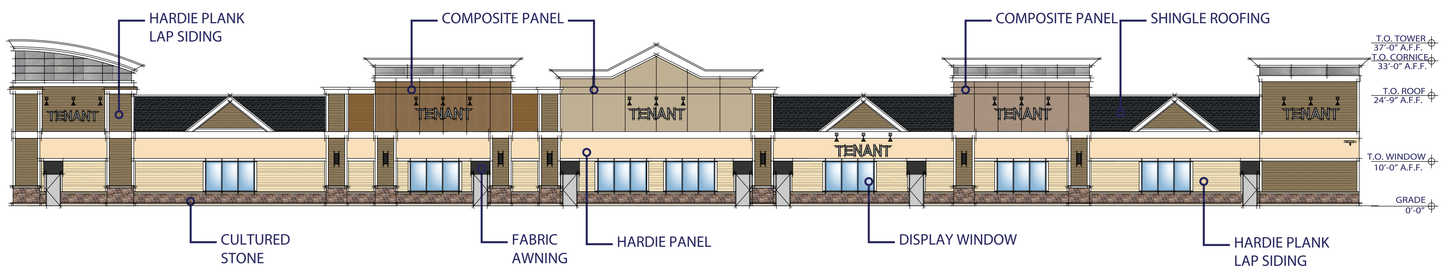
FLOOR PLAN

EXTERIOR ELEVATION 3

EXTERIOR ELEVATION 4



EXTERIOR ELEVATION 1



EXTERIOR (STREET) ELEVATION 2

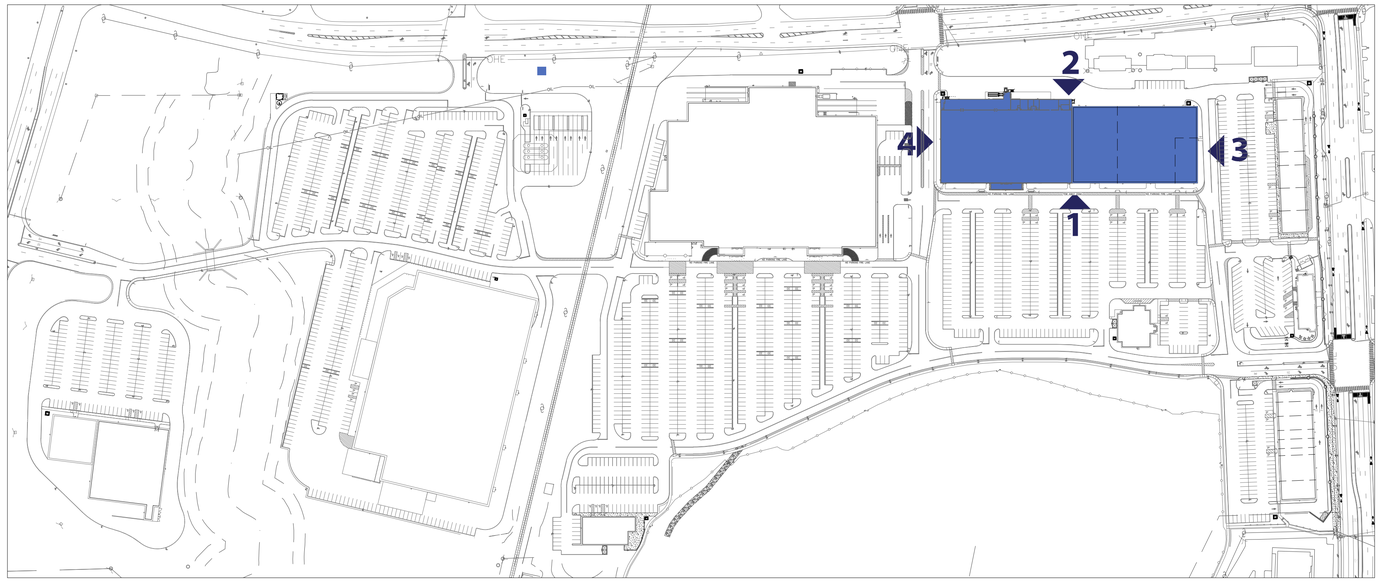
J & J GOVE DEVELOPMENT

PROPOSED WESTBROOK PIKE

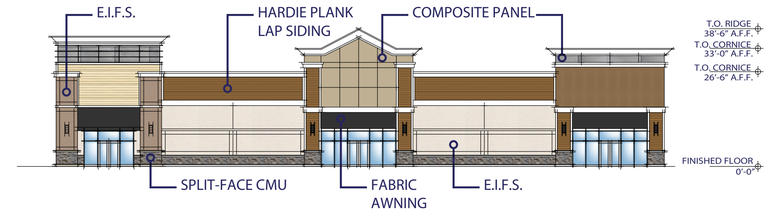
58 MAIN STREET
WESTBROOK, ME

PROPOSED EXTERIOR ELEVATIONS
BUILDING C
JUNE 23, 2016

phase zero design



SITE PLAN



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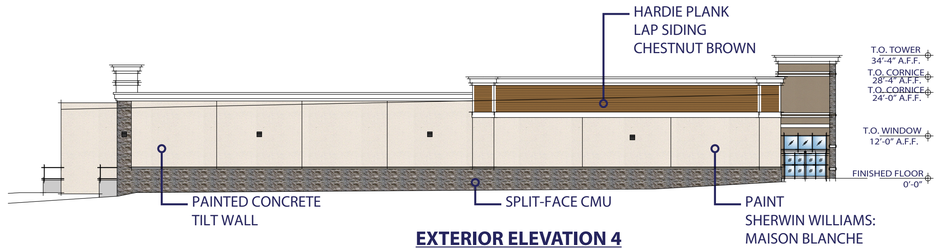
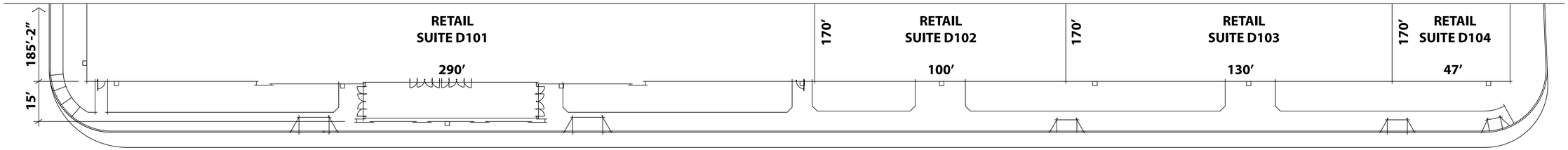
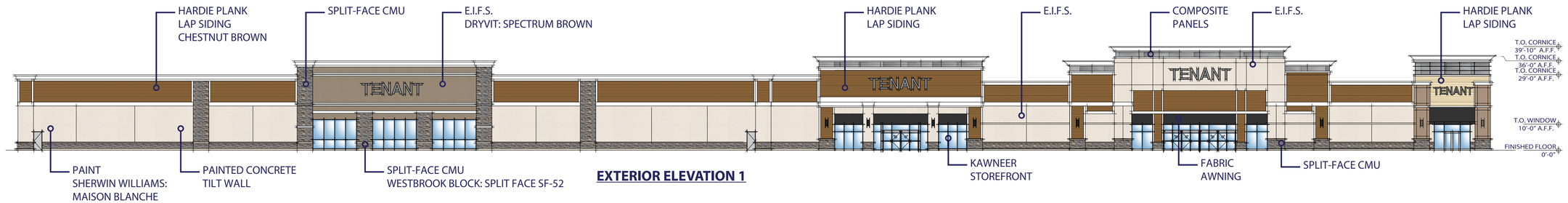


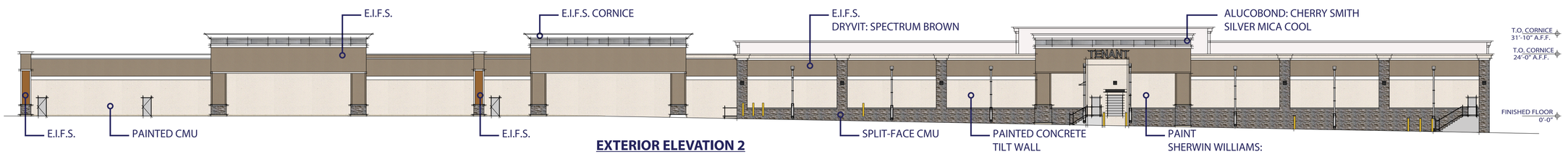
EXTERIOR ELEVATION 4



EXTERIOR WALL AT FRONT



EXTERIOR ELEVATION 1



EXTERIOR ELEVATION 2

J & J GOVE DEVELOPMENT

PROPOSED WESTBROOK PIKE

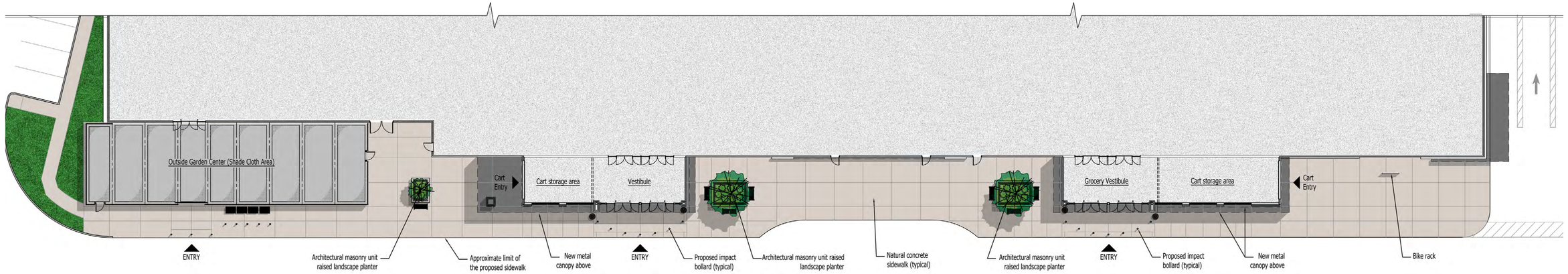
58 MAIN STREET
WESTBROOK, ME

PROPOSED EXTERIOR ELEVATIONS
BUILDING D
JUNE 23, 2016

phase zero design

BUILDING E

Front / East Elevation



Hardscape Plan

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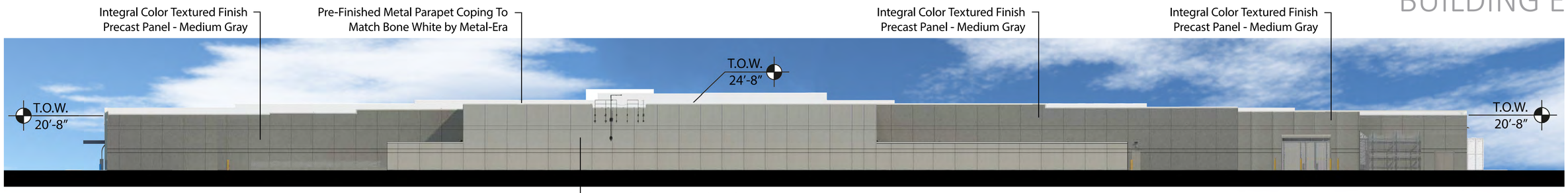
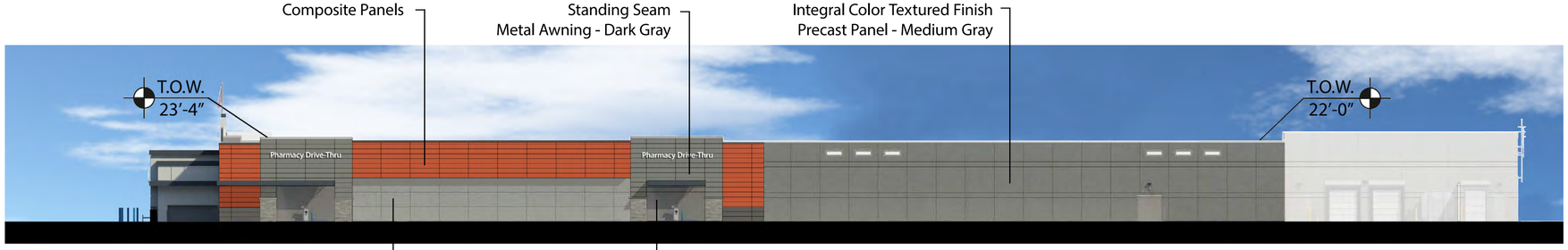
BUILDING E



Rear / West Elevation

Left / South Elevation



Right / North Elevation

Wall Sign	Qty.	Facade Location	Type	Color	Height	Width	Illumination	Area (S.F.)	Total S.F.
Walmart		Front / East	Business	White	6'-6"		Channel Lit		
Spark	1	Front / East	Business	Yellow	9'-5 7/8"	44'-1 7/8"	Channel Lit	419.13	419.13
Home & Pharmacy	1	Front / East	Directional	White	3'-5 1/2"	28'-2 7/8"	N/A	97.66	97.66
Grocery	1	Front / East	Directional	White	3'-4"	12'-7 3/8"	N/A	42.05	42.05
Outdoor Living	1	Front / East	Directional	White	3'-4 7/8"	22'-7 7/8"	N/A	77.17	77.17
Pharmacy, Drive-Thru	1	Front / East	Directional	White	4'-7 3/8"	13'-7"	N/A	62.68	62.68
Pharmacy Drive-Thru	2	Right / North	Directional	White	2'-0 7/8"	19'-3"	N/A	39.90	79.80
Walmart		Left / South	Business	White	5'-6"		Channel Lit		
Spark	1	Left / South	Business	Yellow	8'-0 1/8"	37'-3 3/4"	Channel Lit	300.00	300.00
							Total Proposed Building Signage		**1,078.49**

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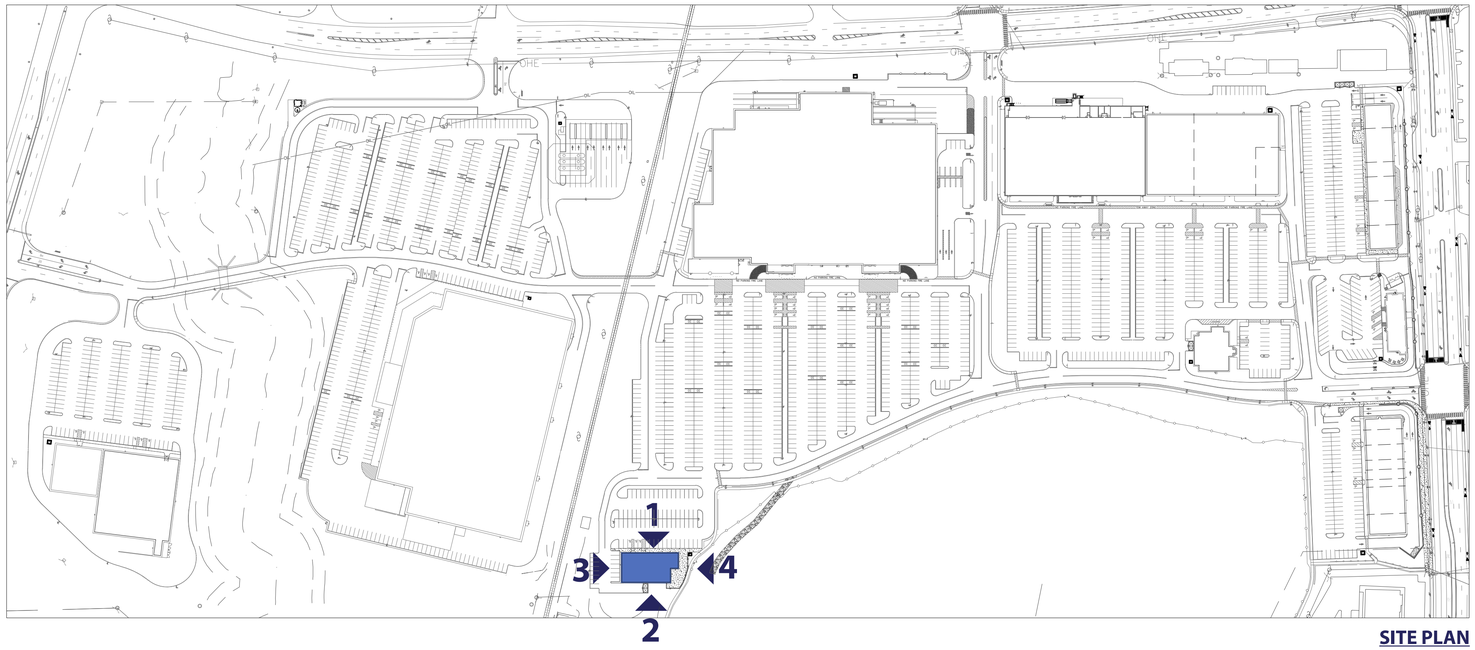
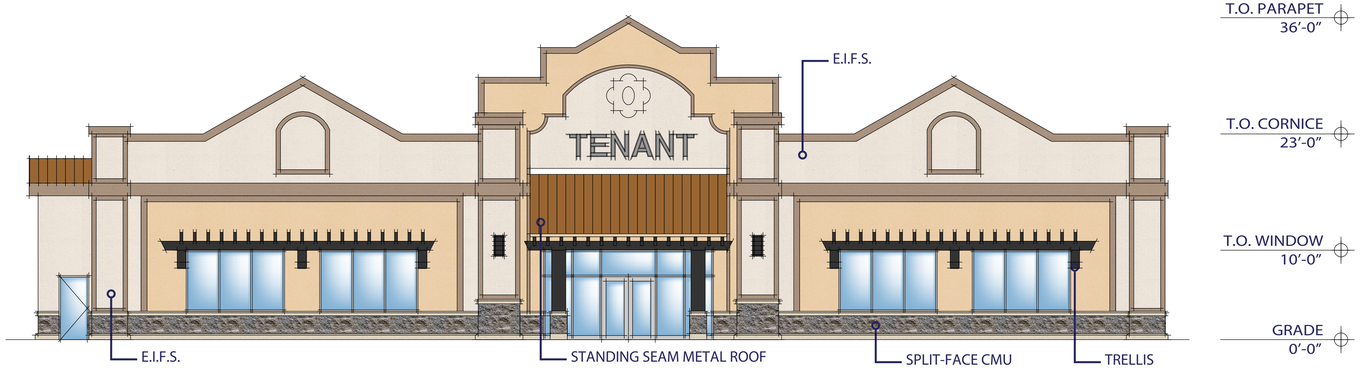
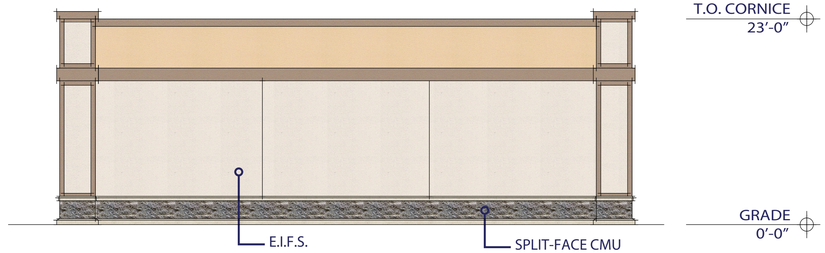


SITE PLAN



EXTERIOR ELEVATION 1



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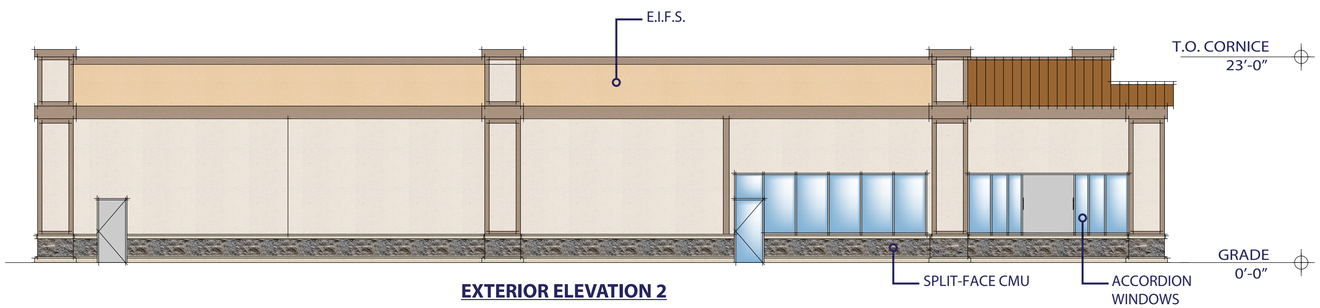
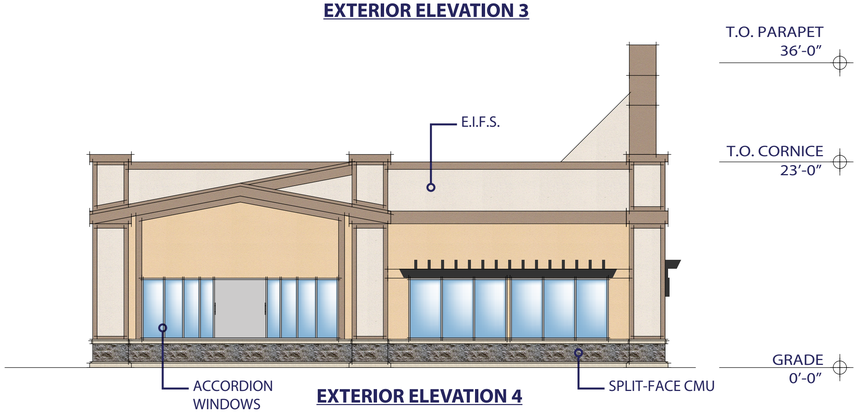


EXTERIOR ELEVATION 2



EXTERIOR ELEVATION 4

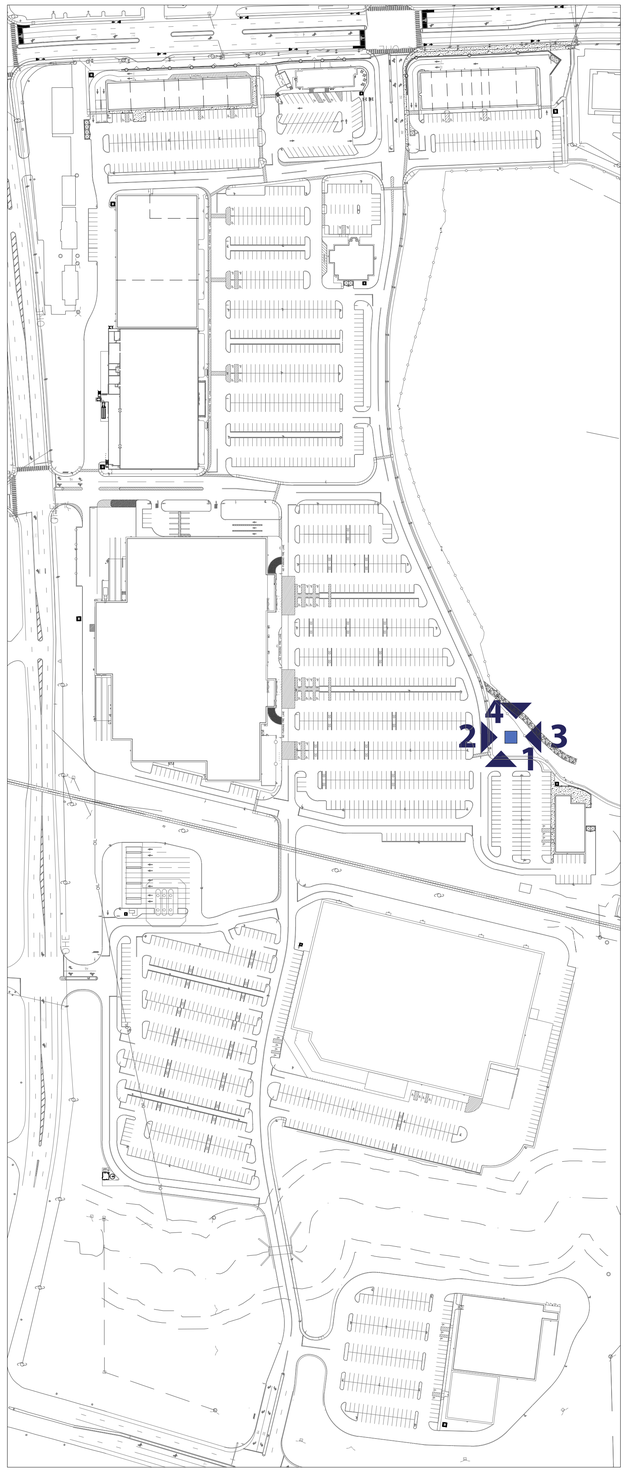
J & J GOVE DEVELOPMENT

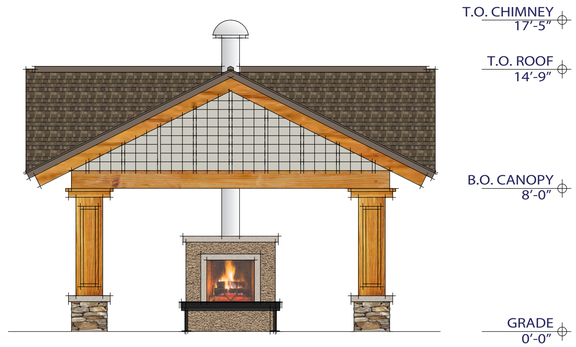
PROPOSED WESTBROOK PIKE

58 MAIN STREET
WESTBROOK, ME

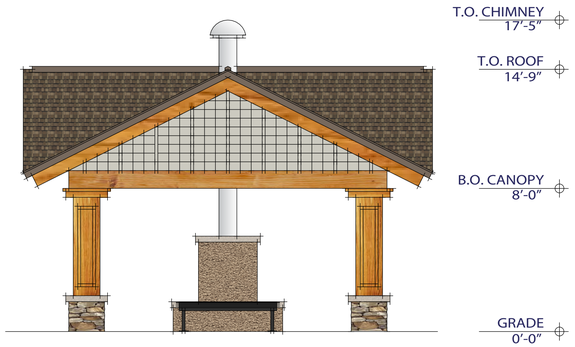
PROPOSED EXTERIOR ELEVATIONS
BUILDING G
JUNE 23, 2016

phase zero design

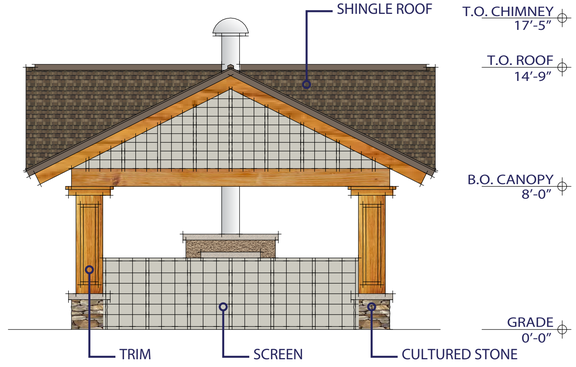




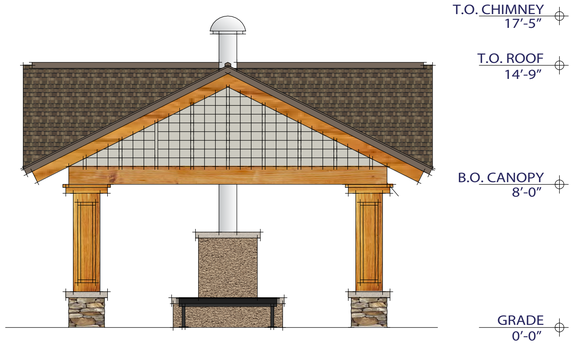
EXTERIOR ELEVATION 1



EXTERIOR ELEVATION 2



EXTERIOR ELEVATION 4



EXTERIOR ELEVATION 3

J & J GOVE DEVELOPMENT

PROPOSED WESTBROOK PIKE

58 MAIN STREET
WESTBROOK, ME

PROPOSED EXTERIOR ELEVATIONS
BUILDING F
JUNE 23, 2016

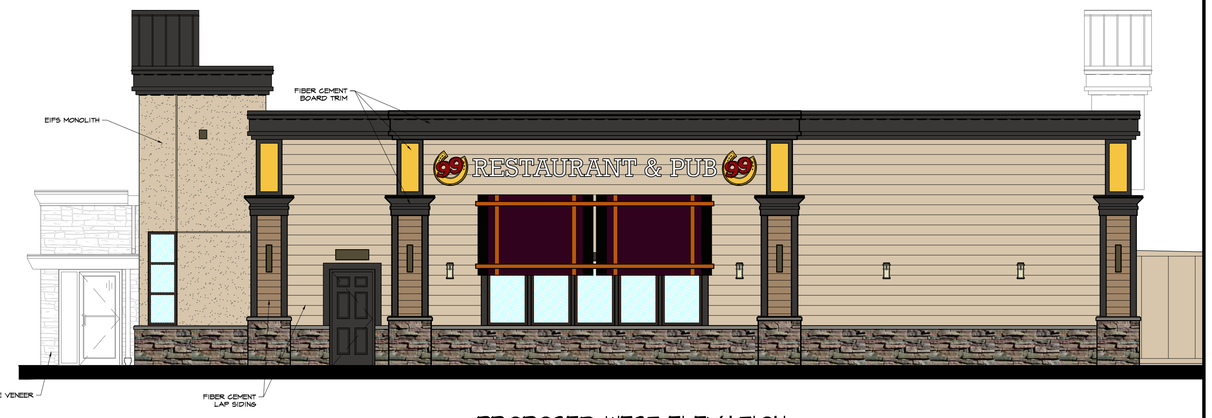
phase zero design

PROPOSED SOUTH ELEVATION

SCALE: 3/16"=1'-0"

PROPOSED EAST ELEVATION

SCALE: 3/16"=1'-0"



PROPOSED WEST ELEVATION

SCALE: 3/16"=1'-0"

PROPOSED NORTH ELEVATION

SCALE: 3/16"=1'-0"

AHARONIAN
& ASSOCIATES, INC.
Architects
401·232·5010
www.arch-eng.com

Ninety 99 Nine

MAIN STREET &
LARRABEE ROAD
WESTBROOK, ME
SEPTEMBER 2, 2016

Memorandum
Planning and Urban Development Department
Planning Division

To:	Elizabeth Boepple, Chair, and Members of the Portland Planning Board
From:	Shukria Wiar, Planner
Date:	October 14, 2016
Re:	Fred P. Hall Elementary School Reconstruction
Meeting Date:	October 18, 2016

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 Preliminary Level III Site Plan Application for the proposed development 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 Fred P. Hall 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 Street. 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 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 remaining of the 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 215 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 October 10th and October 11th, 2016.

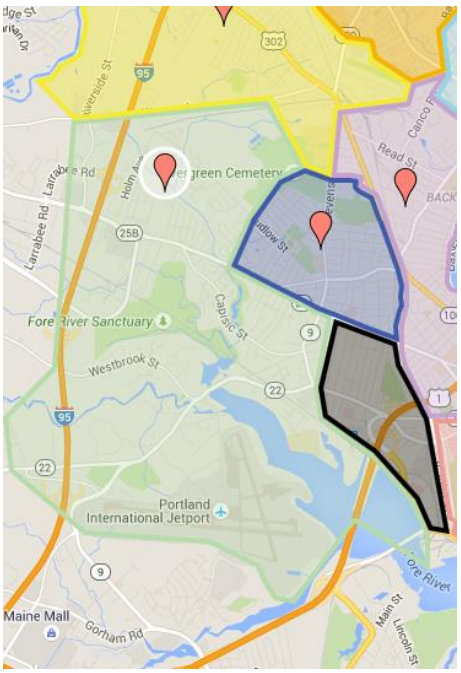
II. REQUIRED REVIEW

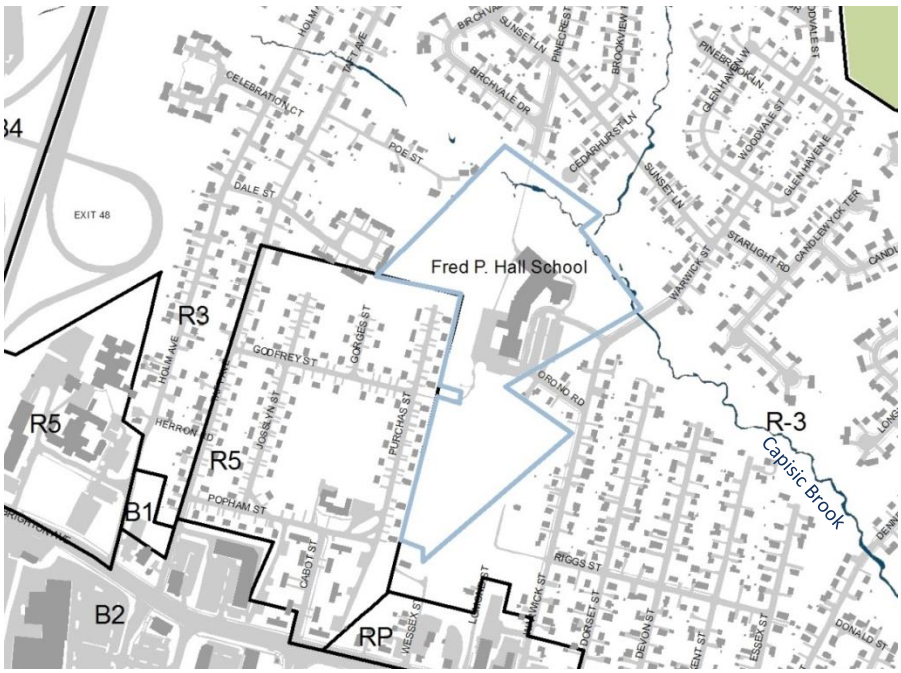
Applicant's Proposal	***Applicable Standards***
Level III Site Plan	Section 14-526
Level III Conditional Use- Instructional	Conditional Use in the R-3 Zone (Section 14-88) Conditional Section (Section 14-474)

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)

The existing school grounds include the 54,000 SF building, a baseball field, playground, hard courts, large wooded 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 Distric 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 Fred P. Hall 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 Street. 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.

As part of this project, the applicant is proposing community use of school facilities for after hours on their site.

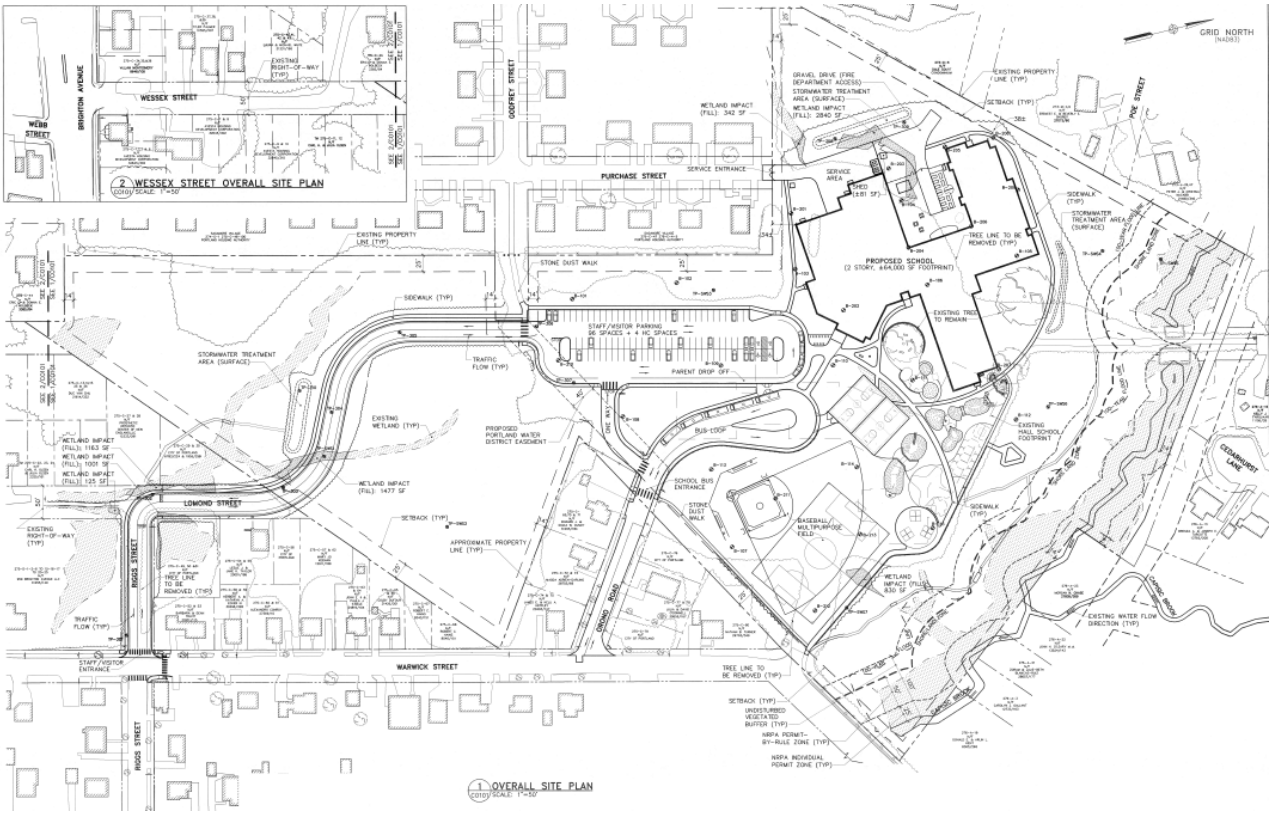


Figure5: Proposed Hall School Development

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, thus requiring. 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 Hall 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.

VI. PRELIMINARY SITE PLAN COMMENTS

Staff has reviewed site plan and the preliminary comments are provided below; City staff met with the applicant and their consultants on October 12, 2016 to address the comments:

1. Transportation Standards

A. Traffic Impacts

The new Hall 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.

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 preliminary 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. Most of this 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. 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. Bringing the street to City standards is also consistent with the City's policies for paper streets.

Regarding the technical aspects of the vehicular circulation, Mr. Errico has noted that the adequacy of geometry and pedestrian and bicycle circulation (Attachment 1).

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 *"[t]he 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*".

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. Sidewalks have been provided on one side of both the access drives on the Orono Road, Riggs Street, and Lomond Street. The applicant has requested a waiver of providing sidewalk on both sides of the street. Much more detail on pedestrian and bicycle accommodations will be required under site plan review. Given the density of the surrounding neighborhood and PPS's emphasis on walkability, pedestrian and bicycle access should clearly be addressed on the site plan. On this, Mr. Errico states in his comments (Attachment 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.*
>
> *Many of the sidewalk handicap ramps do not meet City and ADA standards.*
>
> *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.*

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)

John Peverada, the City's Parking Manager, has raised concerns regarding the location of the proposed baseball field and on-street parking issues it might create; his concern is that having the ball field abutting Warwick Street and that there will be traffic/parking issues created by vehicles parked on street. Even if the street is posted "No Parking", the parents will still park there after hours. The field is far from the off street parking lot. There is also a bend in the street at this particular location that will also contribute to traffic concerns. The consultants are looking at this issue and how best to retain adequate emergency access to the school and fields.

F. Transportation Demand Management

Because the proposal involves an institutional facility for more than 100 students, PPS is required to provide a transportation demand management (TDM) plan in accordance with the City's site plan standards under site plan review.

2. Environmental Quality Standards

A. Preservation of Significant Natural Features

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. However, the proposed drive from Riggs Street does have implications for valuable trees on the site. 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 we have outside Deering Oaks and Baxter Woods. Mr. Tarling, City Arborist, has reviewed the project and has made recommendation, see Attachment ## for his complete review:

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.

B. Landscaping and Landscape Preservation

There is some landscaping is depicted on the site plan. A landscaping plan needs to be submitted for final plan review. Landscaping standards related to understory plantings and parking lots should be addressed on the plan. Waivers of the parking lot landscaping and street tree requirements have been requested. The staff has suggested looking at the landscaping preservation under the pending street tree amendments to the Site Plan ordinance.

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 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 will need to be provided to the City upon receipt.

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. Crime Prevention Through Environmental Design (CPTED) and site design to manage emergency access during events will need to be addressed on the final site plan review.

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.

4. Site Design Standards

The applicant will need to submit exterior lighting and photometric plan, and a wayfinding plan as part of the final application.

VIII. NEXT STEPS

1. Planning Board to provide feedback on site selection, general site plan review considerations
2. PPS to obtain site approval from MDOE, develop site plans, and submit for City site plan review

IV. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Traffic Engineer review (memo from Thomas Errico, 09.30.2016)
2. City arborist review (memo from Jeff Tarling, 10.04.2016)
3. Department of Public Services review (memo from Lauren Swett, 10.04.2016)

APPLICANT'S SUBMITTALS

A. 00_Transmittal Letter
B. 01_Cover
C. 02_Table of Contents
D. 03_TAB 1 - App & Checklist
E. 04_TAB 2 - Dvlpmnt Descrip & Land Use
F. 05_App A - Deeds & Prop Easements
G. 06_App B - State Approvals
H. 07_App C - Financial Capacity
I. 08_App D - Technical Ability
J. 09_App E - Transportation Info

PLANS

Plan1	01_C-001 Cover Sheet
Plan2	02_CX101 Existing Conditions
Plan3	03_CD101 North Removals
Plan4	04_CD102 South Removals
Plan5	05_CD103 Tree Removal
Plan6	06_CO101 Site Plan (Overall)
Plan7	07_CS101 Site Plan (North)
Plan8	08_CS102 Site Plan (South)
Plan9	11_CG101 Grading, Drainage and Erosion (North)
Plan10	12_CG102 Grading, Drainage and Erosion (South)
Plan11	13_AE101 Floor Plan (1st Floor)
Plan12	14_AE102 Floor Plan (2nd Floor)
Plan13	15_AE103 Elevations

Portland Maine | Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

Hall School - Preliminary Traffic Comments

4 messages

Tom Errico <thomas.errico@tylin.com> Fri, Sep 30, 2016 at 3:18 PM
To: Shukria Wiar <shukriaw@portlandmaine.gov>
Cc: Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Jeff Tarling <jst@portlandmaine.gov>, "lswett@woodardcurran.com" <lswett@woodardcurran.com>

Hi Shukria – I have conducted a preliminary review of the application materials and offer the following preliminary comments. Additional comments should be expected.

- 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.
- 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 a the horizontal alignment of the roadway.
- All roadways and sidewalks should note dimensions.
- Many of the sidewalk handicap ramps do not meet City and ADA standards.
- The applicant should provide computations in meeting handicap parking supply requirements
- 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.
- 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.
- 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.
- Vehicle turning templates for bus movements shall be provided for turning onto Orono Road and circulating through the bus loop.
- 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.
- 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.
- I would suggest that the stone dust path to Sagamore Village be paved to match existing conditions.
- 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.

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)

207.781.4753 (fax)

thomas.errico@tylin.com

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Shukria Wiar <shukriaw@portlandmaine.gov> Mon, Oct 3, 2016 at 4:24 PM
To: Tom Errico <thomas.errico@tylin.com>

Hello Tom:

Please remind me, does this project need a Traffic Movement Permit?

Thanks.

Shukria
[Quoted text hidden]
--
Shukria Wiar, Planner
Planning Division
City of Portland 389 Congress Street
Portland, ME 04101
Ph: 207.756.8083
Fax: 207.756.8258

Tom Errico <thomas.errico@tylin.com> Mon, Oct 3, 2016 at 4:26 PM
To: Shukria Wiar <shukriaw@portlandmaine.gov>

The 6th bullet notes that a TMP is not needed. Thanks

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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From: Shukria Wiar [mailto:shukriaw@portlandmaine.gov]
Sent: Monday, October 3, 2016 4:25 PM
To: Tom Errico <thomas.errico@tylin.com>
Subject: Re: Hall School - Preliminary Traffic Comments

[Quoted text hidden]

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

Shukria Wiar <shukriaw@portlandmaine.gov> Mon, Oct 3, 2016 at 4:29 PM
To: Tom Errico <thomas.errico@tylin.com>

Oh man, I just read it and missed the bullet.
[Quoted text hidden]

Portland Maine | Yes. Google's good here.

Shukria Wiar <shukriaw@portlandmaine.gov>

Hall School Comments

Jeff Tarling <jst@portlandmaine.gov> Tue, Oct 4, 2016 at 4:38 PM
To: Shukria Wiar <shukriaw@portlandmaine.gov>

Hall School Project -

Tree & Landscape review;

As the project moves along a detailed landscape plan is needed. Knowing the natural setting I 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. With this in mind, I 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.

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

Hall School Forest Management - The project should incorperate forest management activities to coinside 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 effecting 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.

Overall, the project has been in the works for a few years and I have worked with the project team to locate significant trees and best routes for development.

Thanks

Jeff

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Dept.
55 Portland Street
Portland, ME. 04101
(207) 874.8820
jst@portlandmaine.gov
[Quoted text hidden]

COMMITMENT & INTEGRITY
DRIVE RESULTS

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 & Craig Sweet, EIT
DATE: October 4, 2016
RE: 23 Orono Road, Level III Site Plan Application

Woodard & Curran has reviewed the Preliminary Level III Site Plan Application for the proposed development located at 23 Orono Road in Portland, Maine. The project involves the demolition of the existing Fred P. Hall Elementary School and the construction of a New Fred P. Hall Elementary school.

Documents Reviewed by Woodard & Curran

- Level III Site Plan Application and attachments, dated August 29, 2016, prepared by Oak Point Associates, on behalf of City of Portland Planning Division
- Engineering Plans, Sheets 1-15, dated August 29, 2016, prepared by Oak Point Associates, on behalf of City of Portland Planning Division

Comments

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 should provide verification of ability to serve from utility providers.
3) 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
4) 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.
   b) General Standard: 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. 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.
   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.
   d) Flooding Standard: The project will result in an increase in impervious area of approximately 2.61 acres. 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.

5) 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.
6) 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.
7) Final plans must be stamped by a professional engineer (Section 14-527, sub-section (f) of the City of Portland Land Use Ordinance).
8) 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.
9) 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.
10) 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.

OAK POINT ■ ASSOCIATES

August 29, 2016

Helen Donaldson, Planner
City of Portland
Department of Planning Division
389 Congress Street
4th Floor
Portland, ME 04103-3553

RE: Preliminary Level III Site Plan Application
New Fred P. Hall Elementary School, 23 Orono Road
Portland, Maine

Dear Nell:

Please find enclosed one (1) copy the Preliminary 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).

As stated in the included project narrative, this Preliminary Application Package is for 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 project will include abandoning the existing site entrance from Warwick Street and constructing a new site entrance/exit for parents and staff via Riggs Street and Lomond Street (buses will enter and exit the site via Orono Road). The new school building will have a capacity of 558 students, which is slightly larger than the capacity of the existing school (approximately 440 students).

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: Douglass Sherwood (w/ enclosures)
Anita LaChance (w/o enclosures)

LEVEL III SITE PLAN APPLICATION

State of Maine
Public School Project
23 Orono Road, Portland, Maine

Preliminary Site Plan Application

New Fred P. Hall Elementary School

Prepared For:

City of Portland Planning Division
389 Congress Street
Portland, Maine

August 29, 2016

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 10.35 acres (including 0.62 acres of disturbance within the Riggs Street and Lomond Street Right-of-Ways). This disturbance consists of the following:

- Creation of 3.24 acres of new developed area (including 0.28 acres of new development within the Riggs Street and Lomond Street Right-of-Ways)
- Removal of approximately 2.37 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 4.93 acres of new impervious area (a net increase of 2.52 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, CD101, and CD102, 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 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 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 (98 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, CD101, and CD102. Proposed utilities can be seen on sheets CO101, CU101, and CU102.

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 abandoned on the site, with portions of it 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 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. Services for the new school (potable and fire protection) will be connected to this line. The existing 2" water line in Orono Road will be removed and the existing water service connections will be connected to the new line. Also as part of the removal of the 20" main, the portion of the main beneath Wessex Street will be replaced with an 8" line, and the existing water service connections in Wessex Street will be connected to it.

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
• Site Development on north and west sides of proposed building	Summer 2017-Spring 2018
• Stormwater treatment areas (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 (a).3: Public Transit Access*

   A waiver of the requirement to construct public transit access on the site is requested because the proposed school will not generate any new public transit usage. Transportation (school buses) is provided for students that live over one mile away from the school (1/2 mile for kindergarten students) and students that must cross a major traffic artery, such as Brighton Avenue, to get to the site.

4. *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 between 5,000 ft^2 and 9,999 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.

5. *Code Section 14-526, item (b).2.b.ii: Parking Lot Landscaping*

   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.

6. *Code Section 14-526, item (b).2.b.iii: Street Trees*

   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***	79	Spaces
Visitor Spaces***	15	Spaces
Accessible Spaces	4	Spaces
Total Number of Parking Spaces Provided	**98**	**Spaces**

****State Department of Education Requirement*

Bicycle Parking Calculations

Required Bicycle Parking	20	Spaces (2 per 10 parking spaces)
Provided Bicycle Parking	34	Spaces (6% of School Capacity)

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'

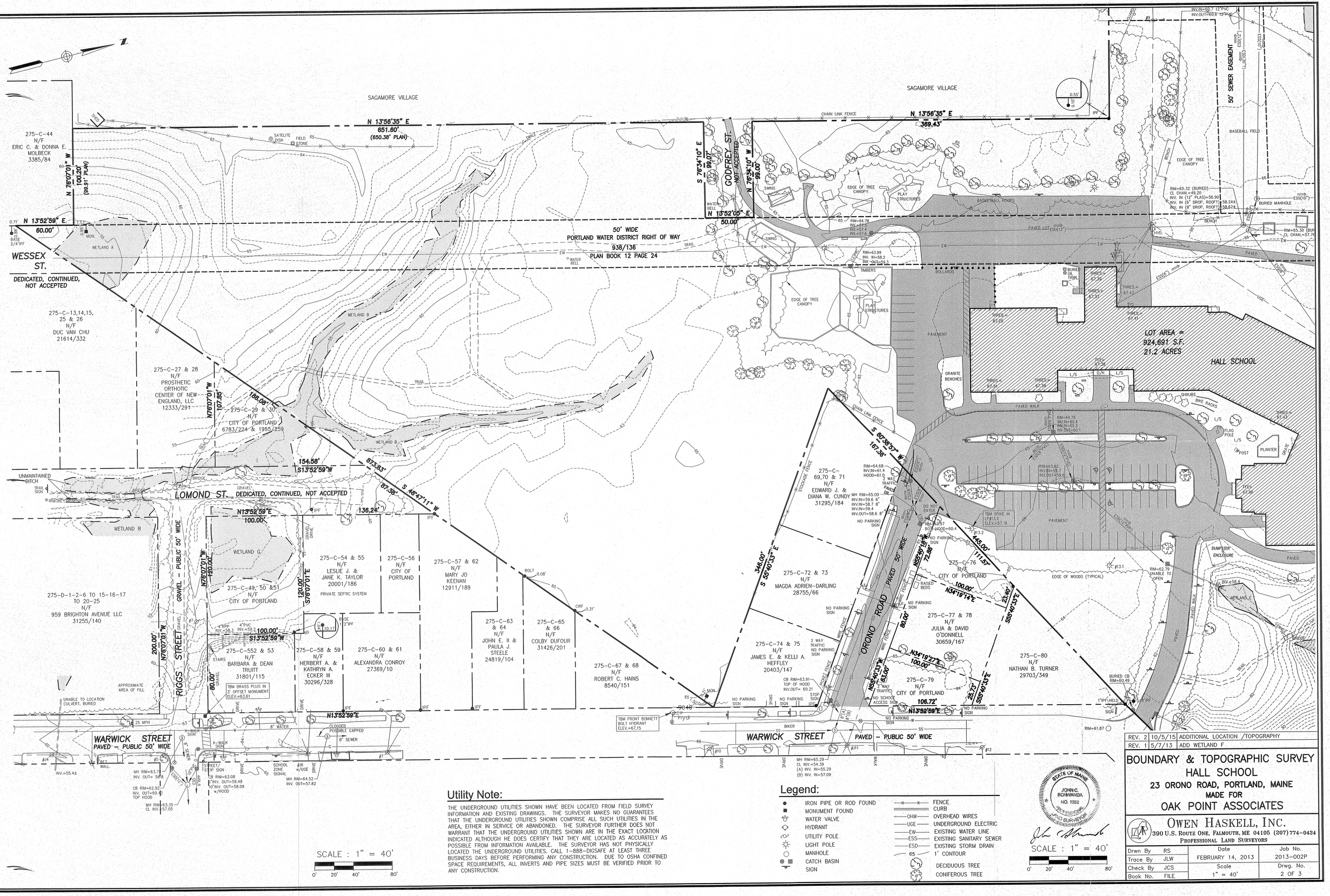
0' 20' 40' 80'

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'

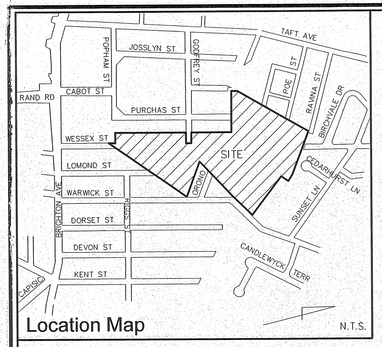
0' 20' 40' 80'

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

---

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

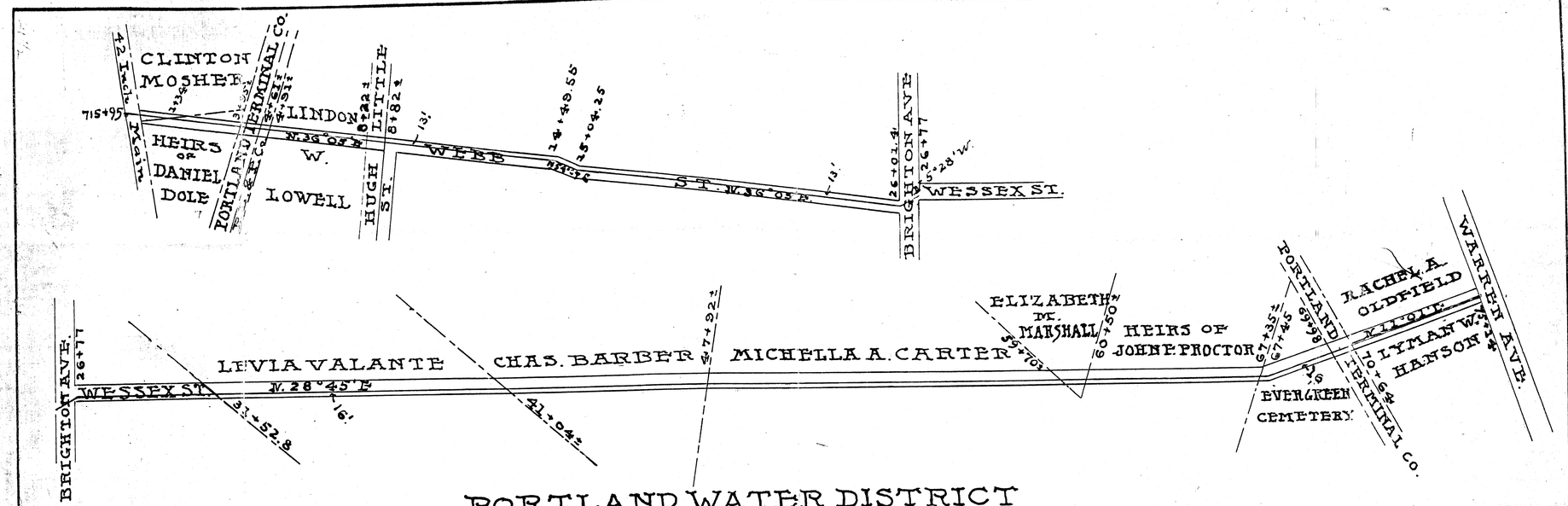
Comments	Book/Page	Doc. Status
	00012/24	Verified/Certified

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
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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.

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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.

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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

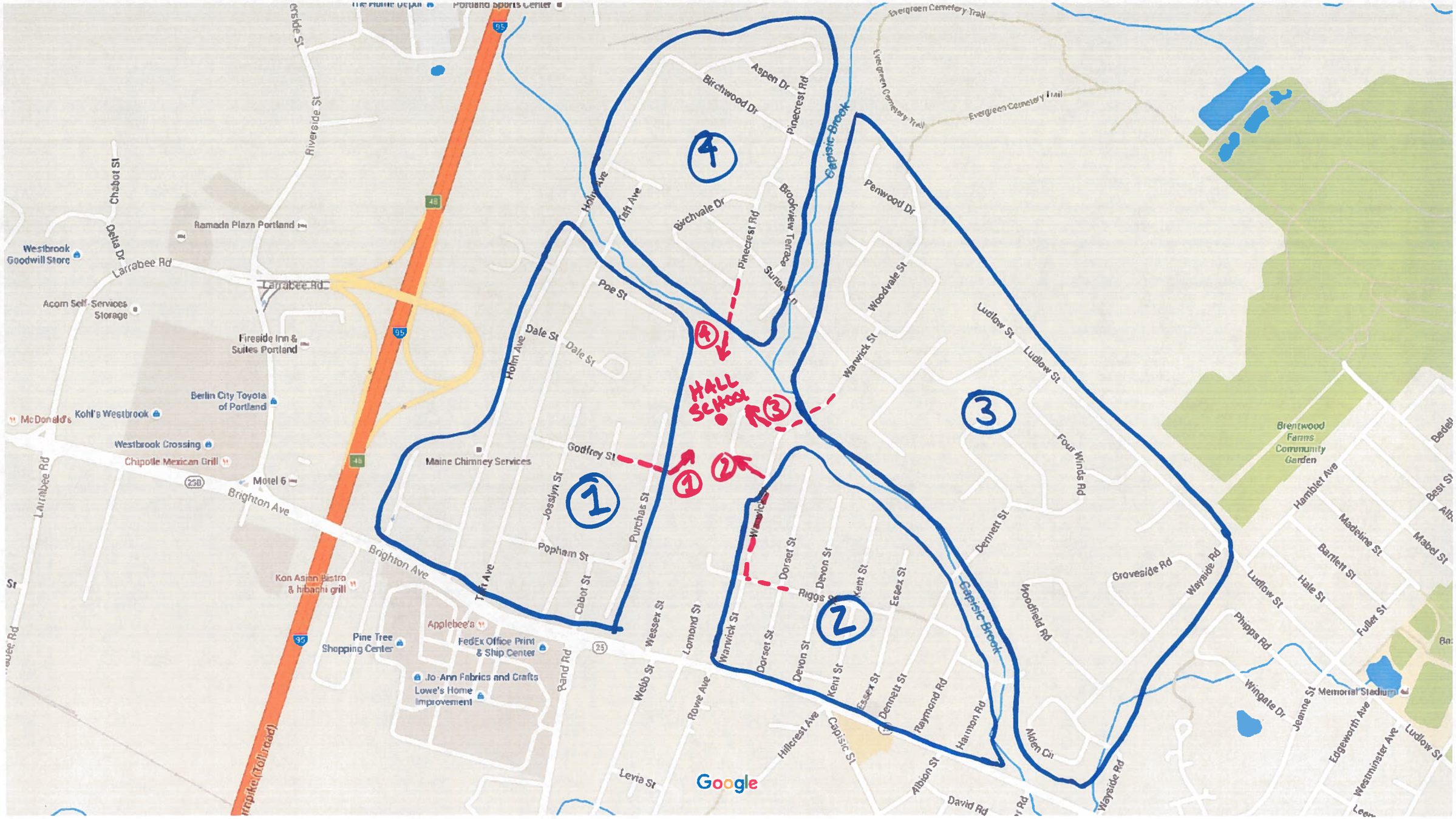
Bicycle Access		
Access Point/Area (see plans)	Percentage of Bicycling	Percentage of Total Population*
1 - Sagamore Village/Godfrey Street	10%	0.60%
2 - Orono Road (Warwick Street South)	75%	4.50%
3 - Warwick Street North	7.5%	0.45%
4 - Pinecrest Road	7.5%	0.45%

*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
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Prepared by:

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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

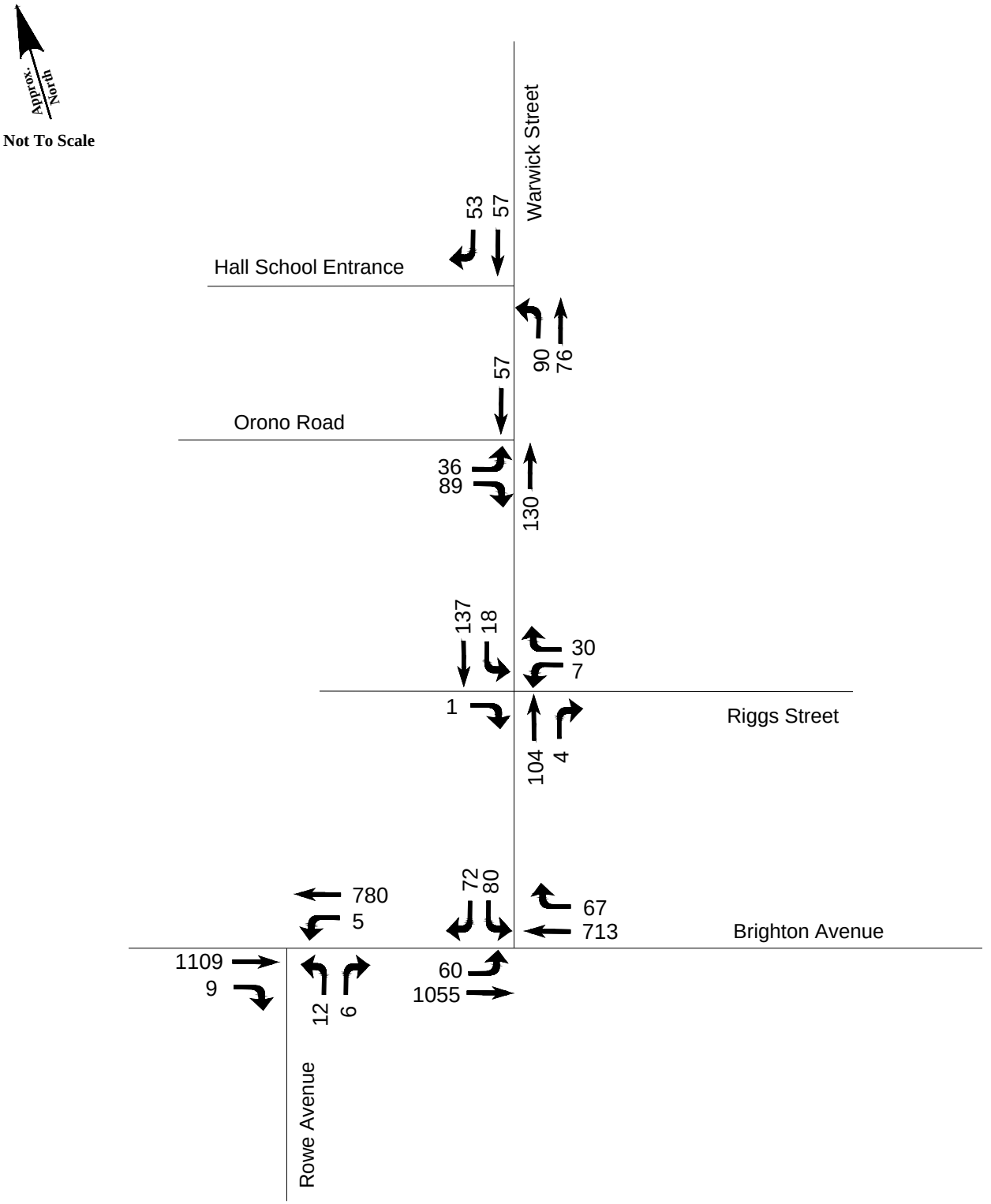


Figure 2

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

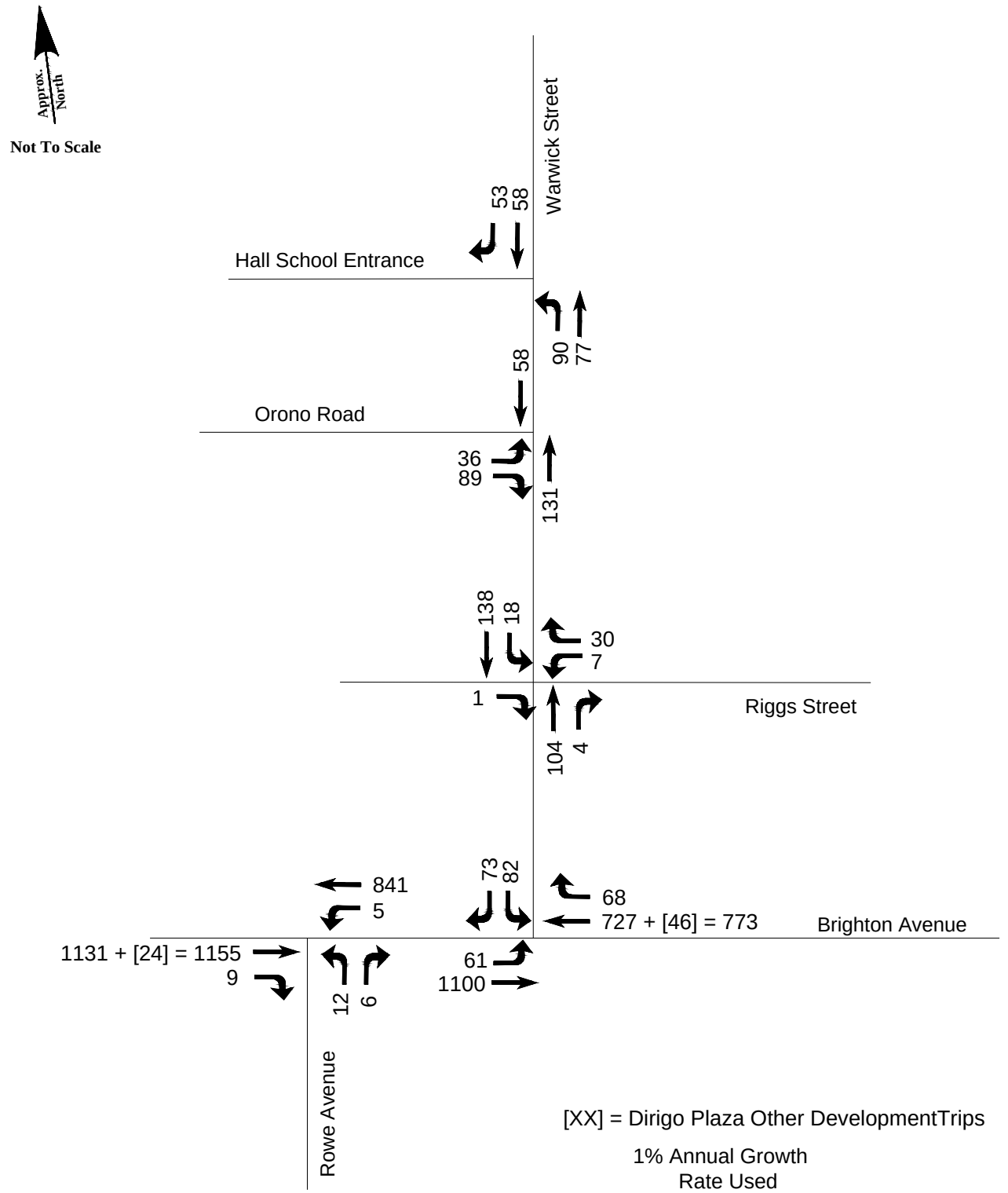


Figure 3

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

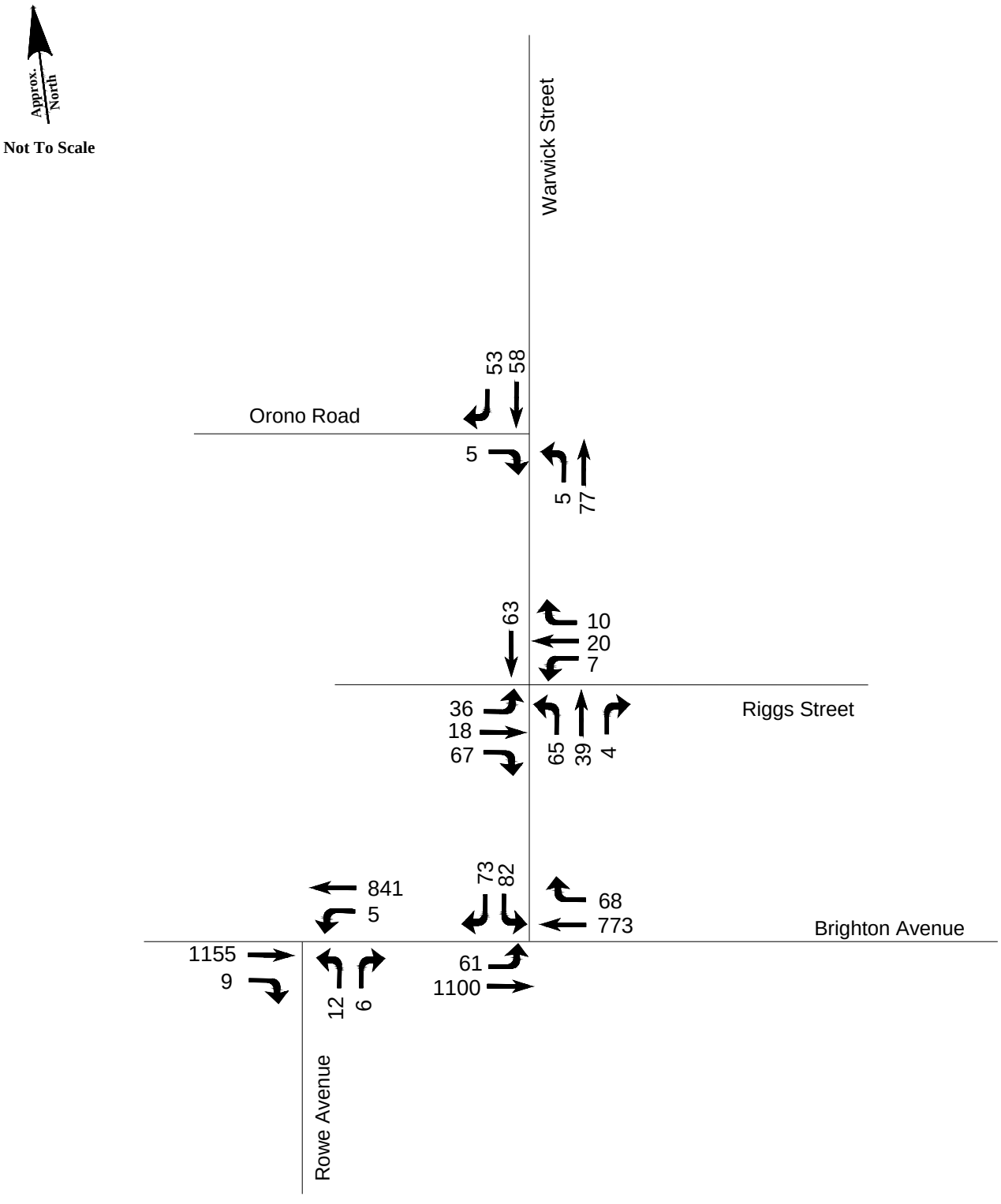


Figure 4

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

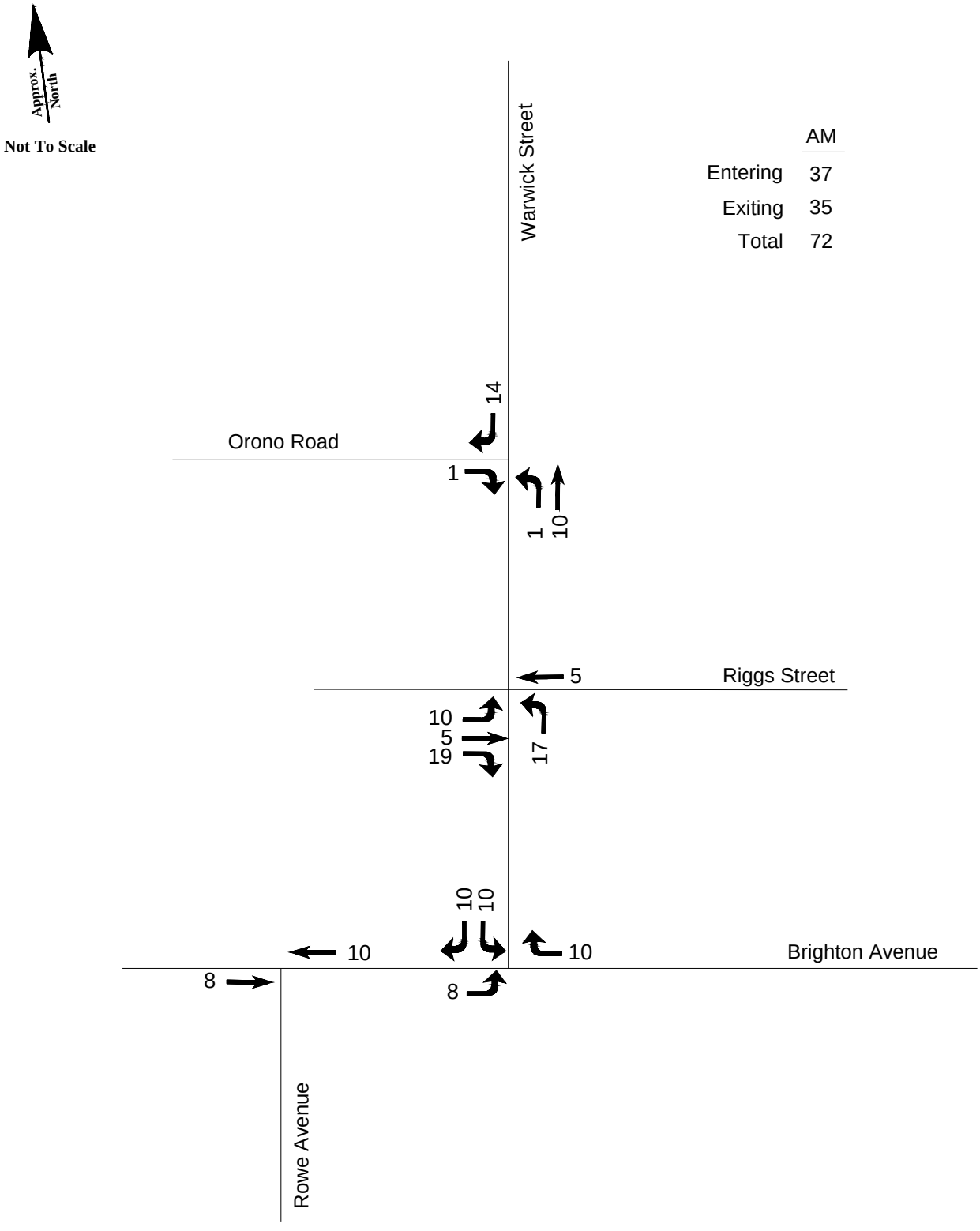


Figure 5

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

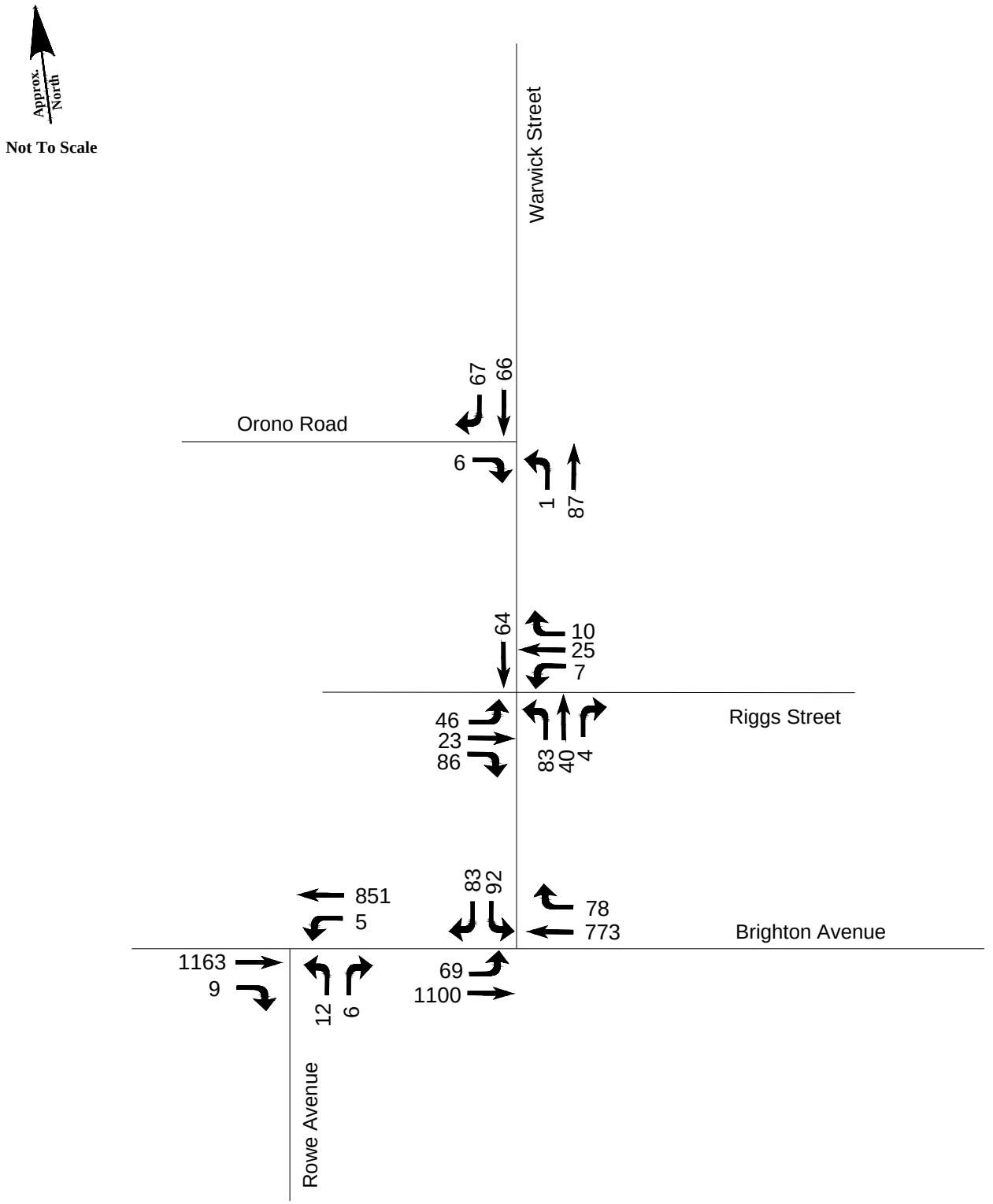


Figure 6

2018 AM Peak Hour Build Volumes
Fred P. Hall School Expansion
Portland, Maine

Maine Traffic Resources
25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

APPENDIX

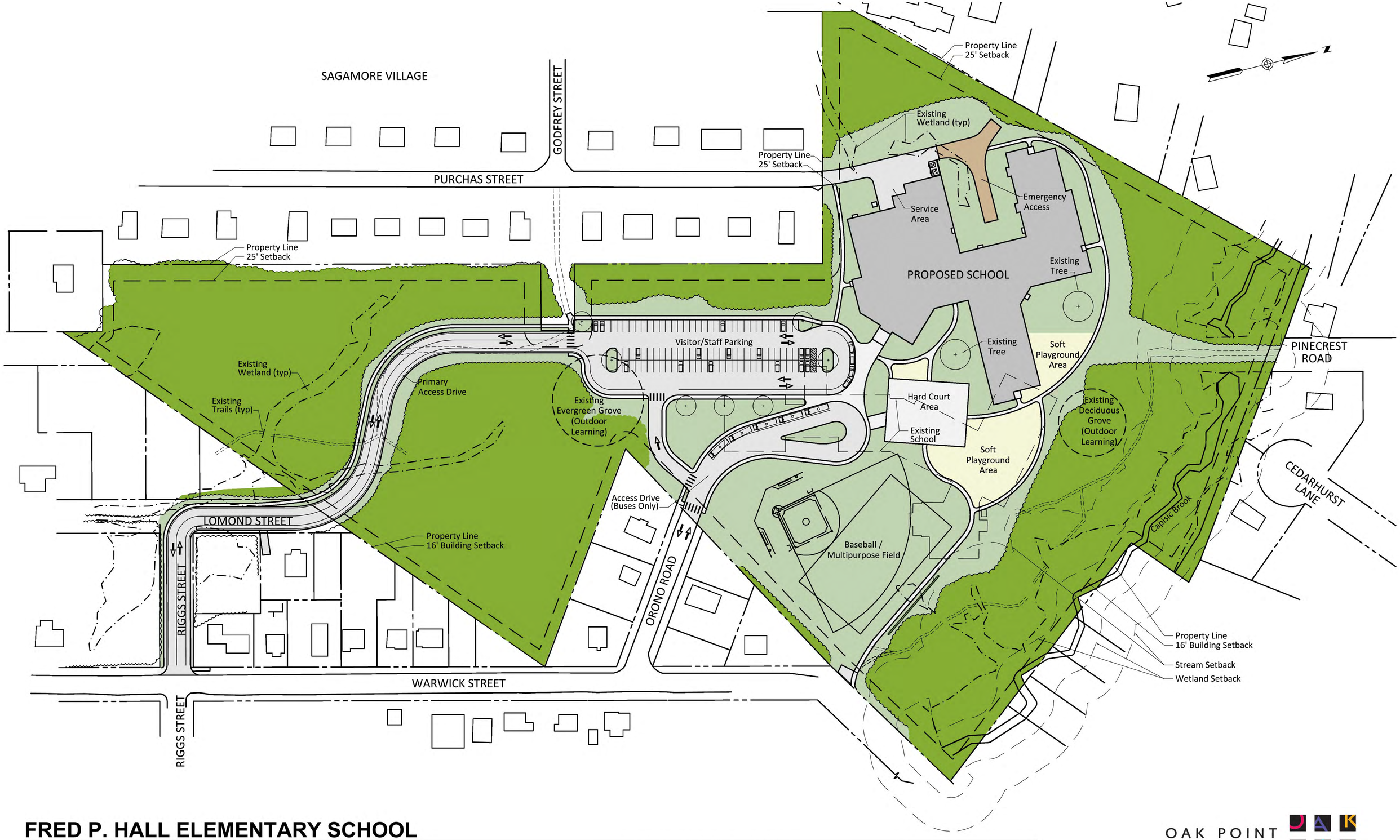
Hall School Site Plan

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

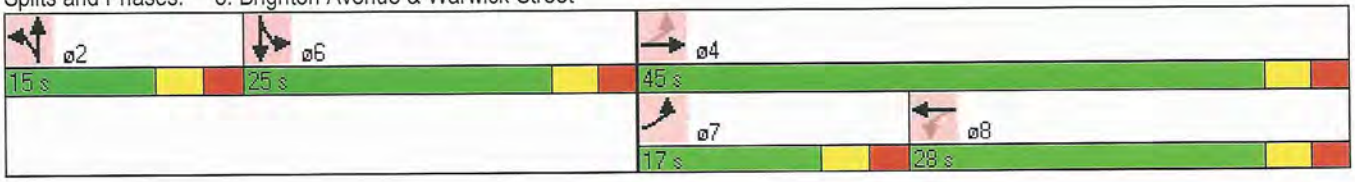
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1055	9	5	713	67	12	0	6	80	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike 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

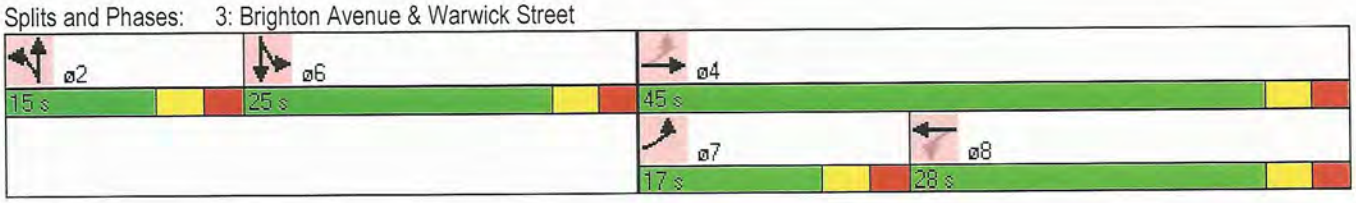
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	1100	9	5	773	68	12	0	6	82	0	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike 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

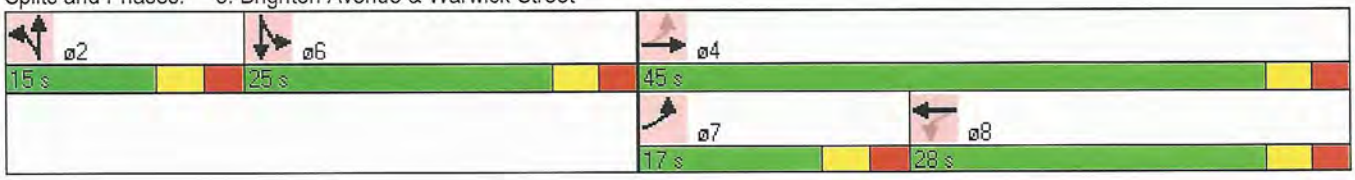
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1100	9	5	773	78	12	0	6	92	0	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike 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

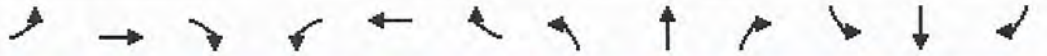
Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 76.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 81.8% ICU Level of Service D
Analysis Period (min) 15

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			



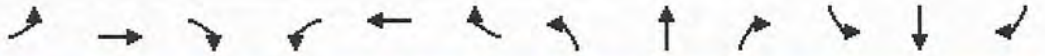
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	0	0	1	7	0	30	0	104	4	18	137	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike 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		

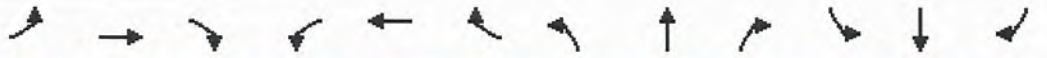
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	46	144	207
Volume Left	0	9	0	24
Volume Right	1	38	5	0
cSH	826	775	1352	1397
Volume to Capacity	0.00	0.06	0.00	0.02
Queue Length 95th (ft)	0	5	0	1
Control Delay (s)	9.4	9.9	0.0	1.0
Lane LOS	A	A		A
Approach Delay (s)	9.4	9.9	0.0	1.0
Approach LOS	A	A		

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

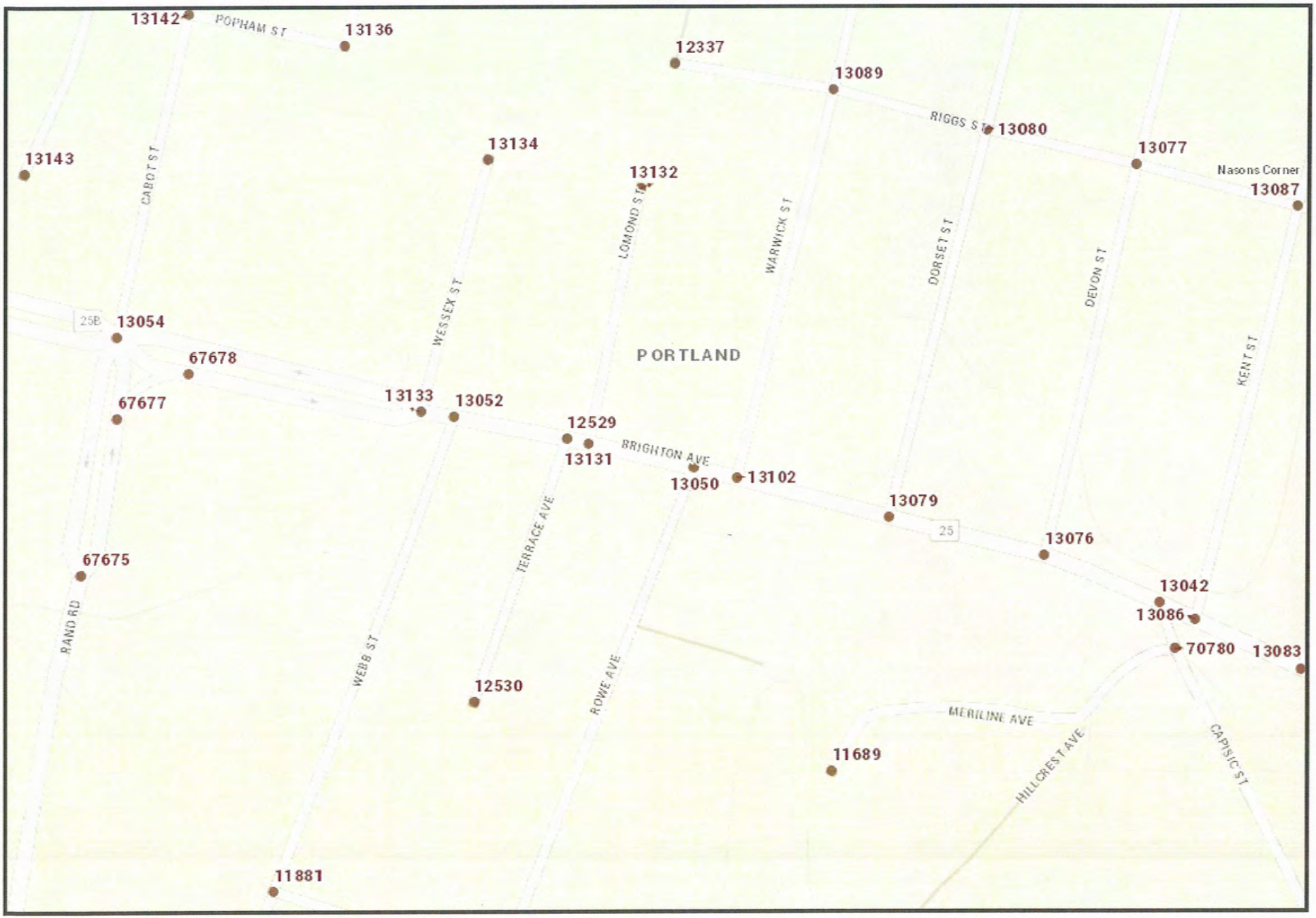
Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
P13042	0025X - 2.70	Int of BRIGHTON AV CAPISIC ST	9	9	0	0	0	1	8	11.1	9.873	0.30	1.04	0.29
												Statewide Crash Rate:	0.67	
13076	0025X - 2.74	Int of BRIGHTON 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

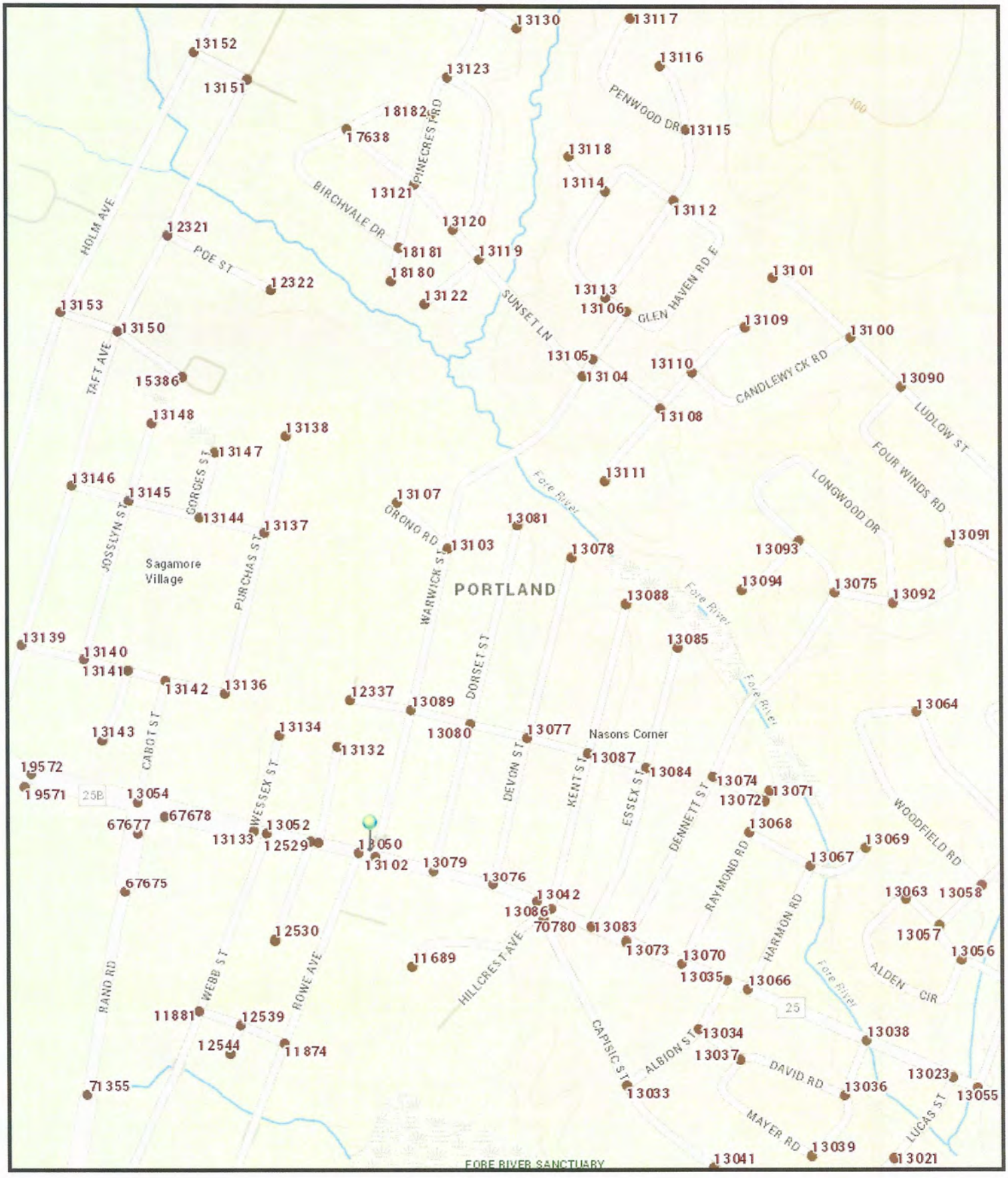
Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
13106	0560768 - 0	0503520 POR,GLENHAVEN RD,WARWICK ST.	2	0	0	0	0	0	0	0.0	0.248	0.00 Statewide Crash Rate: 0.14	0.59	0.00
13105	0560768 - 0.04	0503519 POR,WARWICK ST,STARLITE 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



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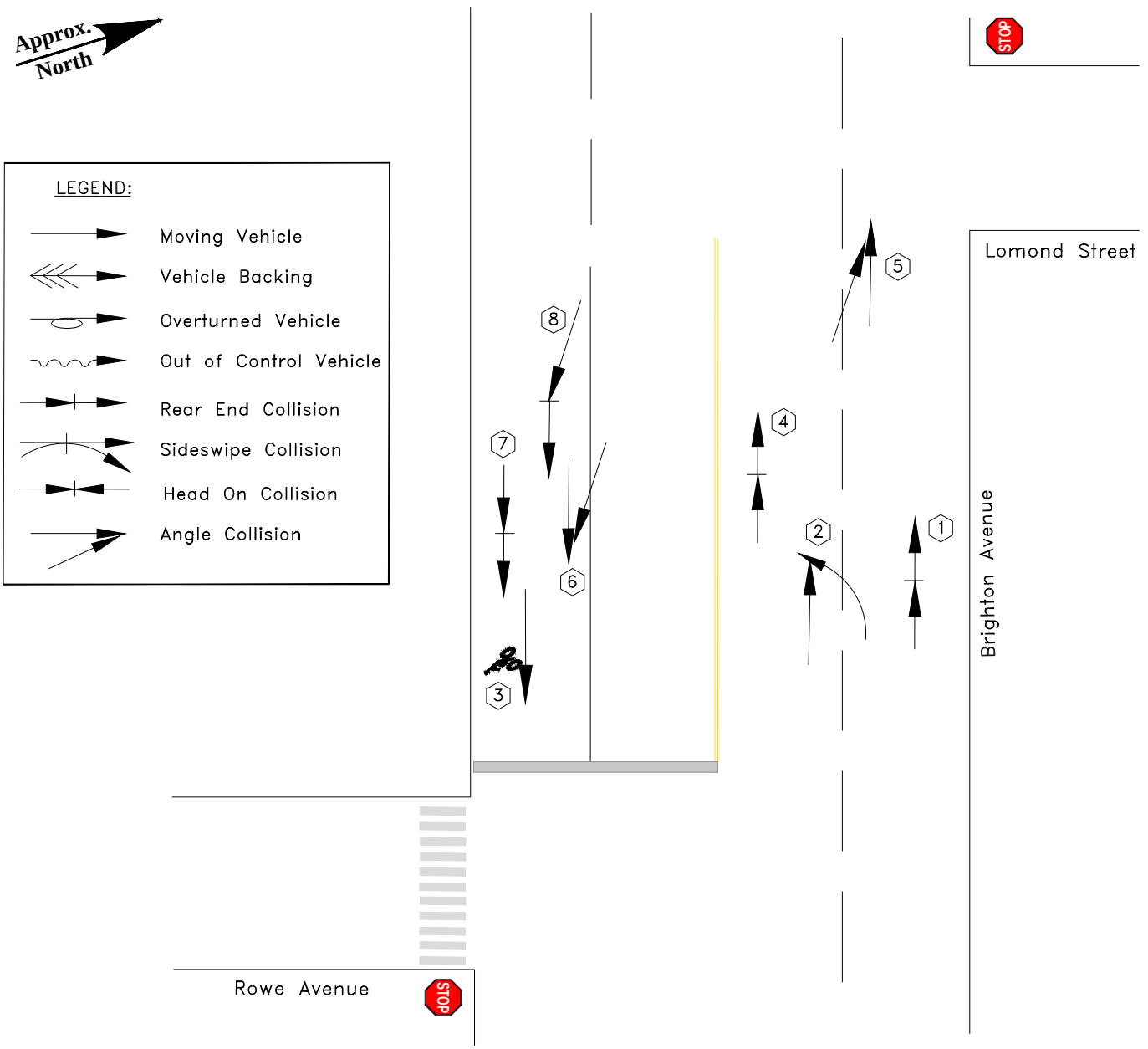
0.1 Miles

1 inch = 0.13 miles

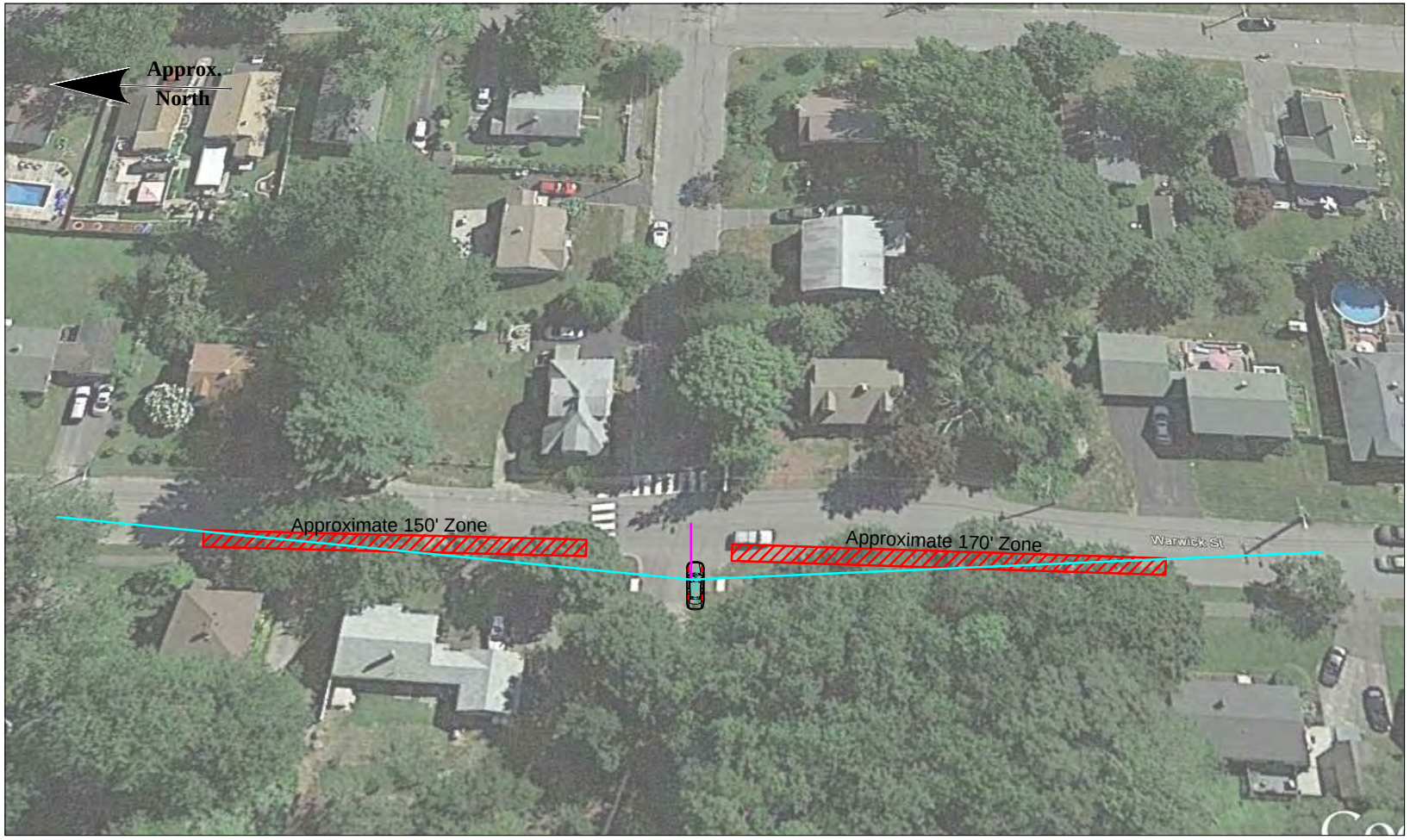
Date: 5/6/2016
Time: 9:40:24 AM



#	DATE	TIME	CONTRIBUTING FACTOR	MDOT REPORT #
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

PRELIMINARY LEVEL III SITE PLAN APPLICATION

NEW FRED P. HALL ELEMENTARY SCHOOL

PORTLAND PUBLIC SCHOOLS, 23 ORONO ROAD, PORTLAND, MAINE

LIST OF DRAWINGS

SHEET NUMBER	DISCIPLINE SHEET	TITLE
1 OF 15	C-001	NOTES, LEGEND, AND ABBREVIATIONS
2 OF 15	CX101	OVERALL EXISTING CONDITIONS SITE PLAN
3 OF 15	CD101	NORTH REMOVALS SITE PLAN
4 OF 15	CD102	SOUTH REMOVALS SITE PLAN
5 OF 15	CX101	TREE REMOVAL PLAN
6 OF 15	CO101	OVERALL SITE PLAN
7 OF 15	CS101	NORTH SITE PLAN
8 OF 15	CS102	SOUTH SITE PLAN
9 OF 15	CU101	NORTH UTILITY PLAN
10 OF 15	CU102	SOUTH UTILITY PLAN
11 OF 15	CG101	NORTH GRADING, DRAINAGE AND EROSION CONTROL PLAN
12 OF 15	CG102	SOUTH GRADING, DRAINAGE AND EROSION CONTROL PLAN
13 OF 15	AE101	FIRST FLOOR PLAN
14 OF 15	AE102	SECOND FLOOR PLAN
15 OF 15	AE201	BUILDING ELEVATIONS

GENERAL CONSTRUCTION NOTES

1. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO COMMENCING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO COMMENCING WORK.
2. ALL WORK INCLUDED IN THIS CONTRACT SHALL CONFORM TO ALL STATE, NATIONAL AND OTHER CODES AND ORDINANCES WHICH ARE APPLICABLE TO THIS PROJECT.
3. WORK FROM GIVEN DIMENSIONS AND LARGE SCALE DETAILS ONLY. DO NOT SCALE DRAWINGS.
4. AT THE END OF EACH WORKING DAY, LEAVE THE CONSTRUCTION SITE IN A NEAT, CLEAN AND SAFE CONDITION.
5. DISPOSE OF AND/OR RECYCLE ANY CONSTRUCTION DEBRIS FROM THE PROJECT AS REQUIRED BY THE STATE OF MAINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING DISPOSAL PERMITS WHICH ARE REQUIRED. DISPOSE OF ALL CONSTRUCTION DEBRIS FROM THE PROJECT IN A STATE APPROVED LANDFILL.
6. PROVIDE ALL WORK IN COMPLIANCE WITH THAT INDUSTRIES' STANDARDS AND PERFORMED IN A WORKMANLIKE PROFESSIONAL MANNER.
7. ALL COMPONENTS ARE NEW WITHIN THE LIMIT(S) OF WORK AND SHALL BE PROVIDED BY THE CONTRACTOR UNLESS INDICATED OTHERWISE.

CIVIL NOTES:

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.
3. EXISTING UNDERGROUND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ONLY AND ARE BASED ON FIELD RECONNAISSANCE, PLAN REFERENCES AND SUBSURFACE UILTITY 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 "DIGSAFE" 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.
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 SUMMER, 2016.
   d. INFORMATION PROVIDED BY THE PORTLAND WATER DISTRICT BETWEEN SPRING, 2012 AND SUMMER, 2016.
   e. INFORMATION PROVIDED BY UNITIL IN SUMMER, 2016.
5. WETLANDS SHOWN HEREON ARE BASED ON A WETLAND DELINEATION PERFORMED IN 2013 STATEWIDE SURVEYS, INC, 35 EASTMAN ROAD, CAPE ELIZABETH, MAINE, 04107.
6. 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)
7. 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 LIGHTPOLE #13.2, NEAR THE END OF ORONO ROAD. BENCHMARK ELEVATION: 67.16'
8. 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.
9. 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, LEVEL I (FOR WETLAND IMPACTS LESS THAN 10,000 SQUARE FEET).
   c. MAINE GENERAL CONSTRUCTION PERMIT (MGCP).
   d. CITY OF PORTLAND LEVEL III SITE PLAN APPROVAL.
   e. CITY OF PORTLAND CONDITIONAL USE PERMIT.
10. 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.
11. WATER SERVICE WORK SHALL BE IN ACCORDANCE WITH PORTLAND WATER DISTRICT REQUIREMENTS. OBTAIN APPROVAL FROM PORTLAND WATER DISTRICT PRIOR TO CONSTRUCTION.
12. ELECTRICAL SERVICE ENTRANCE WORK SHALL BE IN ACCORDANCE WITH CENTRAL MAINE POWER REQUIREMENTS. OBTAIN APPROVAL FROM CENTRAL MAINE POWER COMPANY PRIOR TO CONSTRUCTION.
13. 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.
14. GAS SERVICE WORK SHALL BE IN ACCORDANCE WITH UNITIL REQUIREMENTS. OBTAIN APPROVAL FROM UNITIL PRIOR TO CONSTRUCTION.

ABBREVIATIONS

%	PERCENT
#	NUMBER
±	PLUS OR MINUS
℄	CENTERLINE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
ABAN	ABANDONED
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
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
EJ	EXPANSION JOINT
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
FDN	FOUNDATION
FES	FLARED END SECTION
FFE	FINISH FLOOR ELEVATION
FP	FLAG POLE
FO	FUEL OIL
FT	FEET, FOOT
Fy	YIELD STRENGTH
GAL	GALLON
GALV	GALVANIZED
HC	HANDICAP
INV	INVERT
IRR	IRRIGATION WATER LINE
KSI	KIPS PER SQUARE INCH
L	LENGTH
LBS	POUNDS
MAG	MAGNETIC
MAX	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
MTL	METAL
MIN	MINIMUM
N	NORTH
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER
OC	NATIONAL PIPE THREAD TAPERED THREAD
OD	OUTSIDE DIAMETER
OE&T	OVERHEAD ELECTRIC AND TELEPHONE
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
PVMT	PAVEMENT
R	RADIUS
REINF	REINFORCED, REINFORCING
RGS	RIGID GALVANIZED STEEL
RR	RIP RAP
S	SOUTH
SD	STORM DRAIN
SF	SILT FENCE
SIM	SIMILAR
SMH	SEWER MANHOLE
SPK	SPIKE
SQ	SQUARE
SF,SQ FT	SQUARE FEET
STA	STATION
SS	SANITARY SEWER
TBM	TEMPORARY BENCH MARK
TEMP	TEMPORARY
TP	TEST PIT
TOC	TOP OF CURB
TOW	TOP OF WALL
TR	TRANSFORMER
TW	TOP OF WALL
TYP	TYPICAL
UC	UNDERGROUND COMMUNICATIONS
UCATV	UNDERGROUND CABLE TELEVISION
UD	UNDERDRAIN
UE	UNDERGROUND ELECTRIC LINES
UP	UTILITY POLE
UT	UNDERGROUND TELEPHONE LINES
VC	VITREOUS CLAY, VERTICAL CURVE
W	WIDTH, WATER, WEST
WD	WOOD
WWF	WELDED WIRE FABRIC

LEGEND

- 147.37E / 145.55F — 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 BUILDING LINE
- BUILDING LINE
- EXISTING CHAIN LINK FENCE
- EDGE OF ASPHALT CONCRETE PAVEMENT
- EXISTING EDGE OF ASPHALT CONCRETE PAVEMENT
- EDGE OF EXISTING GRAVEL
- EDGE OF GRAVEL
- CURB LINE
- EXISTING UTILITIES ABANDONED IN-PLACE (CUT AND CAP)
- REMOVALS (DRAWINGS CD101 AND CD102 ONLY)
- SAWCUT
- EXISTING WIRE FENCE
- CHAIN LINK FENCE
- EXISTING LIMITS OF CLEARING
- LIMITS OF CLEARING
- EXISTING TREE
- EXISTING SHRUB
- SHRUB
- DECIDUOUS TREE
- SS(8") — SANITARY SEWER LINE (SIZE AS NOTED)
- EUC(2-3") — EXISTING UNDERGROUND COMMUNICATIONS LINES (SIZE AND NUMBER AS NOTED, IF KNOWN)
- 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
- EOT — EXISTING OVERHEAD TELEPHONE LINES
- OE&T — OVERHEAD ELECTRIC AND TELEPHONE LINES
- OU — OVERHEAD 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)
- W(2") — WATER LINE
- UT(2-4") — UNDERGROUND TELEPHONE LINES (SIZE AND NUMBER AS NOTED)
- UC(2-2") — UNDERGROUND COMMUNICATION LINES (SIZE AND NUMBER AS NOTED)
- UG — UNDERGROUND NATURAL GAS LINE
- CF — CONSTRUCTION FENCE
- CF(PH1) — 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 LIGHT FOUNDATION
- EXISTING STREET LIGHT
- T — EXISTING TRANSFORMER AND PAD
- SURVEY MONUMENT
- DRAIN MANHOLE
- FOUNDATION DRAIN CLEANOUT
- E — ELECTRICAL MANHOLE
- HH — TELEPHONE OR ELECTRICAL HANDHOLE
- T — TRANSFORMER AND PAD
- 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
- WETLAND SYMBOL

FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: JSD
CHECKED BY: JSD
NO.
DATE: 08/29/16

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 SHEET:
LIST OF DRAWINGS, NOTES, LEGEND AND ABBREVIATIONS

OAK POINT ASSOCIATES
LANDSCAPE ARCHITECTURE • ENVIRONMENTAL • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0180

DRAWING NO. C-001
SHEET NO. 1 OF 15

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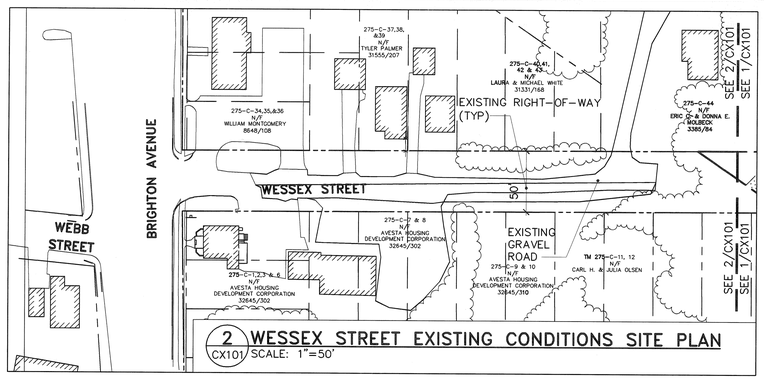
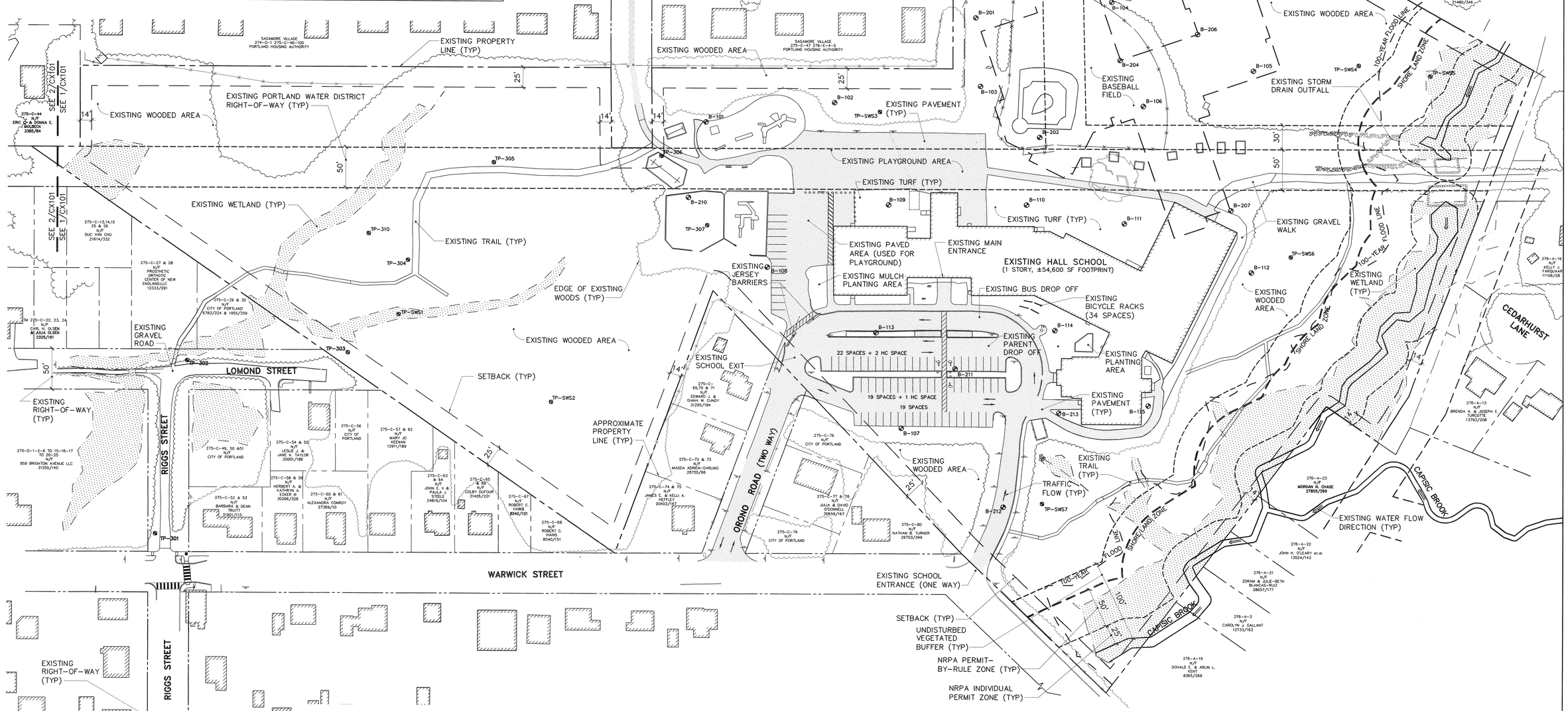


2 WESSEX STREET EXISTING CONDITIONS SITE PLAN
CX101 SCALE: 1"=50'



1 OVERALL EXISTING CONDITIONS SITE PLAN
CX101 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)

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)

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 SHEET): OVERALL EXISTING CONDITIONS SITE PLAN

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 08/29/16

DRAWING NO. CX101
SHEET NO. 2 OF 15

NO.	DATE	DESCRIPTION	BY
REVISIONS			

OAK POINT ASSOCIATES
ENGINEERING • ENVIRONMENTAL • PLANNING
231 Main Street, Biddeford, Maine 04005 207.283.0193

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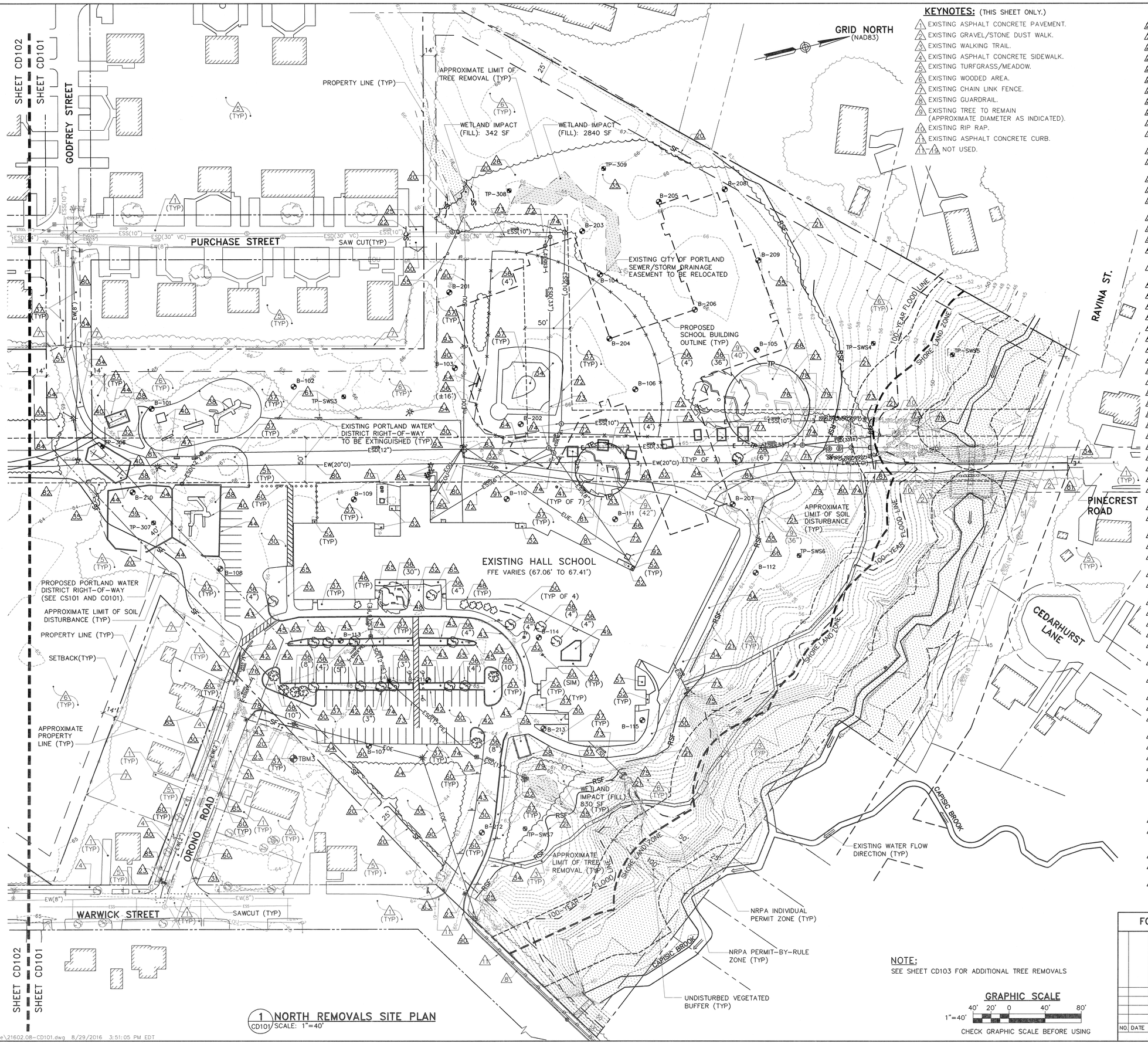

KEYNOTES: (THIS SHEET ONLY.)

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 GUARDRAIL.
9. EXISTING TREE TO REMAIN (APPROXIMATE DIAMETER AS INDICATED).
10. EXISTING RIP RAP.
11. EXISTING ASPHALT CONCRETE CURB.

11A - 19. NOT USED.

20. SILT FENCE.
21. REINFORCED SILT FENCE.
22. SEDIMENT CONTROL WATTLE.
23. CATCH BASIN INLET PROTECTION.
24. POSSIBLE SOIL STOCKPILE LOCATION.
25. STABILIZED CONSTRUCTION ENTRANCE.
26. EROSION CONTROL BLANKET.
27. TREE PROTECTION FENCE.

28 - 28A. 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. 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.
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.
39. REMOVE EXISTING GRAVEL SURFACE, ±4" THICK.
40. REMOVE EXISTING PLAYGROUND EQUIPMENT SET ON CONCRETE POSTS. NOTIFY ARCHITECT AT LEAST 15 BUSINESS DAYS PRIOR TO EQUIPMENT REMOVAL.
41. REMOVE EXISTING WOOD PLAY STRUCTURE, WOOD CHIPS (±3" THICK), AND TIMBER CURB.
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.
49. REMOVE EXISTING PLANTING BED AND TIMBER BORDER.
50. REMOVE EXISTING BICYCLE RACK SET ON CONCRETE POSTS.
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. REMOVE EXISTING METAL GUARD RAIL.
56. REMOVE EXISTING CHAIN LINK FENCE (HEIGHT AS INDICATED).
57. REMOVE EXISTING STORAGE SHED AND REINFORCED 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. REMOVE CONCRETE, CLEAN POSTS AND STORE FOR REINSTALLATION.
62. REMOVE EXISTING JERSEY BARRIER.
63. REMOVE EXISTING SCHOOL SIGN AND (2) METAL POSTS SET IN CONCRETE BASES. CLEAN AND STORE FOR REINSTALLATION.
64. REMOVE EXISTING WOOD BENCH.
65. REMOVE EXISTING MULCH, ±6" THICK.
66. STRIP EXISTING TURFGRASS UNDER TREE CANOPY BY HAND. DO NOT DAMAGE EXISTING TREE OR TREE ROOTS DURING TURFGRASS REMOVAL.

67 - 69A. NOT USED.

70. REMOVE EXISTING 8,000 GALLON UNDERGROUND FIBERGLASS FUEL OIL TANK, INCLUDING ANY REMAINING SLUDGE AND FUEL OIL REMAINING IN THE TANK.
71. REMOVE EXISTING GALLON PRECAST CONCRETE GRIT CHAMBER
72. CUT AND REMOVE EXISTING SEWER LINE.
73. CUT AND REMOVE EXISTING STORM DRAIN LINE.
74. REMOVE EXISTING SEWER/DRAINAGE STRUCTURE.
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 FLOWABLE FILL AND ABANDON IN PLACE.
77. CAP/PLUG EXISTING STORM DRAIN LINE, FILL WITH FLOWABLE FILL AND ABANDON IN PLACE.
78. PLUG EXISTING MANHOLE PENETRATION.
79. REMOVE EXISTING RIP-RAP (D50=6")
80. CUT AND REMOVE EXISTING WATER LINE. COORDINATE SHUT OFF AND DISCONNECTION OF WATER LINE WITH PORTLAND WATER DISTRICT.
81. CAP EXISTING WATER LINE AND ABANDON IN PLACE.
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. PROVIDE 10 BUSINESS DAYS NOTICE TO OWNER, ARCHITECT, PROPERTY OWNER AND PORTLAND WATER DISTRICT, PRIOR TO INTERUPTION WATER SERVICE.

86 - 89A. NOT USED.

90. DISCONNECT AND REMOVE EXISTING OVERHEAD ELECTRIC AND COMMUNICATION LINES. COORDINATE DISCONNECTION WITH OWNER, CMP, TIME WARNER CABLE AND FAIRPOINT COMMUNICATIONS.
91. DISCONNECT AND REMOVE EXISTING UNDERGROUND ELECTRIC CONDUIT AND WIRES.
92. REMOVE EXISTING TRANSFORMER. COORDINATE REMOVAL AND DISCONNECTION OF WIRING WITH CMP.
93. REMOVE EXISTING UTILITY POLE. COORDINATE REMOVAL WITH CMP.

NOTE:
SEE SHEET CD103 FOR ADDITIONAL TREE REMOVALS

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

1 NORTH REMOVALS SITE PLAN
CD101 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

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 08/29/16

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CD101
SHEET NO. 3 OF 15

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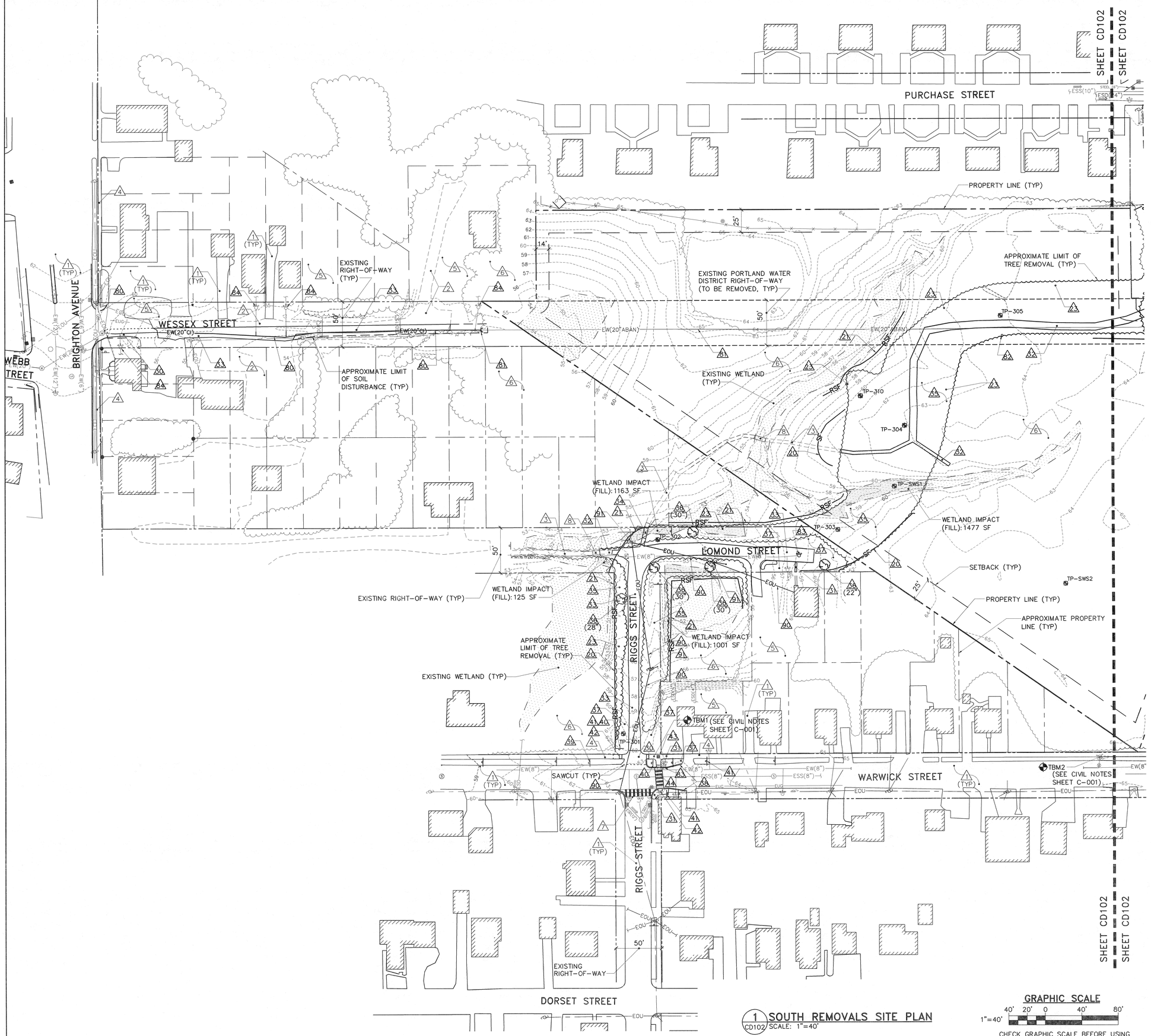

KEYNOTES: (THIS SHEET ONLY.)

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 CROSSWALK.
8. EXISTING WOODEN FOOTBRIDGE.
9. 1.3 NOT USED.
2A. SILT FENCE.
2B. REINFORCED SILT FENCE.
2C. SEDIMENT CONTROL WATTLE.
2D. EROSION CONTROL BLANKET.
2E-2G. NOT USED.
3A. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE PAVEMENT, ±4" THICK.
3B. SAWCUT AND REMOVE EXISTING ASPHALT CONCRETE SIDEWALK, ±2" THICK.
4A. REMOVE EXISTING GRAVEL WALKING TRAIL. ±4" THICK.
5A. STRIP EXISTING STONE GRAVEL DRIVE, ±6" THICK.
6A. REMOVE EXISTING WOODEN FOOTBRIDGE.
6B. CLEAR EXISTING WOODED AREA AND GRUB OUT STUMPS.
6C. REMOVE EXISTING TREE (APPROXIMATE DIAMETER AS INDICATED).
7A. STRIP AND STOCKPILE EXISTING TOPSOIL, ±4" THICK.
8A. REMOVE EXISTING GRANITE CURB.
8B. REMOVE EXISTING WEEDS/BRUSH FROM VICINITY OF EXISTING SIGN AND STREET TREE.
8C. REMOVE EXISTING SIGN AND METAL POST.
8D. REMOVE EXISTING STREET SIGN FROM TOP OF METAL SIGNPOST AND STORE FOR REINSTALLATION.
8E. REMOVE EXISTING TACTILE WARNING PANEL SET IN CONCRETE (±4" THICK).
8F. 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.
8G. 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.
8H-8J. NOT USED.
8K. CUT AND REMOVE EXISTING WATER LINE. COORDINATE SHUT OFF AND DISCONNECTION OF WATER LINE WITH PORTLAND WATER DISTRICT.
8L. CAP EXISTING WATER LINE AND ABANDON IN PLACE.
8M. REMOVE EXISTING WATER LINE MARKER POST.
8N. ADJUST VALVE BOX TO MEET FINISH GRADES INDICATED ON CG102
8P. PROVIDE TEMPORARY WATER SERVICE AFTER WATER LINE IS DISCONNECTED. TEMPORARY SERVICE SHALL BE IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS. PROVIDE 10 BUSINESS DAYS NOTICE TO OWNER, ARCHITECT, PROPERTY OWNER AND PORTLAND WATER DISTRICT PRIOR TO INTERUPTING SERVICE.
8Q-8S. NOT USED.
9A. 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.
9L. REMOVE EXISTING UTILITY POLE. COORDINATE POLE REMOVAL WITH CMP.

NOTE:
SEE SHEET CD103 FOR ADDITIONAL TREE REMOVALS

1 CD102 **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

NO.	DATE	DESCRIPTION	BY
REVISIONS			

DRAWN BY: JSD
CHECKED BY: MMV
NO.
DATE: 08/29/16

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 SHEET: SOUTH REMOVALS SITE PLAN

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CD102
SHEET NO. 4 OF 15

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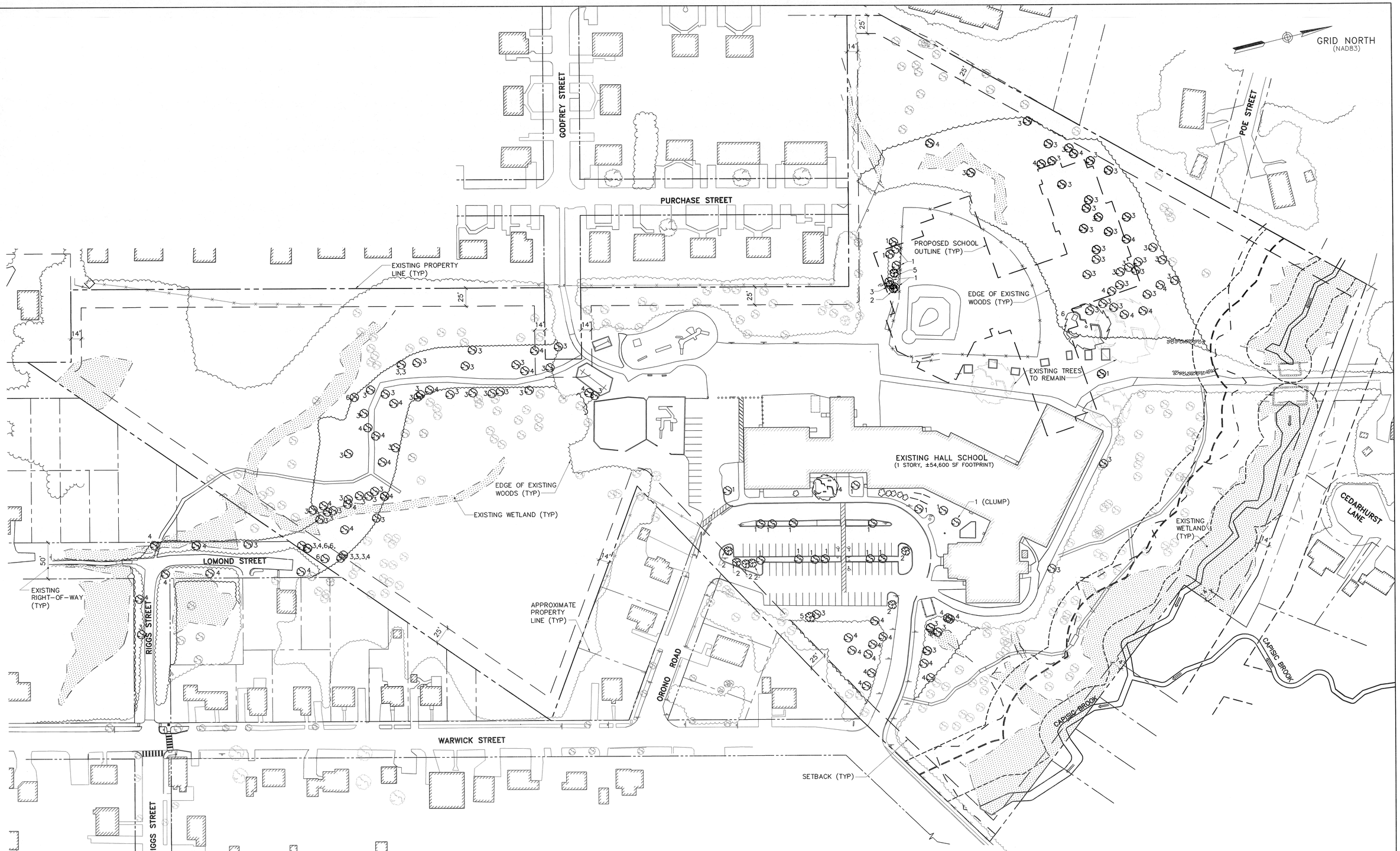

1 CD103 TREE REMOVAL PLAN
SCALE: 1"=50'

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"

GRAPHIC SCALE
50' 25' 0 50' 100'
1"=50'
CHECK GRAPHIC SCALE BEFORE USING

NOTE:
SEE SHEETS CD101 AND CD102 FOR ADDITIONAL REMOVALS

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: TREE REMOVAL PLAN

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 08/29/16

OAK POINT ASSOCIATES
ARCHITECTS • ENGINEERS • PLANNING
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DRAWING NO. CD103
SHEET NO. 5 OF 15

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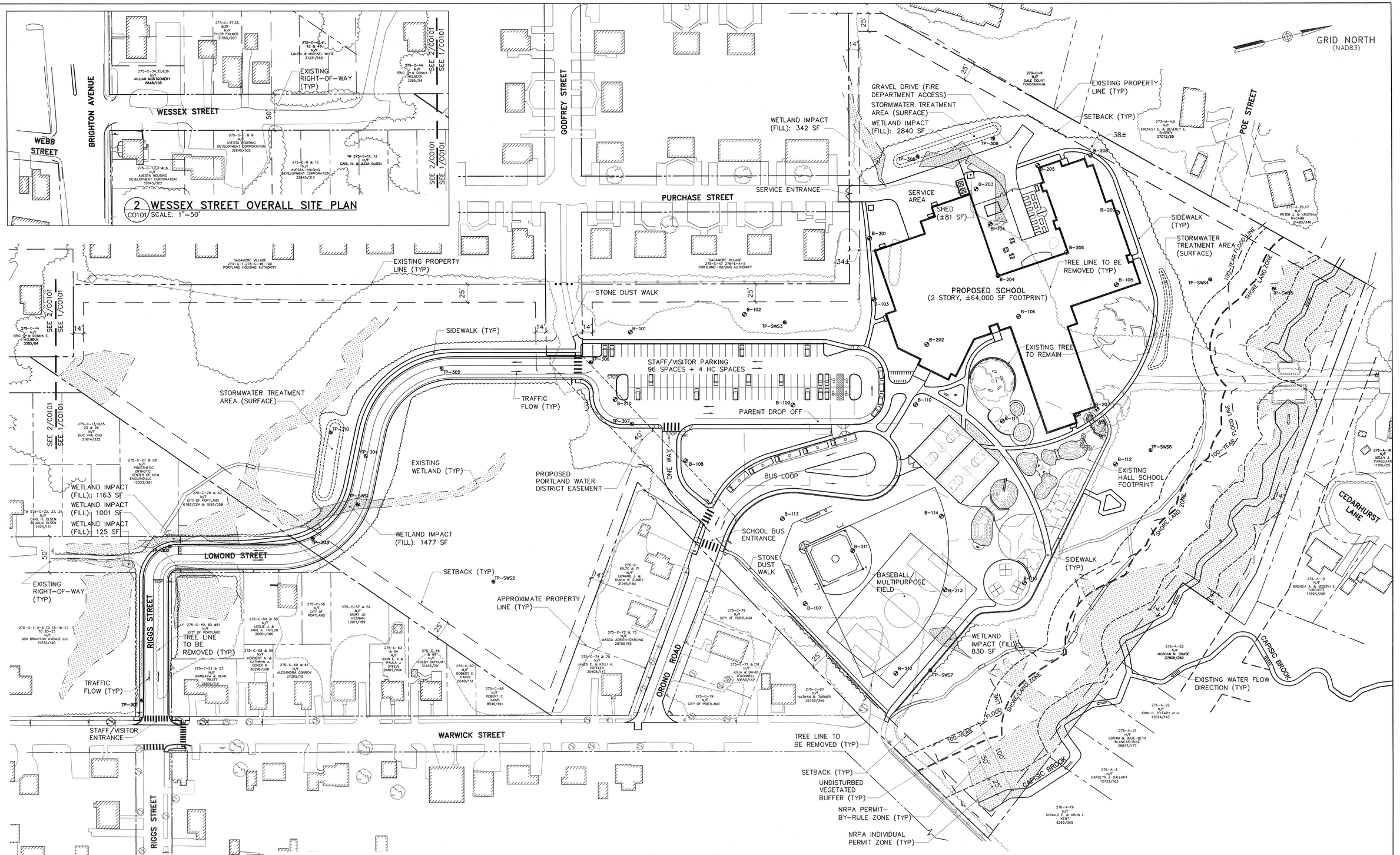
2 WESSEX STREET OVERALL SITE PLAN
C0101 SCALE: 1"=50'

1 OVERALL SITE PLAN
C0101 SCALE: 1"=50'



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: MMV
CHECKED BY: JSD
DATE: 08/29/16

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

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. C0101
SHEET NO. 6 OF 15

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GRID NORTH
(NAD83)

SHEET CS102
SHEET CS101

GODFREY STREET

PURCHASE STREET

PROPOSED SCHOOL BUILDING
2 STORY, ±64,000 SF FOOTPRINT

(FUTURE SHED
±81 SF)

MAIN ENTRANCE

34 Spaces
31 Spaces + 2 Accessible Spaces

31 Spaces + 2 Accessible Spaces

APPROXIMATE LIMIT OF SOIL DISTURBANCE (TYP)

PROPOSED PORTLAND WATER DISTRICT RIGHT-OF-WAY

PROPERTY LINE (TYP)

SETBACK(TYP)

ORONO ROAD

WARWICK STREET

POE STREET

PINECREST ROAD

CEDARHURST LANE

RAVINA

100-YEAR FLOOD LINE

SHORE LAND ZONE

WETLAND IMPACT (FILL): 830 SF

EXISTING WATER FLOW DIRECTION (TYP)

CAPISIC BROOK

NRPA INDIVIDUAL PERMIT ZONE (TYP)

NRPA PERMIT-BY-RULE ZONE (TYP)

UNDISTURBED VEGETATED BUFFER (TYP)

KEYNOTES: (THIS SHEET ONLY.)

1. CONSTRUCTION FENCE: TEMPORARY CHAIN LINK FENCE, MINIMUM 6' HIGH. PROVIDE GATES AND LOCKS TO SECURE SITE DURING NON-WORKING HOURS.
2. PROTECT EXISTING TREE TO REMAIN.
3. NOT USED.
4. NOT USED.
5. NOT USED.
6. NOT USED.
10. ASPHALT CONCRETE PAVEMENT (STANDARD DUTY).
11. ASPHALT CONCRETE PAVEMENT (HEAVY DUTY).
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.
13. GRAVEL ACCESS ROAD.
14. CONCRETE CURB.
15. VERTICAL GRANITE CURB.
16. CONCRETE SIDEWALK.
17. ASPHALT CONCRETE SIDEWALK.
18. STONEDUST WALK.
19. WALKING TRAIL.
20. SKINNED INFIELD AND PITCHERS MOUND.
21. STORM WATER TREATMENT AREA: GRASSED UNDERDRAINED SOIL FILTER, SEE SHEET CD101.
22. NOT USED
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).
27. 6" THICK MULCH (UNDER CANOPY OF TREES TO REMAIN).
28. 6" THICK SAFE SURFACE (WOOD CHIPS).
29. PLAYMOUND, 6" THICK SUPERHUMUS SURFACE.
30. REINFORCED CONCRETE STOOP.
31. DUMPSTER PAD AND ENCLOSURE
32. REINFORCED CONCRETE PAD.
33. TRANSFORMER PAD.
34. BICYCLE RACK ON REINFORCED CONCRETE PAD.
35. FLAGPOLE.
36. BOLLARD.
37. METAL BENCH.
38. CHAIN LINK FENCE BACKSTOP.
39. VINYL-COATED CHAIN LINK FENCE (HEIGHT AS INDICATED).
40. LEAF GATE (CLEAR OPENING AS INDICATED).
41. VINYL COATED GARDEN AREA FENCE (6' TALL WITH TOP AND BOTTOM TENSION WIRE AND 1"X1" FABRIC OPENINGS).
42. PLAYGROUND.
43. TREE/SHRUB PLANTING. .
44. REFILL FORMER STORM DRAIN OUTLET WITH COMMON FILL AND PROVIDE 6" TOPSOIL, SEED (RESTORATION AREA SEED MIX), FERTILIZER AND MULCH.
45. RELOCATED EXISTING GRANITE BENCH.
46. GARDEN AREA FENCE GATE (CLEAR OPENING AS INDICATED).
47. GARDEN AREA.
48. NOT USED.
49. NOT USED.
50. ACCESSIBLE PARKING SPACE.
51. PAVEMENT MARKING: 4" WIDE, WHITE.
52. PAVEMENT MARKING: 4" WIDE, YELLOW.
53. PAVEMENT MARKING: STOP BAR AND LEGEND.
54. CROSSWALK.
55. STOP SIGN.
56. WAY FINDING SIGN.
57. DO NOT ENTER SIGN.
58. ONE WAY SIGN.
59. EMERGENCY VEHICLES ONLY SIGN AFFIXED TO LEAF GATE.
60. RELOCATED SCHOOL SIGN.

1 NORTH SITE PLAN
CS101 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.
NORTH SITE PLAN

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 08/29/16

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0195

DRAWING NO. CS101
SHEET NO. 7 OF 15

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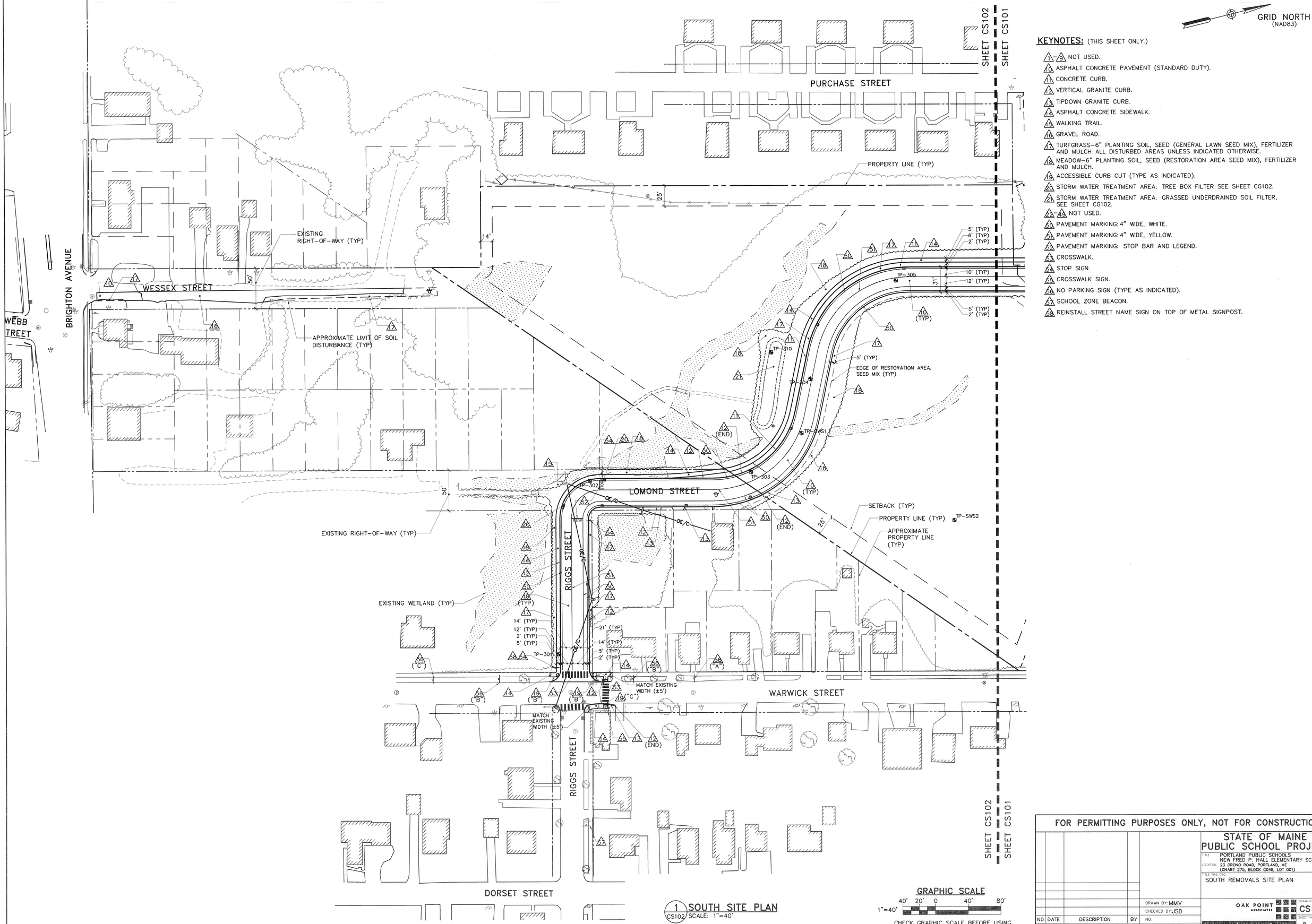

KEYNOTES: (THIS SHEET ONLY.)

1. NOT USED.
2. ASPHALT CONCRETE PAVEMENT (STANDARD DUTY).
3. CONCRETE CURB.
4. VERTICAL GRANITE CURB.
5. TIPDOWN GRANITE CURB.
6. ASPHALT CONCRETE SIDEWALK.
7. WALKING TRAIL.
8. GRAVEL ROAD.
9. TURFGRASS–6" PLANTING SOIL, SEED (GENERAL LAWN SEED MIX), FERTILIZER AND MULCH ALL DISTURBED AREAS UNLESS INDICATED OTHERWISE.
10. MEADOW–6" PLANTING SOIL, SEED (RESTORATION AREA SEED MIX), FERTILIZER AND MULCH.
11. ACCESSIBLE CURB CUT (TYPE AS INDICATED).
20. STORM WATER TREATMENT AREA: TREE BOX FILTER SEE SHEET CG102.
21. STORM WATER TREATMENT AREA: GRASSED UNDERDRAINED SOIL FILTER, SEE SHEET CG102.
22–49. NOT USED.
50. PAVEMENT MARKING: 4" WIDE, WHITE.
51. PAVEMENT MARKING: 4" WIDE, YELLOW.
52. PAVEMENT MARKING: STOP BAR AND LEGEND.
53. CROSSWALK.
54. STOP SIGN.
55. CROSSWALK SIGN.
56. NO PARKING SIGN (TYPE AS INDICATED).
57. SCHOOL ZONE BEACON.
58. REINSTALL STREET NAME SIGN ON TOP OF METAL SIGNPOST.

1 CS102 **SOUTH 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

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 08/29/16

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 REMOVALS SITE PLAN

OAK POINT ASSOCIATES
ENGINEERING • PLANNING • SURVEYING • TRAINING
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CS102
SHEET NO. 8 OF 15

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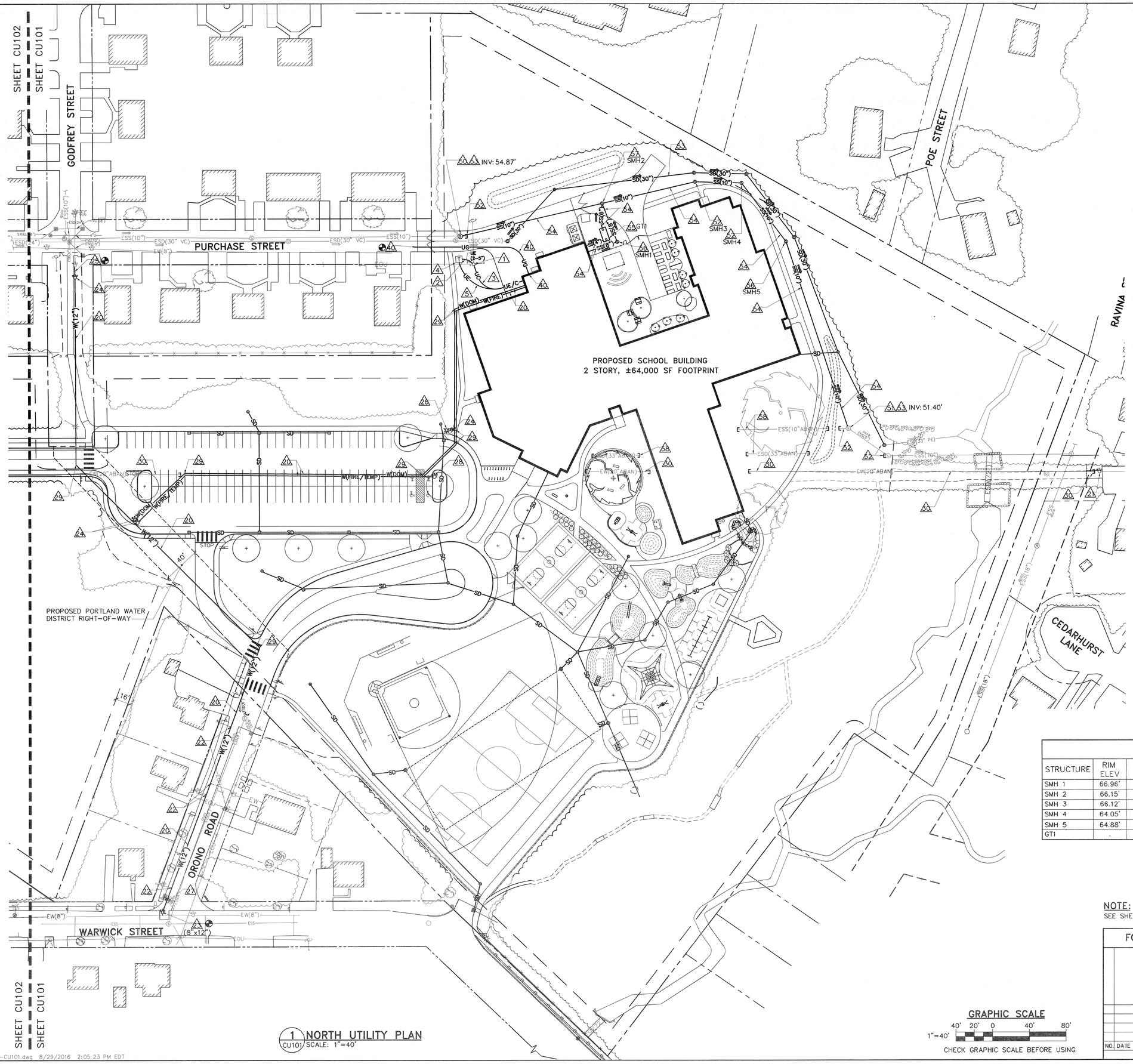

KEYNOTES: (THIS SHEET ONLY.)

ELECTRIC/COMMUNICATIONS

1. MULTIPLE CONDUIT RISERS ON UTILITY POLE WITH STANDARD SMP 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).
2. ELECTRIC SERVICE (PRIMARY), IN CONDUIT TRENCH.
3. COMMUNICATIONS SERVICE IN CONDUIT TRENCH.
4. CONCRETE TRANSFORMER PAD. TRANSFORMER INSTALLATION AND WIRING FROM TRANSFORMER TO UTILITY POLE BY CMP. COORDINATE INSTALLATION WITH CMP.
5. UNDERGROUND ELECTRIC (SECONDARY/COMMUNICATIONS LINE IN CONDUIT TRENCH).
6. – 19. NOT USED.

WATER

20. WATER LINE IN PIPE TRENCH.
21. BLOW-OFF VALVE.
22. EXTEND EXISTING RESIDENTIAL SERVICE AND CONNECT TO NEW WATER LINE. PROVIDE AT LEAST 48 HOURS NOTICE TO PROPERTY OWNER AND ARCHITECT PRIOR TO ANY WATER SERVICE OUTAGE. PROVIDE TEMPORARY WATER SERVICE TO HOMES FOR ANY OUTAGES EXCEEDING 4 HOURS IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS.
23. TAPPING SLEEVE (SIZE AS INDICATED), VALVE AND THRUST BLOCK.
24. WATER VALVE.
25. 12"X8" INCREASER. CONNECT TO EXISTING 8" WATER VALVE.
26. FIRE HYDRANT.
27. SHUT OFF EXISTING WATER VALVE, CAP END OF PIPE AT VALVE AND ABANDON WATER LINE IN PLACE.
28. TEMPORARY WATER SERVICE TO EXISTING SCHOOL: PROVIDE 8" TAPPING SLEEVE, TAPPING VALVE AND JOINT RESTRAINT. DISCONNECT SERVICE FROM EXISTING SCHOOL IMMEDIATELY PRIOR TO BUILDING DEMOLITION, SHUT VALVE AND CUT CAP END OF WATER LINE AT CONNECTION TO EXISTING WATER SERVICE TO SCHOOL.
29. JOINT RESTRAINT.
30. CAP EXISTING WATER LINE AND ABANDON IN PLACE.
31. – 39. NOT USED.

GAS

40. GAS LINE IN PIPE TRENCH. INSTALLATION OF GAS PIPING ONLY, CONNECTIONS TO EXISTING GAS MAIN AND GAS METER ON BUILDING AND ALL REQUIRED TESTING BY UNITIL (NOT IN CONTRACT). COORDINATE INSTALLATION WITH UNITIL AND PROVIDE AT LEAST 21 BUSINESS DAYS NOTICE PRIOR TO STARTING ANY TRENCHING FOR GAS LINE.
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 SEWER MANHOLE (INVERT ELEVATION AS INDICATED).
54. SANITARY SEWER LINE IN PIPE TRENCH.
55. GREASE TRAP. SEE SANITARY STRUCTURE SCHEDULE, THIS SHEET.
56. SEWER MANHOLE. SEE SANITARY STRUCTURE SCHEDULE, THIS SHEET.
57. DROP MANHOLE. SEE SANITARY STRUCTURE SCHEDULE, THIS SHEET.
58. FILL EXISTING SANITARY SEWER/STORM DRAIN LINE WITH FLOWABLE FILL, CAP/PLUG ENDS OF LINE TO REMAIN AND ABANDON IN PLACE.

SANITARY STRUCTURE SCHEDULE

STRUCTURE	RIM ELEV	INVERT IN	PIPE SIZE	INVERT OUT	PIPE SIZE	REMARKS
SMH 1	66.96'	60.87'	8"	60.77'	8"	RIM 2" ABOVE FINISHED GRADE
SMH 2	66.15'	53.84'	6",8",10"	53.74'	10"	DROP MANHOLE
SMH 3	66.12'	53.06'	10"	52.96'	10"	RIM 2" ABOVE FINISHED GRADE
SMH 4	64.05'	52.63'	10"	54.53'	10"	RIM 2" ABOVE FINISHED GRADE
SMH 5	64.88'	54.01'	10"	51.91'	10"	RIM 2" ABOVE FINISHED GRADE
GT1	.	.	4"	.	6"	GREASE TRAP

NOTE:
SEE SHEET CG101 FOR STORM DRAINAGE INFORMATION

1 NORTH UTILITY PLAN
CU101 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: 08/29/16

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 SHEET: NORTH UTILITY PLAN

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CU101
SHEET NO. 9 OF 15

C:\dfile\21602.08-CU101.dwg 8/29/2016 2:05:23 PM EDT

GRID NORTH
(NAD83)

KEYNOTES: (THIS SHEET ONLY.)

ELECTRIC/COMMUNICATIONS

1. UTILITY POLE (BY CMP). COORDINATE INSTALLATION WITH CMP, FAIRPOINT COMMUNICATIONS AND TIME WARNER CABLE.
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 OUTAGES. NOTIFY PROPERTY OWNERS AT LEAST 10 BUSINESS DAYS PRIOR TO ANY UTILITY DISRUPTION.
3. - 19. NOT USED.

WATER

20. WATER LINE IN PIPE TRENCH.
21. BLOW-OFF VALVE.
22. EXTEND EXISTING RESIDENTIAL SERVICE AND CONNECT TO NEW WATER LINE. PROVIDE AT LEAST 48 HOURS NOTICE TO PROPERTY OWNER AND ARCHITECT PRIOR TO ANY WATER SERVICE OUTAGE. PROVIDE TEMPORARY WATER SERVICE TO HOMES FOR ANY OUTAGES EXCEEDING 4 HOURS IN ACCORDANCE WITH PORTLAND WATER DISTRICT'S WRITTEN REQUIREMENTS.
23. 20"X8" DECREASER. CONNECT TO EXISTING 20" WATER MAIN AFTER WATER VALVE PIT.
24. ADJUST VALVE BOX TO MEET FINISH GRADES INDICATED ON CG102.
25. CAP AND ABANDON EXISTING WATERLINE.

SHEET CU102
SHEET CU101

PURCHASE STREET
PROPERTY LINE (TYP)
EXISTING RIGHT-OF-WAY (TYP)
WESSEX STREET
BRIGHTON AVENUE
WEBB STREET
EW(20"ABAN)
LOMOND STREET
RIGGS STREET
WARWICK STREET
DORSET STREET
SETBACK (TYP)
PROPERTY LINE (TYP)
APPROXIMATE PROPERTY LINE (TYP)
EXISTING RIGHT-OF-WAY (TYP)
50'

1 CU102 SOUTH UTILITY PLAN
SCALE: 1"=40'

GRAPHIC SCALE
40' 20' 0 40' 80'
1"=40'
CHECK GRAPHIC SCALE BEFORE USING

NOTE:
SEE SHEET CD103 FOR ADDITIONAL TREE REMOVALS

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 CO48, LOT 001)

TITLE THIS DWG:
SOUTH UTILITY PLAN

NO.	DATE	DESCRIPTION	BY
REVISIONS			

DRAWN BY: MMV
CHECKED BY: JSD
NO.
DATE: 08/29/16

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CU102
SHEET NO. 10 OF 15

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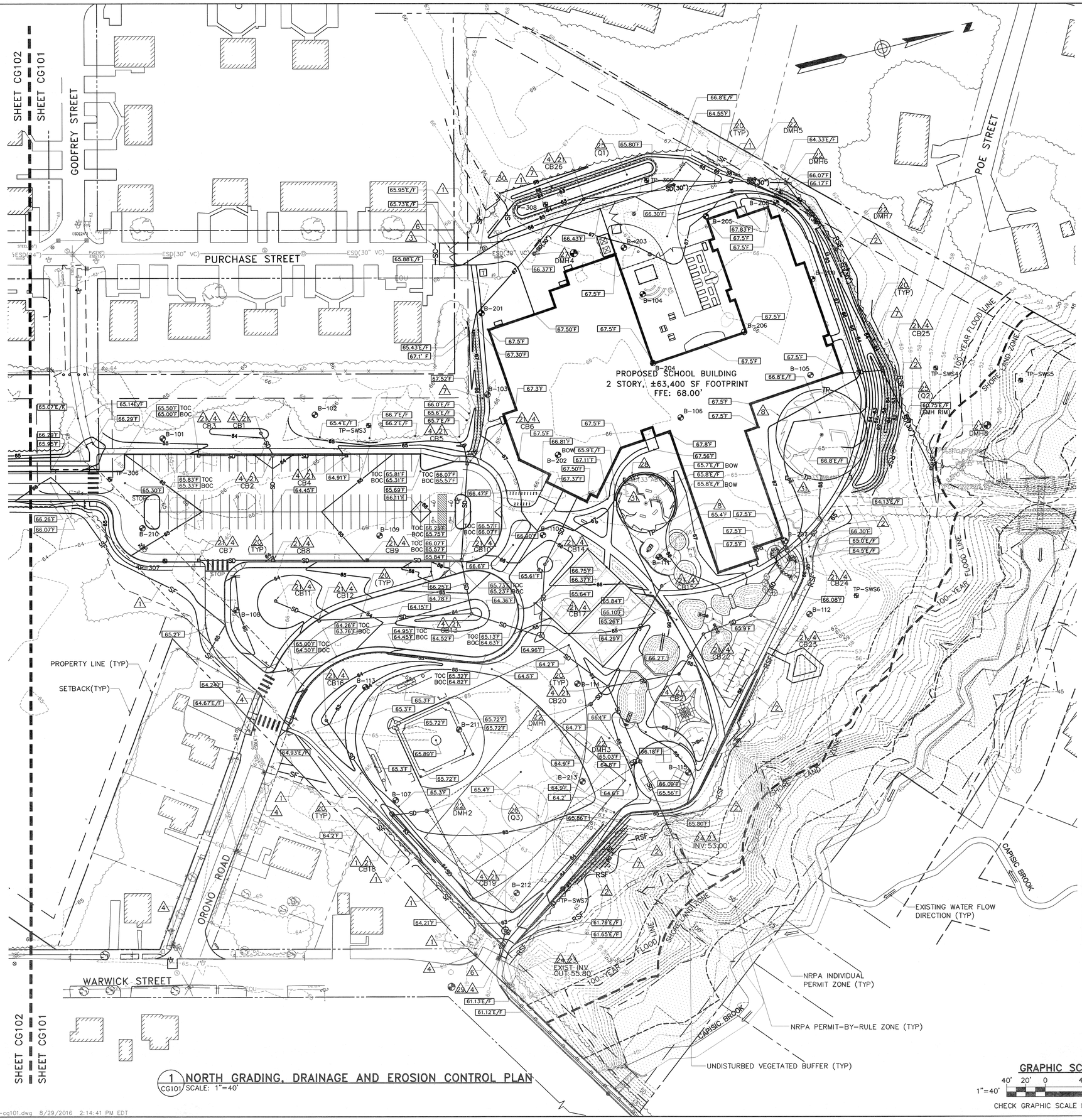

1 NORTH GRADING, DRAINAGE AND EROSION CONTROL PLAN
CG101 SCALE: 1"=40'

KEYNOTES: (THIS SHEET ONLY.)

1. SILT FENCE.
2. REINFORCED SILT FENCE.
3. SEDIMENT CONTROL WATTLE.
4. CATCH BASIN INLET PROTECTION.
5. POSSIBLE SOIL STOCKPILE LOCATION.
6. STABILIZED CONSTRUCTION ENTRANCE.
7. EROSION CONTROL BLANKET.
8. TREE PROTECTION FENCE.
9. NOT USED.
10. STORM DRAIN LINE IN PIPE TRENCH.
11. CATCH BASIN. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET.
12. DRAIN MANHOLE. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET.
13. PIPE OUTLET PROTECTION.
14. FLARED END SECTION (INVERT AS NOTED).
15. STORMWATER TREATMENT AREA (GRASSED UNDERDRAINED SOIL FILTER). SEE TREATMENT AREA SCHEDULE, THIS SHEET.
16. STORMWATER TREATMENT AREA (SUBSURFACE SAND FILTER). SEE TREATMENT AREA SCHEDULE, THIS SHEET.
17. CONNECT TO EXISTING STORM DRAIN LINE (LINE SIZE AND TYPE AS INDICATED) WITH DRAIN MANHOLE. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET.
18. SEATWALL, ±18" TALL. TOP OF WALL ELEVATION: 67.33'. ELEVATION AT BACK OF WALL: 67.00'. BOTTOM OF WALL ELEVATION VARIES (MATCH EXISTING GRADE).
19. CORE EXISTING CATCH BASIN AT ELEVATION: 56.80'.
20. REMOVE EXISTING MANHOLE FRAME AND COVER AND RESET RIM TO ELEVATION: 66.00'.
21. CAP EXISTING 33" STORMDRAIN LINE, FILL WITH FLOWABLE FILL AND ABANDON IN PLACE.

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	
CB2	63.85	63.75	60.81	60.71	FROM CB1
–	–	–	60.81	–	FROM CB3
–	–	–	60.81	–	FROM CB4
CB3	64.47	64.37	–	61.37	
CB4	64.58	64.48	–	61.48	
CB5	63.92	63.82		60.82	
CB6	65.19	65.09	60.56	60.46	
CB7	64.50	64.40	–	61.40	
CB8	63.94	63.84	60.16	60.06	FROM CB2
–	–	–	60.16	–	FROM CB7
CB9	65.03	64.93	59.67	59.57	
CB10	65.23	65.13	59.08	58.98	FROM CB6
–	–	–	59.08	–	FROM CB9
CB11	63.00	62.90		59.82	
CB12	63.23	63.13	59.57	59.47	
CB13	63.55	63.45	58.69	58.59	FROM CB10
–	–	–	58.69	–	FROM CB12
CB14	64.90	64.80	–	59.80	
CB15	65.08	64.98	60.08	59.98	ROOF DRAIN
CB16	62.59	62.49	–	59.49	
CB17	63.92	63.82	58.21	58.11	FROM CB13
–	–	–	58.21	–	FROM CB14
CB18	62.50	62.40	57.74	57.64	FROM CB16
–	–	–	57.74	–	FROM CB19
CB19	61.85	61.75	–	58.65	TO CB18
–	–	–	–	58.75	OVERFLOW TO ECB
CB20	63.61	63.51	57.69	57.59	INV OUT TO DMH1, INV IN FROM CB15
–	–	–	57.69	58.75	INV OUT OVERFLOW TO DMH3, INV IN FROM CB15
–	–	–	57.69	–	FROM CB21
CB21	65.06	64.96	58.86	58.76	
CB22	65.71	65.61	59.55	59.45	
CB23	65.04	64.94	60.29	60.19	
CB24	64.25	64.15	–	61.15	
CB25	63.87	63.77	46.39	46.29	FROM DMH7
–	–	–	46.39	–	
CB26	64.05	64.05	50.02	49.92	FROM DMH4
–	–	–	50.02	–	
DMH1	64.55	64.65	57.46	57.36	5' DIAMETER W/ WIER, INV OUT TO ISOLATOR ROW
–	–	–	–	57.36	TO SAND FILTER CHAMBERS
DMH2	65.41	65.51	57.46	57.36	5' DIAMETER W/ WIER, INV OUT TO ISOLATOR ROW
–	–	–	–	57.36	TO SAND FILTER CHAMBERS
DMH3	65.29	65.29	54.19	54.09	FROM SAND FILTER
–	–	–	54.19	–	FROM CB20
DMH4	67.07	67.07	50.69	50.59	
DMH5	65.10	65.10	48.77	48.67	
DMH6	63.40	63.40	48.25	48.15	MATCH EXISTING GRADE
DMH7	63.83	63.83	47.50	47.40	
DMH8	55.20	55.20	46.44	46.34	MATCH EXISTING GRADE

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	TOP SURFACE AREA
Q1	62.89'	64.39'	65.80'	65.16'	CB26	YES	61.70'	307'	1456 SF	2901 SF
Q2	62.00'	63.00'	64.00'	63.50'	CB25	YES	60.70'	289'	1614 SF	718 SF

SAND FILTER SCHEDULE

TREATMENT AREA	TOP ELEV	CHAMBER INV	INLET INV	UNDER-DRAIN INV	BOTTOM ELEV	LENGTH 'L'	WIDTH 'W'	CHAMBER INFORMATION ROWS	#/ROW	COLLECTION PIPE SPACING TYPE	'C'	'S1'	'S2'	'S3'	LINED
Q3	59.15'	57.32'	57.36'	54.15'	53.82'	193.35'	78.77'	23	27	A	7.9'	1.0'	0.5'	1.0'	YES

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: 08/29/16

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
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. CG101
SHEET NO. 11 OF 15

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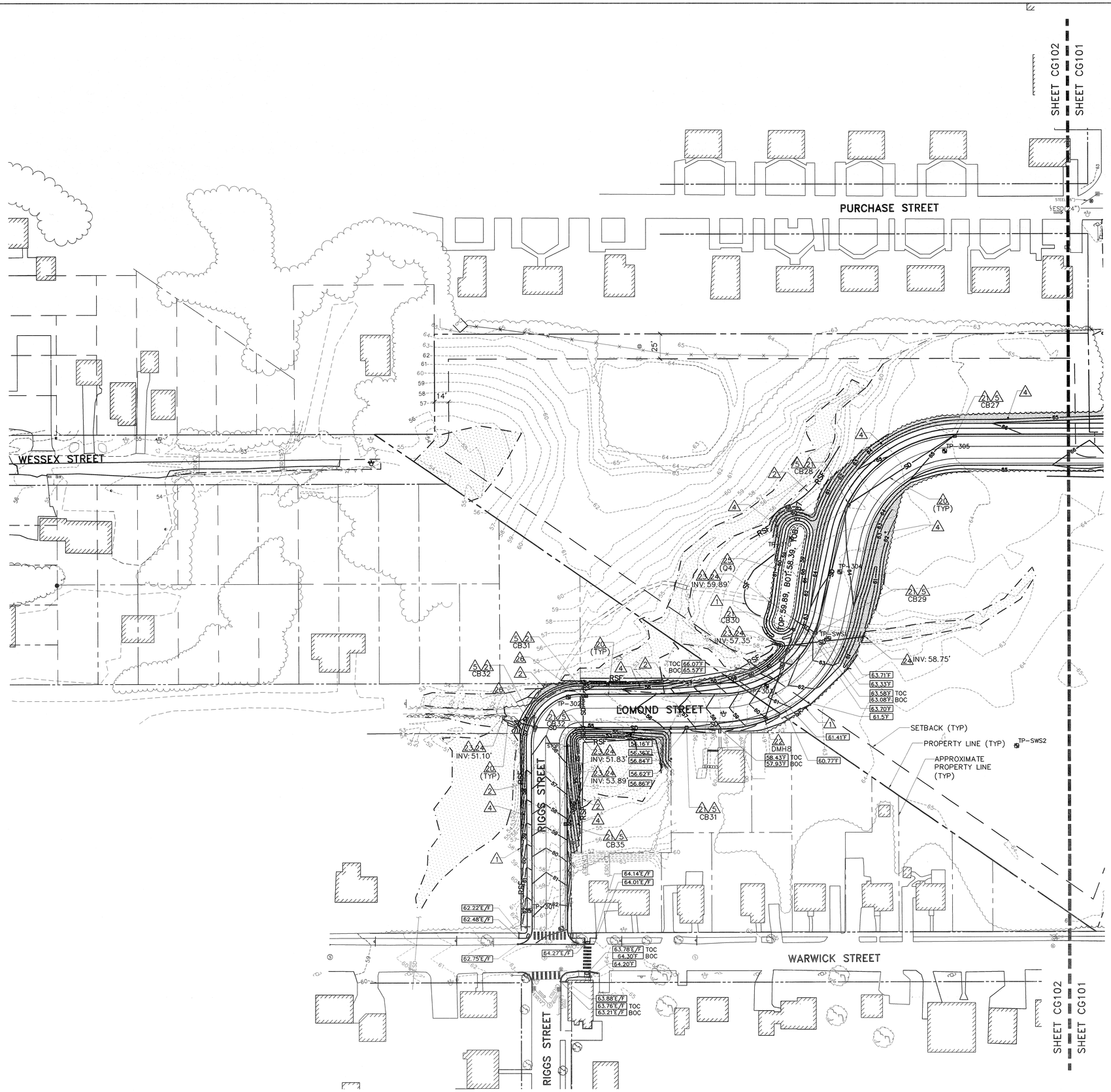

KEYNOTES: (THIS SHEET ONLY.)

1. SILT FENCE.
2. REINFORCED SILT FENCE.
3. SEDIMENT CONTROL WATTLE.
4. EROSION CONTROL BLANKET.
5. CATCH BASIN INLET PROTECTION.
6. – 13. NOT USED.
14. STORM DRAIN LINE IN PIPE TRENCH.
15. CATCH BASIN. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET.
16. DRAIN MANHOLE. SEE DRAINAGE STRUCTURE SCHEDULE, THIS SHEET.
17. PIPE OUTLET PROTECTION.
18. FLARED END SECTION (INVERT AS NOTED).
19. STORMWATER TREATMENT AREA (GRASSED UNDERDRAINED SOIL FILTER). SEE TREATMENT AREA SCHEDULE, THIS SHEET.
20. STORMWATER TREATMENT (TREE BOX FILTER). SEE TREATMENT AREA SCHEDULE, THIS SHEET.

STRUCTURE	NORMAL FINISH GRADE AT RIM ELEVATION	RIM ELEVATION	INVERT IN (SIZE)	INVERT OUT (SIZE)	REMARKS
CB27	64.89	64.79	–	61.79	
CB28	64.04	63.94	60.92	60.82	
CB29	63.10	63.00	60.10	60.00	
CB30	59.89	59.89	56.06	55.71	FROM TREATMENT AREA Q4
CB31	56.64	56.54	53.42	53.32	
CB32	54.93	54.83	52.01	–	6' DIA, TOP OF WIER ELEV: 53.25
–	–	–	52.01	51.91	FROM CB31, OVERFLOW OUTLET TO CB33
–	–	–	–	51.91	FROM CB34, PRIMARY OUTLET TO WETLAND
CB33	55.14	55.04	51.62	51.52	FROM CB32
–	–	–	51.62	–	FROM TREE BOX FILTER
CB34	55.53	55.43	52.42	52.32	FROM TREE BOX FILTER
CB35	58.22	58.12	–	53.89	
DMH8	60.00	60.00	54.53	54.43	

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	TOP SURFACE AREA
Q4	58.39'	59.89'	61.37'	60.37	CB30	YES	57.22'	229'	1525 SF	2611 SF

1 CG102 SOUTH 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

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

DRAWN BY: MMV
CHECKED BY: JSD
DATE: 08/29/16

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

OAK POINT ASSOCIATES
LAND PLANNING • SURVEYING • CIVIL ENGINEERING
231 Main Street, Biddeford, Maine 04005 207.283.0159

DRAWING NO. CG102
SHEET NO. 12 OF 15

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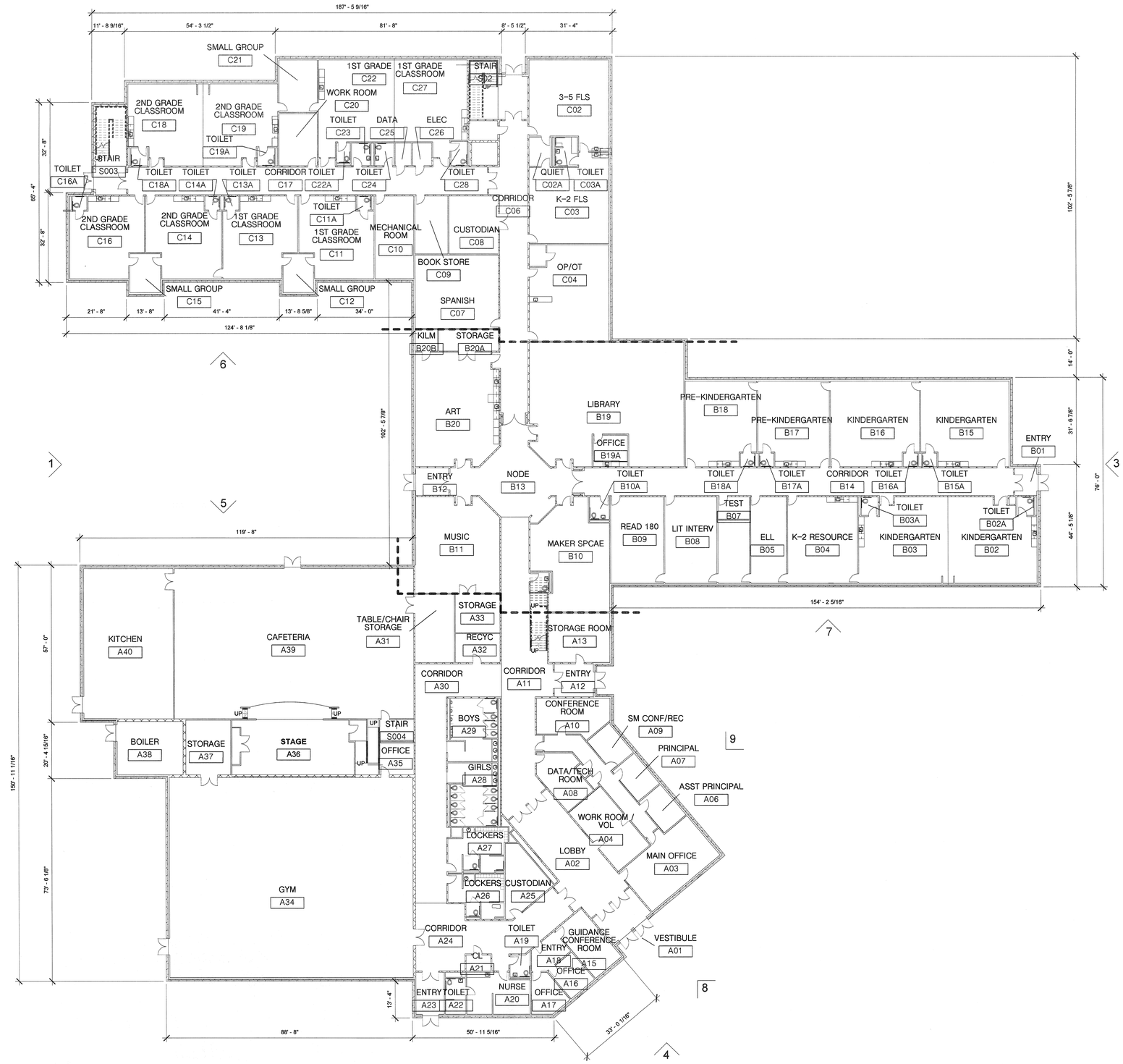


1 FIRST FLOOR REFERENCE PLAN PERMITTING
AE201 AE101 SCALE: 1/16" = 1'-0"

GRAPHIC SCALE
16' 8' 0 16' 32'
1/16"=1'-0"
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 CO48, LOT 001)

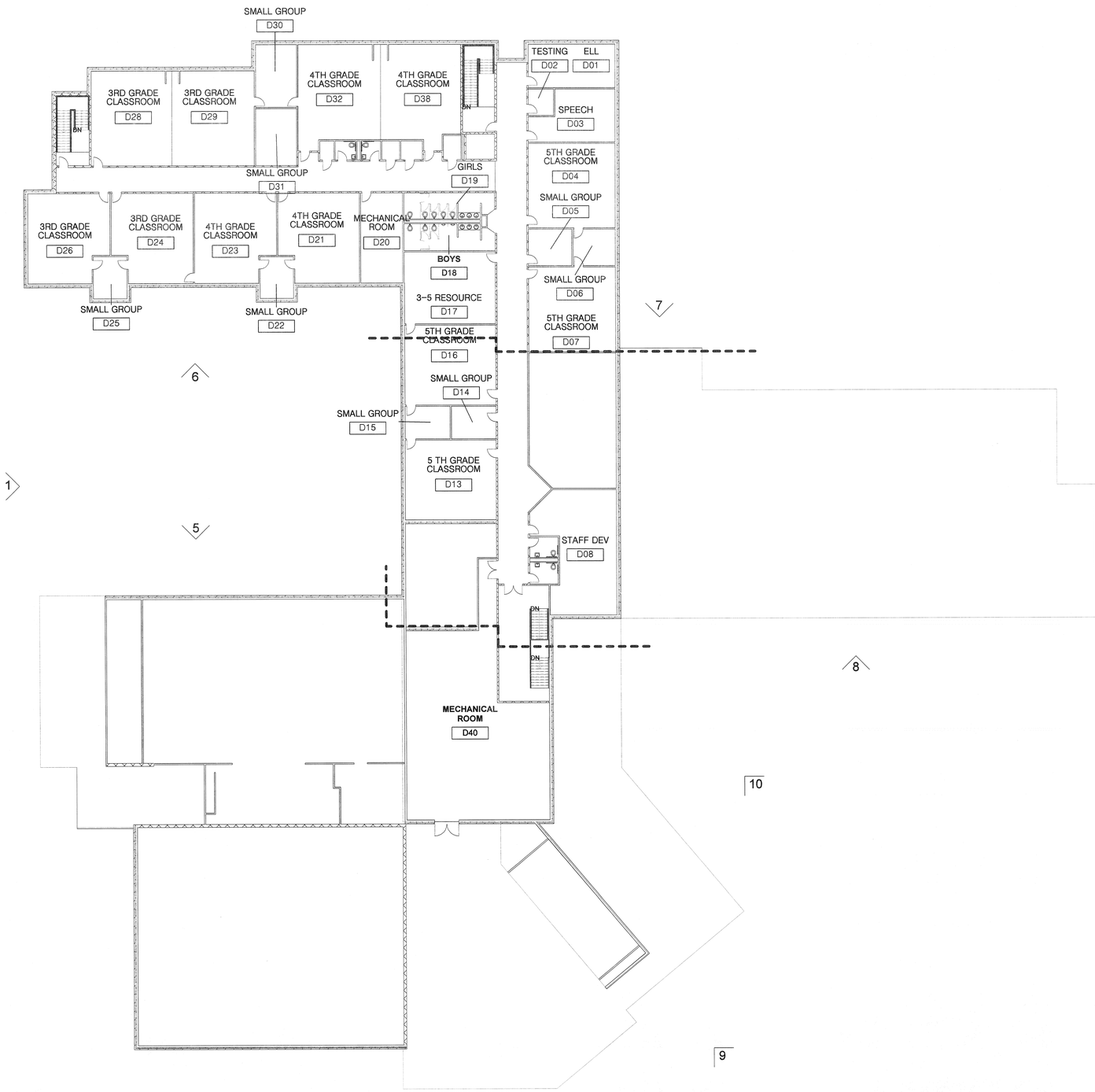
TITLE THIS DWG.
FIRST FLOOR PLAN

NO.	DATE	DESCRIPTION
		REVISIONS

DRAWN BY: DEM
CHECK BY: TGB
BY
NO.
DATE 08/29/16

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. AE101
SHEET NO. 13 OF 15



1 SECOND FLOOR REFERENCE PLAN PERMITTING
AE201 AE102 SCALE: 1/16" = 1'–0"

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	BY
		REVISIONS	

DRAWN BY: DEM
CHECK BY: TGB
NO.
DATE 08/29/16

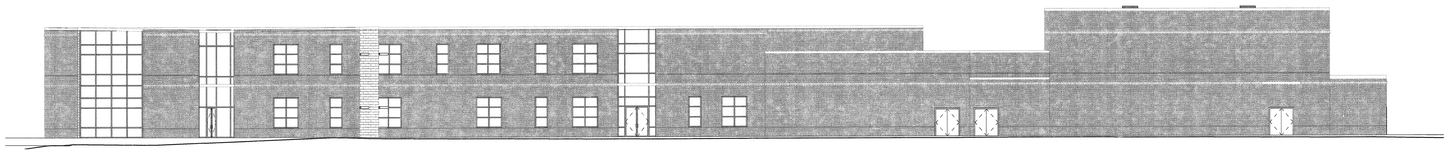
STATE OF MAINE
PUBLIC SCHOOL PROJECT

TITLE PORTLAND PUBLIC SCHOOLS
NEW FRED P. HALL ELEMENTARY SCHOOL
LOCATION 23 ORONO ROAD, PORTLAND, ME
(CHART 275 BLOCK CO48, LOT 001)

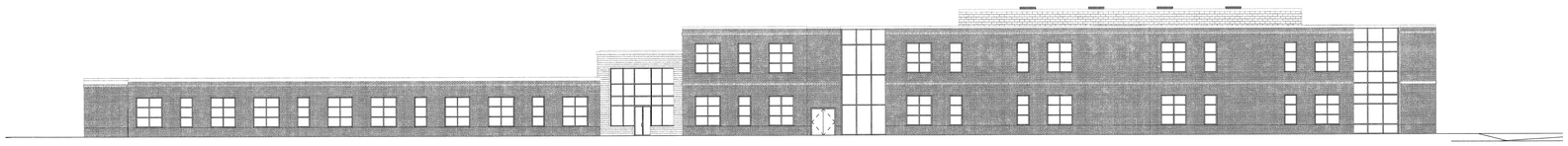
TITLE THIS DWG.
SECOND FLOOR PLAN

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. AE102
SHEET NO. 14 OF 15

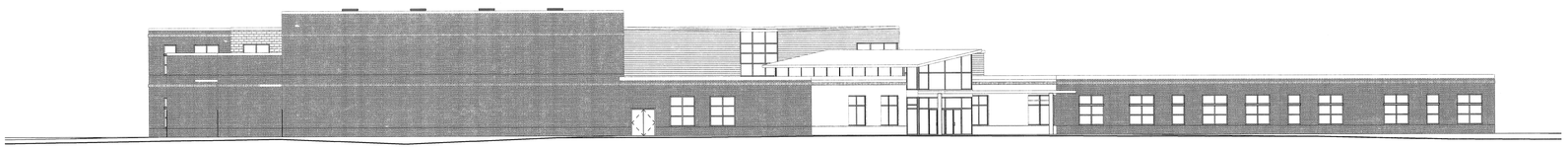


1 WEST ELEVATION
AE201 SCALE: 1/16" = 1'-0"

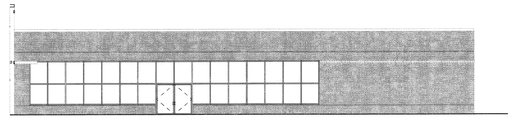


2 NORTH ELEVATION
AE201 SCALE: 1/16" = 1'-0"

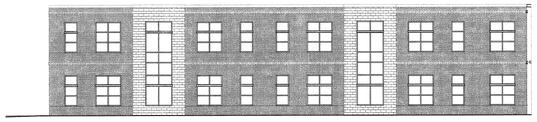
3 EAST ELEVATION
AE201 SCALE: 1/16" = 1'-0"



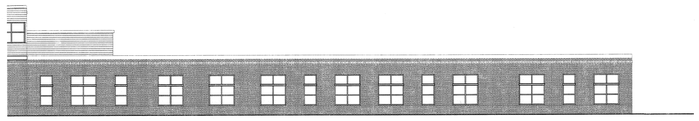
4 SOUTH ELEVATION
AE201 SCALE: 1/16" = 1'-0"



5 CAFETERIA PART ELEVATION
AE201 SCALE: 1/16" = 1'-0"

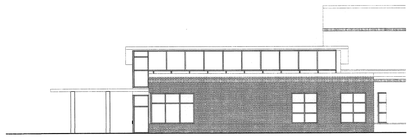


6 1ST/2ND CLASSROOM PART ELEVATION
AE201 SCALE: 1/16" = 1'-0"

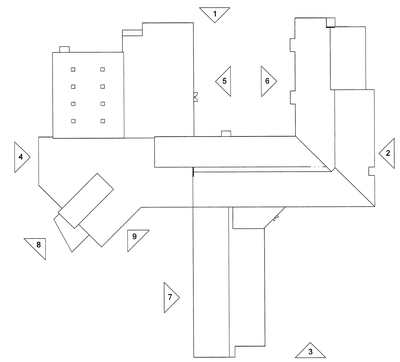


7 KINDERGARTEN CLASSROOM PART ELEVATION
AE201 SCALE: 1/16" = 1'-0"

8 MAIN ENTRANCE PART ELEVATION
AE201 SCALE: 1/16" = 1'-0"



9 MAIN OFFICE PART ELEVATION
AE201 SCALE: 1/16" = 1'-0"



FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

GRAPHIC SCALE
16' 8' 0 16' 32'
1/16"=1'-0"
CHECK GRAPHIC SCALE BEFORE USING

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DRAWN BY: Author
CHECK BY: Designer
NO.
DATE 08/29/16

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.
BUILDING ELEVATIONS

OAK POINT ASSOCIATES
231 Main Street, Biddeford, Maine 04005 207.283.0193

DRAWING NO. AE201
SHEET NO. 15 OF 15

Att. A

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

File: 16105

July 28, 2016

Ms. Barbara Barhydt
City of Portland, Planning Division
389 Congress Street, 4th Floor
Portland, ME 04101

RE: SITE PLAN APPLICATION, WESTERLEA VIEW LOFTS
75 CHESTNUT STREET

Dear Barbara,

On behalf of A&M Partners, Inc. we are pleased to provide the accompanying package of submission materials related to a 54-unit apartment complex with a main lobby entranced at 75 Chestnut Street. This submission package is intended to meet the City's Preliminary Submission requirements as outlined in the Level III Application procedures. The materials represent the development of currently undeveloped land adjacent to the 3 level Chestnut Street Garage. The proposed 7 story apartment building will abut the garage and have access to it but will be a separate building both in ownership and under the building code.

The site is on the east side of Chestnut St, north of Oxford St. and south of Lancaster. There is currently access to the 2nd level of the garage from Chestnut Street. This will be retained in our proposal. From Oxford to Lancaster Street the site drops some 20 feet. The proposed 1st floor will be unexcavated at the southerly end and follow the grade as it drops going north. The second floor and above will be level

The proposed building will contain 38 2-bedroom units, 14 1-bedroom units and 2 studios for a total of 54 units. With an additional 2,328+/- sq. ft. of 1st floor space is for uses as yet undetermined Commercial use with a proposed 800 sq. ft. residential living space on a second level.

The proposed footprint of the structure is 11,600 sq. ft.
The site area is 92,224 sq. ft.
Parking for the apartments at a ratio of one space to one unit will be in the existing garage.

PINKHAM & GREER
CIVIL ENGINEERS

Accompanying this project description are the following materials:

Site Plan Application w/ Checklist
Deed
Financial Capacity Letter
Zoning Analysis
Letter to PWD
City Wastewater Application
Light Cut Sheets
Traffic Assessment
Stormwater Analysis
Shadow Study

Survey
Site & Subdivision Plans
Architectural Plans

We look forward to the review with the Staff and the Planning Board.

Sincerely,

PINKHAM & GREER,
CIVIL ENGINEERS

Thomas S. Greer, P.E.

cc: (1) Lou Wood, (1) Bill Hopkins, (1) File

Enclosures

TSG/rjs

PROJECT NAME: Westerlea View Lofts

PROPOSED DEVELOPMENT ADDRESS:

75 Chestnut Street

PROJECT DESCRIPTION:

This is the construction of a seven story building for 54 residential units.

CHART/BLOCK/LOT: 26 / E / 10

PRELIMINARY PLAN x (date)
FINAL PLAN _____ (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Lou Woods Business Name, if applicable: A & M Partners, Inc Address: 120 Exchange Street City/State : Portland, ME Zip Code: 04101	**Applicant Contact Information** Work # 207-879-1358 Home# Cell # Fax# e-mail: lcwood@ampartners.me
Owner – (if different from Applicant) Name: Same as Applicant Address: City/State : Zip Code:	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Agent/ Representative Thomas S. Greer, P.E. Name: Pinkham & Greer, Civil Engineers Address: 28 Vannah Avenue City/State : Portland, ME Zip Code: 04103	**Agent/Representative Contact information** Work # 207-781-5242 Cell # e-mail: tgreer@pinkhamandgreer.com
Billing Information Name: Same as Applicant Address: City/State : Zip Code:	**Billing Information** Work # Cell # Fax# e-mail:

Engineer Thomas S. Greer, P.E. Name: Pinkham & Greer, Civil Engineers Address: 28 Vannah Ave City/State : Portland, ME Zip Code: 04103	**Engineer Contact Information** Work # 207-781-5242 Cell # Fax# 207-781-4245 e-mail: tgreer@pinkhamandgreer.com
Surveyor Del Maxfield Name: Maine Survey Consultants, Inc. Address: PO Box 485 City/State : Harrison, ME Zip Code: 04040	**Surveyor Contact Information** Work # 207-583-6159 Cell # Fax# 207-583-6159 e-mail: dmaxfield@mainesurveyconsultants.com
Architect Bill Hopkins Name: Archetype Architects Address: 48 Union Wharf City/State : Portland, ME Zip Code: 04101	**Architect Contact Information** Work # 207-772-6022 Cell # Fax# 207-772-4056 e-mail: hopkins@archetypepa.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) _X_ 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

Updated: October 6, 2015

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:
Thomas Greer agent	7/28/16

PROJECT DATA

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

Total Area of Site	92,224 sq. ft.
Proposed Total Disturbed Area of the Site	29,000 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)	53,511 sq. ft.
Impervious Area (Total Proposed)	63,563 sq. ft.
Building Ground Floor Area and Total Floor Area	
Building Footprint (Total Existing)	49,326 sq. ft.
Building Footprint (Total Proposed)	11,600 sq. ft.
Building Floor Area (Total Existing)	148,006 sq. ft.
Building Floor Area (Total Proposed)	81,200 sq. ft.
Zoning	
Existing	B7
Proposed, if applicable	
Land Use	
Existing	Parking Garage
Proposed	Parking Garage & Residential
Residential, If applicable	
# of Residential Units (Total Existing)	0
# of Residential Units (Total Proposed)	54
# of Lots (Total Proposed)	0
# of Affordable Housing Units (Total Proposed)	5
Proposed Bedroom Mix	
# of Efficiency Units (Total Proposed)	2
# of One-Bedroom Units (Total Proposed)	14
# of Two-Bedroom Units (Total Proposed)	38
# of Three-Bedroom Units (Total Proposed)	0
Parking Spaces	
# of Parking Spaces (Total Existing)	450
# of Parking Spaces (Total Proposed)	450
# of Handicapped Spaces (Total Proposed)	
Bicycle Parking Spaces	
# of Bicycle Spaces (Total Existing)	0
# of Bicycle Spaces (Total Proposed)	22
Estimated Cost of Project	$5,850,000.00

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST**
x		1	Completed Application form
		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
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);	
n/a		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.	

Att. B

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

File: 16105

July 29, 2016

Ms. Barbara Barhydt
City of Portland, Planning Division
389 Congress Street, 4th Floor
Portland, ME 04101

RE: WESTERLEA VIEW LOFTS, 75 CHESTNUT STREET

Dear Barbara,

Attached is the application for Inclusionary Zoning. This project will provide 6 units to meet this requirement. It will include:

(2) second floor, 2 bedroom units
(2) second floor, 1 bedroom units
(1) third floor, 2 bedroom unit
(1) third floor, 1 bedroom unit

Standard restriction on units will be part of the final application.

Sincerely,

PINKHAM & GREER,
CIVIL ENGINEERS

Thomas S. Greer, P.E.

cc: (1) Lou Wood, (1) Bill Hopkins, (1) File

Enclosures

TSG/rjs

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.

PROJECT NAME: Westerlea View Lofts

PROPOSED DEVELOPMENT ADDRESS: 75 Chestnut Street

ASSESSOR'S CHART/BLOCK/LOT (s): 26 / E / 10 **Applicable Zone:** B7

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer	**Applicant Contact Information**
Name: Lou Woods Business Name, if applicable: A & M Partners, Inc. Address: 120 exchange Street City/State : Portland, ME Zip Code: 04101	Work # 207-879-1358 Home# Cell # Fax# e-mail: lcwood@ampartners.me
Owner – (if different from Applicant) Name: Same as Applicant Address: City/State : Zip Code:	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Billing Information Name: Same as Applicant Address: City/State : Zip Code:	**Billing Information** Work # Cell # Fax# e-mail:

RIGHT, TITLE OR INTEREST:

Owner

(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.

Parking Garage

PROJECT DESCRIPTION:

Construction of an 11,600 sq. ft. footprint, 7 story building with 54 residential units.

INCLUSIONARY ZONING:	
# IZ Units	
On-Site IZ Units	
Off-Site IZ Units	
# IZ Homeownership Units	
# IZ Rental Units	
# IZ Efficiencies	2
# IZ 1-Beds	2
# IZ 2-Beds	2
# IZ 3-Beds	
IZ Fee In-Lieu	

APPLICATION FEES:
(Payment may be made by Credit Card, Cash or Check payable to the City of Portland.)

___ 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.

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.**

Applicant Checklist	Planner Checklist	# of Copies	Written Submissions Checklist
X		1	Application form that is completed and signed.
X		1	Cover letter stating the nature of the project.
X		1	Evidence of right, title and interest.
		1	Written Submittals that address the conditional use standards of Sec. 14-484, including unit size and bedroom count
		1	Draft Workforce Housing Agreement
		1	Proposed Marketing Strategy
		1	Written Proposal for providing workforce units on-site, off-site, or payment of fee-in-lieu.
		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.
X		1	Floor Plans of all units and identifying proposed designated workforce housing units
		1	Interior Standards for Units for market rate and workforce housing units, including kitchen, bathroom, flooring and closet amenities
		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.

The Conditional Use Application to Ensure Workforce Housing must be complete, including but not limited to the contact information, project data, application checklist, 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:

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 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:**
Thomas Sevigny	8/9/16

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) 482-5928

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

ZONING ANALYSIS
75 CHESTNUT STREET
WESTERLEA VIEW LOFTS
PORTLAND, MAINE

Zoning Analysis

This site is in the B7 Zone, A. It is at the edge of the bayside area as well as the downtown area. The zone encourages these districts to acquire a distinctly urban form through dense development featuring a mix of uses such as housing, retail, offices, research and development, and artisan studios and that emphasizes a quality pedestrian experience, promotes public transit, and demonstrates exemplary urban design.

This project will focus on the housing portion of that goal.

- Multifamily Housing is an allowed use. There are no density restrictions. The site is in a well-established area of the city with existing sidewalks throughout the area. The Chestnut Street walk will be upgraded to brick in compliance with the City Technical Standards.

Below are the dimensional requirements for the project.

Space Standards	Required
Minimum Lot Size	None
Minimum Street Frontage	None
Minimum Front Yard Setback	None
Minimum Rear Yard Setback	None
Minimum Side Yard Setback	None
Minimum Length of Building Wall	25% of permiter
Maximum Building Lot Coverage	100%
Maximum Residential Density	None
Maximum Building Height	75 Feet
Minimum Building Height	-
Off Street Parking	1 Per Unit
Bick Racks	12

Performance Standards

- All storage of items will be inside the structure.
- Waste will be stored inside and picked up by a private waste hauler.
- All of the mechanical equipment will be roof mounted. It will meet the City's noise requirements.

- Parking is taking place in the existing garage. No additional parking is required.
- This project will have minimal glare. The building materials will be non-reflective. Lighting will be shielded and down lit.
- This site with residential uses will not generate odors.
- The project will connect to existing public utilities; sewer, water, gas, and communications.

Westerlea View Lofts
75 Chestnut Street
Portland, Maine 04101

Compliance with B-7 Mixed Use Urban Design Principles and Standards

Principle A:

Westerlea View lofts creates a dense siting of mixed use by stacking seven stories of residential above a first floor of residential and a large, double height space that has potential to be used for a gym/live work/retail space. The building is able to offer this space because of its advantageous use of the site's slope.

The density of the building is achieved through its height while the footprint is long and narrower with the narrow end facing toward Back Cove keeping any blocked neighboring views to a minimum. The height also allows the tenants of the building to benefit from the views afforded by the site.

The building footprint sits on only a little more than half of the vacant lot that exists now leaving a large portion to be developed as green space to be utilized by the tenants (both the residential and that of the first floor space) and the public and is directly accessible from the double-height space.

The owner of the building is also the owner of the existing 3-story garage located adjacent to Westerlea View Lofts. The existing entrance to the second level of the garage is located midway along the proposed footprint and this access will be maintained through a tunnel under the residential tower and dividing the residential portion of the at ground level from the double height space. This garage entrance creates the desired mid-block permeability. The parking garage will also provide all of the necessary parking for the project.

The material choice for the building includes multiple new materials as is encouraged in this zone. Although the materials are modern, the finishes chosen relate to more historic materials both in finish and color.

The building is to be located near the property lines on Oxford and Chestnut. The angled property line on Chestnut influenced the stepping nature of that street's façade which made for a positive breaking up of the mass along the public right-of-way. The main entrances of the residential and the double-height space are also located on this façade and are denoted by a warm textured finish giving the street level a strong and welcoming presence.

Principle B:

Both the access for the existing garage and the large green area create ample mid-block permeability.

The existing sidewalks will be maintained and resurfaced and will meet the project with areas of planting, crushed stone and bike storage. Where the public way crosses the garage entrance the pedestrian lane will be clearly marked.

Although several trees will need to be removed for the project to be near the property line as required by zoning, other trees will be added in the green space as well as around the perimeter of the existing garage extending the area that will benefit from planting beyond that of the proposed site.

Principle C:

The parking garage for this project is an already existing and successful structure in terms of traffic. The relationship of the entrances to the building are previously mentioned. Bike racks will be included both at the Chestnut Street entry and at the garage entry on Oxford Street.

The design takes advantage of the façade backed up against the garage by placing service, utility and mechanical infrastructure in the zone here where fenestration is not possible. Another space has been allocated for such infrastructure that needs ample venting in a screened platform above the tunnel access to the garage.

Principle D:

For planting and landscaping see site plan

Principle E:

The design of Westerlea View Lofts is innovative yet sensitive to its surrounding and site.

All facades are broken up through stepping of the building, material changes, fenestration and carved out decks. There is a clear base to the building where the entrances are located and the potential for mixed-use exists. The middle of the building, although broken up in massing, does provide a rhythm through pattern, glazing and stacking of units and decks. The top floor breaks from the pattern with larger areas of glazing and angled decks allowing for maximum views towards Back Cove.

The primary entrance on Chestnut street provides direct access to the elevators and stairs as well as a pass through to the second story of the garage.

Windows, both fixed and operable will cover a large portion of all the facades with a larger quantity on the ground level due to storefront and on the top floor due to the angled decks and a greater floor to ceiling height.

The back side of the building is that next to the garage. In order for glazing to be allowed on the second residential level, a horizontal rated surface will extend from the building over the first 10’ of the garage so this has been turned into the opportunity to create large deck space for those units and visually soften the connection of the two structures.

A variety of new durable materials are to be used for the façade. Steel siding with a concealed fastening system will be used in conjunction with Nichiha, both in sandstone and wood finishes. The Nichiha system has an extremely well developed connection system that creates a more finished look that withstands high wind loads.

Canopies will be included at the entrances on Chestnut Street.

The orientation of the building and the location of the existing garage keep shadows on neighboring buildings to a minimum as shown in the included shadow studies.

Doc#: 50644 Bk:27183 Pg: 53

QUITCLAIM DEED

MAINE REAL ESTATE TAX PAID

MTM PORTLAND PROPERTIES, LLC, a Maine limited liability company with its principal place of business in Portland, County of Cumberland and State of Maine, for consideration paid, grants to A & M PARTNERS, INC., a Maine corporation with its principal place of business in Portland, County of Cumberland and State of Maine and having a mailing address of 120 Exchange Street, Portland, ME 04101, WITH QUITCLAIM COVENANT, that certain condominium unit situated in Portland, County of Cumberland and State of Maine, the legal description of which is as follows:

Unit No. 2 (hereinafter referred to as the "Unit") in the Chestnut Street Parking Condominium (hereinafter referred to as the "Condominium"), situated at Oxford and Chestnut Streets in the City of Portland, County of Cumberland and State of Maine, as more particularly described in the Declaration of Chestnut Street Parking Condominium dated June 29, 1988, and recorded in the Cumberland County Registry of Deeds in Book 8355, Page 99, as amended by a certain Amendment to Declaration of Chestnut Street Parking Condominium, dated March 5, 1991 and recorded in Book 9485, Page 18, and also by Certificate of Amendment, dated March 5, 1991, and recorded in Book 9485, Page 36 and re-recorded in Book 9548, Page 66, and by Second Amendment to Declaration of Chestnut Street Parking Condominium dated February 11, 2005 and recorded in Book 22383, Page 1, and Second Amendment to Bylaws of Chestnut Street Parking Condominium Association dated February 5, 2005 and recorded in Book 22383, Page 30, and as shown on the five (5) page set of Plats and Plans incorporated into the Declaration and recorded in said Registry of Deeds in Plan Book 171, Pages 68 through 72 (herein collectively referred to as the "Plats and Plans") by virtue of the recording of which Declaration, Plats and Plans, the said Oxford Development Associates, as Declarant, created the Condominium pursuant to the Maine Condominium Act, Title 33 of the Maine Revised Statutes of 1964, as amended, Chapter 31, Section 1601-101 et seq., as amended.

TOGETHER WITH an undivided interest in the Common Elements of the Condominium, the liability for Common Expenses of the Condominium, and Votes in the Association of Unit Owners of the Condominium allocated to the Unit pursuant to the Declaration;

TOGETHER WITH the rights to use the Limited Common Elements allocated to the Unit as described, specified and allocated pursuant to the Declaration;

TOGETHER WITH an easement in common with the Owners of other units to use the Common Elements of the Condominium for the purposes of ingress and egress in accordance with the Declaration and the exclusive right and easement for the use, occupancy and enjoyment of the Unit;

TOGETHER WITH an easement in common with all other Unit Owners to use all pipes, wires, ducts, cable, conduits, public utility lines and other Common Elements serving the Unit and located in any of the other units;

TOGETHER WITH an easement, to the extent necessary, for structural and subjacent support over every other unit and over the Common Elements;

TOGETHER WITH all other rights, easements, rights-of-way, interests, Allocated Interests, privileges and appurtenances as more particularly described, located, defined, allocated, or referred to in the Declaration, the Plats and Plans, and the Bylaws described in the Declaration, all of which are incorporated herein by reference thereto;

ALSO HEREBY CONVEYING, TRANSFERRING and ASSIGNING, without any warranty covenants or covenant of title, all of the Reserved Development Rights described in Articles XVI and XVII of said Declaration, together with all Special Declarant Rights and all easements described or referred to in said Declaration and on said Plats and Plans which are necessary or convenient to the exercise of said Reserved Development Rights or to the construction, ownership, use, sale or lease of any condominium units, common elements or limited common elements created by the exercise of said Reserved Development rights, including, but not limited to, the easements, rights, and privileges described in Sections 7.4, 7.5, 7.6, 7.8, 7.9, 7.11, 7.12, 7.13 and 7.14 and Article XII of said Declaration.

SUBJECT TO the matters affecting title described in the Declaration and the Plats and Plans and the terms, conditions, covenants, agreements, easements and provisions of the Declaration and Bylaws as the same may be amended from time to time, which terms, conditions, covenants, agreements, easements and provisions, together with any amendments thereto, shall constitute covenants running with the land and shall bind the Grantee and any person having at any time any interest or estate in the Unit, as though such provisions were recited and stipulated at length herein;

SUBJECT TO an easement in common with the Owners of other units to use all pipes, wires, ducts, cables, conduits, public utility lines and other Common Elements serving the other units and located in the Unit and to an easement for structural and lateral support in favor of every other unit;

AND, by the recording of or by acceptance of this deed the Grantee does accept and agree for the Grantee, its successors and assigns, to be bound by and subject to all of the provisions, terms, conditions, covenants, agreements, easements and provisions of the Act, the Declaration, the Bylaws and the Plats and Plans, as the same may be amended from time to time.

Grantee, for itself and its successors and assigns, agrees and acknowledges that Grantee is purchasing the Unit in the Condominium by virtue and in furtherance of Grantee's exercise of a certain right of first offer set forth in a certain Agreement dated February 11, 2005 (the "Agreement") between Grantee and Blethen Maine Newspapers, Inc., a Washington corporation. A Memorandum of Right of First Offer dated June 11, 2009 pertaining to the Agreement was duly recorded by Grantee on the same date in the Cumberland County Registry of Deeds in Book 26984, Page 27 (the "Memorandum"). Reference is further made to a certain Notice of Transfer from the Grantor to the Grantee dated, served on the Grantee and recorded on June 16, 2009 in said Registry of Deeds in Book 26998, Page 124 pertaining to the Agreement and Memorandum. By its purchase of the Unit in the Condominium at the purchase price set forth in the Notice of Transfer, and by its acceptance of this deed, the Grantee agrees and acknowledges that (a) the Grantor has fully complied with its obligations under the Agreement and the Memorandum, (b) Grantee's right of first offer in the Agreement and referred to in the Memorandum and the Notice of Transfer has merged with the fee estate conveyed hereby and (c) the right of first offer and all other rights of Grantee under the Agreement and the Memorandum have been terminated and no longer encumber the Unit in the Condominium.

FOR SOURCE OF TITLE reference is hereby made to the Release Deed of Blethen Maine Newspapers, Inc. dated June 15, 2009 and recorded in said Registry of Deeds in Book 26992, Page 159. Grantor means and intends to convey all and the same estate and premises acquired by it from Blethen Maine Newspapers, Inc. under said deed, subject to the matters noted in this instrument.

IN WITNESS WHEREOF, the undersigned MTM PORTLAND PROPERTIES, LLC has caused this instrument to be executed and delivered by

the undersigned officer hereunto duly authorized, this 17th day of August, 2009.

Signed, Sealed and Delivered

Witness

MTM PORTLAND PROPERTIES, LLC
By: MaineToday Media, Inc., its Sole Manager

By: Richard L. Connor
Name: Richard L. Connor
Title: Chief Executive Officer

STATE OF MAINE
Cumberland, ss. August 17, 2009

Personally appeared the above named Richard L. Connor in his stated capacity for MaineToday Media, Inc., the Sole Manager of MTM Portland Properties, LLC, and acknowledged the foregoing instrument to be his free act and deed in said capacity and the free act and deed of MaineToday Media, Inc. and MTM Portland Properties, LLC.

Before me,

~~Notary Public~~
PAUL F. DRISCOLL
Attorney-at-Law

Received
Recorded Register of Deeds
Aug 17,2009 09:24:56A
Cumberland County
Pamela E. Lovley

Att. F

Norway Savings Bank
COLORFUL SOLUTIONS™

May 23, 2016

To Whom It May Concern,

This letter will confirm that Lou Wood and A&M Partners have been longstanding clients of Norway Savings Bank for many years and have always handled their relationships with Norway Savings Bank in an exemplary fashion. Norway Savings Bank has extended numerous credit facilities to Mr. Wood and A&M Partners over the course of this relationship and they have an impeccable repayment history with our institution. Norway Savings Bank can confirm that Mr. Wood and A&M Partners have sufficient financial capacity based on their deposit and loan relationship with us.

Please don't hesitate to call me at (207) 482-7901 if I can be of service.

Sincerely,

Daniel P. Walsh
Senior Vice President &
Senior Commercial Lender

Att. G

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

File: 16142

July 14, 2016

Mr. Gordon Johnson
Portland Water District
PO Box 3553
Portland, ME 04104-3553

RE: CAPACITY TO SERVE LETTER, CHESTNUT STREET, PORTLAND

Dear Gordy,

Attached is information for the Chestnut Street Project. There will be 53 units in the 6 floors of housing with two levels of parking. The access to parking will be from Chestnut Street for the lowest level and Oxford Street for the upper level. The flow will be 8,190 gpd as well as a sprinkler system.

If you could provide a capacity to serve letter for the City of Portland it would be greatly appreciated.

Sincerely,

PINKHAM & GREER,
CIVIL ENGINEERS

Thomas S. Greer, P.E.

cc: (1) File

enclosures

TSG/rjs

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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

Date: July 28, 2016

David Margolis-Pineo
Deputy City Engineer
207-874-8850
207-400-6696
dmp@portlandmaine.gov

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

Site Address: Chestnut Street

Chart Block Lot Number: 26 / E /10

Proposed Use: Parking Lot / Residential
Previous Use: Parking Lot
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.
Chestnut 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: Barbara Barhydt Phone: 207-874-8699
Owner/Developer Name: A & M Partners, Inc.
Owner/Developer Address: 120 Exchange St. Portland, ME 04101
Phone: 207-879-1358 Fax: E-mail: lcwood@ampartners.me
Engineering Consultant Name: Thomas S. Greer, P.E., Pinkham & Greer, Civil Engineers
Engineering Consultant Address: 28 Vannah Ave, Portland, ME 04103
Phone: 207-781-5242 Fax: 207-781-4245 E-mail: tgreer@pinkhamandgreer.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: 8,280 GPD
Peaking Factor/ Peak Times: 3
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)*
90 gpd per bedroom

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.

Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
(207) 774-3603
(207) 400-6890 mobile
trafficsolutions@maine.rr.com

July 27, 2016

Traffic Assessment
For Proposed
"Westerlea View Lofts"
Portland, Maine

INTRODUCTION

A&M Partners, Inc. is proposing a seven story apartment building at 75 Chestnut Street on an undeveloped parcel of land located adjacent to the existing Chestnut Street Garage. A total of 54 apartments are proposed to include; (38) 2-bedroom units, (14) 1-bedroom units and 2 studio units. Additionally, the proposed project will include approximately 2,328 square feet of commercial-retail space on the first floor and an 800 square foot residential living space on the second floor. Parking at a ratio of one space per apartment unit will be provided in the existing and adjacent Chestnut Street Garage.

This document determines peak hour trip generation of the proposed project during both peak commuter time periods and examines current roadway safety trends in the general vicinity of the proposed project.

SITE TRAFFIC

Site Trip Generation: Trip generation was determined for the proposed "Westerlea View Lofts" project based upon trip tables presented in the seventh edition of the Institute of Transportation Engineers (ITE) "**TRIP GENERATION**" handbook. The analysis assumes the proposed commercial space will be leased as office space and the 800 square foot residential space proposed for the second floor considered as an additional apartment unit. The following trip rates were used in that effort:

Land-Use Code 223 – Mid-Rise Apartment
Street Peak Hour – AM Peak = *0.30 trips/dwelling unit*
Street Peak Hour – PM Peak = *0.39 trips/dwelling unit*

Land-Use Code 715 – Single-Tenant Office Building
Street Peak Hour – AM Peak = *1.80 trips/1,000sf building area*
Street Peak Hour – PM Peak = *1.73 trips/1,000sf building area*

Accordingly, the proposed 55 apartment units (54 apartment units + 800-sf residential space) can be expected to generate **17** vehicle trips in the "*morning*" peak hour and an additional 21 trips in the "*afternoon*" peak hour. The 2,328 square feet of single-tenant office space will generate an additional 4 peak hour trips in each peak hour time period. In total, the proposed "Westerlea View Lofts" project can be expected to generate approximately 21 vehicle trips in the AM peak hour and 25 trips during the PM peak hour.

EXISTING SAFETY CONDITIONS

The Maine Department of Transportation's (MaineDOT) Accident Records Section provided the latest three-year (2013 through 2015) crash data for the section of Chestnut Street between Cumberland Avenue and Somerset Street, a distance of approximately 0.22 miles. Their report is presented as follows:

2013 -2015 Traffic Accident Summary

Location	Total Crashes	Critical Rate Factor
1. Chestnut Street @ Cumberland Avenue	9	2.52
2. Chestnut Street @ Oxford Street	1	1.39
3. Chestnut Street @ Lancaster Street	3	5.01
4. Chestnut Street @ Kennebec Street	1	1.07
5. Chestnut Street @ Somerset Street	4	1.21
6. Chestnut Street btw. Cumberland Avenue and Oxford Street	7	9.98
7. Chestnut Street btw. Oxford Street and Lancaster Street	1	1.40
8. Chestnut Street btw. Lancaster Street and Kennebec Street	1	2.34
9. Chestnut Street btw. Kennebec Street and Somerset Street	1	2.70

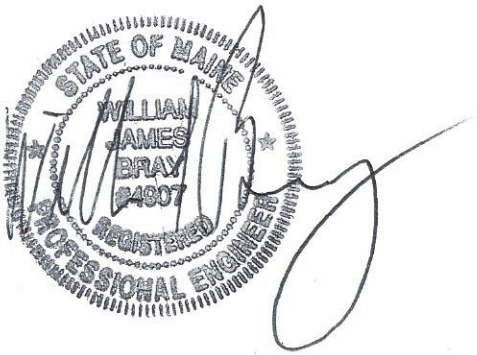
The MaineDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- ***8 or more accidents***
- ***A Critical Rate Factor greater than 1.00***

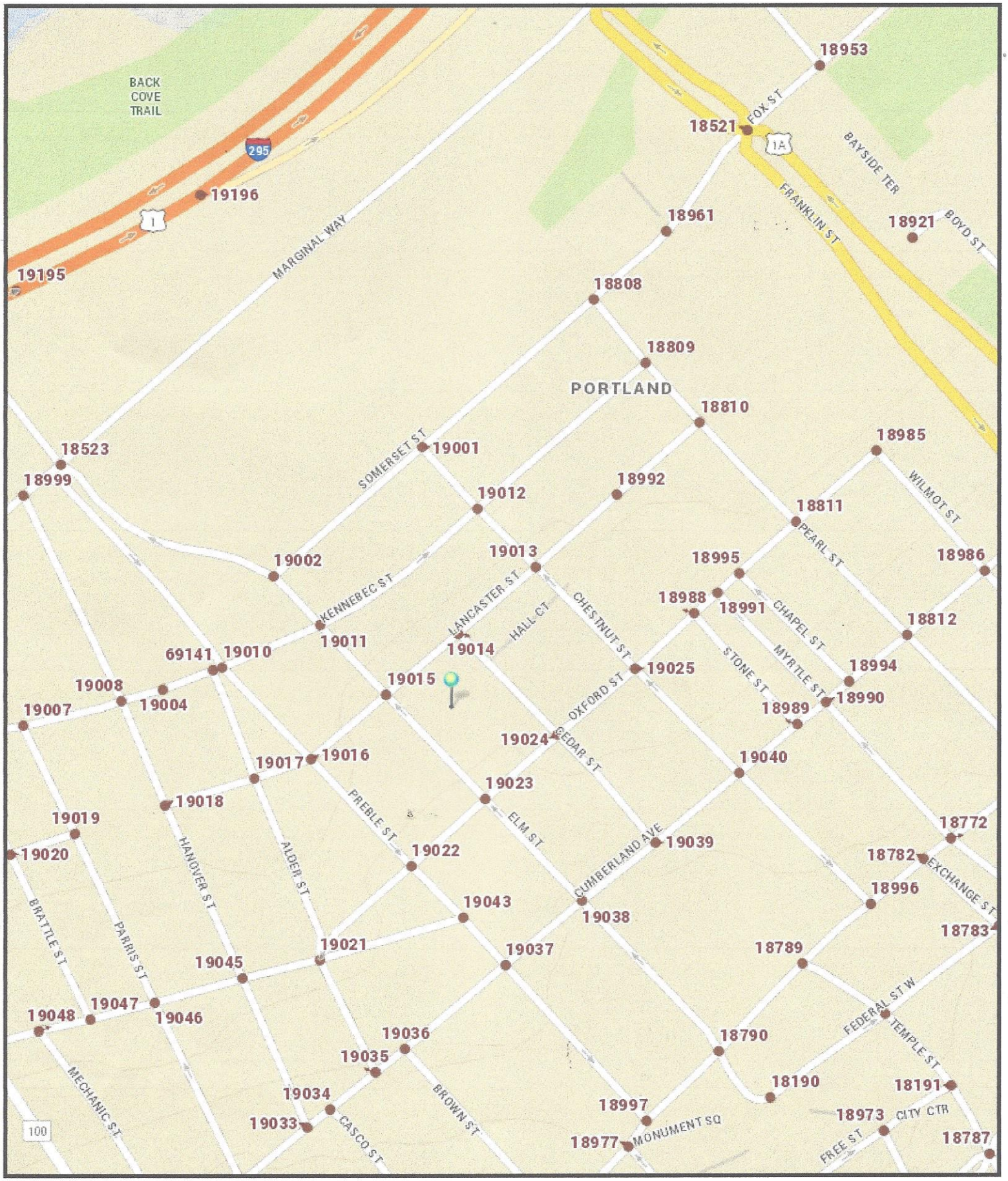
As the data presented in the table shows, the intersection of Chestnut Street and Cumberland Avenue (Highlighted in green) meets MaineDOT's criteria as a high crash location. A total of 9 crashes and a Critical Rate Factor (CRF) of 2.52 were reported by MaineDOT. A more in-depth review (preparation of detailed vehicle collision diagrams) was prepared to determine if a clear pattern of accident is occurring (Copies of the Collision Diagram is attached as an appendix to the report). The detailed analysis shows that the majority of the vehicle crashes (a total of 5 collisions) directly or indirectly involved a pedestrian crossing within the intersection.

Vehicle sightlines were reviewed at the intersection and were found to be more than adequate for the approach speeds of traffic on Cumberland Avenue. Roadway pavement markings, specifically crosswalk markings, are high visibility ("*piano–key*") markings and all appropriate pedestrian crossing signs exist within the intersection.

The City may want to consider the effectiveness of converting the Cumberland Avenue/Chestnut Street intersection to a multi-way stop controlled intersection; greatly enhancing the safety of pedestrians crossing within the intersection.



CHESTNUT AREA



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.

0.08 Miles

1 inch = 0.08 miles

Date: 7/21/2016
Time: 2:24:07 PM

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

Chestnut

REPORT PARAMETERS

Year 2013, Start Month 1 through Year 2015 End Month: 12

Route: **0560135**	Start Node: **19040**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19001**	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
19040	0560135 - 0.09	Int of CHESTNUT ST CUMBERLAND AV	2	9	0	0	1	4	4	55.6	3.136	0.96	0.38	2.52
												Statewide Crash Rate:	0.13	
19025	0560135 - 0.16	0509445 POR,CHESTNUT,OXFORD ST.	2	1	0	1	0	0	0	100.0	0.397	0.84	0.60	1.39
												Statewide Crash Rate:	0.14	
19013	0560135 - 0.24	Int of CHESTNUT ST LANCASTER ST	2	3	0	0	0	1	2	33.3	0.331	3.02	0.60	5.01
												Statewide Crash Rate:	0.14	
19012	0560135 - 0.28	0509432 POR,CHESTNUT,KENNEBEC ST.	2	1	0	0	0	0	1	0.0	0.528	0.63	0.59	1.07
												Statewide Crash Rate:	0.14	
19001	0560135 - 0.31	0509421 POR,SOMERSET,CHESTNUT ST.	2	4	0	0	0	1	3	25.0	2.632	0.51	0.42	1.21
												Statewide Crash Rate:	0.14	
Study Years: 3.00		**NODE TOTALS:**		18	0	1	1	6	10	44.4	7.024	0.85	0.32	2.68

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
19025	19040	194734	0 - 0.07	0560135 - 0.09	0.07	2	7	0	0	0	0	7	0.0	0.00014	16544.24	1657.05	9.98
0509445 POR,CHESTNUT,OXFORD ST.				RD INV 05 60135											Statewide Crash Rate: 384.17		
19013	19025	194711	0 - 0.08	0560135 - 0.16	0.08	2	1	0	0	0	0	1	0.0	0.00014	2324.95	1656.22	1.40
Int of CHESTNUT ST LANCASTER ST				RD INV 05 60135											Statewide Crash Rate: 384.17		
19012	19013	194709	0 - 0.04	0560135 - 0.24	0.04	2	1	0	0	0	0	1	0.0	0.00009	3742.80	1601.68	2.34
0509432 POR,CHESTNUT,KENNEBEC ST.				RD INV 05 60135											Statewide Crash Rate: 384.17		
19001	19012	194692	0 - 0.03	0560135 - 0.28	0.03	2	1	0	0	0	0	1	0.0	0.00008	4204.61	1555.80	2.70
0509421 POR,SOMERSET,CHESTNUT ST.				RD INV 05 60135											Statewide Crash Rate: 384.17		
Study Years: 3.00				**Section Totals:**	0.22		10	0	0	0	0	10	0.0	0.00045	7362.48	1386.03	5.31
				Grand Totals:	0.22		28	0	1	1	6	20	28.6	0.00045	20614.94	1649.61	12.50

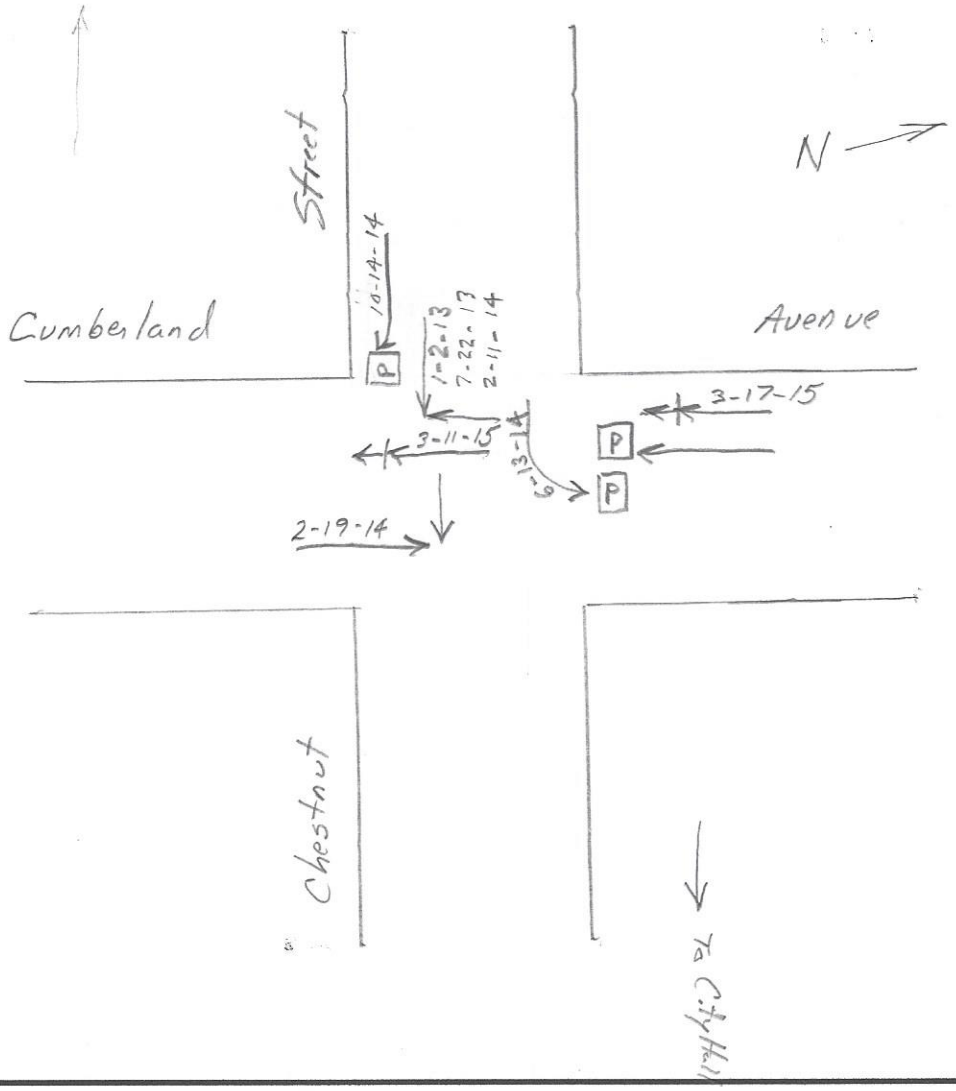
COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION Chestnut Street @ Cumberland Avenue

TOWN Portland NODE NO(S) 19040

YEARS REVIEWED 2013-2015 DATE PREPARED 7-24-2016



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

LOCATION Chestnut Street @ Cumberland Avenue

TOWN Portland NODE NO(S) 19040

YEARS REVIEWED 2013-2015 DATE PREPARED 7-24-2016

REPORT NO.	DATE	TIME	INJURIES K	A	B	C	LIGHT	ROAD SURFACE	ACF	OTHER
13-21	1-2-13	15:35					2	2	2	
13-2075	7-22-13	15:27				1	2	1	2,5	
14-526	2-11-14	21:28					4	1	2	
14-670	2-19-14	16:26				1	2	SNOW	16,14	Ped ran across rd.
14-1731	6-13-14	14:54				1	2	2	2	Ped in x-walk
14-3027	10-14-14	12:20				1	2	1	51	
15-1148	3-11-15	16:00					2	1	4	Ped in crosswalk
15-1199	3-17-15	10:29					2	1	4, 14	Ped in crosswalk
15-3689	11-3-15	14:40			1		3	1	Pedestrian ran w/o looking	

Att. I

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

STORMWATER MANAGEMENT REPORT
WESTERLEA VIEW LOFTS
PORTLAND, MAINE

July 28, 2016

Project Description:

This project is the construction of a 54 residential unit at 75 Chestnut Street. The site has an existing 3 story parking garage. This project will add an 11,600 sq. ft. footprint building to the site.

Existing Conditions:

The site has 49,326 sq. ft. of existing parking garage and a lawn area of 38,713 sq. ft. around the garage. The site has slopes in the 4-8% range. It has street frontage on Chestnut, Lancaster, and Oxford Street. It is considered an urban site.

Developed Conditions:

The Chestnut Street side of the site will be developed with an 11,600 sq. ft. building and a small grass area. The site will be landscaped and an underdrained soil filter will be installed at the low corner of Chestnut.

Methodology:

This stormwater analysis was performed using HydroCad Software based on TR-55 modeling conditions. This model requires assumptions as to the land cover, slopes and soils. These are enhanced by the topography mapping, soils mapping, and on-site observations. The flows were determined using a Type III coastal storm and rainfall totals for the 24 hour period for a 2 year storm, 3.1", for a 10 year storm, 4.6", and for a 25 year storm, 5.8". These data are published in the manual for Stormwater Management for Maine: Best Management Practices, published by the Maine Department of Environmental Protection.

Analysis:

A simple model of the site was developed to determine the relative impact of adding the 11,600 sq. ft. of building. This shows a slight increase in peak flows as noted below if no stormwater management is done.

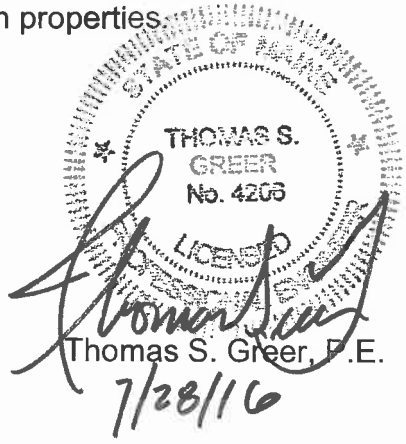
Peak Flows with No Stormwater Management Cubic Feet Per Second (cfs)		
	Existing	Developed
2 Year	4.08	4.57
10 Year	6.93	7.42
25 Year	9.21	9.69

This shows approximately ½ cfs increase in peak flows. An underdrained soil filter will be installed in the corner of the site. That will capture all the water from the roof of the new building and the landscaped area around it. This will significantly reduce the peak flows in the small storms and meet the stormwater quality standards. Peak flows from that system will be as follows:

Underdrained Soil Filter Flows	
	cfs
2 Year	0.1
10 Year	0.52
25 Year	1.66

Conclusion:

The use of the underdrained soil filter to capture and treat roof runoff will not result in any unreasonable impacts to downstream properties.



Thomas S. Greer, P.E.
7/28/16

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Tel: 207.781.5242 Fax: 207.781.4245

JOB 75 CHESTNUT ST
SHEET NO. _____ OF _____
CALCULATED BY TSG DATE 7/28/16
CHECKED BY _____ DATE _____
SCALE _____

CHECK of FILTER SIZE

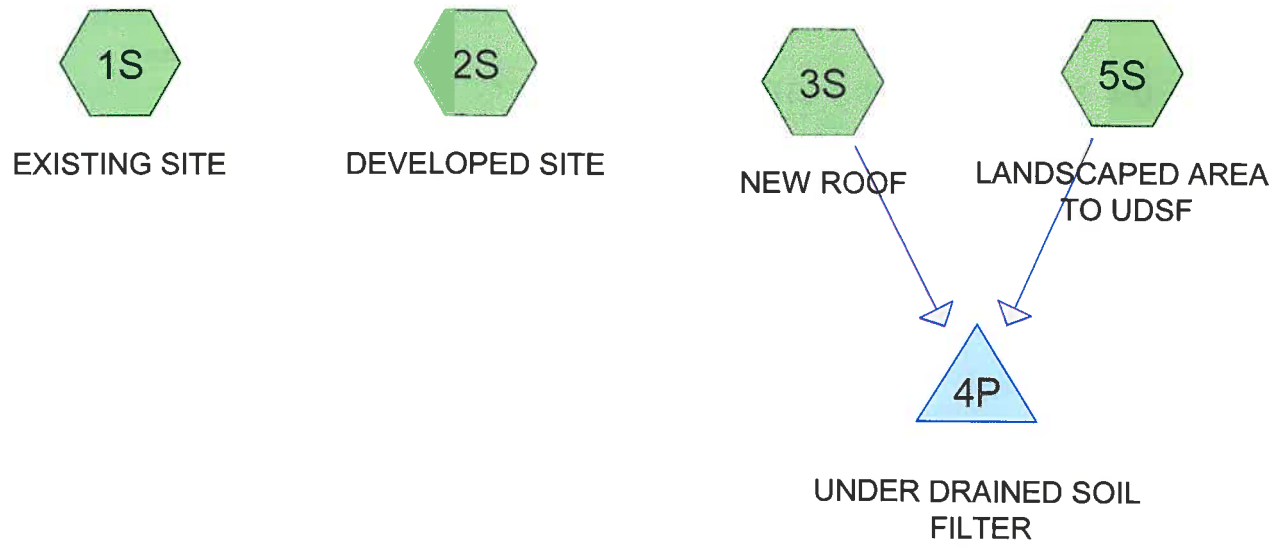
ROOF 11,600 sq ft x 1"/12" = 966 CF

LANDSCAPED 7,000 x .4" 1"/12" = 233 CF

TOTAL REQUIRED 1,199 CF

TOTAL PROVIDED 9.5 TO 11 = 1,800 CF

OK



Subcat Reach Pond Link

Routing Diagram for CHESTNUT STREET TSG 16142
Prepared by Hewlett-Packard Company, Printed 7/28/2016
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=92,224 sf 58.02% Impervious Runoff Depth>1.78"
Tc=10.0 min CN=88 Runoff=4.08 cfs 0.315 af

Subcatchment 2S: DEVELOPED SITE Runoff Area=92,224 sf 68.92% Impervious Runoff Depth>2.04"
Tc=10.0 min CN=91 Runoff=4.57 cfs 0.359 af

Subcatchment 3S: NEW ROOF Runoff Area=11,600 sf 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.81 cfs 0.060 af

Subcatchment 5S: LANDSCAPED AREA TO Runoff Area=7,000 sf 0.00% Impervious Runoff Depth>0.94"
Tc=5.0 min CN=75 Runoff=0.19 cfs 0.013 af

Pond 4P: UNDER DRAINED SOIL FILTER Peak Elev=10.52' Storage=1,132 cf Inflow=0.99 cfs 0.072 af
Outflow=0.10 cfs 0.072 af

Total Runoff Area = 4.661 ac Runoff Volume = 0.746 af Average Runoff Depth = 1.92"
36.63% Pervious = 1.707 ac 63.37% Impervious = 2.954 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=92,224 sf 58.02% Impervious Runoff Depth>3.10"
Tc=10.0 min CN=88 Runoff=6.93 cfs 0.546 af

Subcatchment 2S: DEVELOPED SITE Runoff Area=92,224 sf 68.92% Impervious Runoff Depth>3.39"
Tc=10.0 min CN=91 Runoff=7.42 cfs 0.599 af

Subcatchment 3S: NEW ROOF Runoff Area=11,600 sf 100.00% Impervious Runoff Depth>4.05"
Tc=5.0 min CN=98 Runoff=1.20 cfs 0.090 af

Subcatchment 5S: LANDSCAPED AREA TO Runoff Area=7,000 sf 0.00% Impervious Runoff Depth>1.97"
Tc=5.0 min CN=75 Runoff=0.40 cfs 0.026 af

Pond 4P: UNDER DRAINED SOIL FILTER Peak Elev=11.02' Storage=1,823 cf Inflow=1.60 cfs 0.116 af
Outflow=0.52 cfs 0.103 af

Total Runoff Area = 4.661 ac Runoff Volume = 1.262 af Average Runoff Depth = 3.25"
36.63% Pervious = 1.707 ac 63.37% Impervious = 2.954 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=92,224 sf 58.02% Impervious Runoff Depth>4.18"
Tc=10.0 min CN=88 Runoff=9.21 cfs 0.738 af

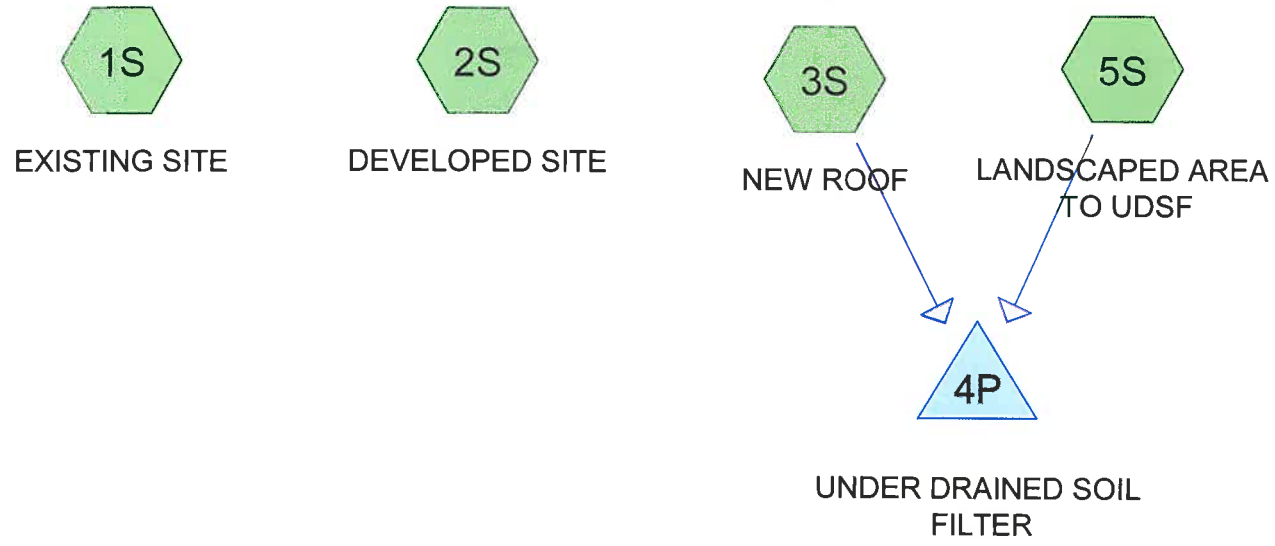
Subcatchment 2S: DEVELOPED SITE Runoff Area=92,224 sf 68.92% Impervious Runoff Depth>4.50"
Tc=10.0 min CN=91 Runoff=9.69 cfs 0.793 af

Subcatchment 3S: NEW ROOF Runoff Area=11,600 sf 100.00% Impervious Runoff Depth>5.15"
Tc=5.0 min CN=98 Runoff=1.52 cfs 0.114 af

Subcatchment 5S: LANDSCAPED AREA TO Runoff Area=7,000 sf 0.00% Impervious Runoff Depth>2.90"
Tc=5.0 min CN=75 Runoff=0.59 cfs 0.039 af

Pond 4P: UNDER DRAINED SOIL FILTER Peak Elev=11.04' Storage=1,861 cf Inflow=2.11 cfs 0.153 af
Outflow=1.66 cfs 0.133 af

Total Runoff Area = 4.661 ac Runoff Volume = 1.684 af Average Runoff Depth = 4.34"
36.63% Pervious = 1.707 ac 63.37% Impervious = 2.954 ac



Subcat Reach Pond Link

Routing Diagram for CHESTNUT STREET TSG 16142
Prepared by Hewlett-Packard Company, Printed 7/28/2016
HydroCAD® 10.00-16 s/n 01454 © 2015 HydroCAD Software Solutions LLC

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	2.688	2.688	IMPERVIOUS	1S, 2S
0.000	0.000	0.000	0.000	1.707	1.707	LANDSCAPED	1S, 2S, 5S
0.000	0.000	0.000	0.000	0.266	0.266	ROOF	3S

Summary for Subcatchment 1S: EXISTING SITE

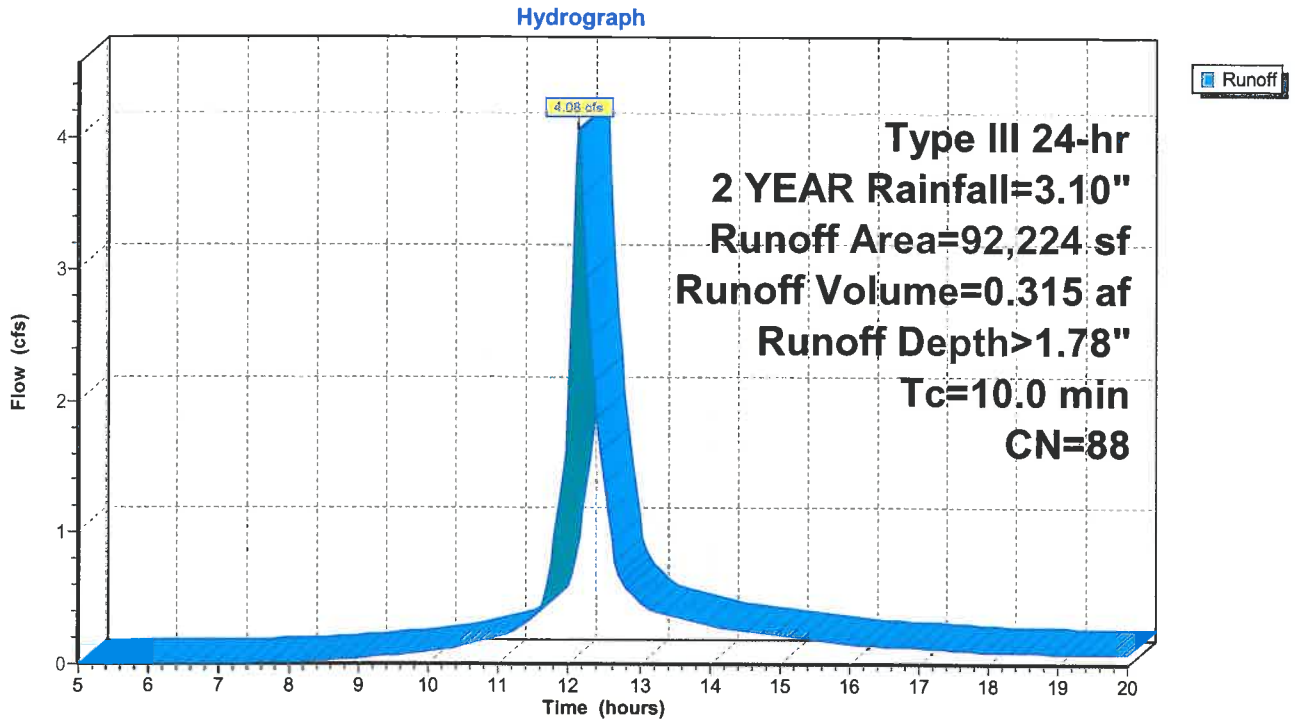
Runoff = 4.08 cfs @ 12.14 hrs, Volume= 0.315 af, Depth> 1.78"

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
*	53,511	98	IMPERVIOUS
*	38,713	75	LANDSCAPED
	92,224	88	Weighted Average
	38,713		41.98% Pervious Area
	53,511		58.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, DIRECT**

Subcatchment 1S: EXISTING SITE



Summary for Subcatchment 2S: DEVELOPED SITE

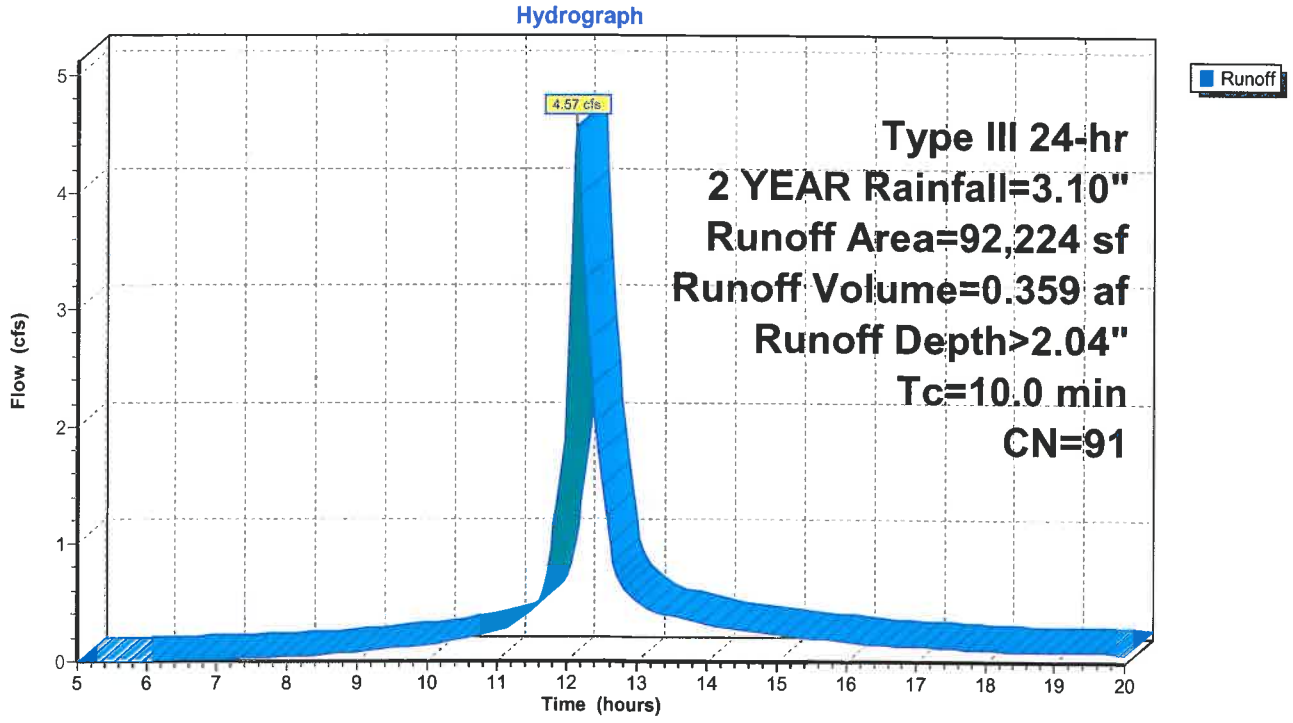
Runoff = 4.57 cfs @ 12.14 hrs, Volume= 0.359 af, Depth> 2.04"

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
*	63,563	98	IMPERVIOUS
*	28,661	75	LANDSCAPED
	92,224	91	Weighted Average
	28,661		31.08% Pervious Area
	63,563		68.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, DIRECT**

Subcatchment 2S: DEVELOPED SITE



Summary for Subcatchment 3S: NEW ROOF

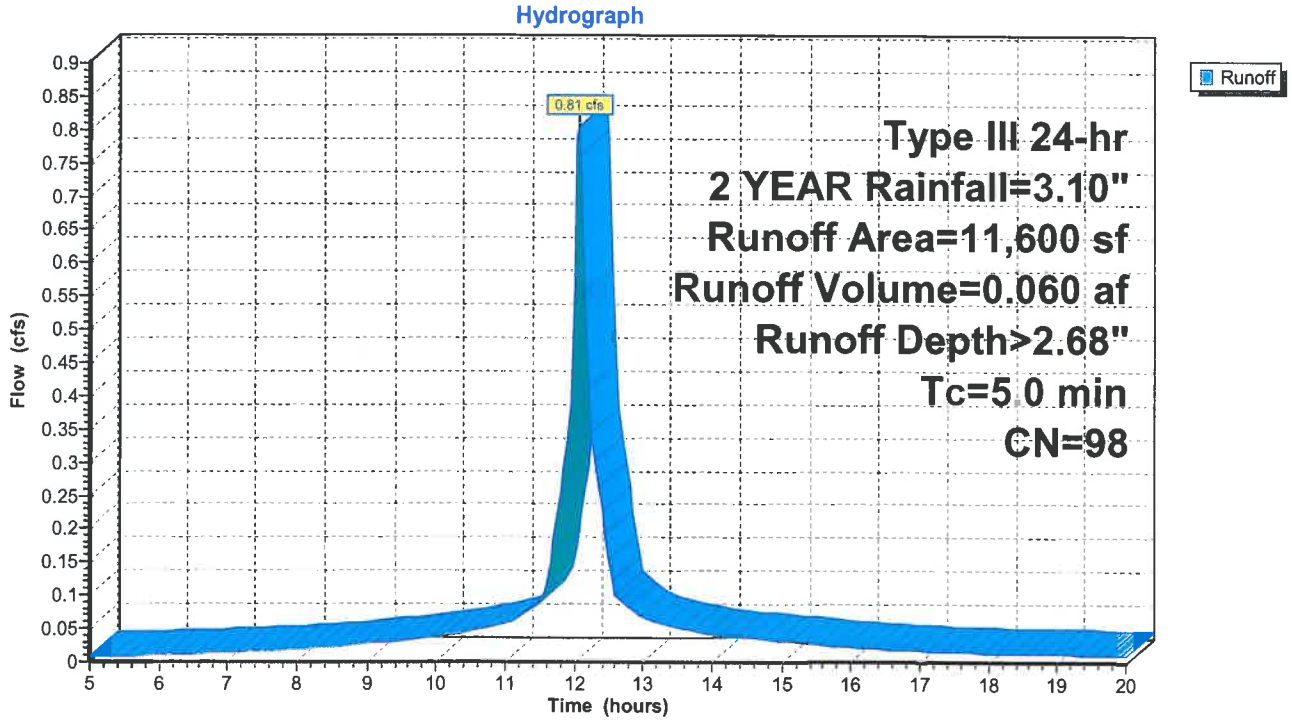
Runoff = 0.81 cfs @ 12.07 hrs, Volume= 0.060 af, Depth> 2.68"

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
*	11,600	98	ROOF
	11,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Subcatchment 3S: NEW ROOF



Summary for Subcatchment 5S: LANDSCAPED AREA TO UDSF

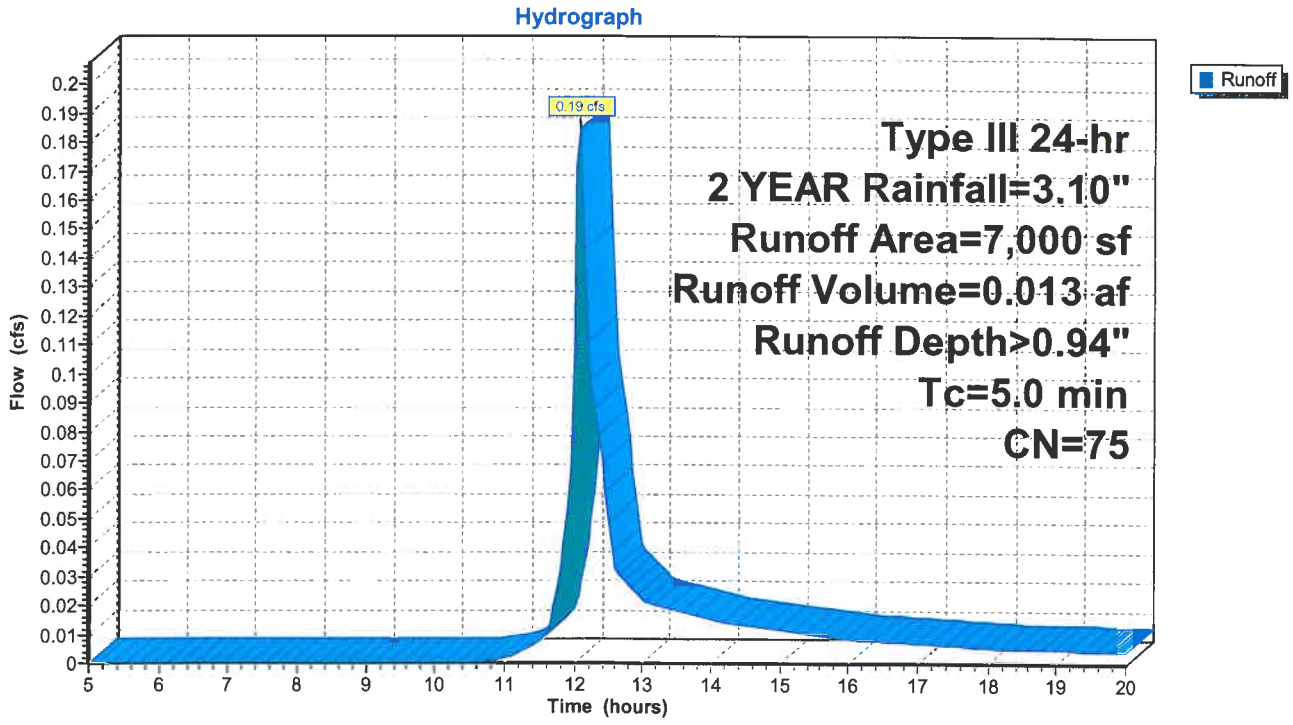
Runoff = 0.19 cfs @ 12.09 hrs, Volume= 0.013 af, Depth> 0.94"

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
*	7,000	75	LANDSCAPED
	7,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Subcatchment 5S: LANDSCAPED AREA TO UDSF



Summary for Pond 4P: UNDER DRAINED SOIL FILTER

Inflow Area = 0.427 ac, 62.37% Impervious, Inflow Depth > 2.03" for 2 YEAR event
Inflow = 0.99 cfs @ 12.07 hrs, Volume= 0.072 af
Outflow = 0.10 cfs @ 11.60 hrs, Volume= 0.072 af, Atten= 90%, Lag= 0.0 min
Primary = 0.10 cfs @ 11.60 hrs, Volume= 0.072 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.52' @ 12.88 hrs Surf.Area= 1,310 sf Storage= 1,132 cf

Plug-Flow detention time= 87.0 min calculated for 0.072 af (100% of inflow)
Center-of-Mass det. time= 86.3 min (838.1 - 751.8)

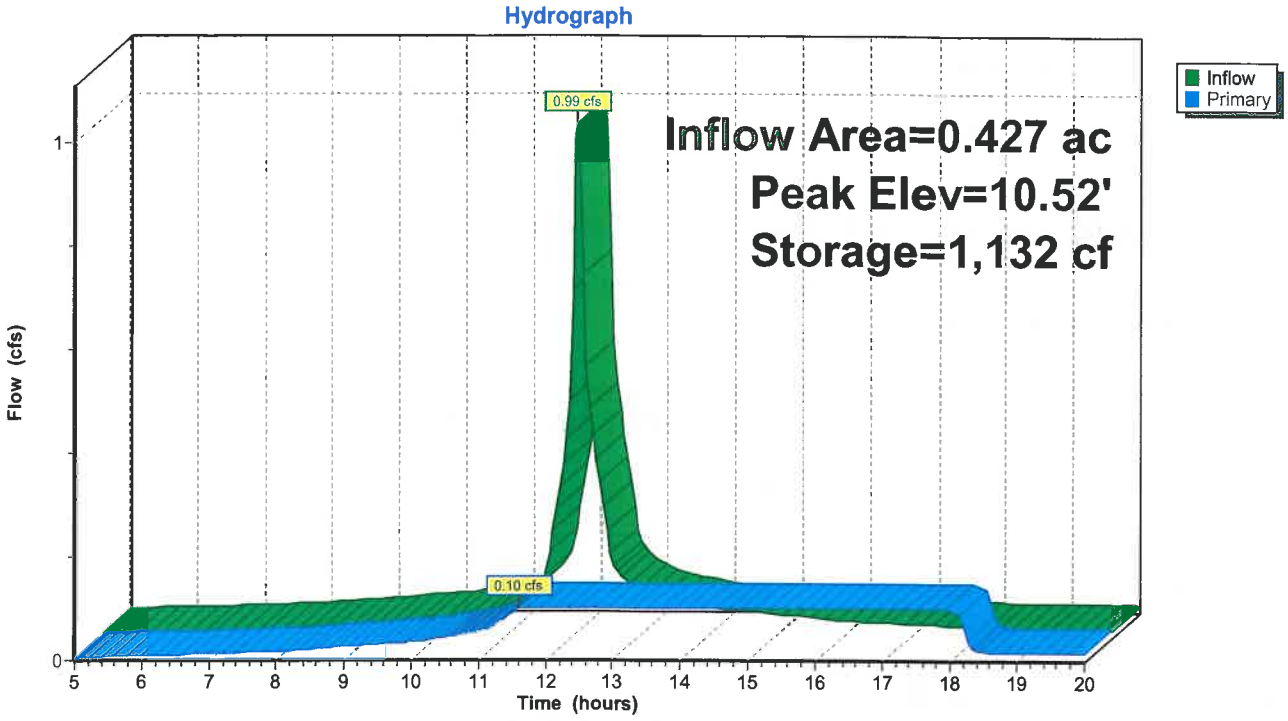
Volume	Invert	Avail.Storage	Storage Description
#1	9.50'	3,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
9.50	900	0	0
11.00	1,500	1,800	1,800
12.00	2,250	1,875	3,675

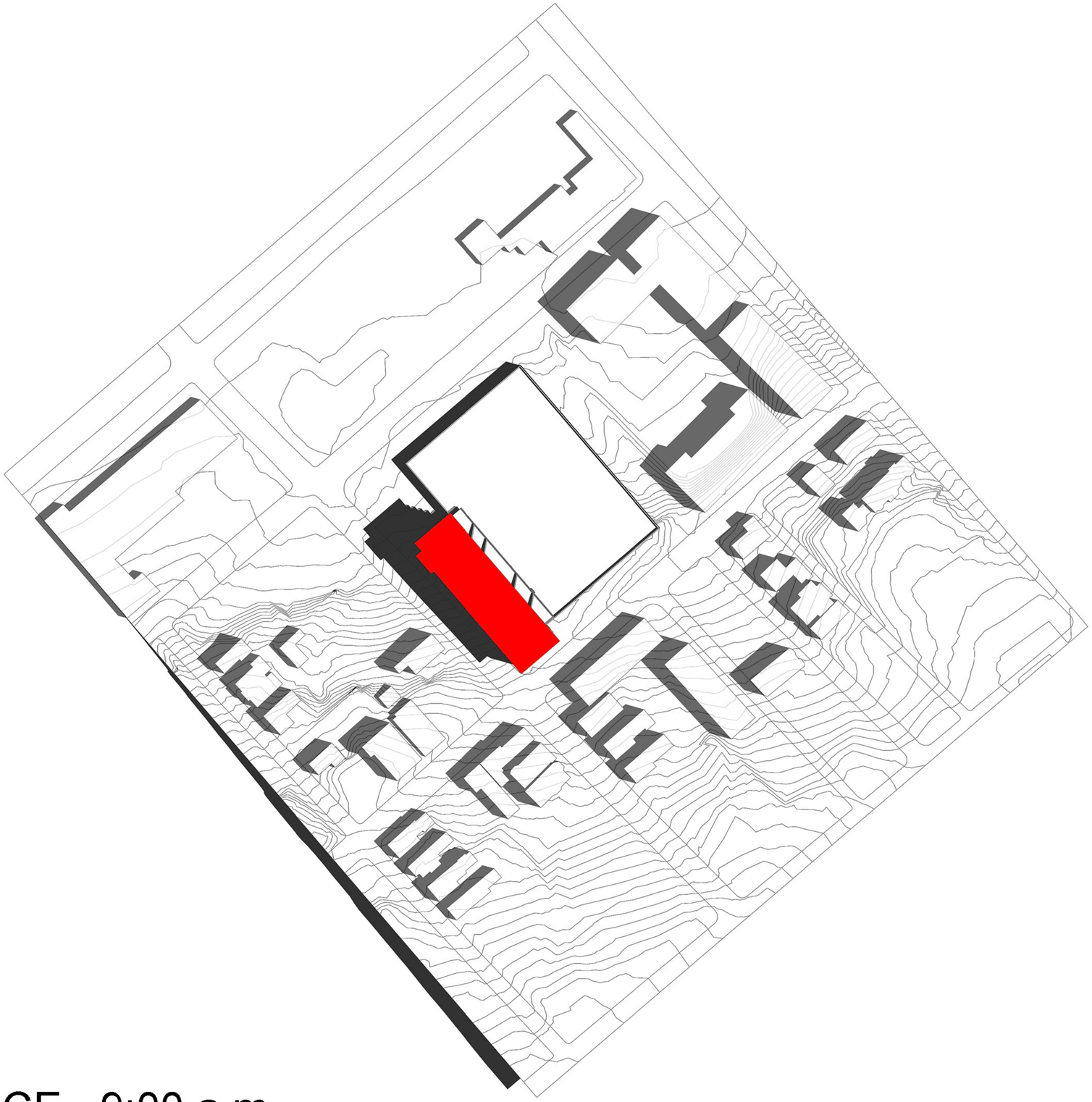
Device	Routing	Invert	Outlet Devices
#1	Primary	9.50'	**0.10 cfs Exfiltration at all elevations**
#2	Primary	11.00'	**2.0" x 2.0" Horiz. Orifice/Grate** X 81 rows C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 11.60 hrs HW=9.53' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.10 cfs)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: UNDER DRAINED SOIL FILTER



Att. J

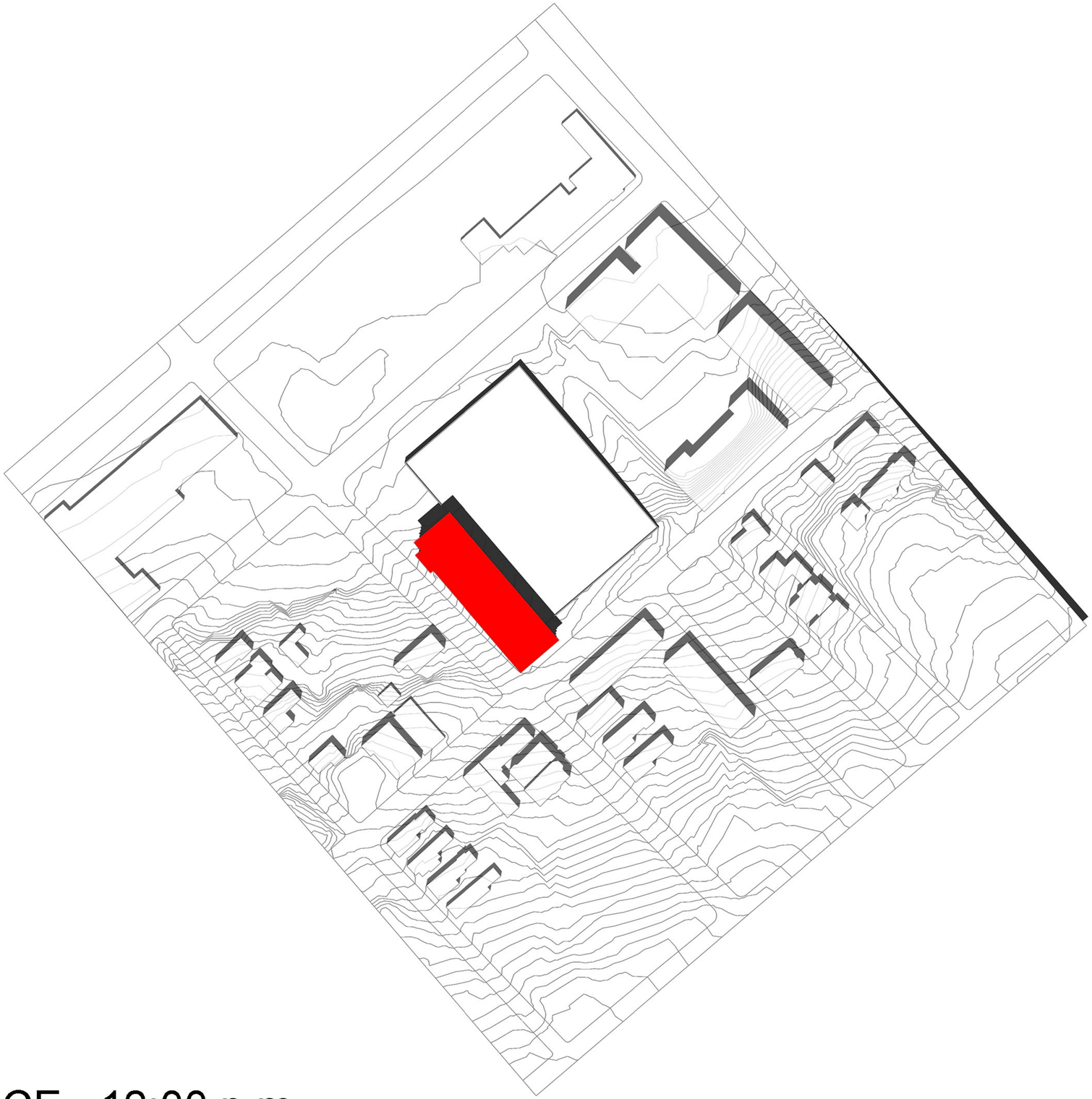


SUMMER SOLSTICE - 9:00 a.m.

Chestnut Street - Portland, Maine

NORTH

ARCHETYPE architects

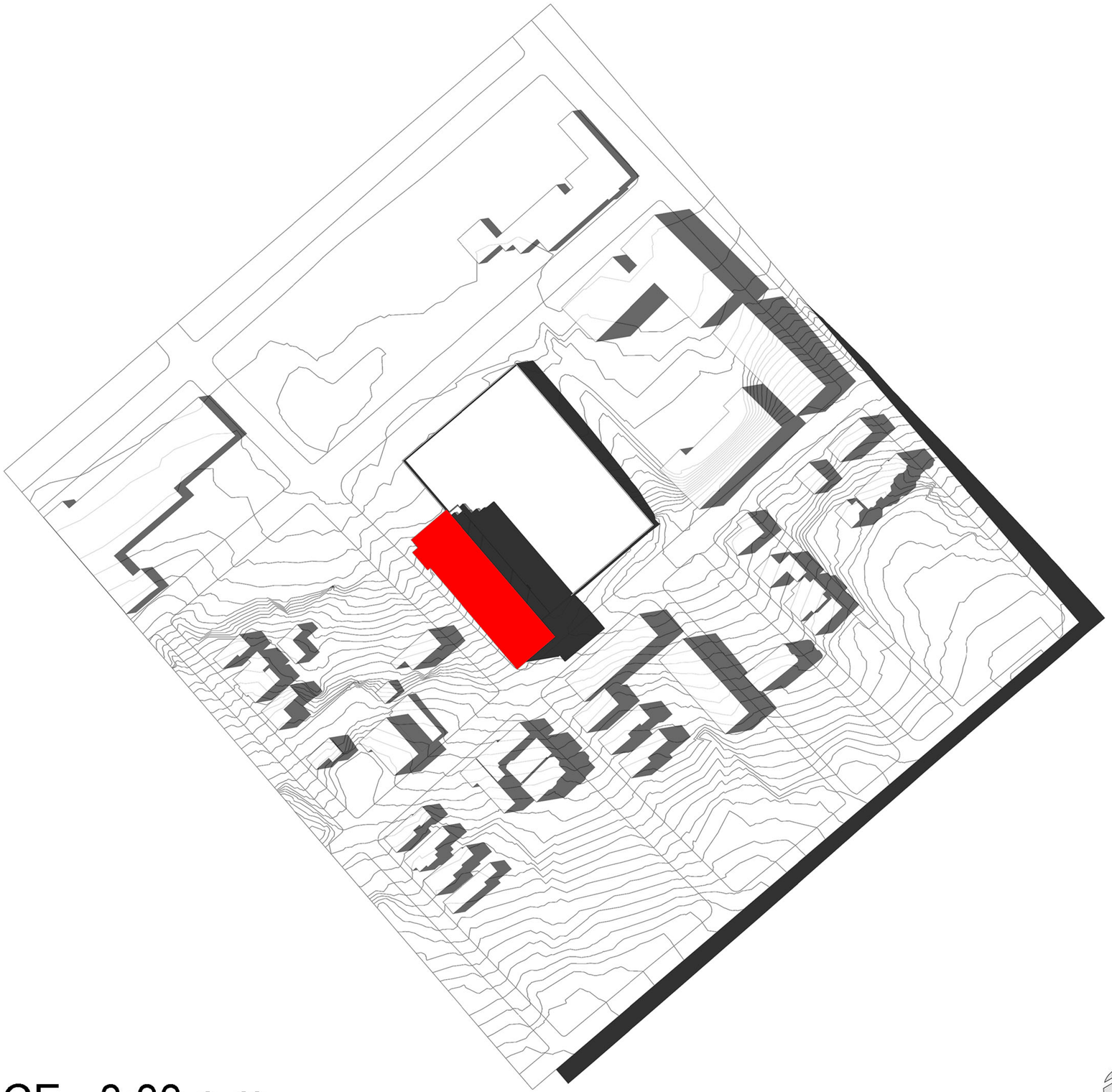


SUMMER SOLSTICE - 12:00 p.m.

Chestnut Street - Portland, Maine

NORTH

ARCHETYPE architects



SUMMER SOLSTICE - 3:00 p.m.

Chestnut Street - Portland, Maine

NORTH

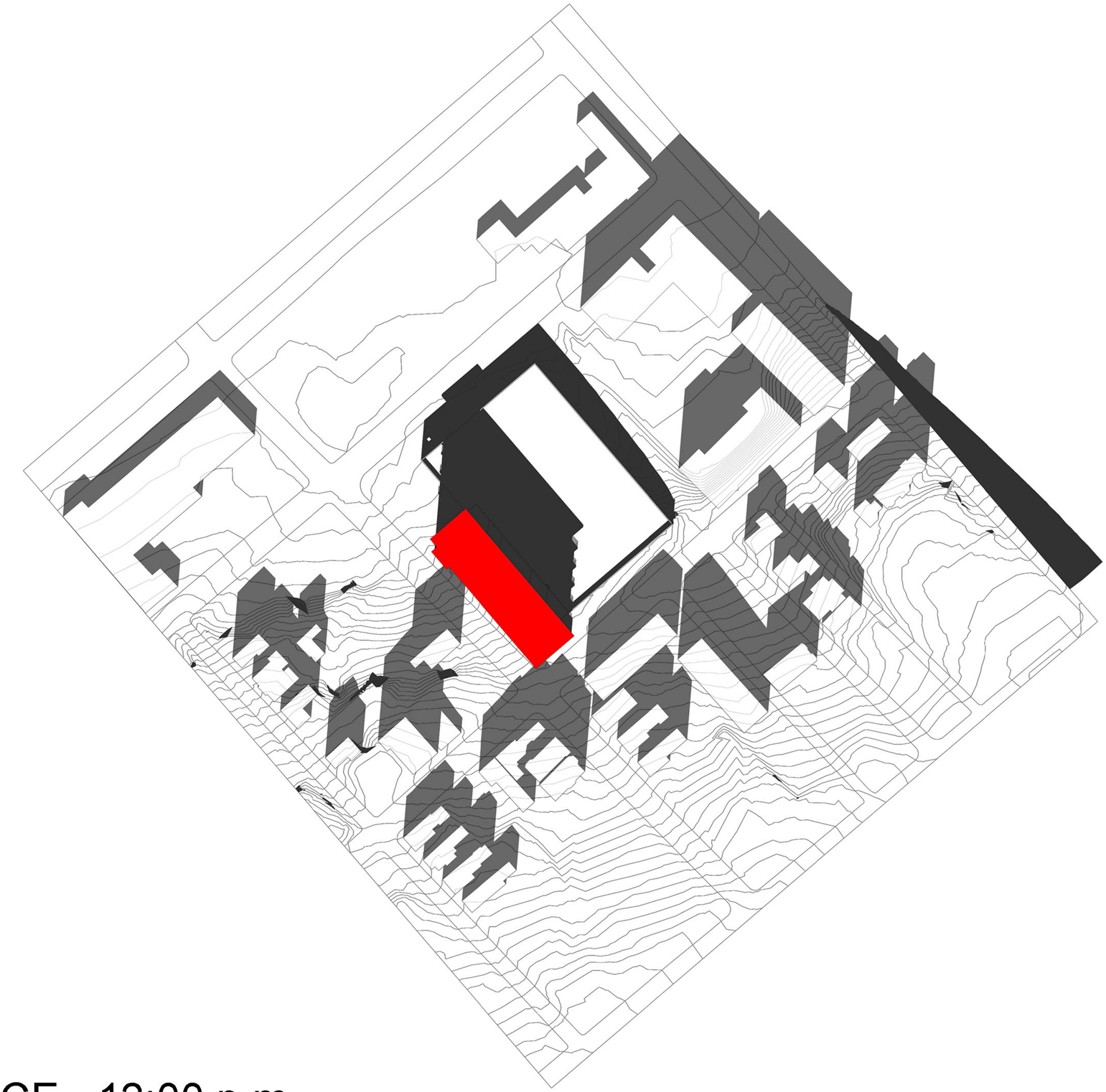
ARCHETYPE architects

WINTER SOLSTICE - 9:00 a.m.

Chestnut Street - Portland, Maine

NORTH

ARCHETYPE architects

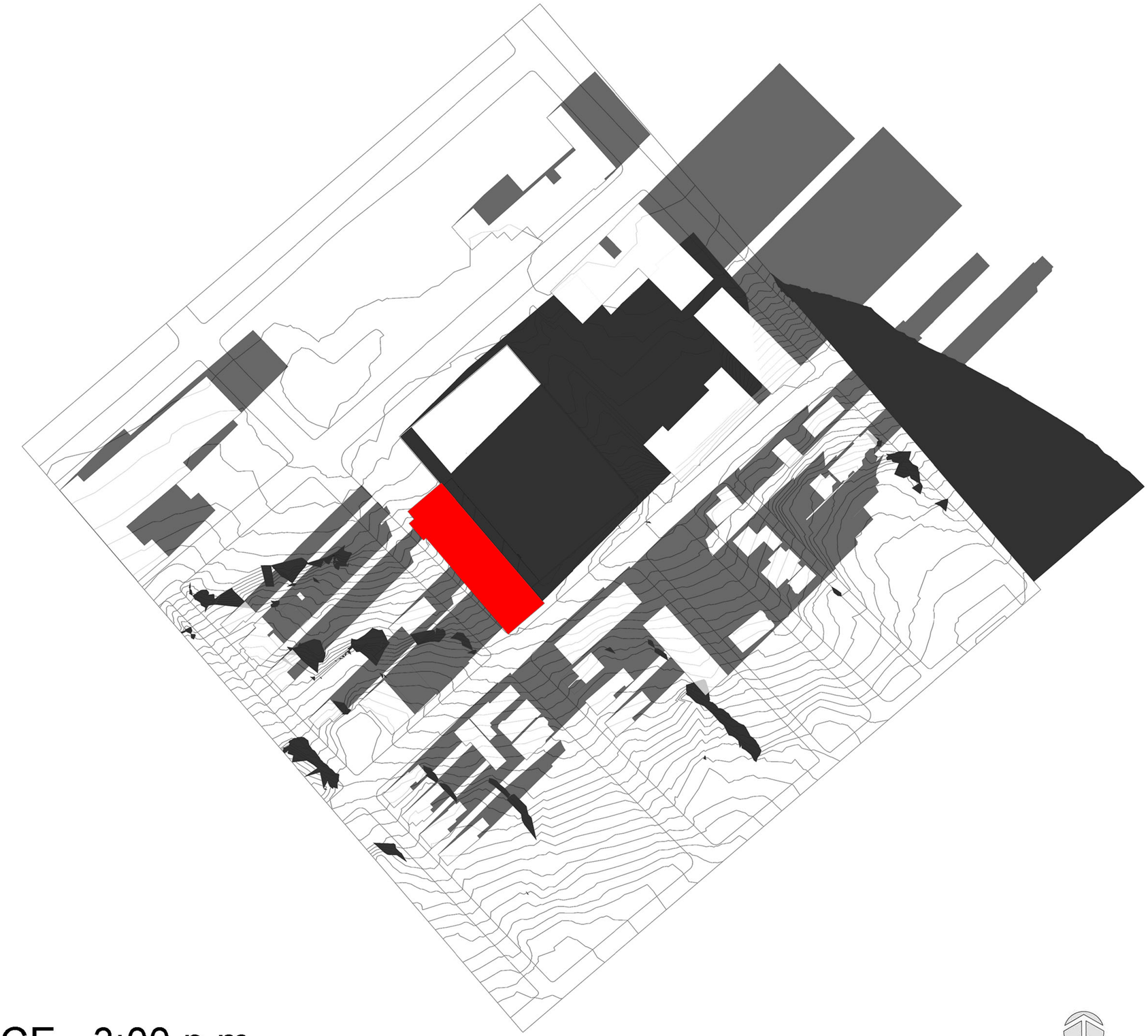


WINTER SOLSTICE - 12:00 p.m.

Chestnut Street - Portland, Maine

NORTH

ARCHETYPE architects



WINTER SOLSTICE - 3:00 p.m.

Chestnut Street - Portland, Maine

NORTH

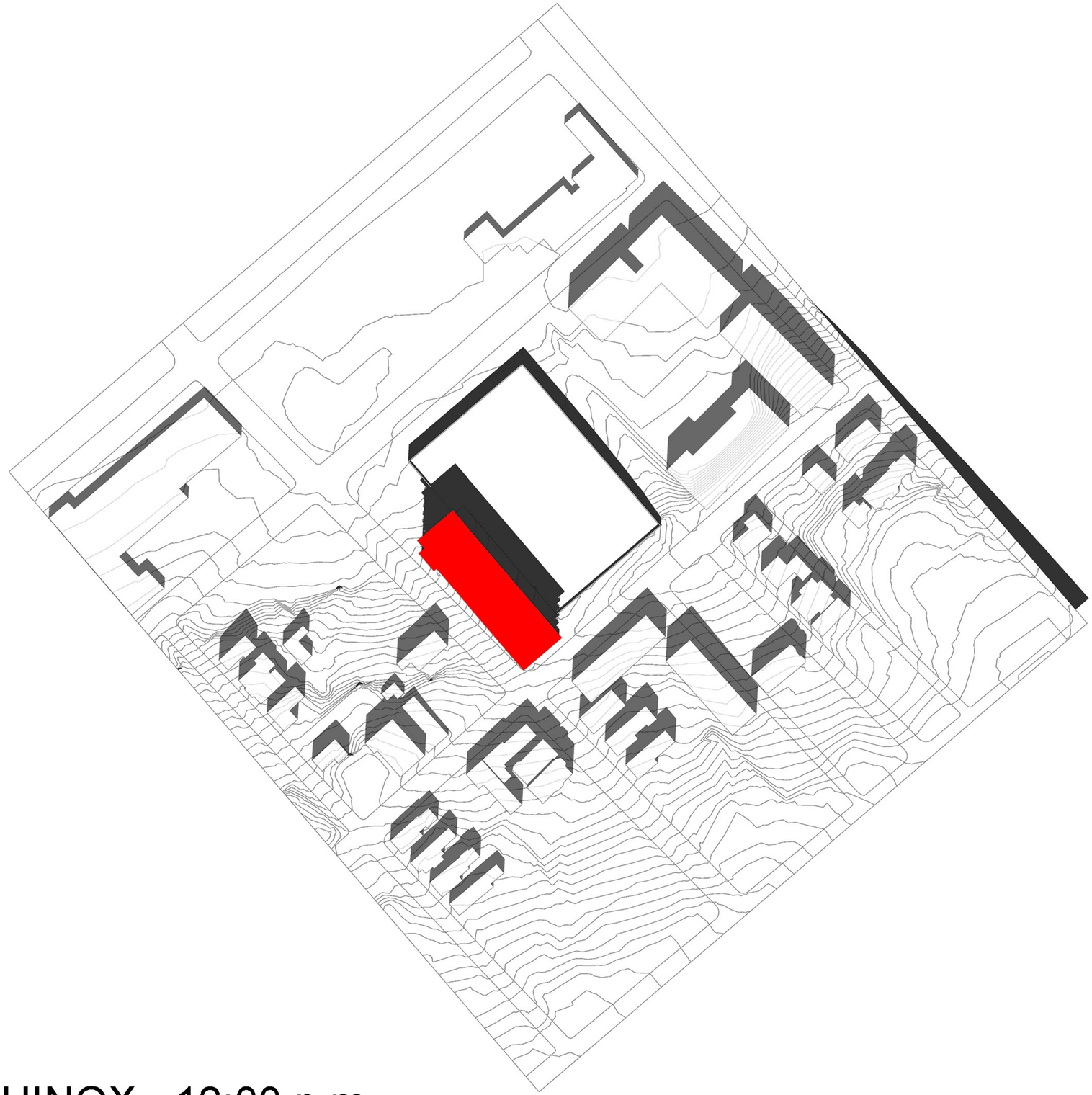
ARCHETYPE architects

SPRING/FALL EQUINOX - 9:00 a.m.

Chestnut Street - Portland, Maine

NORTH

ARCHETYPE architects

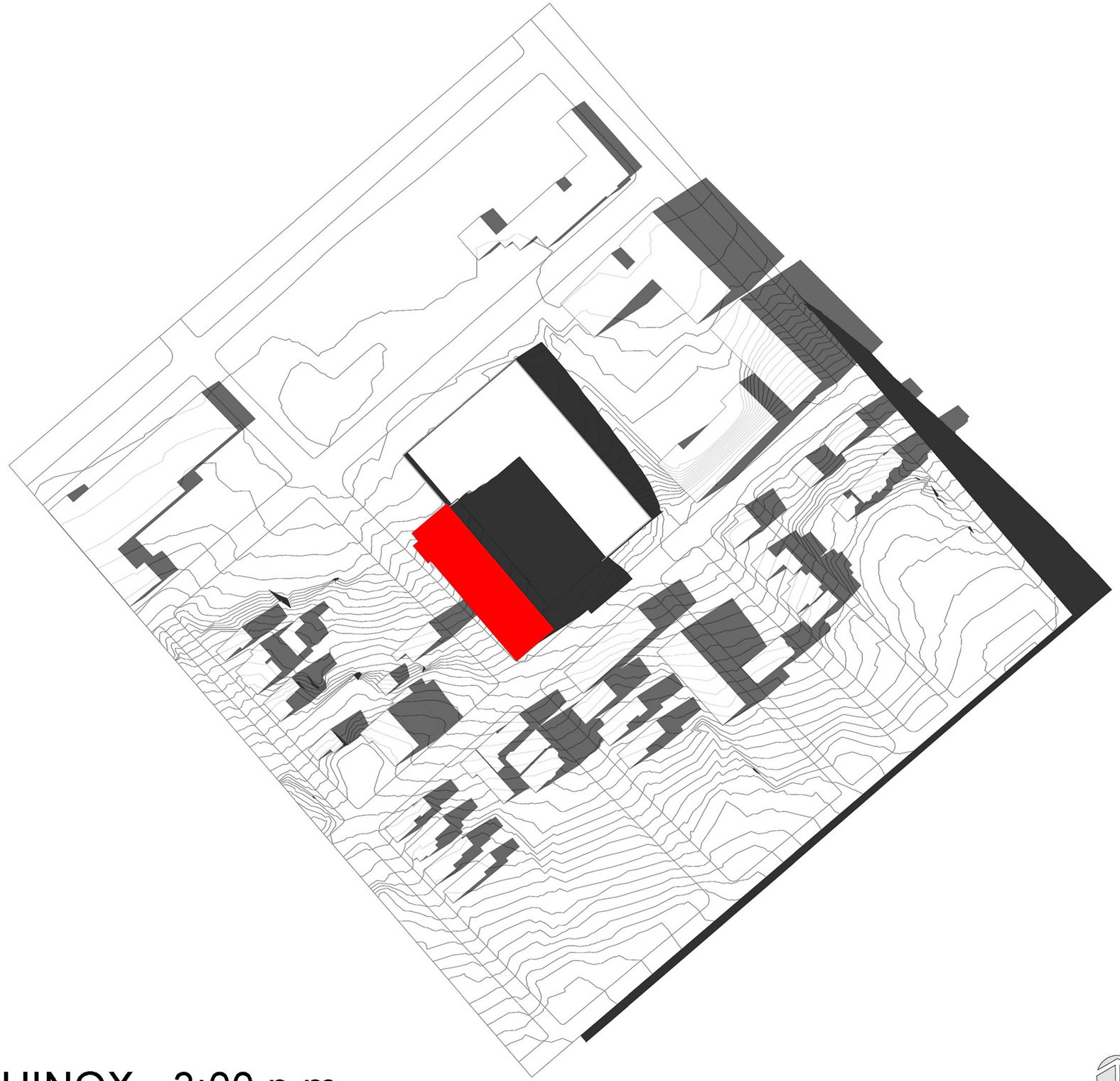


SPRING/FALL EQUINOX - 12:00 p.m.

Chestnut Street - Portland, Maine

NORTH

ARCHETYPE architects



SPRING/FALL EQUINOX - 3:00 p.m.

Chestnut Street - Portland, Maine

NORTH

ARCHETYPE architects

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

Att. K

Neighborhood Meeting Certification

I, Thomas S. Greer hereby certify that a neighborhood meeting was held on August 31, 2016 at 75 Chestnut Street Parking Garage, in Portland at 6:00PM concerning 75 Chestnut Street (Westerlea View Lofts).

I also certify that on August 16, 2016, invitations were mailed to all addresses on the mailing list provided by the Planning Division, including property owners within 500 feet of the proposed development or within 1000 feet of a proposed industrial subdivision or industrial zone change and the residents on the "interested parties" list.

Signed,

Thomas S. Greer

9/2/16 (date)

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

Neighborhood Meeting

August 16, 2016

Dear Neighbor:

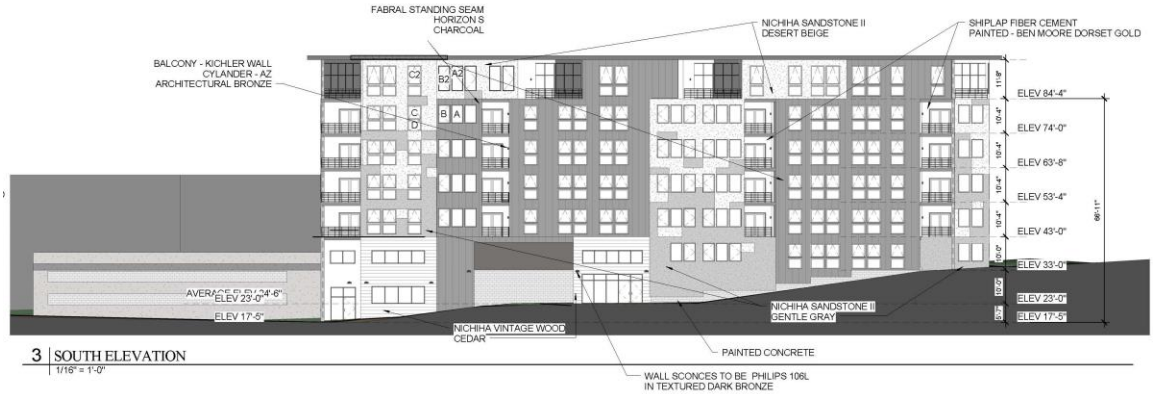
Please join us for a neighborhood meeting to discuss our plans for a 54 residential unit, Westerlea View Lofts at 75 Chestnut Street. The site has an existing 3 story parking garage. This project will add an 11,600 sq. ft. footprint building to the site.

Meeting Location: 75 Chestnut Street (Parking Garage)
the corner of Chestnut Street and Oxford Street

Meeting Date: August 31, 2016 (Wednesday)
Meeting Time: 6:00pm

The purpose of this meeting is to introduce the project to our neighbors as part of the City approval process.

If you have any questions, please call Thomas S. Greer, P.E., Pinkham & Greer, Civil Engineers at 207-781-5242 or email him at tgreer@pinkhamandgreer.com.



WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SITE PLAN COLOR UP

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DRN BY: JDC
DATE: AUGUST 11, 2016
DESG BY: DEF
PROJECT: 16142
CHK BY:

REV.	DATE	DESCRIPTION

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHAN AVE, PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

NEIGHBORHOOD MEETING ATTENDEE LIST
75 Chestnut Street (Westerlea View Lofts)
August 31, 2016

Name & Address	Name & Address
Thomas S. Greer Pinkham & Greer Civil Engineers 28 Vannah Avenue Portland, ME 04103	Steve Hayslaz 18 Hanover st
Ron Spinella 371 Cumberland Ave PORTLAND 04101 ronspinella@maine.rr.com	Jay/York 59 Wilmot St. jay@jayyork.biz
Deborah Van Hoeyck 21 Chestnut St., #301 Portland, ME 04101	KELLY WALLACE kellywallace@yahoo.com 28 HANOVER PORTLAND, ME 04101
Sarah MICHNIEWICZ 47 CEDAR ST. PORTLAND, ME 04101	Richard Murphy PO Box 10645 Portland, ME 04104
Louis Christen 239 Cumberland Ave #164 Portland 04101 Peaks St Units	
LIAM Connelly 198 OXFORD STR.	
FRANK DIDONATO 72 CHESTNUT ST	
Robert C. Hains 250 Holm Ave. Portland	
SUSAN MCCLOSKEY 25 PARRIS ST	
George Rheault 28 Hanover St.	

Neighborhood Meeting Notes

75 Chestnut Street (Westerlea View Lofts)

August 31, 2016

-There are concerns that this is an Avesta project and will bring in bums

-Will there be any other community space offered? (other than the park and the first floor space that could be retail/gym/live/work)

-The neighborhood likes having the current green space so they are glad part of the site will be maintained as a green space

-The size of the building is perfect

-There are concerns about on street parking – the street parking in the area is already maxed out

-What if residents have more than 1 car? (they can rent a second spot, one automatically comes with the rental)

If there is another space available in the garage for lease can it be discounted?

-How will the graffiti that is common in the neighborhood be dealt with?

-There are concerns about children going into the retention pond when it is filled

-There should not be any hidden corners in that neighborhood

-Will there be on-site security?

-Will there be cameras?

-How tall is the project compared to other buildings on the block?

1 Light Outdoor Wall Cylinder -AZ

9234AZ (Architectural Bronze)

Balcony Wall Att. L

Project Name: _____
Location: _____
Type: _____
Qty: _____
Comments: _____

Ordering Information

Product ID	9234AZ
Finish	Architectural Bronze
Available Finishes	AZ, BA, WH

Dimensions

Extension	7.00"
Height from center of Wall opening	3.50"
Base Backplate	5.00 X 4.75
Weight	0.95 LBS

Specifications

Material	Aluminum

Electrical

Voltage	120V

Qualifications

Safety Rated	Wet
Dark Sky	Yes
Warranty	www.kichler.com/warranty

Dimensions

Height	7.00"
Width	4.75"

Primary Lamping

Light Source	Incandescent
Lamp Included	Not Included
Number of Lights/LEDs	1
Max or Nominal Watt	65W
Socket Wire	150
Socket Type	Medium
Lamp Type	BR30

Alternate Lamps

Lamp Included	Bulb Listing	Light Source	Max Wattage/Range	Bulb Product ID	Dimming
No	Hybrid	CFL	13-15W		

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

PHILIPS

GARDCO

Wall Mount

LED wall sconce 106L

Project:

Location:

Cat.No:

Type:

Qty:

Notes:

Philips Gardco 106 LED wall sconces feature a low-profile design that provides wide flexibility in high performance exterior wall illumination. Full cutoff performance, usable illumination patterns, and powerful wattages combine into a compact and architecturally pleasing design. 106L sconces are available in Type 2, 3, and 4 distributions, and provide output of up to 9500 lumens. Energy saving control options increase energy savings and offer California Title 24 compliance. Emergency Battery Backup option available for path of egress.

Ordering guide

example: 106L-32L-700-NW-G1-3-120-IMRI2-BZ

Prefix	Number of LEDs	Drive Current	LED Color - Generation	Distribution	Emergency	Voltage	Options: Controls	Options: Electrical	Finish
106L									
106L 106L LED Wall Sconce	**16L** 16 LEDs (1 module)	**530** 530mA **650** 650mA[1] **700** 700mA **1000** 1000mA **1200** 1200mA	**CW-G1** Cool White 5700K, 70 CRI Generation 1 **NW-G1** Neutral White 4000K, 70 CRI Generation 1 **WW-G1** Warm White 3000K, 70 CRI Generation 1	**2** Type 2 **3** Type 3 **4** Type 4	**EBPC** Emergency Battery Pack Cold Weather[3,4,12] Leave blank to omit an emergency option	**UNV** 120-277V **HVU** 347-480V **120** 120V **208** 208V **240** 240V **277** 277V **347** 347V **480** 480V	**DD** 0-10V Dimming Driver[5,6] **DCC** Dual Circuit Control[7,8] **DynaDimmer:** Automatic Profile Dimming **CS50** Safety 50% Dimming (7 hours)[7,9,10] **CM50** Median 50% Dimming (8 hours)[7,9,10] **CE50** Economy 50% Dimming (9 hours)[7,9,10] **DA50** All Night 50% Dimming[7,9,10] **Photoelectric Systems** **PCB** Photocontrol Button[5,10,11,12] **Infrared Motion Response Systems** **IMRI2** Integral with #2 lens[4,12,13] **IMRI3** Integral with #4 lens[4,12,13] **Wireless Controls** **LLC2** Integral module with #2 lens[5,7,9,14] **LLC3** Integral module with #3 lens[5,7,9,14]	**Fusing** **F1** Single (120, 277, 347VAC)[12] **F2** Double (208, 240, 480VAC)[12] **F3** Canadian Double Pull (208, 240, 480VAC)[12]	**Textured** **BK** Black **WH** White **BZ** Bronze **DGY** Dark Gray **MGY** Medium Gray **Customer specified** **RAL** Specify optional color or RAL (ex: OC-LGP or OC-RAL7024) **CC** Custom color (Must supply color chip for required factory quote)
	32L 32 LEDs (2 module)	**530** 530mA **650** 650mA[1] **700** 700mA **1000** 1000mA[2]							

1. 650mA only available with Emergency Battery Pack Cold Rated (EBPC) option
2. 32L rated for 30°C at 1000mA
3. Available for use with 16L and 32L in 530mA or 650mA only. Rated for -20°C to 35° C.
4. Available in 120 or 277V only.
5. Not available with Dual Circuit Control (DCC) option.
6. 16L not available with Dimming Driver (DD) in following configurations: 530, 700 and 1200mA in 347 and 480V.
7. Not available with Dimming Driver (DD) option.
8. Available in 32L with 530mA. Consult technical support center for use with photocell and CS/CM/CE/DA.
9. Available in 120-277V (UNV) only.
10. Not available with LLC and DCC.
11. Not available with 480V.
12. Must specifiy input voltage.
13. Not available with DD, DCC or LLC.
14. LLC2/3 Not available with PCB, IMRI, CS/CM/CE/DA. Ships with WS accessory attached to wireless module. Not for use with LLCR accessory.

106L Wall sconce LED

Wall Mount

Luminaire Accessories (order separately)

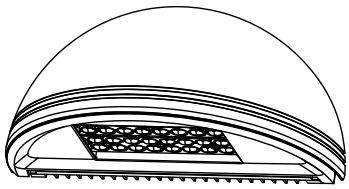
Mounting Accessories	
Wall Mount	
WS	Wall Mounted Box for Surface Conduit

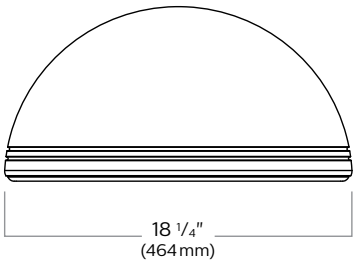
Controls Accessories	
Wireless controls remote mount module	
LLCR2-(F)	#2 lens - specify finish in place of (F)
LLCR3-(F)	#3 lens - specify finish in place of (F)

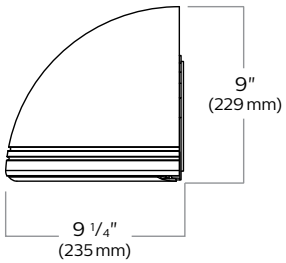
Wireless controls remote controller accessory

Wireless controls system offers a remote radio/sensor module that allows connectivity to Wireless system gateway. Remote module can be mounted to wall or pole with j-box supplied. May be specified by choosing one of two different lenses to accommodate a variety of mounting heights/sensor detection ranges. Must specify option DD on luminaires that are planned to be used with remote mount controllers. See page 4 for Wireless Controls details.

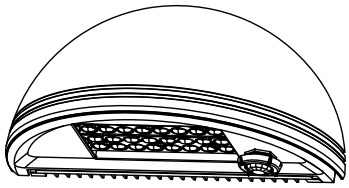
Dimensions

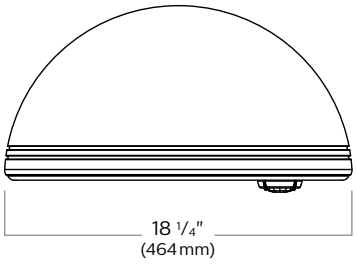


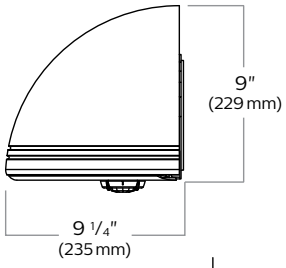




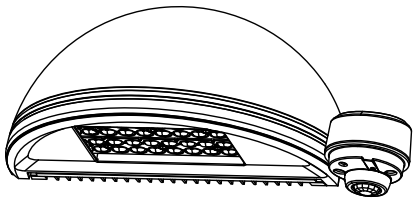
Motion Response

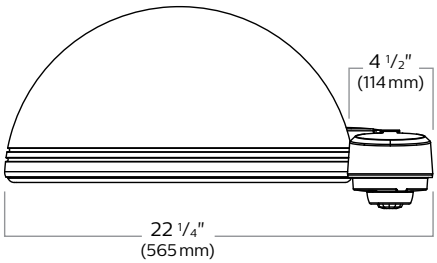


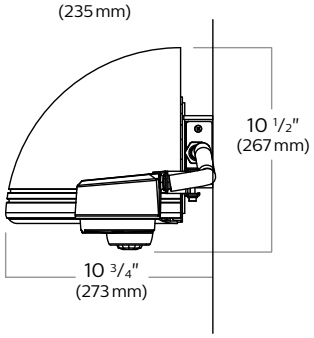


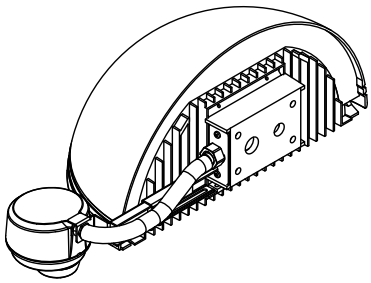


Wireless Controls









Luminaire Weights	
LED Wall Sconce 106L	**Weight**
Luminaire	13.5 lbs
Luminaire - EBPC (EM battery pack)	17.0 lbs
Luminaire - Integrated Wireless Controls	16.3 lbs

106L Wall sconce LED

Wall Mount

LED Wattage and Lumen Values

Ordering Code	LED Qty	LED Current (mA)	Color Temp.	Average System Watts[1]	Type 2			Type 3			Type 4		
					Lumen Output[1,2]	BUG Rating	Efficacy (LPW)	Lumen Output[1,2]	BUG Rating	Efficacy (LPW)	Lumen Output[1,2]	BUG Rating	Efficacy (LPW)
106L-16L-530-NW-G1	16	530	4000K	28	2944	B1-U0-G0	106	2687	B1-U0-G1	97	2747	B1-U0-G1	99
106L-16L-700-NW-G1	16	700	4000K	37	3789	B1-U0-G1	103	3458	B1-U0-G1	94	3535	B1-U0-G1	96
106L-16L-1000-NW-G1	16	1000	4000K	55	5050	B1-U0-G1	92	4609	B1-U0-G1	84	4712	B1-U0-G1	86
106L-16L-1200-NW-G1	16	1200	4000K	65	5744	B2-U0-G1	89	5242	B1-U0-G2	81	5359	B1-U0-G2	83
106L-32L-530-NW-G1	32	530	4000K	52	5698	B2-U0-G1	110	5200	B1-U0-G2	100	5316	B1-U0-G2	102
106L-32L-700-NW-G1	32	700	4000K	70	7242	B2-U0-G1	103	6609	B1-U0-G2	94	6757	B1-U0-G2	96
106L-32L-1000-NW-G1	32	1000	4000K	107	9797	B2-U0-G1	92	8941	B2-U0-G2	84	9140	B2-U0-G2	86

LED Wattage and Lumen Values (Emergency Mode)[3]

Ordering Code	LED Qty	LED Current (mA)	Color Temp.	Ave. System Watts (charging mode)	Type 2	Type 3	Type 4
106L-16L-NW-EBPC	16	N/A	4000K	14	1345	1228	1255
106L-32L-NW-EBPC	32	N/A	4000K	14	1754	1600	1636

1. Wattage and lumen output may vary by +/- 8% due to LED manufacturer forward volt specification and ambient temperature. Wattage shown is average for 120V through 277V input. Actual wattage may vary by an additional +/- 10% due to actual input voltage.
2. Lumen values based on photometric tests performed in compliance with IESNA LM-79.
3. For emergency EBPC option, publish values are based on initial lumens.

Luminaire options

DD: 0-10V dimming driver with leads supplied through back of luminaire (for secondary dimming controls by others).

Dynadimmer Automatic Profile Dimming: Automatic dimming profiles (CS50/CM50/CE50) offer safety, median, or economy settings, for shorter or longer duration. Dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. 50% dimming is standard. DA50 offers 50% instantaneous dimming all night (during all dark hours). 75% and 25% dimming is also available if different light levels are required (contact Technical Support for details).

Profile	Dimming		
	Schedule	Duration	Level
Economy	9 PM - 6 AM	9 hours	50%
Median	10 PM - 6 AM	8 hours	50%
Safety	11 PM - 6 AM	7 hours	50%
Reactive 50	all night	dynamic	50%

IMRI2, IMRI3: Infrared Motion Response Integral (IMRI). IMRI module is mounted integral to the luminaire door and is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges (see charts for approximate detection patterns). Motion response for option IMRI is set/operates in the following fashion: The motion sensor is set to a constant 25%. When motion is detected by the PIR sensor, the luminaire returns to 100% light output. Dimming on low is factory set to 25% with 5 minute default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 75%, to 25% of the normal constant wattage reducing the light level. IMRI can also be specified with automatic profile dimming for the added benefit of a combined dimming profile with sensor detection, where the PIR sensor will override the dimming profile when occupancy is detected. Passive infrared (PIR) motion sensor, WattStopper FSP-211, equipped with lens choice specified. Available in 120V or 277V input only. Motion sensor off state power is 0.0 watts. The FSP-211 can also be reprogrammed with WattStopper's FS1R-100 remote programming tool accessory.

DCC: Dual Circuit Control permits separate switching of 32L models only, where a quantity of (2) 16 LED modules are controlled independently by use of two sets of leads, one for each module.

Wireless Controls: Controller radio/sensor module attached to luminaire via WS accessory (included with LLC2 and LLC3 option) and includes radio, photocell and motion sensor. Also available with remote pod accessory where pod is mounted separate from luminaire to pole or wall (see accessories and Wireless Controls information page 4).

F1: Fusing Single (for 120, 277 or 347VAC)

F2: Fusing Double (for 208, 240 or 480VAC)

F3: Fusing Canadian Double Pull (for 208, 240 or 480VAC)

EBPC: Emergency battery pack is cold weather rated down to -20C (-4F) and integral to the luminaire , allowing for a consistent look between emergency and non-emergency sconces. A separate surface mount accessory box is not required. Dual light engines (32L) are wired in parallel, both operating in emergency mode to meet various redundancy lamp requirements. Also available with single light engine (16L). Secondary driver with relay immediately detects AC power loss and powers luminaire for a minimum of 90 minutes from the time power is lost.

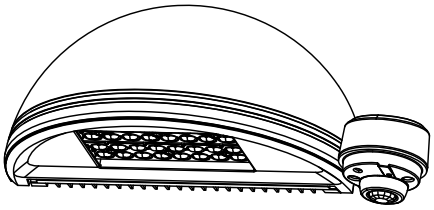
106L Wall sconce LED

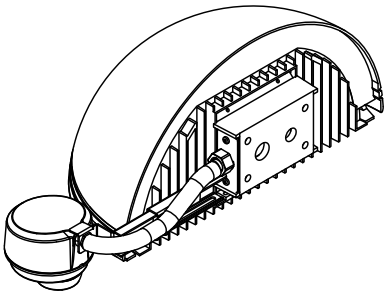
Wall Mount

Infrared Motion Response and Wireless Controls Sensor Coverage Patterns

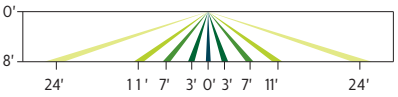
LLC2/3 Luminaire Mounted Controller

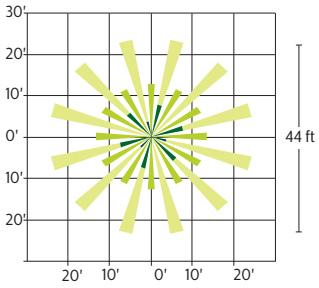
Controller attached to luminaire and Includes radio, photocell and motion sensor with #2 or #3 lens for 8-20' mounting heights.



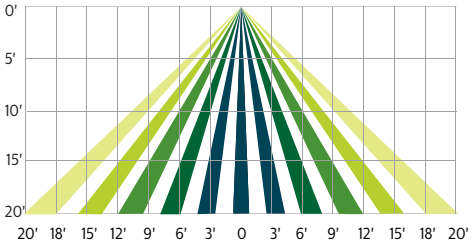


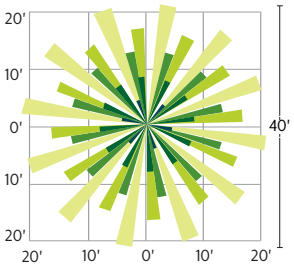
IMRI2/LLC2/LLCR2





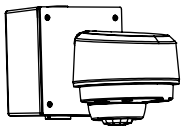
IMRI3/LLC3/LLCR3



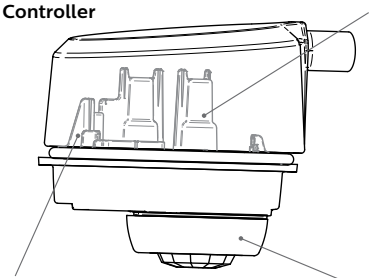


Remote Mount Wireless Controller

Used to extend the communication on site, to extend motion response and add other luminaires that are not pole mounted. Consult factory for more information.



Controller



Wireless Radio

- 1.8 Watts max (no load draw)
- Operating voltage 120-277 VAC RMS
- Communicates using the ZigBee protocol
- Carries out dimming commands from Gateway
- Reports ambient light readings to 1500 Ft-Cd
- Transmission Systems Operating within the band 2400-2483.5Mhz
- ROHS Compliant

Photocell

- Ambient light photocell on every wireless radio that averages the light levels of up to 5 controllers for an accurate reading and optimal light harvesting activity.
- Reports ambient light readings to 1500 Fc.

Motion Response

- Detects motion through passive infrared sensing technology with three different lens configurations
- Motion sensor coverage can be adjusted from a narrow to a wide detection range, which helps reduce false triggers to further increase energy savings.
- Sensing profiles can be updated to adapt to activity levels in the environment, such as occupancy level, wind, and mounting height

106L Wall sconce LED

Wall Mount

Luminaire Configuration Information – Sconce with wireless controls

Gateway

Overview: The gateway opens up communication with the wireless radios installed on equipped luminaires (or pole), allowing you to control your fixtures straight from the web. One gateway can communicate with up to 800 fixtures. Typically one unit is required per parking lot.

Installation: Gateway has 4 blind threaded holes on the back side that accept 10-32 screws. Mount spacing is 10.41" across and 14.19" vertical.

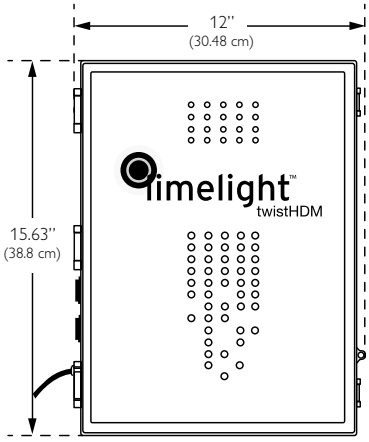
Requirements: The gateway must be mounted in a secure on-site location. The gateway requires 120V. Distance of gateway to the first radio varies upon application; contact factory. Strong internet connection required.

Specifications:

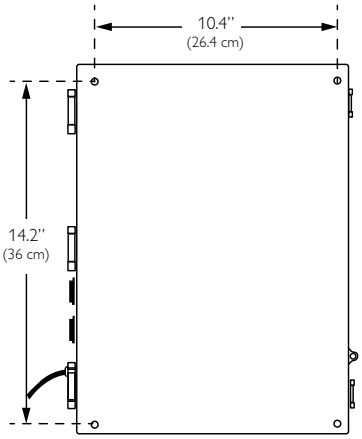
- High density RF Mesh coordinator
- Ethernet or wireless internet connection to server
- Proprietor of software "rules of operation"
- Watertight Ethernet connections
- Highly protected, long life ac/dc power supply
- Single board, ARM compliant 520Mhz Intel computer.
- Operating Temperature -20°C to 55°C
- Tamper proof housing

Gateway Dimensions

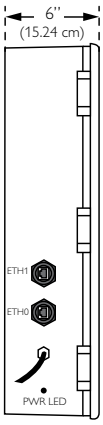
Front View



Back View



Side View



106L Wall sconce LED

Wall Mount

Specifications

Housing

Main body cast housing and back plate made of a low copper die cast Aluminum alloy for a high resistance to corrosion, 0.100" (2.5mm) minimum thickness. Hinged door allows access to driver and LED compartment.

Mounting

Mounting is completed through integral back plate that features a separate recessed feature for hook and lock quick mount plate that secures with two set screws from bottom of luminaire. Mounting plate is located in the center of the luminaire width and 3.5" above the luminaire bottom (lens down position). Luminaire ships fully assembled, ready to install.

Light Engine

Composed of 4 main components: Heat Sink / LED Module / Optical System / Driver. Electrical components are RoHS compliant. IP66 sealed light engines. LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

Heat Sink

Integral door/heat sink design made of low copper die cast Aluminum alloy for a high resistance to corrosion.

LED Module

Composed of high performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 4000K nominal (+/- 275K), CRI 70 Min. Available in other color temperatures including Cool White, 5700K and Warm White, 3000K.

Hardware

All exposed screws shall be stainless and/or corrosion resistant and captive.

Optical System

The advanced LED optical systems provide IES Types 2, 3, 4. Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. Dark sky compliant with 0% uplight and U0 per IESNA TM-15.

Driver

High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Surge Protection

Each luminaire is provided as standard with surge protector (Philips designed SP1) tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/5kA waveforms for Line Ground, Line Neutral and Neutral Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid State Street Lighting Consortium) Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High Test Level 10kV / 5kA.

LED Performance

Predicted lumen depreciation data[1]				
Ambient Temperature (°C)	Driver mA	Calculated L_{70} hours[1,2]	L_{70} per TM-21[2,3]	Lumen Maintenance % @ 60,000 hours
25°C	up to 1200 mA	>100,000	>60,000	88%

1. Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.
2. L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output.
3. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours.

Wiring (supplied by others)

Splices must be made in the junction box.

Finish

Five standard colors offered in textured black, white, bronze, dark gray and medium gray. Color in accordance with the AAMA 2604 standard. Application of polyester powder coat paint 2.5 mils minimum. The thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard. RAL and custom color matching available.

LED Products Manufacturing Standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with EC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

LED Useful Life

Luminaire Useful Life accounts for LED lumen maintenance. Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, LED LM-80/TM-21, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C.

Certifications and Compliance

cULus Listed for Canada and USA suitable for wet locations when mounted downward facing. cULus Listed for Canada and USA suitable for damp locations when inverted upward facing when mounted in covered ceiling application. Emergency Battery Pack option is tested and listed to UL924 and CSA C22.2 No. 141-10 DesignLights Consortium qualified on models as listed on DLC QPL. Luminaire is rated for operation in ambient temperature of -40°C (-40°F) up to +40°C (+104°F).

Limited Warranty

5-year limited warranty. See philips.com/warranties for details and restrictions.
Visit our eCatalog or contact your local sales representative for more information.

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philips.com/luminaires

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281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

File: 16105

September 7, 2016

Att. M

Ms. Jean Fraser
City of Portland, Planning Division
389 Congress Street, 4th Floor
Portland, ME 04101

RE: 75 CHESTNUT STREET, WESTERLEA VIEW LOFTS
RESPONSE TO EMAIL DATED 8/31/16

Dear Jean,

We have completed our team meeting on your memo and offer the following responses:

- *Ownership of the lot: A & M Partners Inc. are identified as the applicant but appears to be one of two entities that own the lot (the other being Chestnut Parking Inc.). Could you please clarify the areas of the two ownerships;*

  A & M Partners owns the entire property.
- *A Parking Analysis (justifying the proposed amount of parking dedicated to the proposed building) should be submitted to address the ordinance requirement (14.332.2 (c) which states:*

  This property has 450 parking spaces that are available to the residents and neighbors. We request a waiver of this study.
- *The Site Plan Ordinance requires a that all Level III development in the B7 zone shall design and implement a Transportation Demand Management (TDM) plan; please submit a draft;*

  Bill Bray will complete a TDM Study.

  The Traffic Engineering Reviewer requests (in view of the increase in traffic from the proposed project) an assessment of the operation and safety of the intersection of Chestnut Street and Lancaster Street;

  We want to make sure we cover all questions from Tom Errico, we do not plan on any studies until his review is complete. This study seems unnecessary in our opinion.
- *Please clarify whether there will be rooftop appurtenances and if so how they will be screened, and provide the building rendering;*

  The building is 60 to 70 feet high. The units will be in the middle of the roof, no screening is required.
- *Please confirm how many of the units have balconies*

There will be 42 units with balconies.

- *Please clarify regarding the long term plans for the parking lot, as it is part of the same lot and scope for improvements to sidewalks and landscaping etc would usually be part of the site plan review.*

  The parking garage will be in existence long term. Each unit will be provided with one space and will be able to rent additional spaces.

  The Landscape Plan prepared by Anthony Muench is adequate for our purposes.

  As for the sidewalk, we are replacing and upgrading the Chestnut Street walk, as this is the one we are impacting

Site Plan Review Issues

- *Staff will be recommending that sidewalks in the vicinity of the new building be 8 feet wide with associated improvements that would include lighting, ADA ramps at street crossings, and possibly realignment of the curb line at corners;*

  The sidewalks are currently 6'-8" to 7'-0" wide. This is the width we intend to leave them. Making them wider will impact the street line. This is not a cost that this project should bare.

  We will provide new ADA ramps at each end of the Chestnut Street sidewalk. We will not be providing ramps on the opposite side of the street. These corners already have ramps.

- *The project is subject to the B-7 Design Standards and the initial review has identified the following aspects that need further consideration:*

  - *E1 Architectural Design: There are a few areas of concern where residential unit windows facing public rights-of-way are low to the ground and do not provide visual privacy for the occupants. The driveway to the garage from Chestnut Street will need further detail to address safety concerns - it should not become a dark tunnel.*

    The windows have been revised as much as practicable. This will be reviewed at the 9/13 meeting.

  - *E4 Articulation: The blank wall on Chestnut Street adjacent to the entrance lobby is of concern at the pedestrian level. Incorporate design elements to make that stretch more comfortable at the street.*

    High windows will be added to this section of wall.

  - *E12 : Materials: The guidelines currently prohibit fiber cement panels to be used on portions of the building visible from the public rights of way. Either revise the material selection to comply with the standard or request a waiver*

from the Planning Board. In addition, the use of two different color panels in a pixilated manner is not necessary and adds visual distraction to an already visually complex facade.

Materials will be reviewed at the 9/13 meeting. We believe we have made appropriates color and material selections.

- *Staff will be recommending that the landscaping and street tree proposals be revised; we appreciate that these may depend on resolution of some of the issues noted above.*

We look forward to the Staff's Landscape Architect's comments.

Please note it is the goal of this project to make apartments available at affordable market rates. Every time the City adds costs the project becomes more expensive and rates are less affordable.

Sincerely,

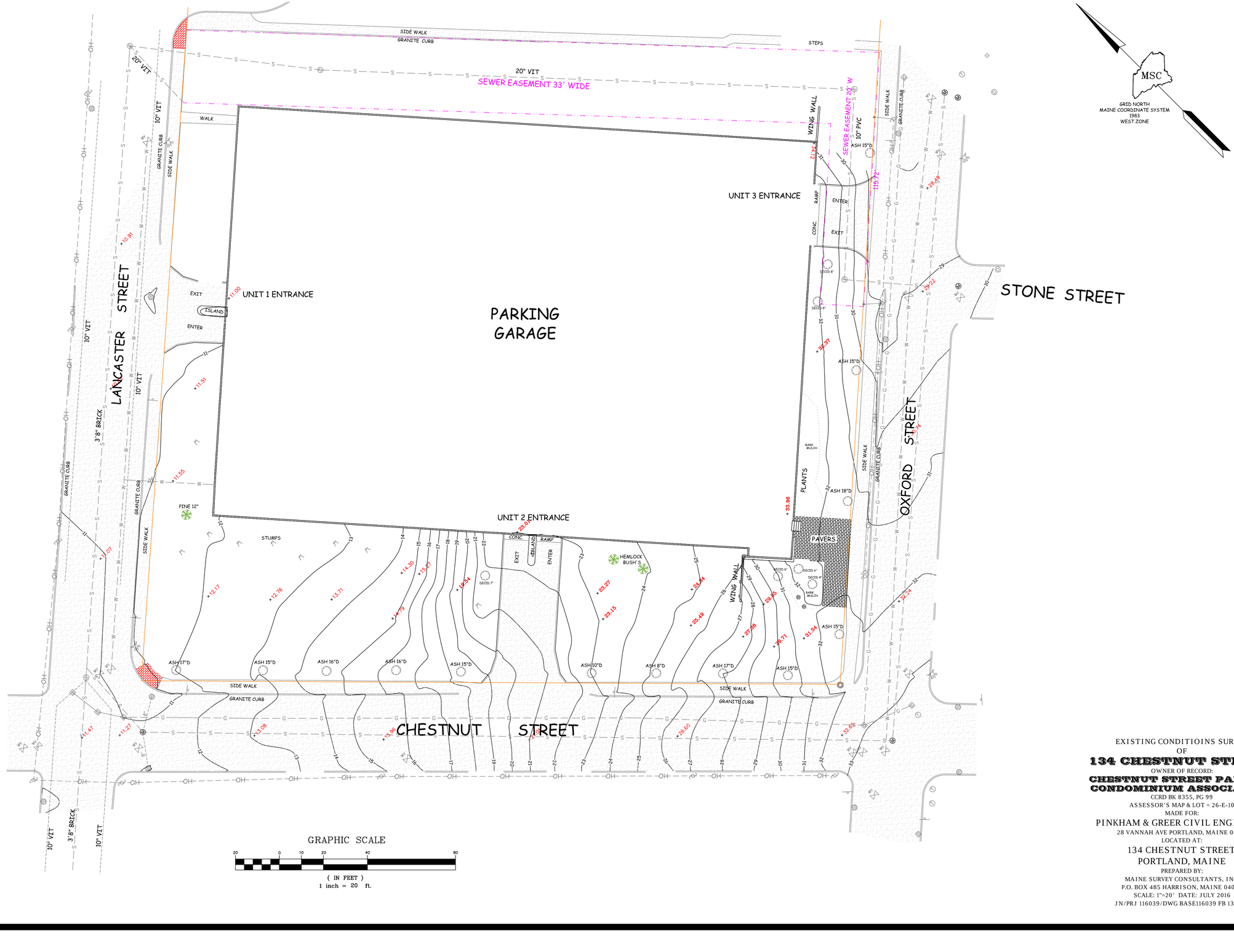
PINKHAM & GREER,
CIVIL ENGINEERS

Thomas S. Greer, P.E.

cc: (1) Lou Wood, (1) Bill Hopkins, (1) File

Enclosures

TSG/rjs



EXISTING CONDITIOINS SURVEY
OF
134 CHESTNUT STREET
OWNER OF RECORD:
CHESTNUT STREET PARKING CONDOMINIUM ASSOCIATION
CCRD BK 8355, PG 99
ASSESSOR'S MAP & LOT = 26-E-10
MADE FOR:
PINKHAM & GREER CIVIL ENGINEERS
28 VANNAH AVE PORTLAND, MAINE 04103
LOCATED AT:
134 CHESTNUT STREET
PORTLAND, MAINE
PREPARED BY:
MAINE SURVEY CONSULTANTS, INC.
P.O. BOX 485 HARRISON, MAINE 04040
SCALE: 1"=20' DATE: JULY 2016
JN/PRJ 116039/DWG BASE116039 FB 137.127

EX. SEWER EASEMENT
CCRD BK 24517, PG 1

EX. SEWER EASEMENT
CCRD BK 5035, PG 267

S46°59'03"W 145.8'
S46°51'03"W 244.0'
S43°07'57"E 15.00'
20"± VIT.
33' WIDE EX. SEWER EASEMENT
20' WIDE EX. SEWER EASEMENT
115.72'
10"± R.
LANCASTER STREET
3'-8" BRICK
EX. GRANITE CURB
EX. BIT. SIDEWALK
EXIT
ISLAND
ENTER
ENTER
EXIT
STONE STREET
OXFORD STREET
EX. BIT. SIDEWALK
EX. GRANITE CURB
EX. PINE TREE TO REMAIN
EX. STUMPS TO BE REMOVED
EX. CONC CURB TO BE REMOVED
EX. GARAGE FLOOR EL. 23.0
EX. GARAGE DRIVEWAY ENTRANCE W/ TRAFFIC ISLAND & CONC. RAMP TO REMAIN.
EX. PLANTINGS, TREES & SHRUBS TO BE REMOVED
EX. CONCRETE RETAINING WALL TO REMAIN
EX. PLANTINGS AND ASH TREE TO REMAIN
EX. PLAZA TO REMAIN. ANY DAMAGE DURING CONSTRUCTION IS TO BE REPAIRED
PORTION OF EX. PLAZA TO BE REMOVED
EX. BIT. SIDEWALK TO BE REPLACED WITH BRICK
EX. BIT. DRIVEWAY TO BE REBUILT
3-EX. ASH TREES TO REMAIN
EX. CB, RIM 10.26
CHESTNUT STREET
EX. SMH, RIM 11.38
EX. CB, RIM 10.95
12" VIT.
18"± VIT.
6" C.I.
EX. TELE MH, RIM 33.63
EX. CB, RIM 34.08
EX. SMH, RIM 33.62
APPROX. OUTLINE OF FULL DEPTH CONSTRUCTION FOR UTILITY TRENCHS AND PAVEMENT REPAIR, TYP.
EX. BIT. SIDEWALK TO BE REPLACED WITH BRICK
EX. GRANITE CURB TO REMAIN
7-EX. ASH TREES TO BE REMOVED
EX. PARKING SIGNS TO BE REMOVED DURING CONSTRUCTION AND STOCKPILED

LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- 20 CONTOURS
- BUILDING
- EDGE OF GRAVEL
- CURB
- G GAS LINE
- S SANITARY SEWER
- SD STORMDRAIN
- OHU OVERHEAD UTILITY
- W WATER LINE
- CATCH BASIN
- COMBINED SYSTEM MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- EM ELECTRIC METER
- G GAS METER
- HYDRANT
- WATER VALVE
- GAS VALVE
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- SIGN
- TREE
- IMPERVIOUS TO BE REMOVED
- BENCHMARK

DEMOLITION NOTES

1. ANY UNUSED SERVICE LINES ARE TO BE PROPERLY REMOVED TO THE MAIN. CAP EACH IN ACCORDANCE WITH THE APPROPRIATE UTILITY REQUIREMENTS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHAN AVE. PORTLAND, ME. 04103
TEL: 207.781.5042 FAX: 207.781.4245

STATE OF MAINE
THOMAS
GREER
No. 4206
REGISTERED
PROFESSIONAL
ENGINEER
7/28/16

REV.	DATE	DESCRIPTION

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142

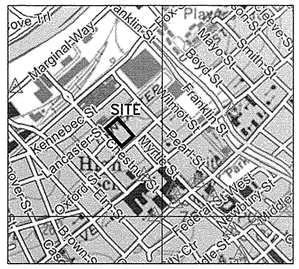
DRN BY: JDC
DESG BY: DEF
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

EXISTING CONDITIONS AND DEMOLITION PLAN

C1.3

MAP/LOT 26 / E / 10



LOCATION PLAN

NOT TO SCALE

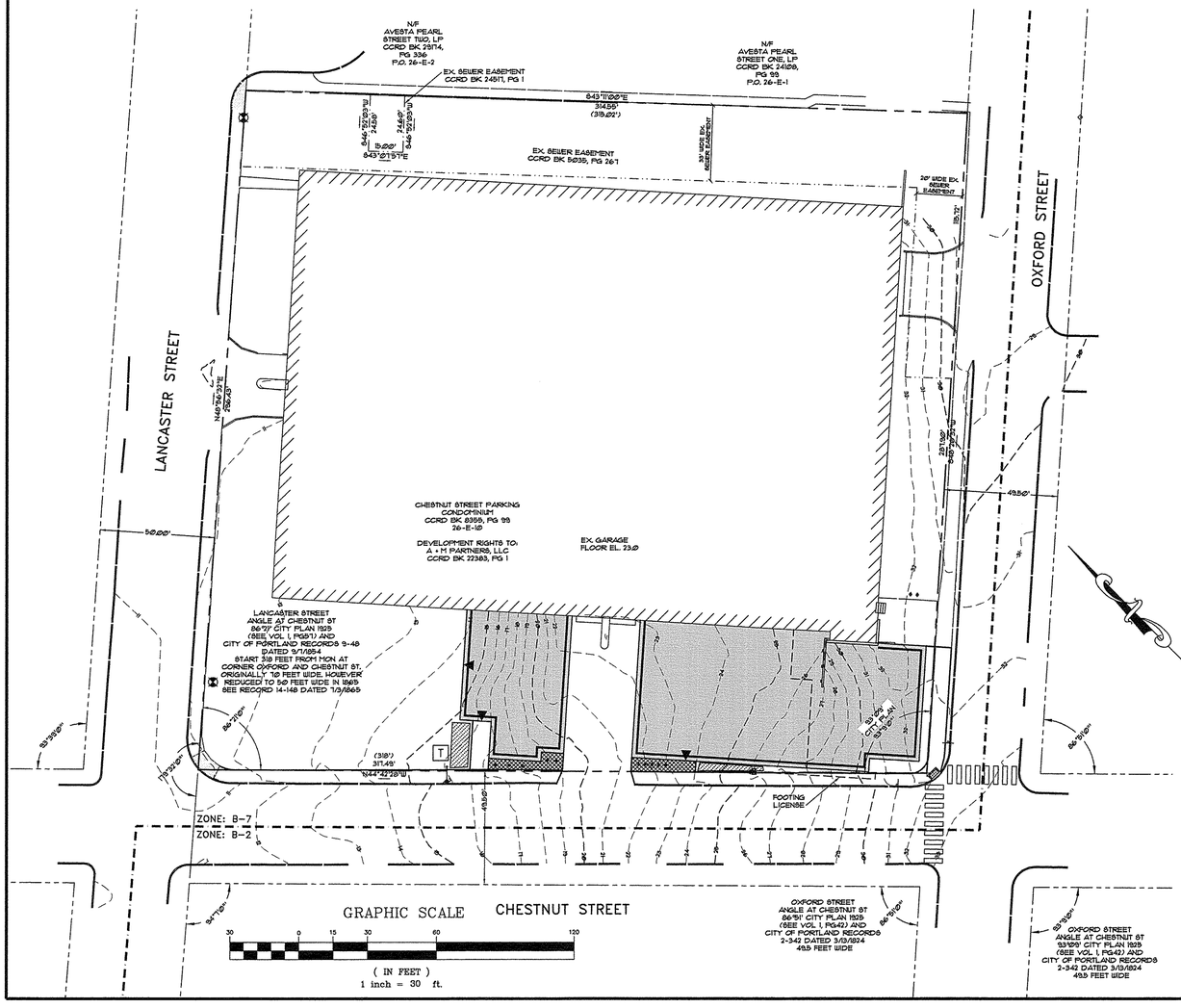
LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- BUILDING
- CURB
- 40 CONTOURS
- ZONING DISTRICT
- IRON PIPE FOUND
- MONUMENT FOUND

PROPOSED

- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- FOOTING LICENSE
- IRON PIPE/ROD TO BE SET
- SNOW STORAGE AREA



SURVEY GENERAL NOTES AND PLAN REFERENCES

SUBDIVISION CONDITIONS OF APPROVAL

1.

CITY OF PORTLAND SITE PLAN AND SUBDIVISION NOTES

1. LANDSCAPING SHALL MEET THE "ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE AND LANDSCAPE GUIDELINES" OF THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS AND LOCATION AND SIZE OF BUILDINGS.
3. ALL POWERLINE UTILITIES SHALL BE UNDERGROUND.
4. SIDEWALKS AND CURBING SHALL BE DESIGNED AND BUILT WITH TIPDOWN RAMPS AT ALL STREET CORNERS, CROSSWALKS AND DRIVEWAYS IN CONFORMANCE WITH THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
5. 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 QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR REGRADING.
7. ALL DISTURBED AREAS ON THE SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL BE STABILIZED WITH LOAM AND SEED OR OTHER METHODS AS REQUIRED BY BEST MANAGEMENT PRACTICES (SEE ABOVE).
8. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC WORK'S REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
9. EXISTING VEGETATION SHALL BE CONSERVED IN AREAS SHOWN ON THIS SITE. FENCING OR OTHER PROTECTIVE BARRIERS SHALL BE ERECTED OUTSIDE THE DRIP-LINE OF INDIVIDUAL, GROUPINGS OF TREES DESIGNATED FOR PRESERVATION PRIOR TO THE ONSET OF CONSTRUCTION. REGRADING SHALL NOT TAKE PLACE WITHIN THE DRIP-LINE OF TREES DESIGNATED FOR PRESERVATION. NO STORAGE OR CONSTRUCTION MATERIALS SHALL BE PERMITTED WITHIN THE DRIP-LINE OF TREES TO BE PRESERVED.
10. SUBDIVISION AT THE TIME OF APPROVAL IS DEFINED AS "SUBDIVISION SHALL MEAN THE DIVISION OF A LOT, TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE LOTS, INCLUDING LOTS OF FORTY (40) ACRES OR MORE, WITHIN ANY FIVE-YEAR PERIOD WHETHER ACCOMPLISHED BY SALE, LEASE, DEVELOPMENT, BUILDINGS OR OTHERWISE AND AS FURTHER DEFINED IN 30-A M.R.S.A. SECTION 4401. THE TERM SUBDIVISION SHALL ALSO INCLUDE THE DIVISION OF A NEW STRUCTURE OR STRUCTURES ON A TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD AND THE DIVISION OF AN EXISTING STRUCTURE OR STRUCTURES PREVIOUSLY USED FOR COMMERCIAL OR INDUSTRIAL USE INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD. THE AREA INCLUDED IN THE EXPANSION OF AN EXISTING STRUCTURE IS DEEMED TO BE A NEW STRUCTURE FOR THE PURPOSE OF THIS PARAGRAPH. A DWELLING UNIT SHALL INCLUDE ANY PART OF A STRUCTURE WHICH, THROUGH SALE OR LEASE, IS INTENDED FOR HUMAN HABITATION, INCLUDING SINGLE-FAMILY AND MULTIFAMILY HOUSING CONDOMINIUMS, TIME-SHARE UNITS AND APARTMENTS."

WAIVERS

1. ALLOW THE DEVELOPER TO PAY INTO THE STREET TREE FUND IN LIEU OF PLANTING STREET TREES.

GENERAL NOTES

1. OWNER: A&M PARTNERS, INC.
   120 EXCHANGE STREET, PORTLAND MAINE
   04101. DEEDS RECORDED IN CUMBERLAND
   COUNTY REGISTRY OF DEEDS BK. 27183,
   PG. 53, DATE 8/17/09.
2. ENGINEER: PINKHAM & GREER CIVIL
   ENGINEERS, 28 VANNAH AVENUE,
   PORTLAND, MAINE, 04103.
3. ARCHITECT: ARCHETYPE ARCHITECTS,
   48 UNION WHARF, PORTLAND, MAINE 04101.
4. TOPOGRAPHIC & BOUNDARY: MAINE SURVEY
   CONSULTANTS, INC., PO BOX 485, HARRISON, MAINE, 04040.
5. UNDERLYING SOILS MAPPING TAKEN FROM SOIL CONSERVATION
   STUDY OF CUMBERLAND COUNTY. THE UPPER HALF OF THE SITE IS CLASSIFIED
   HINCKLEY (HIB). THE LOWER HALF IS CLASSIFIED AS AU GRES (Au). THE
   SURFACE OF THE SITE IS CURRENT URBAN LAND.
6. TAX MAP REFERENCE: MAP 26 / BLOCK E / LOT 10.
7. ZONE: B-7, MIXED DEVELOPMENT, PROPOSED USE: CONDOMINIUMS
8. TOTAL PARCEL = 2.12 acres
9. UNITS TO BE SERVICED BY PUBLIC WATER, SEWER, AND GAS FROM CHESTNUT
   STREET. THESE SERVICES, INCLUDING HYDRANTS, ARE AS SHOWN ON SHEET C1.4,
   GRADING AND UTILITIES PLAN.
10. POWER, TELEPHONE AND CABLE SERVICES ARE TO BE OVERHEAD ACROSS
    CHESTNUT STREET. THESE SERVICES ARE SHOWN ON SHEET C1.4, GRADING AND
    UTILITIES PLAN.
11. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL MEET CITY OF PORTLAND
    TECHNICAL MANUAL STANDARDS.
13. PROPOSED PARKING SPACES: NO NEW SPACES, EXISTING PARKING IS
    ALREADY ONSITE. 1 PER UNIT PROVIDED IN THE EXISTING GARAGE.
14. THE SUBJECT PARCEL SHOWN AS WESTERLEA VIEW LOFTS IS SUBJECT TO A CITY
    OF PORTLAND LEVEL II SITE PLAN AND SUBDIVISION PERMIT.
15. DETAILS OF STREET TREES ARE INCLUDED ON THE LANDSCAPE PLAN AS PART
    OF THE APPROVAL FOR WESTERLEA LOFTS SITE PLAN.
16. FLOODPLAIN: THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE
    MAP, COMMUNITY PANEL 230051 0013 B, EFFECTIVE DATE JULY 17, 1986. IT IS
    NOT IN A SPECIAL FLOOD HAZARD ZONE.
17. PROPERTY PINS TO BE SET AT THE EXPENSE OF THE DEVELOPER AT THE END
    OF CONSTRUCTION ON CORNERS NOT CURRENTLY MARKED.
18. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE
    WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE
    BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF
    ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2003.

SNOW CLEARANCE NOTES

1. SNOW MAY BE STORED WITHIN THE TEMPORARY SNOW STORAGE AREAS ONLY.
2. ANY SNOW THAT CAN NOT BE STORED ON SITE SHALL BE PHYSICALLY REMOVED AND TRANSPORTED OFFSITE WITHIN 24 TO 48 HOURS FOLLOWING A SNOW STORM.
3. SNOW TRANSPORTED OFFSITE SHALL BE BROUGHT TO A MAINE DEP APPROVED "SNOW DUMP" OR MEET THE EXEMPTION REQUIREMENTS SPECIFIED WITHIN CHAPTER 513 WHEN THE ABOVE REQUIREMENTS CANNOT BE MET DUE TO AN ABUNDANCE OF SNOW.
4. THE SNOW CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO VEGETATION, LANDSCAPING, CURBING, LIGHTING, FENCING ETC. RESULTING FROM THEIR ACTIVITIES.
5. THE CONDOMINIUM ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL BEING UNDERTAKEN IN A TIMELY FASHION.

ZONE INFORMATION

B-7 MIXED DEVELOPMENT DISTRICT ZONE

PERMITTED USE: RESIDENTIAL CONDOMINIUMS

PARKING INFORMATION

OFF STREET PARKING	1 PER UNIT
BIKE RACKS	EXTERIOR: 12

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	53,511 SQ. FT.
PROPOSED IMPERVIOUS	63,565 SQ. FT.
NET IMPERVIOUS	+10,054 SQ. FT.

EASEMENTS & LICENSES

1. PROPOSED LICENSE: FROM THE CITY OF PORTLAND TO WESTERLEA VIEW LOFTS FOR BUILDING FOOTINGS.

ZONE INFORMATION

ZONE: B-7, MIXED DEVELOPMENT
PERMITTED USE: CONDOMINIUMS

SPACE STANDARDS	REQUIRED
MINIMUM LOT SIZE	NONE
MINIMUM STREET FRONTAGE	NONE
MINIMUM FRONT YARD SETBACK	NONE
MINIMUM REAR YARD SETBACK	NONE
MINIMUM SIDE YARD SETBACK	NONE
MINIMUM LENGTH OF BUILDING WALL	25% OF PERIMETER
MAXIMUM BUILDING LOT COVERAGE	100%
MAXIMUM RESIDENTIAL DENSITY	NONE
MAXIMUM BUILDING HEIGHT	75 FEET
MINIMUM BUILDING HEIGHT	-
OFF STREET PARKING	1 PER UNIT
BIKE RACKS	12

SUBDIVISION PLAN, APPROVED BY THE CITY OF PORTLAND PLANNING BOARD

DATE

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE., PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE — THOMAS S. GREER No. 4206 — REGISTERED PROFESSIONAL ENGINEER — LICENSED

9/28/16

REV.	DESCRIPTION	DATE

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC
DESG BY: DEF
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SUBDIVISION PLAN

C1.1

MAP/LOT 26 / E / 10

CITY OF PORTLAND SITE PLAN AND SUBDIVISION NOTES

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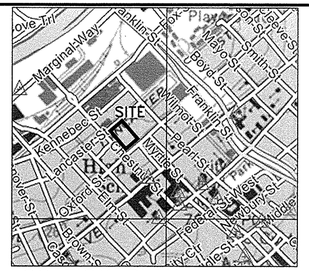
1. ALLOW THE DEVELOPER TO PAY INTO THE STREET TREE FUND IN LIEU OF PLANTING STREET TREES.



LOCATION PLAN

NOT TO SCALE

ZONE INFORMATION

B-7 MIXED DEVELOPMENT DISTRICT ZONE

PERMITTED USE: RESIDENTIAL CONDOMINIUMS

PARKING INFORMATION

OFF STREET PARKING	1 PER UNIT
BIKE RACKS	EXTERIOR: 12

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	53,511 SQ. FT.
PROPOSED IMPERVIOUS	63,565 SQ. FT.
NET IMPERVIOUS	+10,054 SQ. FT.

ZONE INFORMATION

ZONE: B-7, MIXED DEVELOPMENT
PERMITTED USE: CONDOMINIUMS

SPACE STANDARDS	REQUIRED
MINIMUM LOT SIZE	NONE
MINIMUM STREET FRONTAGE	NONE
MINIMUM FRONT YARD SETBACK	NONE
MINIMUM REAR YARD SETBACK	NONE
MINIMUM SIDE YARD SETBACK	NONE
MINIMUM LENGTH OF BUILDING WALL	25% OF PERIMETER
MAXIMUM BUILDING LOT COVERAGE	100%
MAXIMUM RESIDENTIAL DENSITY	NONE
MAXIMUM BUILDING HEIGHT	75 FEET
MINIMUM BUILDING HEIGHT	-
OFF STREET PARKING	1 PER UNIT
BIKE RACKS	12

PROJECT SITE DRAWINGS

C1.1	SUBDIVISION RECORDING PLAT
C1.2	SITE PLAN
C1.3	EXISTING CONDITIONS AND DEMOLITION PLAN
C1.4	GRADING AND UTILITIES PLAN AND EROSION CONTROL PLAN
C1.5	LANDSCAPE PLAN, NOTES AND DETAILS
C2.1	DETAILS
C2.2	DETAILS
C2.3	DETAILS
C2.4	DETAILS
	EXISTING CONDITIONS SURVEY

GENERAL NOTES

1. OWNER: A&M PARTNERS, INC.
120 EXCHANGE STREET, PORTLAND MAINE
04101. DEEDS RECORDED IN CUMBERLAND
COUNTY REGISTRY OF DEEDS BK. 27183,
PG. 53, DATE 8/17/09.
2. ENGINEER: PINKHAM & GREER CIVIL
ENGINEERS, 28 VANNAH AVENUE,
PORTLAND, MAINE, 04101.
3. ARCHITECT: ARCHETYPE ARCHITECTS,
48 UNION WHARF, PORTLAND, MAINE 04101.
4. TOPOGRAPHIC & BOUNDARY: MAINE SURVEY
CONSULTANTS, INC., PO BOX 485, HARRISON, MAINE, 04040.
5. UNDERLYING SOILS MAPPING TAKEN FROM SOIL CONSERVATION STUDY OF CUMBERLAND COUNTY. THE UPPER HALF OF THE SITE IS CLASSIFIED HINCKLEY (HIB). THE LOWER HALF IS CLASSIFIED AS AU GRES (.Au). THE SURFACE OF THE SITE IS CURRENT URBAN LAND.
6. TAX MAP REFERENCE: MAP 26 / BLOCK E / LOT 10.
7. ZONE: B-7, MIXED DEVELOPMENT, PROPOSED USE: CONDOMINIUMS
8. TOTAL PARCEL = 2.12 acres
9. UNITS TO BE SERVICED BY PUBLIC WATER, SEWER, AND GAS FROM CHESTNUT STREET. THESE SERVICES, INCLUDING HYDRANTS, ARE AS SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
10. POWER, TELEPHONE AND CABLE SERVICES ARE TO BE OVERHEAD ACROSS CHESTNUT STREET. THESE SERVICES ARE SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
11. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
13. PROPOSED PARKING SPACES: NO NEW SPACES, EXISTING PARKING IS ALREADY ONSITE. 1 PER UNIT PROVIDED IN THE EXISTING GARAGE.
14. THE SUBJECT PARCEL SHOWN AS WESTERLEA VIEW LOFTS IS SUBJECT TO A CITY OF PORTLAND LEVEL II SITE PLAN AND SUBDIVISION PERMIT.
15. DETAILS OF STREET TREES ARE INCLUDED ON THE LANDSCAPE PLAN AS PART OF THE APPROVAL FOR WESTERLEA LOFTS SITE PLAN.
16. FLOODPLAIN: THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 230051 0013 B, EFFECTIVE DATE JULY 17, 1986. IT IS NOT IN A SPECIAL FLOOD HAZARD ZONE.
17. PROPERTY PINS TO BE SET AT THE EXPENSE OF THE DEVELOPER AT THE END OF CONSTRUCTION ON CORNERS NOT CURRENTLY MARKED.
18. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2003.

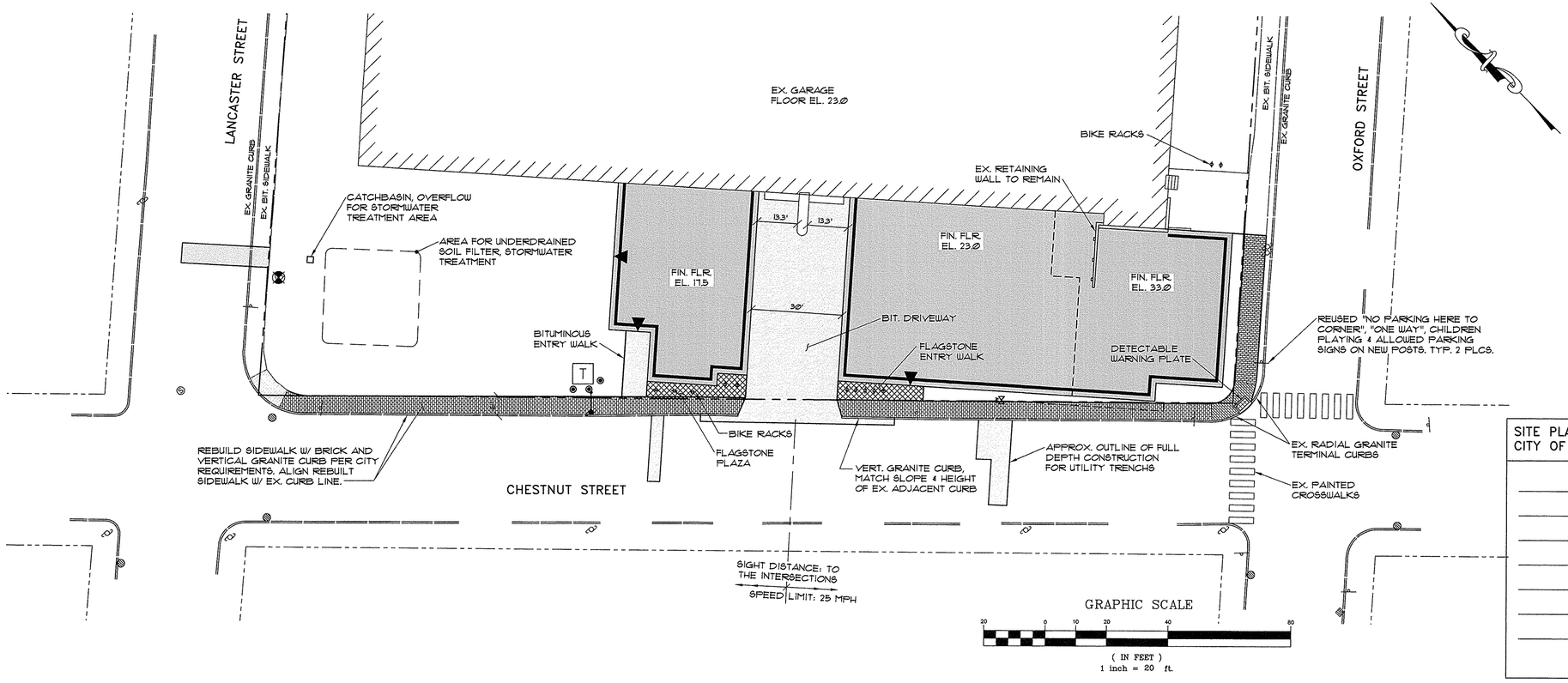
LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- BUILDING
- CURB
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- AREA LIGHT ON POLE
- SIGN
- CONCRETE PAD
- BENCHMARK

PROPOSED

- FOOTING EASEMENT
- EDGE OF PAVEMENT
- GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- UTILITY POLE W/ GUY WIRE
- FULL DEPTH BITUMINOUS PVMT
- BITUMINOUS OVERLAY
- BRICK PAVERS
- CONCRETE PAD
- FLAGSTONE PAVERS



SITE PLAN, APPROVED BY THE CITY OF PORTLAND PLANNING BOARD

DATE

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE, PORTLAND, ME. 04102
TEL: 207.781.5240 FAX: 207.781.4295

THOMAS S. GREER No. 4286 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER
7/28/16

REV.	DATE	DESCRIPTION

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

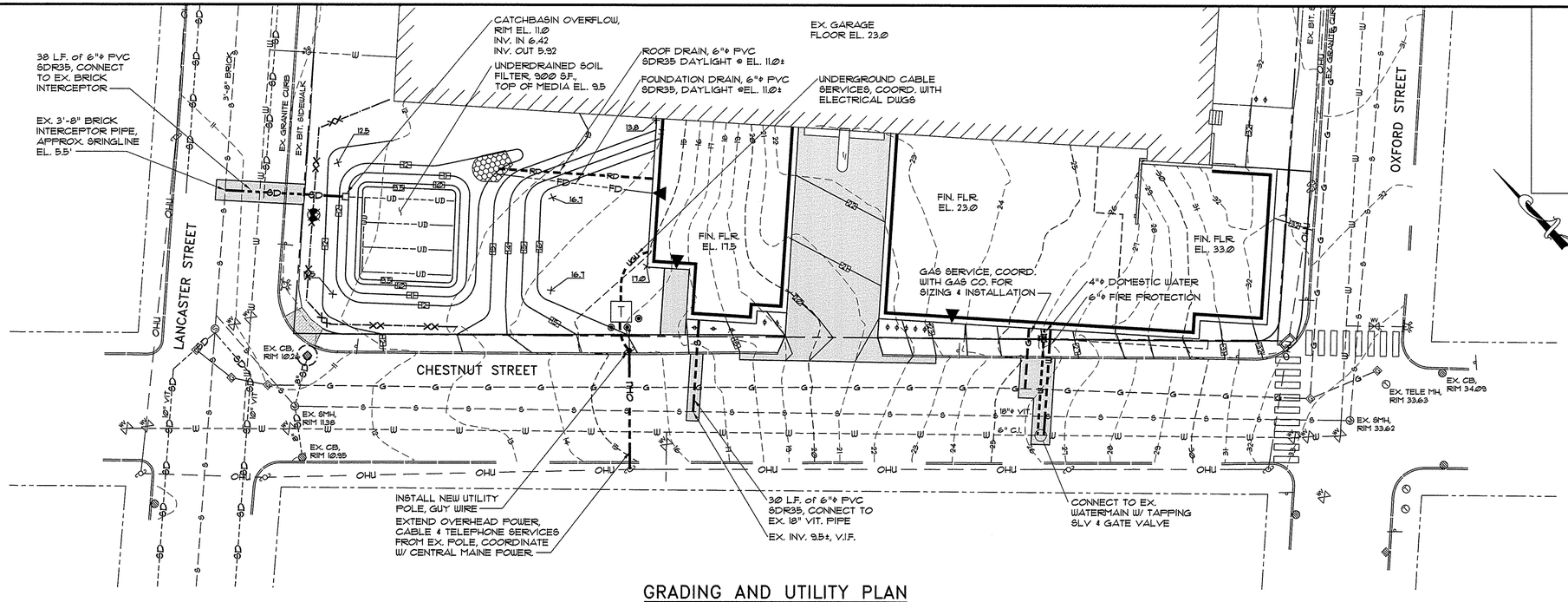
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC
DESG BY: DEF
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SITE PLAN

C1.2

MAP/LOT 26/E/10



GRADING AND UTILITY PLAN

SCALE: 1"=20'

LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- CONTOURS
- BUILDING
- EDGE OF GRAVEL
- CURB
- GAS LINE
- SANITARY SEWER
- STORMDRAIN
- OVERHEAD UTILITY
- WATER LINE
- CATCH BASIN
- COMBINED MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- GAS METER
- HYDRANT
- WATER VALVE
- GAS VALVE
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- SIGN

PROPOSED

- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- CONTOURS
- GAS LINE
- SANITARY SEWER
- STORMDRAIN
- OVERHEAD UTILITY
- UNDERGROUND UTILITY
- WATER LINE
- SPOT GRADE
- CATCH BASIN
- UTILITY POLE W/ GUY WIRE
- WATER SHUT OFF
- TRANSFORMER
- BOLLARD
- FULL DEPTH BITUMINOUS PVMT
- BITUMINOUS OVERLAY
- BRICK PAVERS
- CONCRETE PAD
- FLAGSTONE PAVERS

EROSION CONTROL

- CATCH BASIN PROTECTION WITH SILTSACK
- SILT FENCE

GRAPHIC SCALE

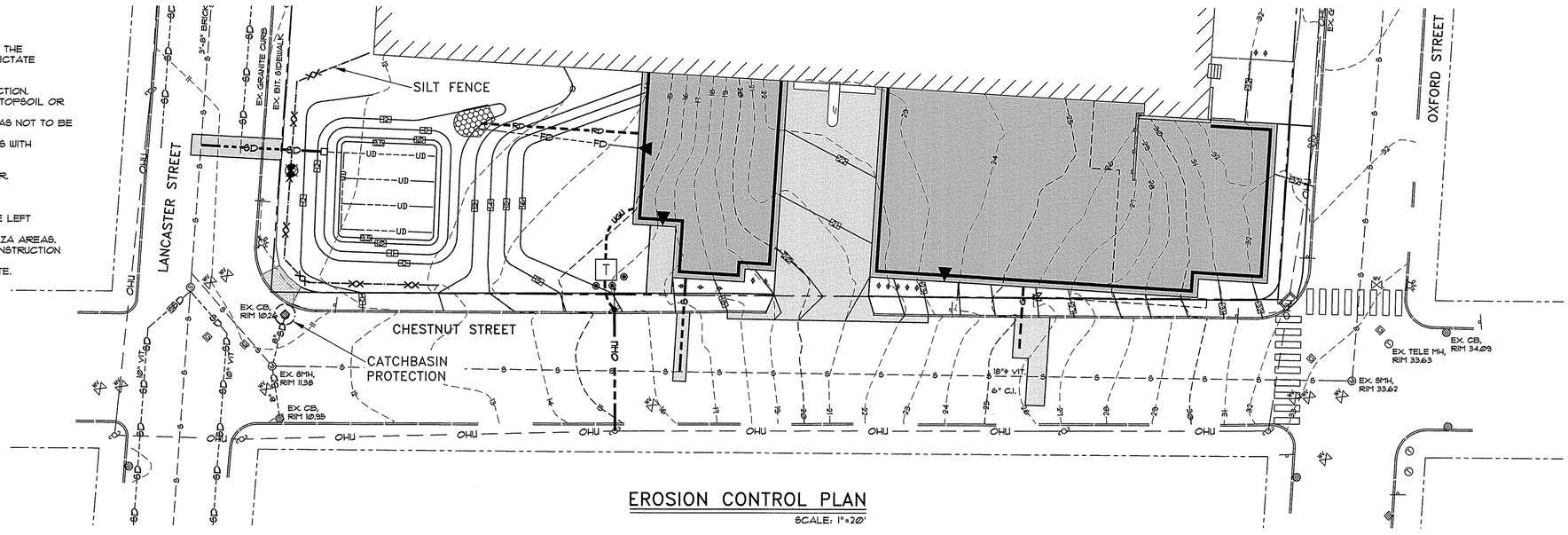
20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SUGGESTED SEQUENCE OF CONSTRUCTION TO CONTROL EROSION:

THIS SEQUENCE OF CONSTRUCTION IS A GENERAL GUIDE TO THE CONTRACTOR. ACTUAL CONSTRUCTION PRACTICES WILL DICTATE VARIATIONS IN THE ORDER OF MAJOR EVENTS.

1. INSTALL PERIMETER SILT FENCE AND CATCH BASIN PROTECTION.
2. INSTALL SILTATION BASINS. (PRIOR TO ANY STRIPPING OF TOPSOIL OR OTHER EARTHWORK)
3. CLEAR AND GRUB WORK AREAS. TEMPORARILY SEED AREAS NOT TO BE WORKED ON WITHIN 14 DAYS.
4. STRIP AND STOCKPILE ON-SITE TOPSOIL. SEED STOCKPILES WITH TEMPORARY SEED MIX.
5. BEGIN EARTHWORK FOR BUILDING FOUNDATION. STABILIZE AREAS DRAINING TO UNDERDRAINED SOIL FILTER.
6. CONSTRUCT UNDERDRAINED SOIL FILTER.
7. BEGIN BUILDING CONSTRUCTION.
8. ROUGH GRADE SITE.
9. RESEED OR TEMPORARILY SEED ANY AREA WHICH WILL BE LEFT UNDISTURBED FOR MORE THAN 14 DAYS.
10. COMPLETE FINE GRADING AND PAVING OF WALKS AND PLAZA AREAS.
11. CLEAN SILTATION BASIN AND STORM DRAIN SYSTEM OF CONSTRUCTION SEDIMENTATION.
12. FINE GRADE, LOAM SEED AND FERTILIZE REMAINDER OF SITE.
13. REMOVE TEMPORARY SOIL EROSION MEASURES.



EROSION CONTROL PLAN

SCALE: 1"=20'

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE, PORTLAND, ME. 04103
TEL. 207.781.5242 FAX. 207.781.4045

THOMAS S. GREER No. 4206 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

7/28/16

REV.	DATE	DESCRIPTION

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142

DRN BY: JDC
DESG BY: DEF
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

GRADING AND UTILITY PLAN, AND EROSION CONTROL PLAN

C1.4

MAP/LOT 26 / E / 10

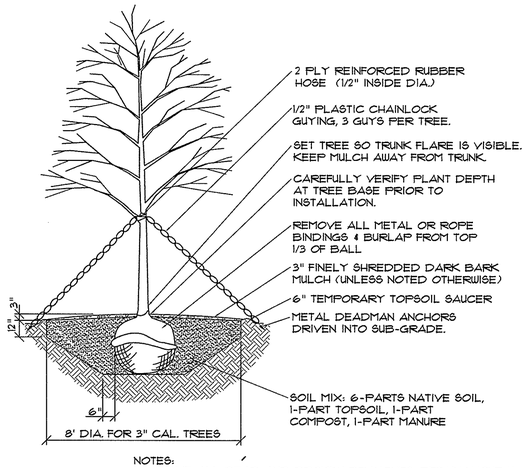
LANDSCAPE NOTES

GENERAL:

1. SAVE EXISTING TREES AS SHOWN. DO NOT CUT OR CLEAR ANY VEGETATION BEYOND THE IMPACT LIMIT LINE.
2. ALL PLANT MATERIALS INSTALLED ARE TO MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
3. ALL PROPOSED PLANT LOCATIONS SHALL BE AS SHOWN ON PLANS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO PLANTING AND WILL NOTIFY OWNER'S REPRESENTATIVE IN THE EVENT OF CONFLICTS.
4. PLANT LOCATIONS ARE TO BE SCALED FROM THELANDSCAPE PLAN UNLESS NOTED OTHERWISE.
5. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL FINAL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
6. FINAL QUANTITY FOR EACH PLANT TYPE IS NOTED IN THE PLANT LIST. THIS NUMBER SHALL TAKE PRECEDENCE IN THE CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE LIST AND ON THE PLAN.
7. ANY PROPOSED SUBSTITUTIONS MUST BE APPROVED BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
8. ALL DISTURBED AREAS TO BE LOAMED AND SEEDED.

MAINTENANCE:

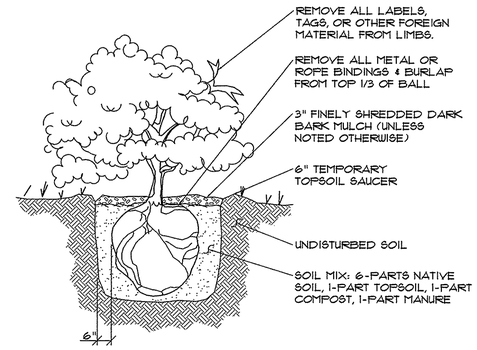
1. LAWNS: SHALL BE WATERED, FERTILIZED AND MOWN ON A REGULAR BASIS ACCORDING TO SEASON AND RAINFALL, TO PRODUCE A STRONG TURF OF 80% MIN. COVERAGE WITHIN THE FIRST YEAR, FREE FROM SIZABLE THIN OR BARE SPOTS. REGRADING AND RESEEDING WILL BE PERFORMED ON BARE SPOTS UNTIL COVERAGE IS COMPLETE.
2. TREES & SHRUBS: THE ESTABLISHMENT PERIOD SHALL BE TWO CALENDAR YEARS FROM THE DATE OF FINAL ACCEPTANCE. DURING THE ESTABLISHMENT PERIOD THE OWNER OR OWNER'S CONTRACTOR SHALL WATER, CULTIVATE AND PRUNE AS REQUIRED TO MAINTAIN A HEALTHY GROWING CONDITION.
3. AT THE END OF THE ESTABLISHMENT PERIOD AND UPON SUBSEQUENT ANNUAL INSPECTIONS, PLANTS WHICH HAVE DIED OR FAILED TO THRIVE SHALL BE REPLACED WITH EQUIVALENT SIZE AND SPECIES. AFTER THE CONTRACTOR'S GUARANTEE PERIOD HAS ENDED, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN AND REPLACE PLANTINGS.
4. TREES, SHRUBS AND LAWNS WHICH ARE NOT IRRIGATED WITH AN AUTOMATIC SPRINKLER OR DRIP SYSTEM SHALL BE THOROUGHLY WATERED ON A REGULAR BASIS DURING PERIODS OF BELOW AVERAGE RAINFALL. SOIL SHOULD BE SAMPLED AT A DEPTH OF 12" AND IF DRY, WATER TO DEPTH OF 24".
5. MULCH IS TO BE MAINTAINED AT A DEPTH TO COMPLETELY COVER THE SOIL AND TO PRESERVE MOISTURE AND MINIMIZE WEEDS.
6. TREES, SHRUBS AND LAWNS SHALL BE FERTILIZED ANNUALLY AND TREATED WITH INSECTICIDES AND/OR FUNGICIDES AS REQUIRED FOR CONTINUED HEALTHY GROWTH.
7. SUCKERS, WEEDS, AND DEAD WOOD SHALL BE REMOVED ON A SEASONAL BASIS, AND SHRUBS SHALL BE PRUNED TWICE A YEAR ACCORDING TO THE REQUIREMENTS OF EACH SPECIES (I.E. SOME SPECIES SHOULD NOT BE PRUNED AT ALL). SHRUBS SHALL NOT BE PRUNED INTO INDIVIDUALS BUT ALLOWED TO GROW INTO A MASS.
8. WHERE TREES ARE LOCATED NEAR SIDEWALKS OR PARKING LOTS, THE CANOPY SHALL BE LIMBED UP TO PROMOTE SAFE CLEARANCE TO 8' ABOVE GRADE.
9. LAWN AREAS SHALL BE MOWN AS OFTEN AS NECESSARY TO KEEP LAWNS TO A 2 1/2 - 3" HEIGHT, AND AERATED ON A SEASONAL BASIS.
10. BEDS AND LAWN EDGES SHALL BE REGULARLY TRIMMED AND EDGED.
11. PERENNIAL AND ANNUAL BEDS SHALL BE DESIGNED, PLANTED AND MAINTAINED FOR SEASONAL COLOR AND INTEREST. ANNUALS MAY BE INCORPORATED TO A MAXIMUM LIMIT OF 25% OF THE BED AREA OF MAINTAINED BEDS FROM MAY 15 THROUGH NOVEMBER 15. PERENNIAL BEDS SHALL BE WATERED AS REQUIRED FOR HEALTHY PLANT GROWTH, AND WEEDED AND DEADHEADED ON A MONTHLY BASIS.



NOTES:
1. PRUNE ALL DEAD AND BROKEN BRANCHES. RETAIN NATURAL SHAPE, NEVER CUT LEADER.
2. IN LEDGE CONDITIONS, BLASTING SHALL BE 10' DIA AND 4' BELOW TREE HOLE BOTTOM GRADE.

2 DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



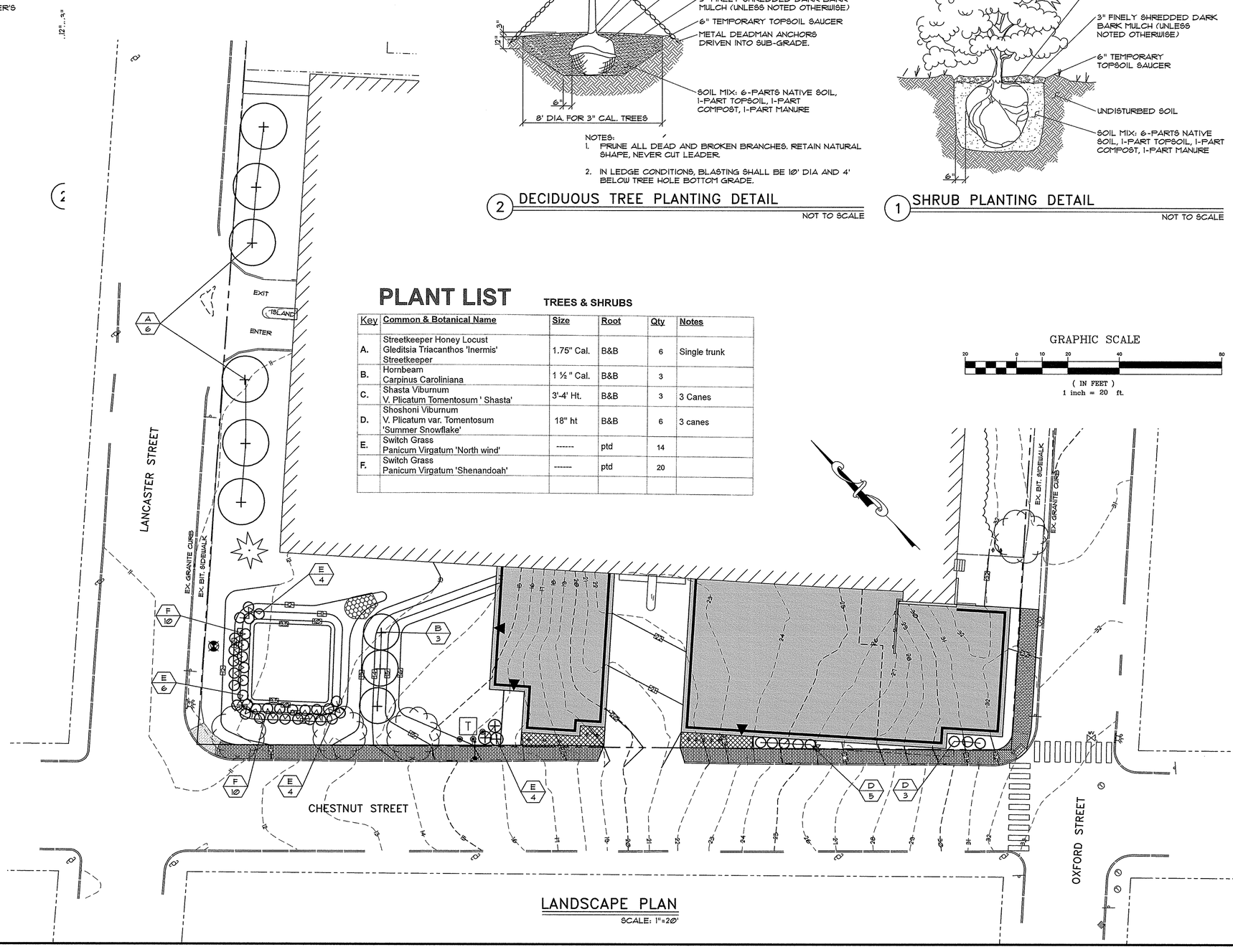
1 SHRUB PLANTING DETAIL

NOT TO SCALE

PLANT LIST

TREES & SHRUBS

Key	Common & Botanical Name	Size	Root	Qty	Notes
A.	Streetkeeper Honey Locust Gleditsia Triacanthos 'Inermis' Streetkeeper	1.75" Cal.	B&B	6	Single trunk
B.	Hornbeam Carpinus Caroliniana	1 ½ " Cal.	B&B	3	
C.	Shasta Viburnum V. Plicatum Tomentosum ' Shasta'	3'-4' Ht.	B&B	3	3 Canes
D.	Shoshoni Viburnum V. Plicatum var. Tomentosum 'Summer Snowflake'	18" ht	B&B	6	3 canes
E.	Switch Grass Panicum Virgatum 'North wind'	------	ptd	14	
F.	Switch Grass Panicum Virgatum 'Shenandoah'	------	ptd	20	



LANDSCAPE PLAN

SCALE: 1"=20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PINKHAM & GREER
CIVIL ENGINEERS
28 HANNAH AVE, PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE — THOMAS GREER No. 4206 — LICENSED PROFESSIONAL ENGINEER

7/28/16

REV.	DATE	DESCRIPTION

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142

DRN BY: JDC
DESG BY: DEF
CHK BY: TG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

LANDSCAPE PLAN, NOTES AND DETAILS

C1.5

MAP/LOT 26 / E / 10

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 OR 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%

9. INSTALL EROSION CONTROL MESH IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. MESH TO BE EQUAL TO NORTH AMERICAN GREEN PRODUCT C125BN.

10. FOLLOW SILT FENCE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS FOR INSTALLATION OF SILT FENCE. SECURE ENTIRE BOTTOM OF FENCE EITHER BY BURYING BOTTOM 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 STABLILIZATION 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

STABILIZING SITE FOR THE WINTER:

1. STANDARD CONDITIONS REQUIRING THE TIMELY STABILIZATION OF DITCHES AND CHANNELS - THE CONTRACTOR WILL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY NOVEMBER 1. THE CONTRACTOR WILL CONSTRUCT AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 15. IF THE CONTRACTOR FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER:

   a. INSTALL A SOD LINING IN THE DITCH - THE CONTRACTOR WILL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE SITE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, 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 THE SOD WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS.

   b. INSTALL A STONE LINING IN THE DITCH - THE CONTRACTOR WILL LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 1. THE CONTRACTOR WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE CONTRACTOR WILL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING SO TO PREVENT THE STONE LINING FROM REDUCING THE DITCH'S CROSS-SECTIONAL AREA.

2. STANDARD CONDITIONS REQUIRING THE TIMELY STABILIZATION OF DISTURBED SLOPES - THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 1. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. ANY AREA HAVING A GRADE GREATER THAN 15% (6H:1V) IS A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL 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 1 THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BEFORE NOVEMBER 1, THEN THE CONTRACTOR WILL COVER THE SLOPE WITH A LAYER OF WOODWASTE COMPOST AS DESCRIBED IN ITEM C OF THIS CONDITION OR WITH STONE RIPRAP AS DESCRIBED IN ITEM D OF THIS CONDITION.

   b. STABILIZE THE SLOPE WITH SOD - THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. 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 TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).

   c. STABILIZE THE SLOPE WITH WOODWASTE COMPOST - THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF WOODWASTE COMPOST ON THE SLOPE BY NOVEMBER 1. PRIOR TO PLACING THE WOODWASTE COMPOST, THE CONTRACTOR WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE CONTRACTOR WILL NOT USE WOODWASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

   d. STABILIZE THE SLOPE WITH STONE RIPRAP - THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 1. THE CONTRACTOR WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR DRAINAGE AND SOIL SEPARATION.

3. STANDARD CONDITIONS REQUIRING THE TIMELY STABILIZATION OF DISTURBED SOILS - BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

   a. STABILIZING THE SOIL WITH TEMPORARY VEGETATION - BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1, THEN THE CONTRACTOR WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM C OF THIS STANDARD CONDITION.

   b. STABILIZE THE SOIL WITH SOD - THE CONTRACTOR WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

   c. STABILIZE THE SOIL WITH MULCH - BY NOVEMBER 1 THE CONTRACTOR WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1,000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE CONTRACTOR WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE CONTRACTOR WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

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/1000 SF. (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/1000 SF. (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/1000 SF. OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75 LBS/1,000 SF. 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/1000 SF. (3 TONS/ACRE) AND ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THOUGH THE MULCH.

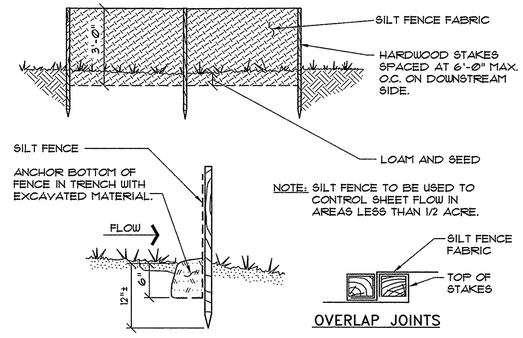
BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL TACK, OR WOOD CELLULOSE FIBER. WHEN GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH THEN COVER IS SUFFICIENT.
AFTER NOVEMBER 1, MULCH AND ANCHORING OF ALL BARE SOIL SHALL 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 SF. 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 SF. 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.

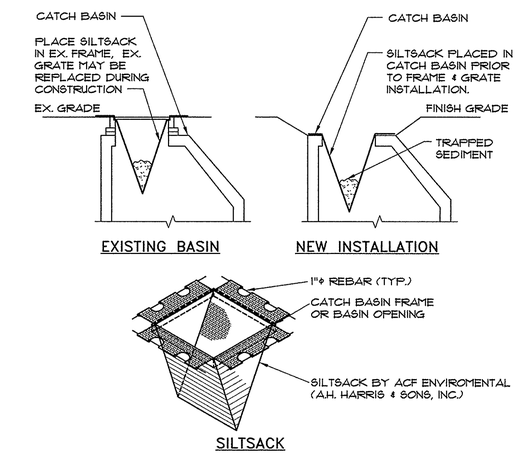
6. TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION
WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE OR EROSION CONTROL MIX LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED 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.



1 SILT FENCE DETAIL

NOT TO SCALE



2 CATCH BASIN PROTECTION

NOT TO SCALE

PINKHAM & GREER
CIVIL ENGINEERS
28 HAWKINS ST. PORTLAND, ME. 04103
TEL. 207.775.2402 FAX. 207.775.1240

STATE OF MAINE
THOMAS GREER
No. 4206
LICENSED PROFESSIONAL ENGINEER
7/28/16

REV.	DATE	DESCRIPTION

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

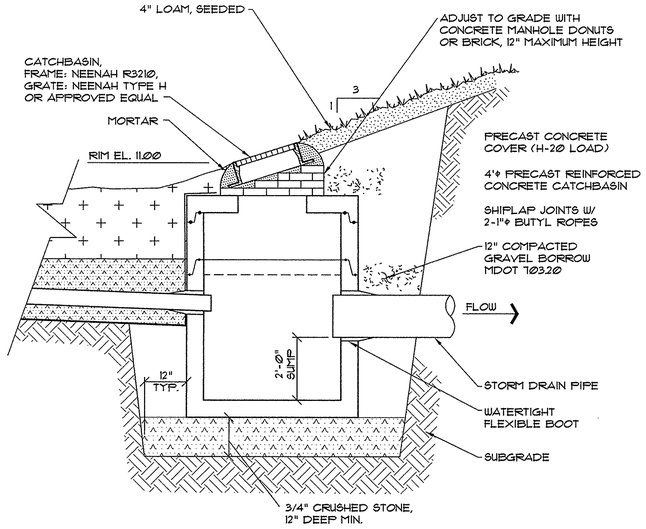
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC/RJS
DESG BY: DEF
CHK BY: TG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

DETAILS

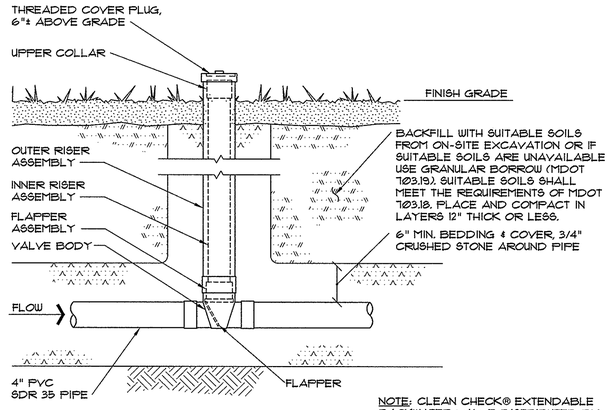
C2.1

MAP/LOT 26 / E / 10



6 UDSF CATCHBASIN OVERFLOW

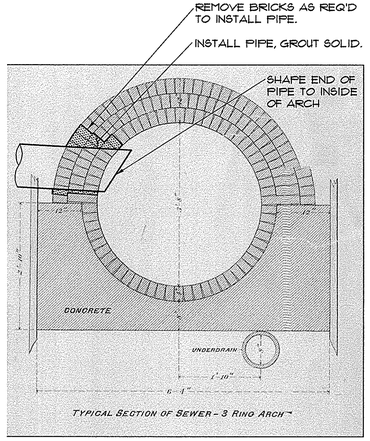
NOT TO SCALE



NOTE: CLEAN CHECK® EXTENDABLE BACKWATER VALVE DISTRIBUTED BY RECTORSEAL (www.rectorseal.com) OR APPROVAL EQUAL.

5 TYPICAL BACKFLOW PREVENTOR DETAIL

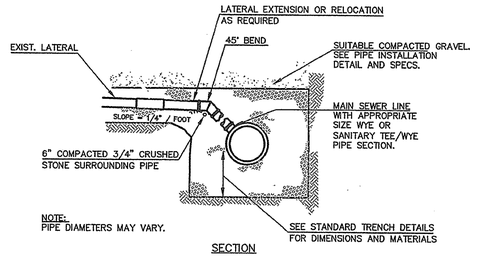
NOT TO SCALE



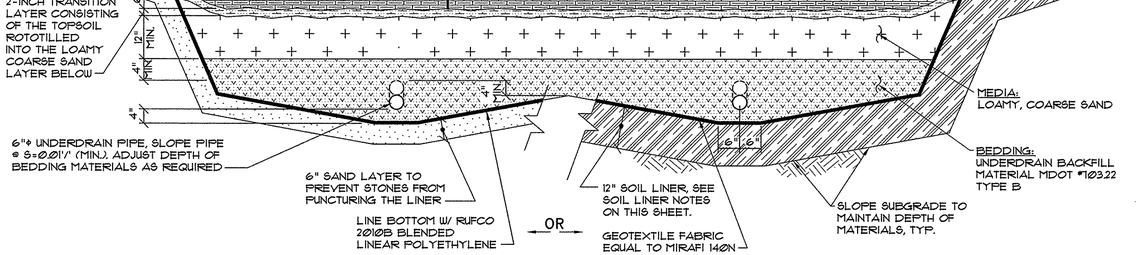
TYPICAL SECTION OF 3'8"ø BRICK ARCH TAKEN FROM "NORTH SIDE INTERCEPTING SEWER AND APPURTENANCES WILMOT ST. TO FREEBLE ST.

4 TYP EX. LATERAL CONNECTION (11-16)

NOT TO SCALE

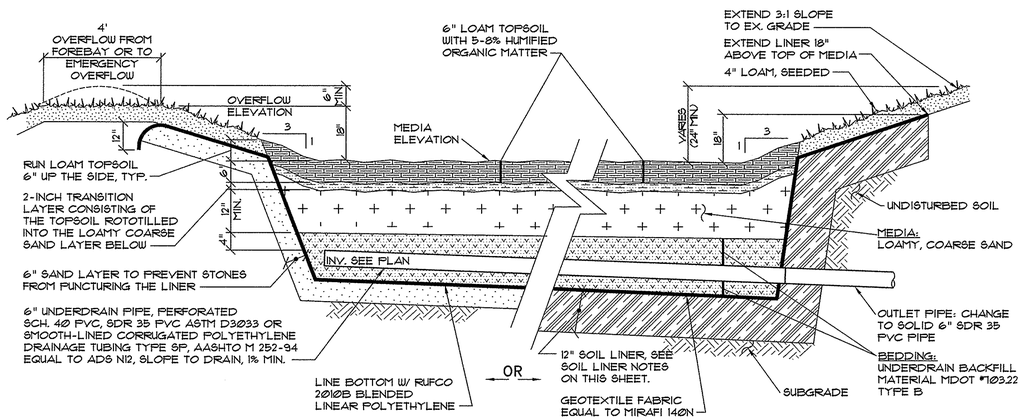


SECTION



3 UNDERDRAINED SOIL FILTER CROSS-SECTION

NOT TO SCALE



2 UNDERDRAINED SOIL FILTER LONGITUDINAL SECTION

NOT TO SCALE

SOIL FILTER MEDIA NOTES

1. THE SOIL FILTER MUST BE AT LEAST 12 INCHES DEEP AND MUST EXTEND ACROSS THE BOTTOM OF THE ENTIRE FILTER AREA AND UP THE SIDES TO THE DEPTH OR ELEVATION SPECIFIED. THIS SOIL MIXTURE SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS CAN BE MIXED WITHIN THE FILTER. THE RESULTANT MIXTURE SHOULD HAVE MINIMAL CLAY CONTENT WITH NO LESS THAN 8% FINES PASSING THE #200 SIEVE. DURING CONSTRUCTION, CARE SHOULD BE TAKEN TO AVOID COMPACTION OF BOTH THE GRAVEL AND SOIL FILTER. COMPACTION SHOULD BE BY SATURATION ONLY, UNLESS SPECIAL LOW COMPACTION EQUIPMENT IS AVAILABLE.
2. CARE SHOULD BE TAKEN, ESPECIALLY IN AREAS WHERE THE PREDOMINANT SOIL AND OVERBURDEN CONTAINS MARINE CLAY, TO BE SURE THAT THE SAND AND TOPSOIL USED IN THE MIXTURE HAVE VERY LITTLE OR NO CLAY CONTENT. USE OF SOILS WITH MORE THAN 2% CLAY CONTENT COULD CAUSE FAILURE OF THE SYSTEM.
3. THE SOIL FILTER MEDIA MUST BE COMPOSED OF A THOROUGHLY BLENDED MIXTURE OF MATERIALS MEETING THE SPECIFICATIONS IN **TABLE B**. ADJUST THE PROPORTIONS BASED ON THE ORGANIC CONTENT AND AMOUNT OF FINES OF EACH COMPONENT. IF THE SAND IS VERY CLEAN OR THE MULCH IS RELATIVELY COARSE, USE MORE MULCH AND LESS SAND WHILE STAYING WITHIN THE ESTABLISHED RANGES. IF THE SAND IS SILTY OR THE MULCH LOAMY, USE MORE SAND AND LESS MULCH.

TABLE A

ME DOT SPECIFICATIONS FOR UNDERDRAINS (MDOT "703.22)	
SIEVE SIZE	% BY WEIGHT
UNDERDRAIN TYPE C	
1"	100
3/4"	90-100
3/8"	0-15
#4	0-25
#10	0-5

TABLE B

SOIL FILTER MEDIA			
FILTER MEDIA	MIXTURE BY VOLUME	SPECIFICATION	
SAND	70%-80%	MEDOT SPECIFICATION "703.01 FINE AGGREGATE FOR CONCRETE (SEE **TABLE C**)	
MULCH	20%-30%	MODERATELY FINE, SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 8%-10% PASSING THE 200 SIEVE	

TABLE C

ME DOT SPECIFICATIONS FOR UNDERDRAINS (MDOT "703.01)	
SIEVE SIZE	% BY WEIGHT
3/8"	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#60	10-30
#100	2-10
#200	0-5

SOIL LINER NOTES

THE COMPACT SOIL LINER SHALL HAVE THE FOLLOWING CHARACTERISTICS:

1. A LIQUID LIMIT GREATER THAN OR EQUAL TO 20, AND A PLASTICITY INDEX GREATER THAN OR EQUAL TO 8 BUT LESS THAN OR EQUAL TO 30, AS DETERMINED USING ASTM D-4318, STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS. GLACIAL TILL SOILS DO NOT NEED TO MEET LIQUID LIMIT AND PLASTICITY INDEX REQUIREMENTS.
2. A MINIMUM FINES CONTENT OF 35%.
3. A MAXIMUM PARTICLE SIZE OF LESS THAN OR EQUAL TO 3 INCHES.
4. HAVE A MINIMUM IN-PLACE DENSITY OF 92% OF THE MAXIMUM DRY DENSITY AS MEASURED BY ASTM D-698, STANDARD TEST METHOD FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT (12,400 FT-LBF/FT3 (600 KN-M/M3)).
5. BE COMPACTED USING A KNEADING ACTION TO REMOLD THE SOIL WITHIN 0-4% ABOVE OPTIMUM MOISTURE CONTENT AS DETERMINED USING ASTM D-698.
6. HAVE A MAXIMUM COMPACTED LIFT THICKNESS OF 9 INCHES AND PROVIDE A MEANS TO ENSURE LIFT INTERFACE BONDING.

UNDERDRAINED SOIL FILTER CONSTRUCTION NOTES

1. PRIOR TO CONSTRUCTION OF UNDERDRAINED SOIL FILTER STABILIZE AREAS THAT DRAIN TO THEM WITH EITHER TEMPORARY OR PERMANENT EROSION CONTROL MEASURES IN ACCORDANCE WITH THE EROSION & SEDIMENT CONTROL PLAN, NOTES & DETAILS.
2. DO NOT PLACE THE FILTER MEDIA UNTIL AFTER THE SOIL FILTER AREA IS USED FOR A SETTLING BASIN DURING CONSTRUCTION AND ALL AREAS THAT DRAIN TO THE BASIN HAVE BEEN STABILIZED. PRIOR TO PLACEMENT OF THE FILTER MEDIA ALL SEDIMENT RESULTING FROM CONSTRUCTION ACTIVITIES MUST BE REMOVED.
3. EXCAVATE UNDERDRAINED SOIL FILTER AND DITCH IN A MANNER THAT WILL NOT COMPACT THE SUBGRADE. DO NOT OPERATE HEAVY MACHINERY INSIDE THE UNDERDRAINED SOIL FILTER.
4. THE TOP 6" OF SOIL FILTER MEDIA SHALL CONSIST OF LOAM TOPSOIL WITH 5-8% HUMIFIED ORGANIC MATTER. SCREENED TOPSOIL FROM THE DEVELOPMENT MAY BE APPROPRIATE BUT SHOULD BE TESTED FOR ORGANIC CONTENT. THE MEDIA SHOULD HAVE SUFFICIENT NUTRIENT CONTENT TO SUPPORT A GOOD STAND OF GRASS TYPE VEGETATION, OR ORGANIC MATTER (SUCH AS SUPERHUMUS OR EQUIVALENT) CAN BE ADDED IF NECESSARY AND PROVIDED THAT THE TEXTURE IS SUITABLE.
5. IF 20 MIL GEOMEMBRANE IS USED:
   THE CONTRACTOR SHALL PROVIDE DETAILS FOR THE PROPOSED RUFCO 2010B BLENDED LINEAR POLYETHYLENE LINER SYSTEM TO BE INSTALLED WITHIN THE SOIL FILTER BASIN. INFORMATION SHALL INCLUDE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION PROCEDURES THAT ADDRESS:
   - SEAMING OF LINER PANELS
   - BOOT INSTALLATION FOR PIPE PENETRATIONS
   - SEAM TESTING PROCEDURES
   - METHOD OF SUBGRADE PREPARATION
   - PLACEMENT AND COMPACTION OF STONE (TO MINIMIZE RISK OF PUNCTURING OF INSTALLED LINER)
6. PLACE UNDERDRAIN BEDDING, UNDERDRAIN PIPE AND BACKFILL MATERIAL IN A MANNER THAT DOES NOT COMPACT THE SUBGRADE, BEDDING OR BACKFILL.
7. PLACE SOIL FILTER BED OVER THE PREPARED SURFACES WITH AN EXCAVATOR WORKING FROM OUTSIDE THE SWALE OR DITCH SO THAT WHEN SHAPED TO FINISH GRADE DEPTH IS AT LEAST 18 INCHES. DO NOT COMPACT.
8. SUBMIT SAMPLES OF THE SCREENED SOIL FILTER BED MATERIAL TO A SOIL TESTING LABORATORY FOR TESTING TO DETERMINE LIME AND FERTILIZER APPLICATION NECESSARY FOR THE TOPSOIL FILTER TO GROW GRASS.
9. APPLY LIMESTONE AND FERTILIZER OVER THE TOPSOIL FILTER ACCORDING TO THE SOIL TEST RECOMMENDATIONS USING LIGHT SPREADING EQUIPMENT. WORK LIME AND FERTILIZER INTO TOPSOIL FILTER TO A DEPTH OF 2 INCHES USING LIGHT EQUIPMENT.
10. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL OR HYDROSEEDER (USING A SLURRY INCLUDING SEED AND FERTILIZER).

SEED MIXTURE	LBS/ACRE	LBS/1000 SF
CREEPING RED FESCUE (PENNLAWN, ENSYLVA OR WINTERGREEN)	20	0.46
RED TOP	2	0.05
TALL FESCUE (KENTUCKY 31)	20	0.46
TOTAL	42	0.97

11. MAINTENANCE: GRASS SHOULD BE MOWED NO MORE THAN 2 TIMES PER GROWING SEASON TO MAINTAIN GRASS HEIGHTS LESS THAN 12 INCHES. REMOVE CLIPPINGS. REMOVE SEDIMENT BUILD-UP WHEN IT HAS ACCUMULATED TO APPROXIMATELY 25% OF CHANNEL CAPACITY.
12. IF BEDROCK IS ENCOUNTERED IN THE UNDERDRAINED SOIL FILTER, OVER EXCAVATE AND REPLACE WITH ONE FOOT OF SOIL.

1 UNDERDRAINED SOIL FILTER NOTES

NOT TO SCALE

PINKHAM & GREER
CIVIL ENGINEERS
28 VAWW AVE. PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.6295

STATE OF MAINE — THOMAS S. GREER No. 4026 — REGISTERED PROFESSIONAL ENGINEER — 7/28/16

NO.	DESCRIPTION	DATE

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

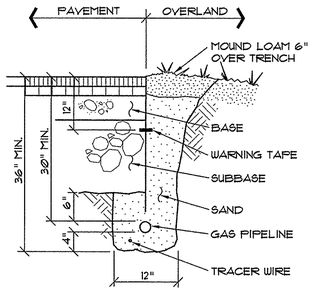
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC/RJS
DESG BY: DEF
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

DETAILS

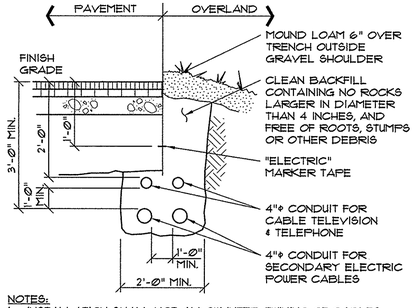
C2.2

MAP/LOT 26 / E / 10



4 GAS PIPING TRENCH SECTION

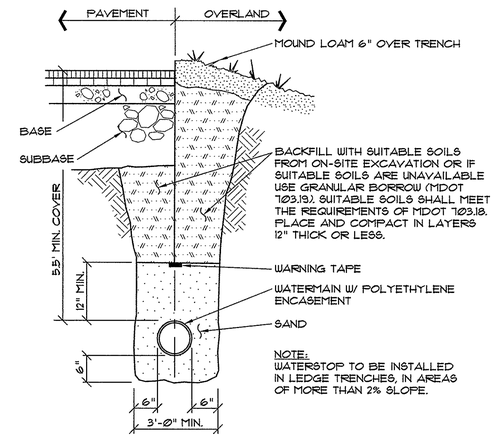
NOT TO SCALE



NOTES:
1. INSTALLATION SHALL NOT ALLOW INTER-TWINING OF CABLES.
2. DIRECT BURY CABLES EXCEPT UNDER PAVED AREAS. PROVIDE SCH. 40 PVC CONDUIT UNDER PAVED AREAS, EXTEND CONDUIT 5'-0" BEYOND EDGE OF PAVEMENT.

3 CABLE TRENCH SECTION

NOT TO SCALE



2 TYPICAL WATER MAIN SECTION ON-SITE

NOT TO SCALE

UNDERGROUND UTILITIES WARNING TAPE

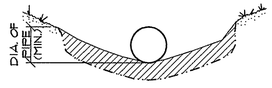
IDENTIFICATION TAPE TO BE INSTALLED ABOVE ALL NEW UNDERGROUND UTILITIES AND ABOVE ANY EXISTING UTILITIES THAT MAY BE EXPOSED BY THIS CONSTRUCTION.

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.

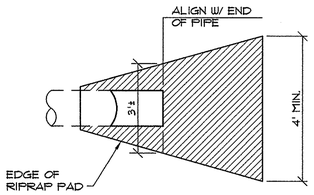
APWA UNIFORM COLOR CODE:

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

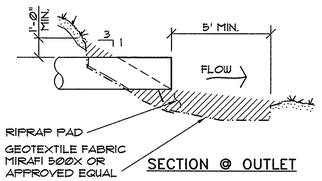
1 UNDERGROUND UTILITIES WARNING TAPE



CROSS SECTION



PLAN @ OUTLET



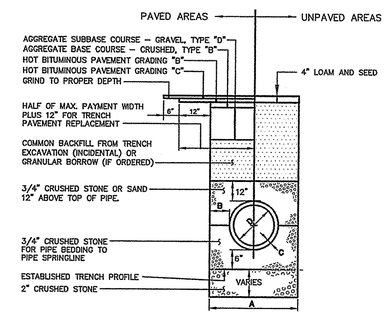
SECTION @ OUTLET

6 PIPE INLET/OUTLET DETAILS

NOT TO SCALE

NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.

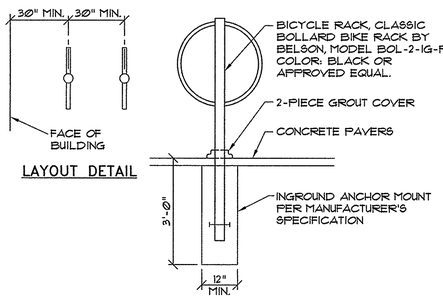
ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES..



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

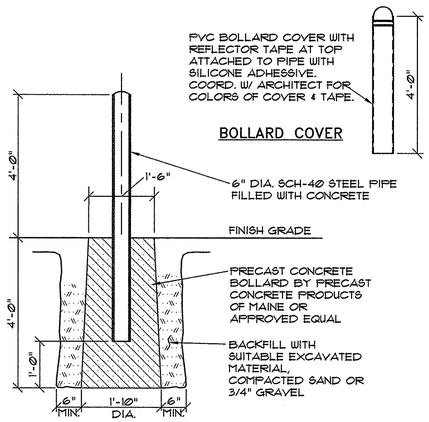
5 TYPICAL PIPE TRENCH INSTALLATION (11-12)



LAYOUT DETAIL

8 BIKE RACK DETAIL

NOT TO SCALE



7 STEEL BOLLARD DETAIL

NOT TO SCALE

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE, PORTLAND, ME 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE
THOMAS A. GREER
No. 4306
LICENSED PROFESSIONAL ENGINEER
7/28/16

REV.	DATE	DESCRIPTION

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142

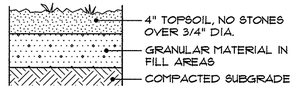
DRN BY: JDC/RJS
DESG BY: DEF
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

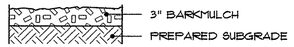
DETAILS

C2.3

MAP/LOT 26 / E / 10



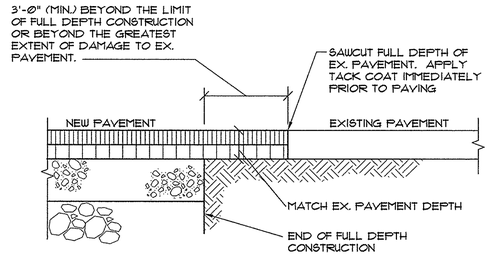
GRASS



PLANT BED BARKMULCH

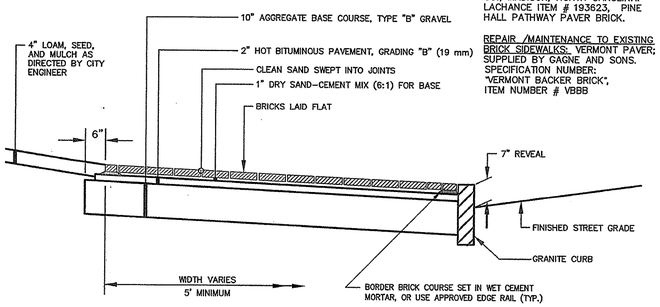
4 LANDSCAPE SURFACE FINISHES

NOT TO SCALE



1 PAVEMENT CUTTING & MATCHING SECTION

NOT TO SCALE



BRICKS TO BE USED:

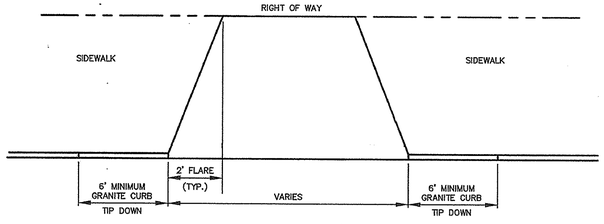
NEW CONSTRUCTION:
4"x8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM # 193623, PINE HALL PATHWAY PAVER BRICK.

REPAIR /MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER; SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: "VERMONT BACKER BRICK", ITEM NUMBER # VBBB

5 BRICK SIDEWALK WITH BITUMINOUS BASE (I-10)

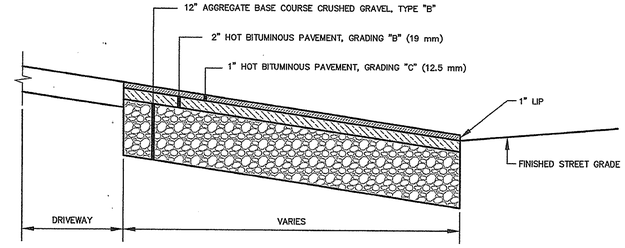
NOT TO SCALE

NOTE:
MATCH GRADE OF EXISTING DRIVEWAY AT R. O. W. LINE, EXCEPT WHEN DIRECTED OTHERWISE BY CITY ENGINEER.



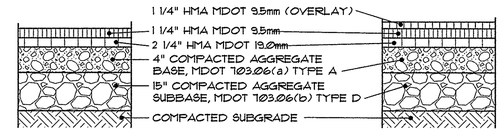
6 DRIVEWAY APRON LAYOUT (I-9)

NOT TO SCALE



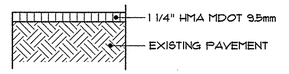
7 BITUMINOUS DRIVEWAY APRON (I-13)

NOT TO SCALE



NEW PAVEMENT

PAVEMENT REPAIR AT TRENCHES

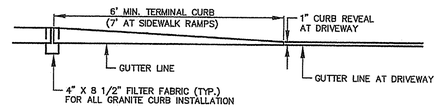


PAVEMENT OVERLAY

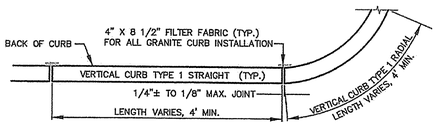
NOTES:
1. HMA = HOT MIX ASPHALT.
   MDOT = MAINE DEPARTMENT OF TRANSPORTATION.
2. ALL COURSE THICKNESS AFTER FINAL COMPACTION.

2 BITUMINOUS PAVEMENT SECTIONS

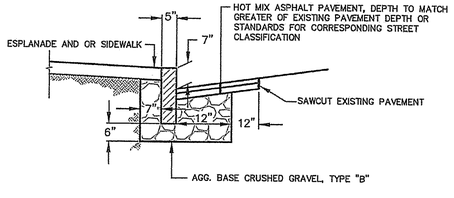
NOT TO SCALE



TERMINAL CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

3 VERTICAL GRANITE CURB INSTALLATION IN EXISTING STREET (I-17)

NOT TO SCALE

PINKHAM & GREER
CIVIL ENGINEERS
28 WINNA AVE, PORTLAND, ME 04103
TEL: 207.797.5242 FAX: 207.797.4496

STATE OF MAINE — THOMAS S. GREER No. 4206 — LICENSED PROFESSIONAL ENGINEER

7/28/16

REV.	DESCRIPTION	DATE

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 15142

DRN BY: JDC/RJS
DESG BY: DEF
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

DETAILS

C2.4

MAP/LOT 26 / E / 10

ELEV 34'

DN

BUILDING TOTAL - 54 UNITS
2 STUDIOS
14 1-BEDROOMS
38 2-BEDROOMS

BED COUNT - 92 BEDS

OPEN TO BELOW

LIVE/WORK
800 S.F.

HVAC PLATFORM

storage/
utility
1496 S.F.

DN

UP

718 S.F.

26'-0 1/2"

32'

ELEV 33'

1165 S.F.

950 S.F.

640 S.F.

ELEV 23'

5 UNITS
2 STUDIO
1 1-BEDROOM
2 2-BEDROOM

ALL UNITS ON THIS LEVEL TO BE WORKFORCE HOUSING

11,600 S.F.

ELEV 32'

EL. +15.5'

SECOND FLOOR

ELEV 23'

DN

LIVE/WORK
2,400 S.F.

EL. +17.5'

utility
storage
laundry
2600 S.F.

unexcavated

32'

LOBBY
ELEV 23'

office

32.5'

2'-8 7/8"

11,600 S.F.

ELEV 32'

EL. +15.5'

FIRST FLOOR

Prepared For:
A&M Partners, Inc

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:

Scale: 1/16" = 1'-0"

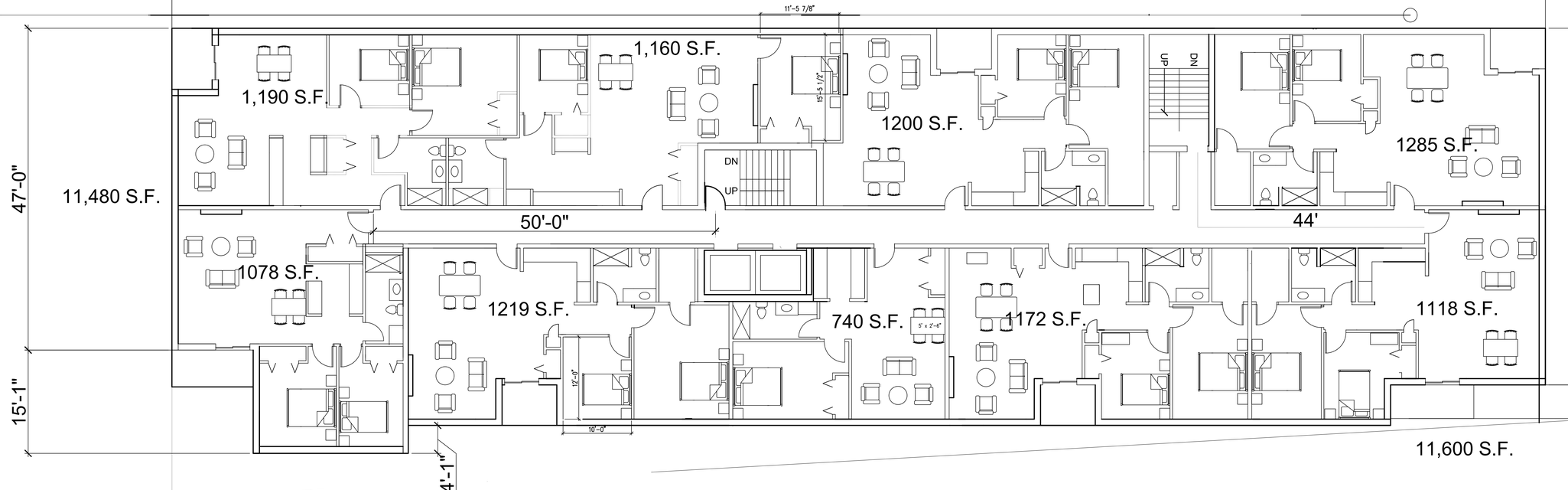
Date: 7-22-2016

PLANS

A1.01

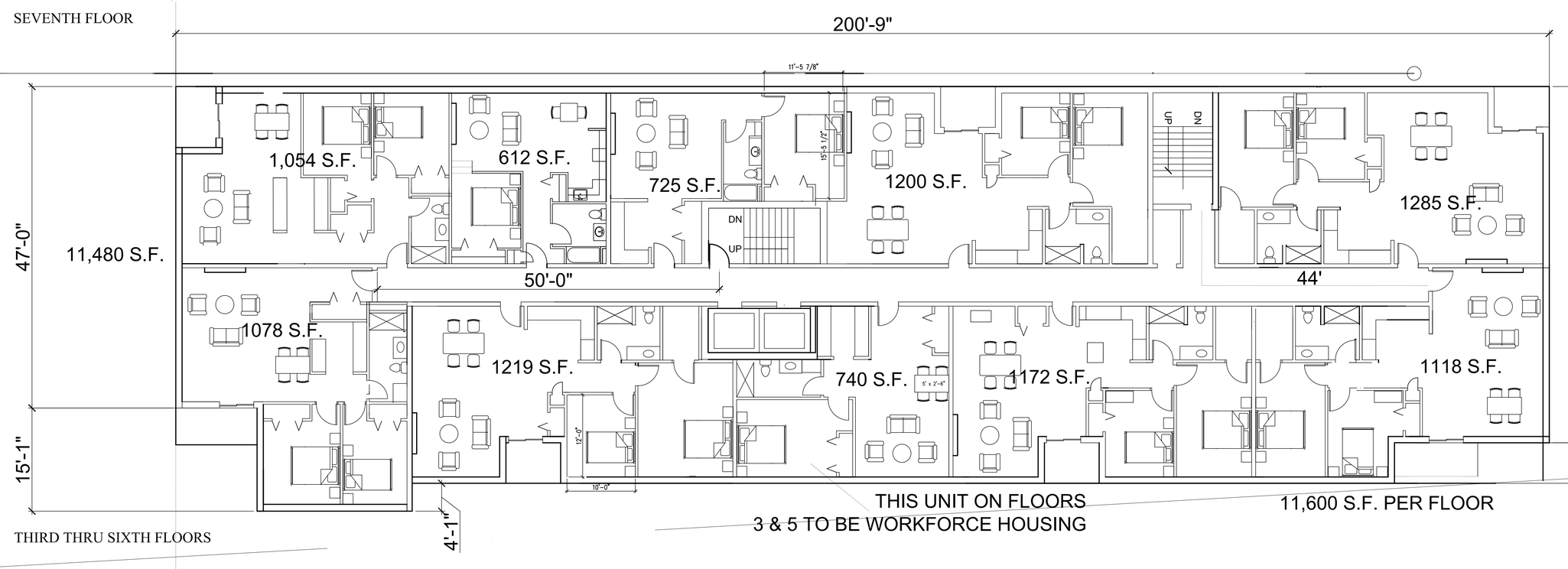
BUILDING TOTAL - 54 UNITS
2 STUDIOS
14 1-BEDROOMS
38 2-BEDROOMS

BED COUNT - 92 BEDS



9 UNITS
1 1-BEDROOM
8 2-BEDROOM

SEVENTH FLOOR



10 UNITS PER FLOOR
3 1-BEDROOM
7 2-BEDROOM

4 LEVELS = 40 UNITS

THIS UNIT ON FLOORS
3 & 5 TO BE WORKFORCE HOUSING

THIRD THRU SIXTH FLOORS

Prepared for: A&M Partners, Inc

Consultant:

Architect: ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project: Westerlea View Lofts
Chestnut Street
Portland, Maine

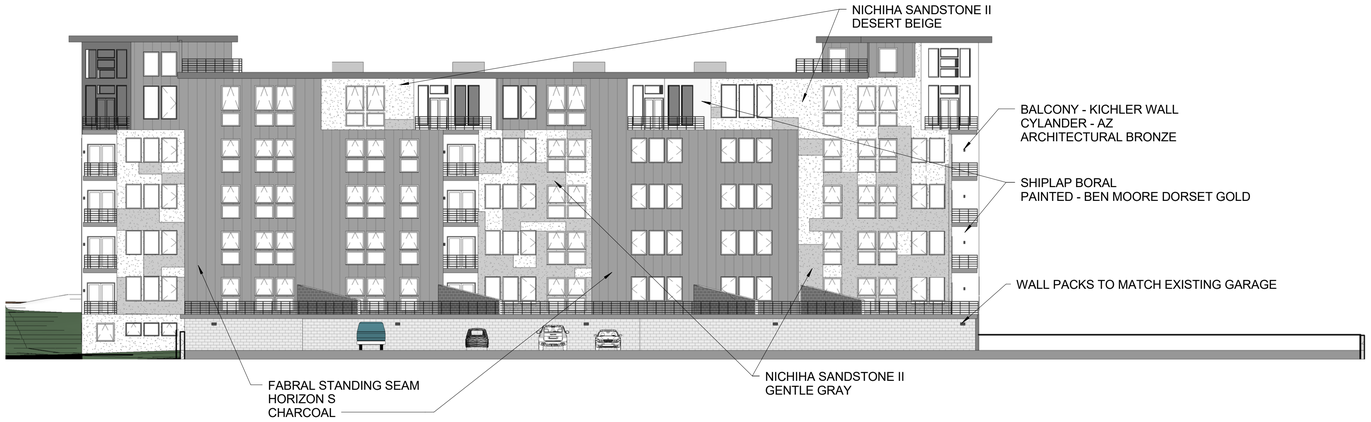
Revisions:

Scale: 1/16" = 1'-0"

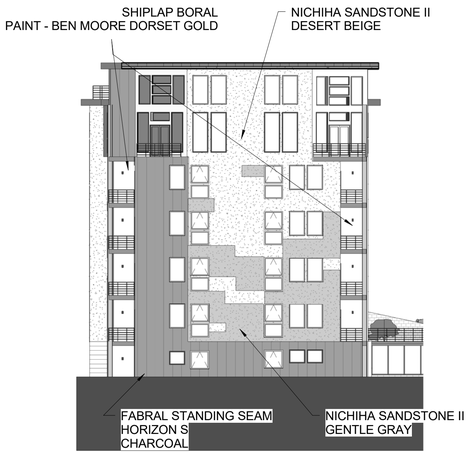
Date: 7-22-2016

PLANS

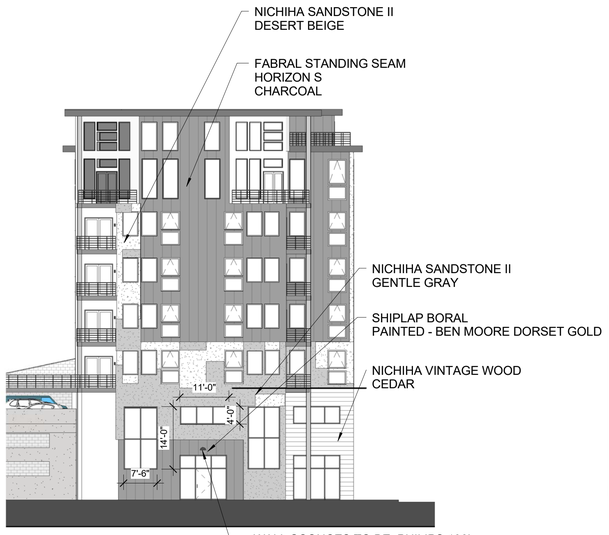
A1.02



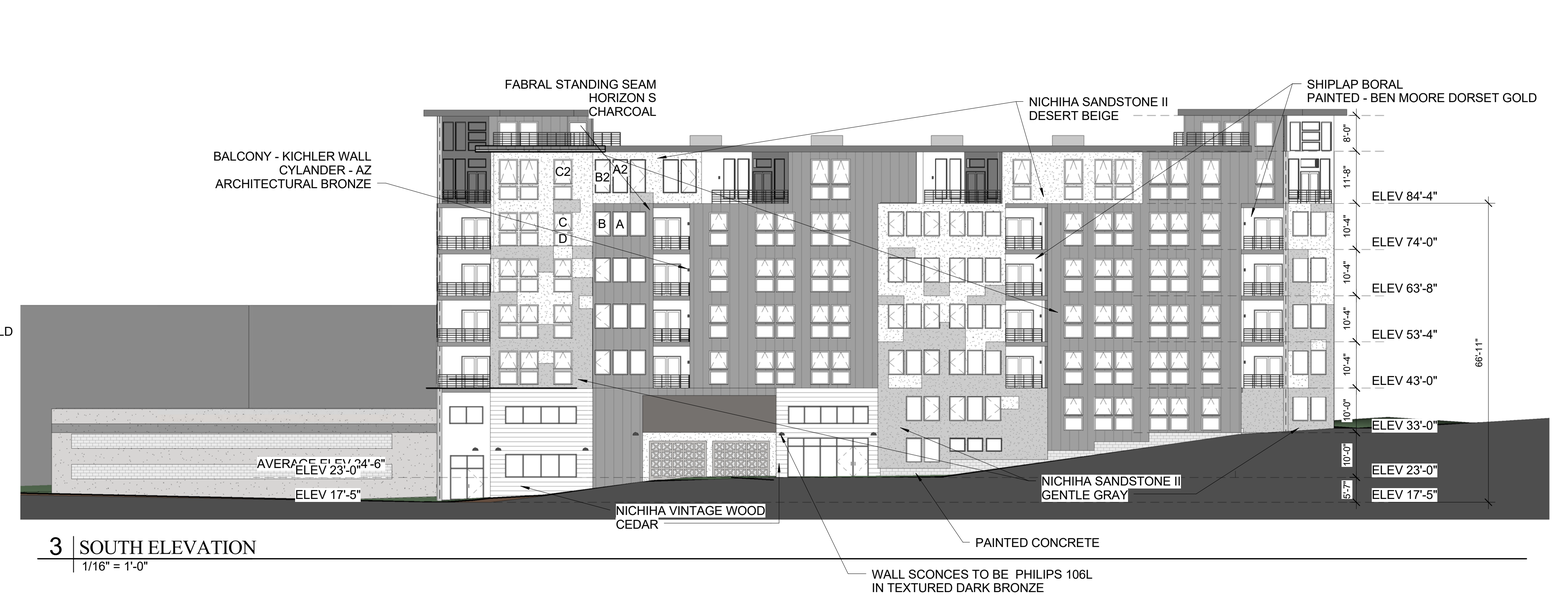
2 | NORTH ELEVATION
1/16" = 1'-0"



1 | EAST ELEVATION
1/16" = 1'-0"



4 | WEST ELEVATION
1/16" = 1'-0"



3 | SOUTH ELEVATION
1/16" = 1'-0"

Prepared For:
A&M Partners

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:

Scale: 1/16" = 1'-0"

Date: 7-22-2016

Building Elevations

A2.01

ARCHETYPE
architects

Memorandum
Planning and Urban Development Department
Planning Division

To: Chair Boepple and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: October 14, 2016

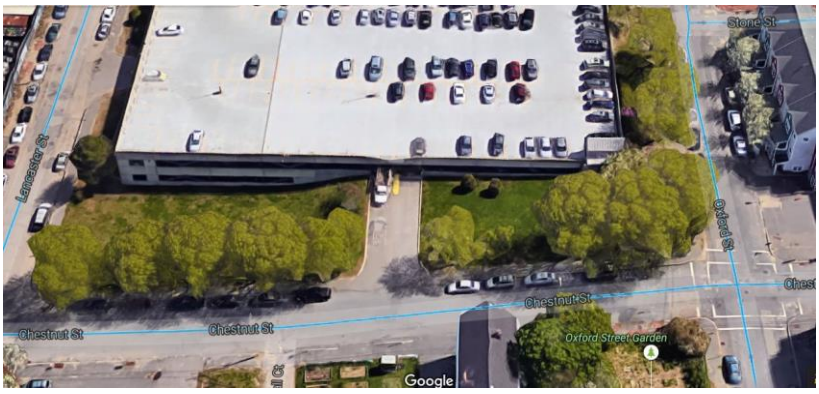
Re: **October 18th, 2016 SECOND Planning Board Workshop**
Level III Site Plan and Subdivision:
54 unit residential development, 75 Chestnut Street
A&M Partners Inc, Applicant

I. INTRODUCTION

A&M partners Inc submitted a preliminary Level III Site Plan and Subdivision application at the end of July and the Planning Board held a Workshop on September 13, 2016. The Board considered that a second Workshop would be helpful and requested additional information to assist in evaluating the proposals.

The applicant submitted additional information on October 3, 2016 and this second Workshop was scheduled at somewhat short notice to take advantage of an unexpected agenda "slot".

The applicant has addressed the bulk of the neighbor, staff and planning Board comments although the footprint and general program has remain unchanged.



The project is called Westerlea View Lofts and located at the corner of Chestnut Street and Lancaster Street in the B7 zone. The proposal is for a 7 story 54 unit residential building (plus one live/work unit) to be constructed on part of the open area surrounding the Chestnut Street parking garage.

The proposal is subject to the Inclusionary Zoning ordinance and a separate conditional use application was submitted for review which proposes 6 units to meet the definition of workforce housing units.

The site abuts the R6 zone along Chestnut and Oxford Streets and is currently an amenity area comprising 10 mature locust street trees and an access drive to the middle level of the parking garage. The building would be constructed over the garage access.

This second Workshop was noticed to 160 neighbors and interested parties, and the public notice appeared in the *Portland Press-Herald* on October 10 & 11, 2016. The applicant held a Neighborhood Meeting on August 31, 2016. The Planning Division received one public comment at the first Workshop (PC1) seeking a better understanding of how the proposed building height related to the heights of surrounding buildings (discussed further under **VI D** below).

Applicant: Lou Wood, A & M Partners, Inc
Agent and Engineer: Tom Greer, Pinkham & Greer
Architect: William Hopkins, Archetype

Required reviews and requested waivers:

Applicant's Proposal	Applicable Standards
New structure of 54 dwelling units	Subdivision Review
Multifamily building of 81,200 sq ft	Level III Site Plan Review and B-7 Design Review
New structure of 54 dwelling units	Inclusionary Zoning Section 14-484
Waiver will be needed regarding the provision of street trees	Ordinance Subdivision 14- 499 *Required Improvements* and Technical Standard 4.6.1- requiring 1 tree per unit to be located in the Right of Way.

II. PROJECT DATA (based on submissions for first Workshop)

SUBJECT	*DATA*
Existing Zoning	B-7
Existing Use	Parking garage and open, landscaped surrounds
Proposed Use	54 residential units & 1 work force unit
Parcel Size	92,224 sq ft
Impervious Surface Area **--Existing** **--Proposed** **--Net Change**	 53,511 sq ft 63,563 sq ft 10,052 sq ft
Total Disturbed Area	29,000 sq ft
Building Footprint **--Existing** **--Proposed** **--Net Change**	 49,326 sq ft 60,926 sq ft 11,600 sq ft
Building Floor Area **--Existing** **--Proposed** **-Net Change**	 148,006 sq ft (existing garage) 229,206 sq ft 81,200 sq ft
Proposed Bedroom Mix **-Efficiency Units** **One-Bedroom Units** **Two-Bedroom Units** **Three-Bedroom Units**	 2 14 38 0
Parking Spaces	450 existing in garage, of which 54/55 spaces (1:1) proposed to be for occupants
Bicycle parking Spaces	22 (none existing)
Estimated Cost of the project:	$5,850,000

III. PLANNING BOARD DISCUSSION 9.13.2016

The following issues were discussed at the first Workshop and the applicant has submitted revisions to address these as noted in the table below:

Issue raised at first Workshop	*Information/revisions submitted*
Building needs better engagement with the community/street	Community room identified in ground level; re-orientation of entrance to live/work space so from Chestnut
Concern re height in context of neighborhood- transition to surrounding lower heights	Neighborhood Architectural Overview (Attachment N) with sections and renderings and floorplans
Concern re siting and massing of building re R6	Siting and massing not changed since first Workshop
Concern about design- using colors to break up bulk; lack of urban scale at street	Generally not changed; updating re entrances and one color for apartment walls (see Att. N)
Windows/apartments at ground level	No change
Street trees	Removing 7 existing and replaced with 6 new ones on Chestnut
Site Landscape- screen blank wall of garage	Added viburnum along base of garage
Site landscape- outdoor recreational space	Added picnic table on paved area
Site landscape- adding green elements	No additional other than new street trees and viburnum around garage
Traffic safety analysis Lancaster and Chestnut	Submitted
Information about parking supply /demand /management	Not submitted but could be part of final submissions
Sidewalks- need to be widened to at least 8 feet	Sidewalks widened to 8 feet
Sidewalks- extend replacement to Lancaster & Oxford	Brick sidewalk (all at 8 ft wide) extended along all street frontages of larger (garage) site)
Street lighting	Added 4 street lights (Bayside medium) along Chestnut
ROW- ADA ramps at corners	Included, though subject to final staff review
Stormwater - Peer Engineer comments	Addressed all comments except re utiity capacity letters
Clarification of external mechanicals on facades	Not specifically addressed

IV. EXISTING CONDITIONS

The proposal site abuts the west side of the 2-3 story parking garage, with the main frontage of the new building along Chestnut Street. The site slopes downhill about 20 feet from Oxford Street to Lancaster Street.

The building is proposed to be at the "top" of the slope at the corner of Chestnut and Oxford Streets and next to the pedestrian steps leading to the top deck of the parking garage- see photos right and below.

Corner of Oxford and Chestnut Streets

Looking towards site from garage deck

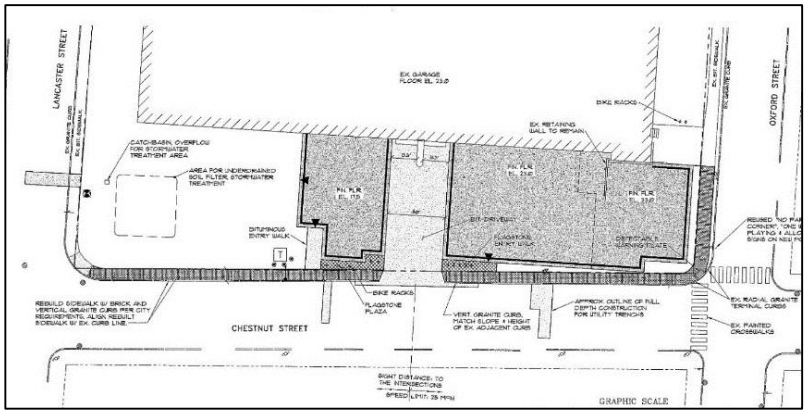
V. PROPOSED DEVELOPMENT

The proposals in terms of the site layout have not changed since the first Workshop. The proposed 7 story building abuts the parking garage and is built over the drive access to the garage. The entrance to the building faces Chestnut Street and is located just uphill from the garage access drive.

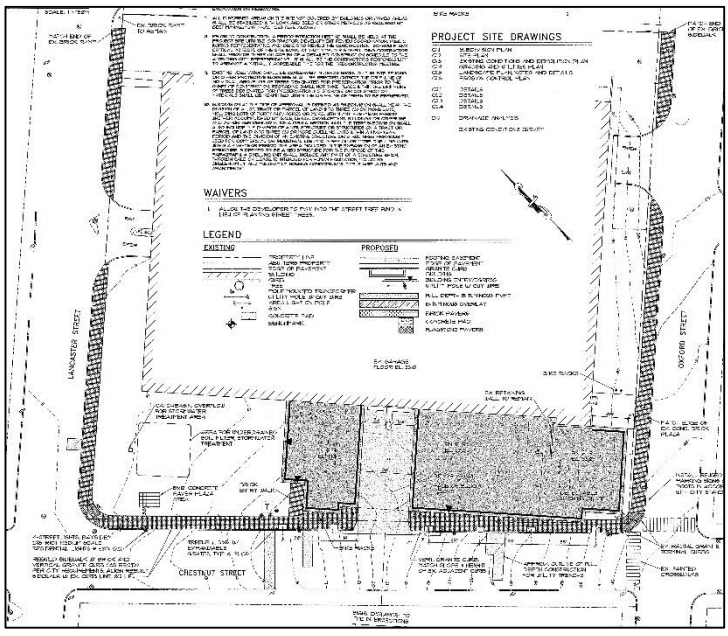
The sidewalk along Chestnut and Oxford Streets along the construction site frontage is proposed to be rebuilt in brick and has been revised to be 8 feet as recommended by staff and supported by the Board at the first Workshop (Plan P17). Seven of the ten existing mature trees along Chestnut would be removed (Plan P15) but the revised proposals add in 6 street trees.

The new building would provide 54 apartment units; these are understood to be market-rate apartments with the exception of 6 units proposed to meet the definition of "Work Force" housing. In addition, there is a 2-level unit next to the garage access drive that is "live-work" totaling approximately 3,128 sq ft.; the entrance to this unit has been relocated so its on Chestnut Street. The first full level of apartments (floor 3) have cantilevered decks out over the top deck of the parking garage (see elevations, Plan P13), and a total of 42 units have balconies.

The previous Site Plan (Plan P4) and revised Site Plan (Plan P17)



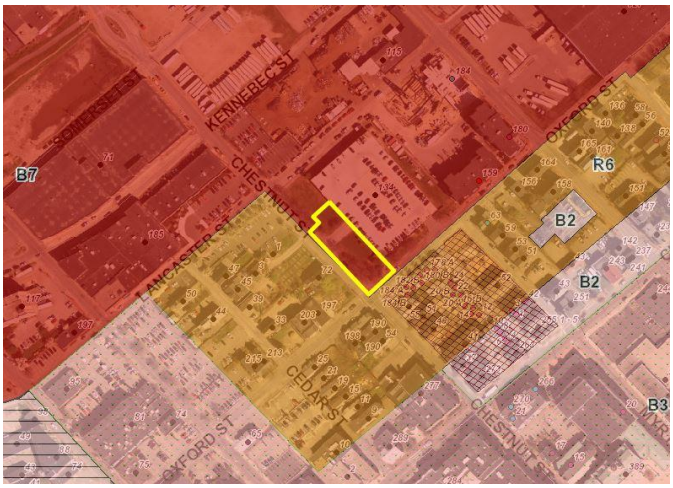
Plan P4 as for Workshop 1



Plan P17 as for Workshop 2

VI. STAFF REVIEW

A. ZONING ASSESSMENT



The proposed development is on the edge of the B7 zone and faces the R6 zone on Chestnut and Oxford Streets. The B7 zone includes a number of unique requirements concerning setbacks and the length of the building wall.

The applicant has submitted a Zoning Analysis (Attachment C) and staff consider that the proposed development meets all of the dimensional requirements of this zone. The Bayside Height Overlay Map (2006) identifies the site as within the "Intermediate Height District" of 3 floors minimum and a maximum of 105 ft. The R6 zoned areas across Chestnut and Oxford Streets are identified as "Traditional Neighborhood Height" with a minimum of 2 floors and a maximum height of 55 feet.

The B7 Zoning ordinance also specifically requires compliance with the *B7 Design Principles and Standards*, which includes requirements for access and circulation, sidewalks and crosswalks, and lighting in addition to building design.

B. SUBDIVISION STANDARDS

14-496. Subdivision Plat Requirements

The applicant has submitted a draft plat which has not been reviewed in detail.

14-497. General Requirements (a) Review Criteria

Water, Air Pollution and Soil Erosion

A revised Erosion Control Plan has been submitted (Plan 20) and staff find this is acceptable (Attachment 10).

Traffic

The applicant has submitted a Traffic Assessment (Attachment H) and the additional assessment of the Chestnut Street/Lancaster Street intersection (Attachment P.) as requested (Attachment 3).

Parking

The applicant has noted that there is a 450 space parking garage abutting the project and in principle the parking supply is adequate. Under Zoning and Site Plan ordinances there is a requirement for additional information and this is discussed below.

Sanitary Sewer/Soils

The application has been reviewed by the consulting Peer Engineer (Attachments 4 abd 10) and is acceptable subject to confirmation of wastewater capacity.

Storm water

The applicant proposes to manage stormwater impacts by collecting the stormwater and directing it to an underdrained soil filter at the corner of the site near Lancaster/Chestnut Streets. The revised submissions additional detail and address the Peer Engineer comments (Attachments 4 and 10).

Scenic Beauty and Street Trees

The proposal results in the removal of 7 of the 10 mature trees at the back of the sidewalk on Chestnut Street (Plan P2 and P15). The Landscape Plan has been revised to add 6 new maple street trees along Chestnut Street in addition to the previously proposed 9 new trees elsewhere on the site. The requirement would be 55 street trees.

Comprehensive Plan
The project is consistent with the Housing Goals and Policies of the Comprehensive Plan.

Electrical Service
The Subdivision ordinance requires electrical service to be underground and the proposals have been revised to place the services crossing Chestnut Street underground (Plan P18).

C. SITE PLAN STANDARDS
14-526 Site Plan Standards

Traffic - Access, Circulation, Loading and Servicing
Staff have not identified any concerns except re the intersection of Chestnut and Lancaster Streets as noted under the Subdivision Review above.

Sidewalks
The applicant is proposing to reconstruct the sidewalk in brick along the Chestnut and Oxford Streets where impacted by the proposals. The applicant has increased the proposed sidewalk width varies from about 7' 0" to 8 feet for all sidewalks and staff recommend that this addresses the Design Standards that were detailed in the first Workshop Memorandum.

The applicant has also extended the upgraded sidewalks along Oxfords and Lancaster streets (Plan P17) in response to the previous staff comments and they meet City standards. Curb ramps have been included but have not been reviewed in detail.

Public Transit Access - these do not apply to this project.

Parking
The applicant is proposing the provision of parking on a one to one ratio within the parking garage. The submissions state that this is the zoning requirement (Attachment C). The parking requirement is that the Planning Board shall establish the parking requirement based on a submitted parking analysis (referenced in Zone and Site Plan Ordinance sections, as quoted in the first Workshop memorandum).

The applicant requested a waiver from this requirement (Att M). The Planning Board indicated at the first Workshop that a formal parking analysis was not required but requested additional documentation of the supply in the existing garage, the likely demand created by the proposed development and how the parking allocation would be managed. This information has not been received.

Bicycle Parking
The proposals show bicycle parking spaces on the site plan and the final submission will need to confirm the number (which should meet the requirement of 2 bicycle parking spaces for every 5 dwelling units) and clarify the number inside and outside and show their locations.

Snow Storage
This may apply to the garage access drive and should be addressed at the final submission stage.

Transportation Demand Management
The Site Plan ordinance requires that all Level III development in the B7 zone shall design and implement a Transportation Demand Management (TDM) Plan. The applicant has confirmed that this will be prepared as part of the final submittal (Attachment M).

Landscape Preservation / Site Landscaping and Screening/Street Trees
The revised proposals add viburnum planting around the base of the parking garage (Plan 19) and add 6 street trees, but do not appear to fully address the City Arborist comments from September (Attachment 7) nor the Planning Board comments regarding some screening of the existing blank wall of the parking garage.

Water quality, Stormwater Management and Erosion Control - see discussion under Subdivision Review above.

Public Safety
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.

The proposals have been revised to bring the gated entrance to the parking garage (under the building) near to Chestnut Street and this addresses concerns regarding the previous proposal for a closed "tunnel" which limited surveillance and access control.

Fire Prevention
The Fire Department had noted concerns about the overhead utilities initially proposed across Chestnut Street (Attachment 6); the revised proposal places these underground. (Plan 17)..

Public Utilities
The Peer Engineer has provided comments regarding the utilities (Attachment 4 and 10).

Massing, Ventilation and Wind Impact
The Site Plan ordinance includes the following requirement in respect of wind impacts:

a. *The bulk, location or height of proposed buildings and structures shall not result in health or safety problems from a reduction in ventilation to abutting structures or changes to the existing wind climate that would result in unsafe wind conditions for users of the site and/or adjacent public spaces.*

The submissions do not include any detailed information regarding the wind conditions anticipated to be created by the proposed 7 story building at this location.

Shadows
The applicant has submitted a Shadow Study (Attachment J). The shadows created by the building largely affect the parking garage. A question is whether the shadows would impact the potential for redevelopment of the parking garage in the future.

Historic Resources- this does not apply to this project.

Exterior Lighting incl Street Lighting
The applicant was advised in the previous Memorandum that further information, as required under the Technical Standards, should be included in the final submissions so reviewers can determine if there are any light trespass or glare issues and that the proposal address the Site Plan ordinance requirements.

Staff had previously recommended the applicant provide lighting along the site's Chestnut Street frontage in conformance with the Bayside Lighting District standards contained within the Technical Manual (Attachment 5). The applicant has introduced four street lights along the Chestnut Street frontage. Staff have not been able to review this proposal in detail (in context of the several site plan , technical and design standards as outlined in the first Workshop Memorandum).

Noise and Vibration
The applicant has confirmed that rooftop appurtenances will be located on the roof without screening (set back) and staff assume this will include HVAC mechanicals. A public comment also asked about whether any mechanical devices would be protruding from the sides of the building. The final submissions should clarify these details and demonstrate that these will meet the Site Plan standards.

D. DESIGN STANDARDS

B-7 Zone Design Principles and Standards

The applicant previously submitted a narrative outlining how the proposal meets the architectural standards (Attachment D) and the City's Urban Designer provided initial comments (Attachment 2) that were discussed by the Planning Board at the first Workshop. The Board raised additional design issues related to:

- Building needs better engagement with the community/street
- Concern re height in context of neighborhood- transition to surrounding lower heights
- Concern re siting and massing of building re R6
- Concern about design- using colors to break up bulk; lack of urban scale at street

The Board also requested that the applicant provide additional information that allowed neighbors to see how the proposed building related in massing and height to the surrounding neighborhood. The applicant submitted the "Neighborhood Architectural Overview" which includes birdseye aerials, renderings, sections, floor plans and elevations (Attachment N).

One neighbor, Louis Christen, submitted comments at the first Workshop (PC1) and is seeking information as to how high the proposed building is above the existing buildings along Oxford Street. Staff have involved the City's surveyors to help answer this question, as the site plan records refer to the zoning height (height above the average grade) and not the absolute height. The absolute height of the proposed building (from Oxford Street) is shown as 71 feet on the elevation in Plan P26; this would be about 35 feet higher than the roof ridge of the townhouses opposite on Oxford Street, and 30-40 feet higher than the Pearl Place buildings further east on the same side of Oxford Street.

The concerns regarding the height of the proposed building may stem from its siting and massing with little in the way of articulation and stepbacks to help transition between its 7 stories and the surrounding smaller scale buildings. The City's Urban Designer has provided an extract of the B7 Design Standards that particularly reference this and other issues raised at the first Workshop (Attachment 8):

> ***Principle A: Urban Design***
> *All development in Bayside shall be designed to create a strong urban identity and sense of place. Buildings may be a variety of architectural styles, particularly those that are innovative and express the aesthetic of the time in which they were built, and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. These principles shall . . . ensure sensitive transitions to surrounding neighborhoods, enhance the physical amenities of the neighborhood, and create a pedestrian oriented environment with safe and vital streets.*
>
> ***A-2: Edges and Transitions*** *– Transitions between larger scale, mixed use buildings and smaller-scale residential uses shall be designed so that there is a seamless connection to adjacent residential neighborhoods to ensure that these zones remain stable, quiet, and secure. This shall be achieved through the mitigation of height, massing, stepbacks, materials, and details and design of the façade at the pedestrian level. . . . Larger scale developments may use public open spaces to provide transitions to lower scale uses.*
>
> ***A-5: Pedestrian Environment*** *– Development on public streets or public spaces shall be human scale at the pedestrian level and enhance the pedestrian environment through the use of elements at the first floor such as . . . fully functioning entries oriented to the street; active windows and storefronts; awnings and weather protection; outdoor seating and sales displays; adequately sized sidewalks; gathering spaces; trees and landscaping; street furniture; . . .*
>
> ***A-7: Building Orientation*** *– The primary facades and entrances of buildings shall be oriented to streets, major pedestrian routes, or open spaces in order enhance the pedestrian-oriented environment.*

Principle D: Open Space and the Public Realm

D-1: Open Space Design *– Publicly-accessible parks, plazas, and other open space shall be accessible from sidewalks and surrounding buildings. . . . Pedestrian amenities such as seating, lighting, artwork, trash receptacles, etc. shall be compatible with the City's Streetscape Standards for Bayside. . . . Solar access, wind protection, and landscaping shall be considered to enhance pedestrian comfort and provide a variety of sunny and shaded areas.*

D-3: Landscaping and Street Furniture *– Landscaping for private property that is accessible to the public shall comply with the City of Portland Technical Manual at a minimum, and with the standards below.*

Landscaping – shall enhance the character and livability of Bayside
Plant Selection – shall consider the plant's tolerance for urban conditions
Compatibility – site improvements shall be considered in coordination with public streetscape improvements which occur or are planned for the immediate area
Irrigation and Drainage – adequate provision of a water source, irrigation system and method of drainage shall be provided for planted areas. Such areas shall also have drainage systems designed to prevent excess water accumulation or runoff onto pedestrian walk areas.
Lighting – lighting of plant materials shall complement existing City programs
Maintenance – a regular program of feeding, watering, pruning, damage repair, pest and weed control, and replacement of declining plant material shall be established at the time of initial design and installation, and maintained thereafter.

Principle E: Architectural Design

New development shall create a mixed-use, pedestrian-friendly setting that contributes to the context of the surrounding urban fabric and provides a sensitive transition to adjacent residential neighborhoods. . . . The scale, massing, and fenestration of new development shall reflect its context, . . .

E-1: Architectural Design *– New development in Bayside may be a variety of architectural styles, . . . and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. A respectful integration of contemporary design within the existing context shall complement, reinforce, and enhance the prevailing patterns and proportions of adjacent buildings without requiring imitation or repetition.*

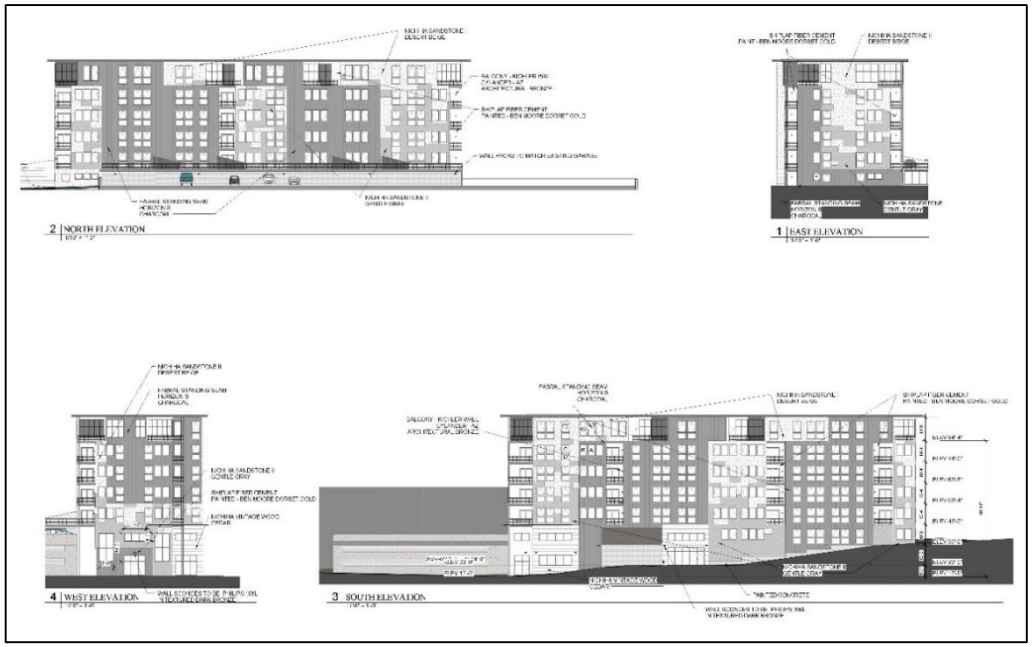
E-2: Height *–Heights along the edges of the B-7 Zone shall transition to the scale of adjacent neighborhood development through design elements such as variations in massing; articulation of the facades in intervals that reflect exiting structures or platting pattern, stepping the architecture to adjacent buildings and/or contextual proportions of building elements, use of architectural style and details such as roof lines, belt courses, cornices, or fenestration, and color or materials that derive from the less intensive zone.*

E-3: Massing *– The composition of a proposed building façade shall be defined by horizontal and vertical articulation, with vertical articulation being predominant, in keeping with the local context of the urban form. New buildings that are four stories or higher shall have three components: base, middle, and top.*

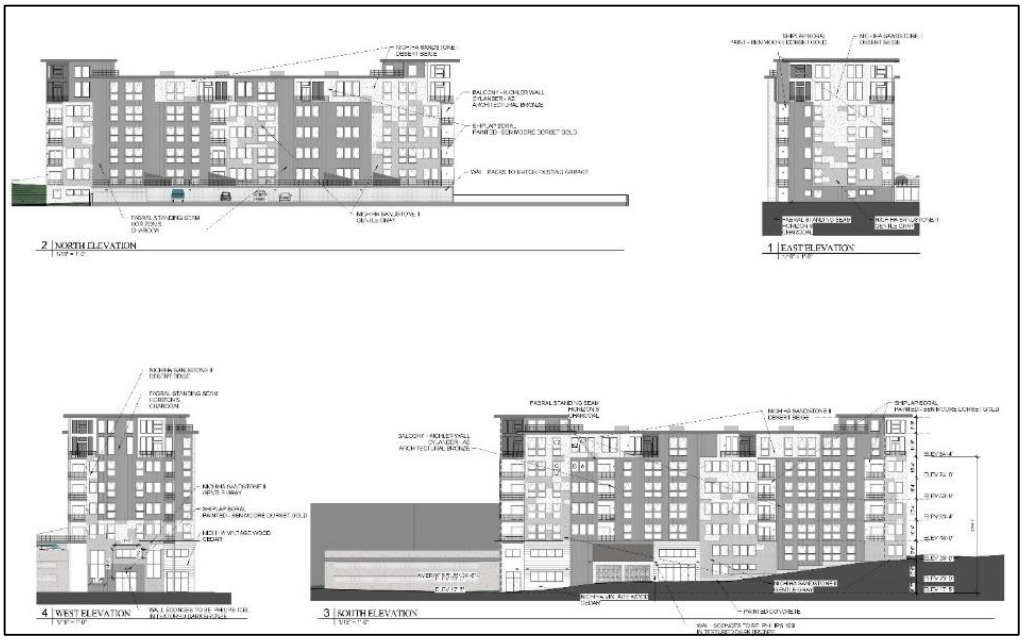
E-4: Articulation *– Façades visible from public rights of way shall incorporate design elements that break the facades into components scaled o the pedestrian, and to the context of other buildings on the street. This may be accomplished through an expression of the building's base, middle and top, vertical fenestration, variation in the planes of the façade, architectural details such as windows, doors, bays, balconies, cornices, reveals, expansion joints, trim, changes in color, texture, and material, permanent artwork, etc.*

The series of elevations below shows how the design has developed as from the original submissions to the revised October submissions:

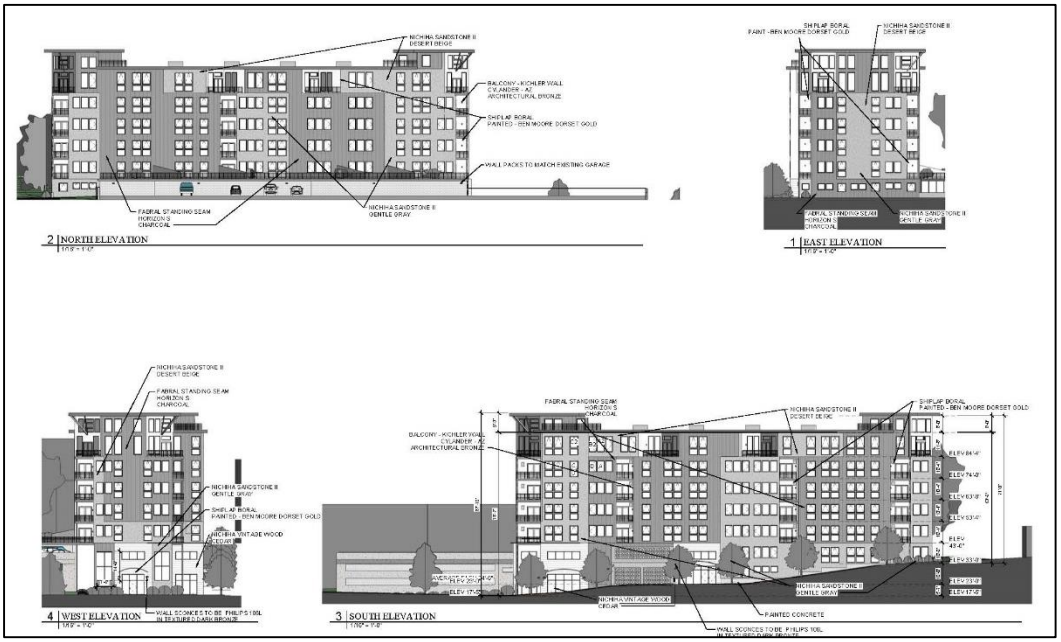
Initial submitted Elevations:



Elevations and rendering as presented to the <u>first Workshop</u> <u>Plans P13</u> and <u>P14</u>):



Revised elevations and rendering submitted for this <u>second Workshop</u>
(to address comments from the first Workshop) <u>Plan P26</u> and <u>Att N</u>. pages 8 and 10):



Multi-family and Other Housing Types Design Standard

This design standard also applies to this proposal and most of the standards are already included in the B7 Standards above. However, the standard regarding open space is relevant:

> *3. Open space on the site for all two-family, special needs independent living unit, bed and breakfast and multiple-family development shall be integrated into the development site. Such open space in a special needs independent living unit or a multiple-family development shall be designed to complement and enhance the building form and development proposed on the site. Open space functions may include but are not limited to buffers and screening from streets and neighboring properties, yard space for residents, play areas, and planting strips along the perimeter of proposed buildings;*

Staff comment: 42 of the new units will have balconies, though about 5 of these are cantilevered over the top deck of the parking garage and may not serve an "open space function". The site includes an open area near the corner of Chestnut Street and Lancaster Street, but this is partly taken up by the stormwater system and it is unclear how much of the area would serve as open space for resident/public access.

VI NEXT STEPS

A. The final submission will need to include the following information:
   - Parking Information
   - TDM Plan
   - Roof top appurtenances and mechanicals on facade
   - Wind impacts
   - Capacity of water and wastewater service
   - Lighting specification and levels
   - Bicycle parking provision
   - ADA compliance site and access to parking
   - Inclusionary Zoning details

B. The final submission will need to revise the proposal to address any further Planning Board comments.

(*Attachments next page*)

ATTACHMENTS:

For PB Workshop 1 on 9.13.2016 (carried forward for reference)	*New for PB Workshop 2 on 10.18.2016*
Attachments to Memorandum 1. Staff e-mail prelim review comments 2. Design Review Preliminary comments 3. Traffic Engineering Review comments 4. Engineering Review comments 5. ROW comments 6. Fire Department comments 7. City Arborist comments (circulated at the first Workshop) **Public Comments** PC1. Louis Christen 9.12.16 **Applicant's Submittal** A. Cover Letter and Subdivision/Site Plan Applic. B. Cover letter & Inclusionary Zoning Cond. Use Applic. C. Zoning analysis D. B-7 Design Standards Compliance narrative E. Right, title and Interest F. Financial Capability letter G. Utility letters of capacity H. Traffic Assessment I. Stormwater Report J. Shadow Study K. Neighborhood Meeting Certification L. Lighting Specifications M. Response letter 9.7.2016 **Plans** 1. Boundary Survey 2. Existing Conditions and Demolition Plan 3. Draft Subdivision Plat 4. Site Plan 5. Grading, Utilities & Erosion Control Plan 6. Landscape Plan 7. Details 8. Details 9. Details 10. Details 11. Floor Plans - Lowest two floors 12. Floor Plans - Floors 3 to 7 13. Building Elevations (revised 8.7.16) 14. Building Perspective Rendering	**Attachments to Memorandum** 8. Design Review Comments re issues raised at the first Workshop 9. Traffic Engineering Review comments (not received at time Memo was completed) 10. Peer Engineer updated comments 11. City Arborist updated comments (not received at time Memo was completed) **Public Comments** (none received at time this Memo was completed) **Applicant's Submittal** N. Neighborhood Architectural Overview including revised perspectives O. Response to Peer Engineer comments P. Traffic Assessment Chestnut/Lancaster intersection Q. Revised Stormwater Report R. Stormwater Inspection & Maintenance Report **Plans** 14. Boundary Survey 15. Existing Conditions and Demolition Plan 16. Draft Subdivision Plat 17. Site Plan 18. Grading, Utilities & Erosion Control Plan 19. Landscape Plan 20. Erosion Control Plan 21. Details 22. Details 23. Details 24. Details **25.** Drainage analysis **26.** Building Elevations (Note- Perspectives and Renderings are in Att. N.)

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Re: 75 Chestnut St proposal and height informatoin

1 message

Louis Christen <louischristen@yahoo.com> Mon, Sep 12, 2016 at 9:30 PM
Reply-To: Louis Christen <louischristen@yahoo.com>
To: Jean Fraser <jf@portlandmaine.gov>
Cc: "Barhydt, Barbara" <bab@portlandmaine.gov>, Tom Greer <tgreer@pinkhamandgreer.com>

Jean,

Thank you for all the time and effort you have put in to help explain this too me. Unfortunately all these numbers just seem to confuse the issue since the measurements being provided aren't apples to apples, per say.

Please enter this email as public comment and as part of the record. I plan to attend and look forward to getting a clear answer to how high this project will be compared to an existing structure: Pearl Place, on the Oxford street side. Once I know that, I can then determine if it will negatively effect the viewshed of my two properties.

Also I would like to know that if the plans were changed after the Neighborhood Meeting, what was changed.

Thank you,
Lou Christen
164 Pearl St
239 Cumberland Ave

From: Jean Fraser <jf@portlandmaine.gov>
To: Louis Christen <louischristen@yahoo.com>
Cc: "Barhydt, Barbara" <bab@portlandmaine.gov>; Tom Greer <tgreer@pinkhamandgreer.com>
Sent: Monday, September 12, 2016 10:20 AM
Subject: Re: 75 Chestnut St proposal and height information

Louis

As you appreciate, staff are not responsible for what the applicant says to you or at any meeting. Also, I think the height of the building has been increased a bit (at the ends) since the Neighborhood Meeting.

I can only give you the staff review evaluation of the building height. The maximum height for this site under zoning is 105 feet and the height of the proposal, as measured form the average grade of the site, is 79ft 6 inches (this is

based on the fact that the elevations state that the average grade is 24 ft 6" and the maximum elevation of the topmost roof is 103 ft 12").

I believe the highest Pearl Place building is 52 ft high (as measured from the average grade) so staff consider the proposed building is about 27-28 feet higher based on our evaluation.

Mr Greer is talking about the absolute height above the grade at the base of the wall, and that will vary depending on where you measure and what measures you compare. I will let him explain the information that he has sent or given out - it could be correct as it is based on a different way of measuring height.

Please let me know if you want this e-mail exchange to be circulated to the Planning Board tomorrow (as "public comment"), or whether you would prefer to send me a separate e-mail that would go to the Board (which would need to be with me by noon tomorrow please). In any case you are welcome to speak at the PB Workshop.

Thank you
Jean

On Sun, Sep 11, 2016 at 9:42 PM, Louis Christen <louischristen@yahoo.com> wrote:

> Hello Jean,
>
> Thank you for the below information. It is the first that I've seen it.
>
> On September 7th I wrote to MR Greer and Ms. Barhydt. I'm
>
> "
> Would it be possible to get an answer to my question below prior to the WORKSHOP on the 13th? If it's easier, please tell me the height of Pearl Place on the Oxford St side and then the proposed top of 75 Chestnut, on the Oxford St side.
>
> On the notification from Pinkham & Greer, the numbers are a bit small but it looks like "Elev" is 84'4" plus one more floor @ 11'+. Total just under 96'? I'm guessing that's above sea level?
>
> Mr. Greer responded:
>
> " Hi Louis,
> The building is about 60 feet above the street on the high end of the site and about 75 feet on the low end of the site. It is my understanding the other projects in the neighborhood are about 54 feet high. The maximum height in the zone is 120 feet, we well below that."
>
> As to can see he doesn't address the measurements from the sketch included in the public notice.

And at the August 31st neighborhood meeting we were told that the new structure would be about "5-6 feet" above the height of Pearl Place.

Can someone explain the discrepancy between "5-6 feet" and *"23-33 feet higher"? And what is the truth?*

Thank you,
Lou

From: Jean Fraser <jf@portlandmaine.gov>
To: louischristen@yahoo.com
Cc: "Barhydt, Barbara" <bab@portlandmaine.gov>; Tom Greer <tgreer@pinkhamandgreer.com>
Sent: Friday, September 9, 2016 4:35 PM
Subject: 75 Chestnut St proposal and height information

Hello Louis

I have seen your e-mails to Tom Greer and Barbara Barhydt and hope the information in this e-mail will be helpful.

I sent the following to Tom Greer on August 31 and had thought he had sent it to you- my apologies that you didn't get it then:

> *"Barbara asked me to look into this question and it may be difficult to get precise numbers because the heights are based on average grades and these vary. The following is the best I can do based on available information- you may want to ask your architects to look at this more closely.*
>
> *The Pearl Place buildings appear to be 2-3 storys above the upper deck of the parking lot, whereas your project is 5.2 storys above the deck, so your project is 2.2 to 3.2 storys higher which would translate into 23-33 feet higher.*
>
> *This is consistent with the fact that the Pearl Place buildings range from about 40 ft to 52 ft in height (as measured from average grade) and your project is about 72 feet high (also measured from average grade)."*

The proposal will be considered at the PB Workshop on Tuesday 9.13.2016 at 5pm- please see the attached PB meeting agenda and the staff PB Memo on this project that has gone to the Planning Board. The

Memo and all of the attachments are on the City's website now at this link:

https://me-portland.civicplus. com/AgendaCenter/ViewFile/Agenda/09132016-1769?html=true

(its the third item and has three parts)

As you are probably aware, you are most welcome to make public comments at the PB Workshop when the Chair of the Planning Board "opens" the public comment section of the meeting. If you are unable to attend, you can send me an e-mail with your comments (before noon on tuesday please) and I will circulate it to the Planning Board.

Please do not hesitate to contact me on Monday if you have any questions regarding the ordinance requirements and/or the review- Tom Greer would be the best person to contact for confirmation of the proposal details.

Thank you
Jean

--
Jean Fraser, Planner
City of Portland
874 8728

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

--
Jean Fraser, Planner
City of Portland
874 8728

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Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

75 Chestnut Street- Preliminary Site Plan Review Comments

1 message

Jean Fraser <jf@portlandmaine.gov> Wed, Aug 31, 2016 at 5:25 PM
To: Tom Greer <tgreer@pinkhamandgreer.com>
Cc: lcwood@ampartners.me, "Barhydt, Barbara" <bab@portlandmaine.gov>

Tom

I confirm that I am preparing a PB Memo on this project to be considered by the Planning Board on Tuesday Sept 13th- time to be confirmed.

I am awaiting written review comments, but reviewers have advised me that the following need immediate attention:

Further Site Plan information requested to be submitted asap for review and inclusion in the PB Memo for the PB to consider

- Ownership of the lot: A& M Partners Inc are identified as the applicant but appears to be one of two entities that own the lot (the other being Chestnut Parking Inc). Could you please clarify the areas of the two ownerships;

- A Parking Analysis (justifying the proposed amount of parking dedicated to the proposed building) should be submitted to address the ordinance requirement (14.332.2 (c) which states:

  > *(c) Site plans over 50,000 square feet and projects in the B-6, B-7, and USM Overlay Zones: Where construction is proposed of new structures having a total floor area in excess of fifty thousand (50,000) square feet, the planning board shall establish the parking requirement for such structures. The parking requirement shall be determined based upon a parking analysis submitted by the applicant and upon the recommendation of the city transportation engineer.*

- The Site Plan Ordinance requires a that all Level III development in the B7 zone shall design and implement a Transportation Demand Management (TDM) plan; please submit a draft;

- The Traffic Engineering Reviewer requests (in view of the increase in traffic from the proposed project) an assessment of the operation and safety of the intersection of Chestnut Street and Lancaster Street;

- Please clarify whether there will be rooftop appurtenances and if so how they will be screened, and provide the building rendering;

- Please confirm how many of the units have balconies;

- Please clarify regarding the long term plans for the parking lot, as it is part of the same lot and scope for improvements to sidewalks and landscaping etc would usually be part of the site plan review.

Key Site Plan review issues that may need further response/discussion prior to finalizing the PB Memo

- Staff will be recommending that sidewalks in the vicinity of the new building be 8 feet wide with associated improvements that would include lighting, ADA ramps at street crossings, and possibly realignment of the curb line at corners;

- The project is subject to the B-7 Design Standards and the initial review has identified the following aspects that need further consideration:

  - E1 Architectural Design: There are a few areas of concern where residential unit windows facing public rights-of-way are low to the ground and do not provide visual privacy for the occupants. The driveway to the garage from Chestnut Street will need further detail to address safety concerns - it should not become a dark tunnel.

  - E4 Articulation: The blank wall on Chestnut Street adjacent to the entrance lobby is of concern at the pedestrian level. Incorporate design elements to make that stretch more comfortable at the street.

  - E12 : Materials: The guidelines currently prohibit fiber cement panels to be used on portions of the building visible from the public rights of way. Either revise the material selection to comply with the standard or request a waiver from the Planning Board. In addition, the use of two different color panels in a pixilated manner is not necessary and adds visual distraction to an already visually complex facade.

- Staff will be recommending that the landscaping and street tree proposals be revised; we appreciate that these may depend on resolution of some of the issues noted above.

I anticipate that reviewers will be sending me written and more detailed preliminary comments over the next few days, which I will forward; they may include additional questions or issues.

Please do not hesitate to contact me if you have any questions.

Thank you

Jean

Jean Fraser, Planner
City of Portland
874 8728

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

75 Chestnut - Preliminatry design comments

1 message

Caitlin Cameron <ccameron@portlandmaine.gov> Wed, Aug 31, 2016 at 10:33 AM
To: "Fraser, Jean" <jf@portlandmaine.gov>

From an initial design review (B-7 Design Standards), we have the following questions and comments:

- Please provide the building rendering in the application materials

- E1 Architectural Design: There are a few areas of concern where residential unit windows facing public rights-of-way are low to the ground and do not provide visual privacy for the occupants. The driveway to the garage from Chestnut Street will need further detail to address safety concerns - it should not become a dark tunnel.

- E4 Articulation: The blank wall on Chestnut Street adjacent to the entrance lobby is of concern at the pedestrian level. Incorporate design elements to make that stretch more comfortable at the street.

- E10 Rooftop Appurtenances: Will there be rooftop appurtenances? Where will they be and how will they be screened?

- E12 : Materials: The guidelines currently prohibit fiber cement panels to be used on portions of the building visible from the public rights of way. Either revise the material selection to comply with the standard or request a waiver from the Planning Board. In addition, the use of two different color panels in a pixilated manner is not necessary and adds visual distraction to an already visually complex facade.

--
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. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

75 Chestnut Street - Preliminary Traffic Comments

1 message

Tom Errico <thomas.errico@tylin.com> Thu, Sep 8, 2016 at 4:04 PM
To: Jean Fraser <jf@portlandmaine.gov>
Cc: Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>, Jeff Tarling <jst@portlandmaine.gov>

Hi Jean – I have reviewed the project application materials and offer the following preliminary traffic comments.

· The applicant shall conduct a traffic and safety assessment of the Chestnut Street/Lancaster Street intersection. The assessment shall consist of conducting intersection turning movement counts during the weekday AM and PM peak periods and evaluating crash information. The assessment should determine the appropriateness of the current two-way STOP configuration (which may cause confusion given other area intersection control conditions) and whether a four-way STOP condition is warranted.

· The City Ordinance notes the following; *Where construction is proposed of new structures having a total floor area in excess of fifty thousand (50,000) square feet, the planning board shall establish the parking requirement for such structures. The parking requirement shall be determined based upon a parking analysis submitted by the applicant and upon the recommendation of the city transportation engineer*. Accordingly, A parking demand and management study shall be conducted that documents the projects expected parking demand according to ITE and/or local accepted data. The study shall also document how garage parking spaces will be managed including but not limited to: will spaces be specifically designated for the proposed tenants; will tenant parking spaces be bundled with each residential unit or an additional amenity; who currently uses the garage and are any users associated with an approved site plan. I would note that I do not expect any issues related to providing a sufficient off-street parking supply.

· Sidewalks along the entire frontage of a project site shall meet City standards. The proposed project is currently proposing full sidewalk upgrades along Chestnut Street where the residential building is being constructed and disturbing the existing sidewalk. Existing sidewalks along the property frontage on Lancaster Street and Oxford Street do not meet the City sidewalk material policy. I would further note that during my field investigation the sidewalk on Lancaster Street is in poor condition with a uneven surface

that creates ponding during rain events. DPW continues to review sidewalk conditions and requirements such that the project meets City standards.

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

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207.347.4354 (direct)

207.400.0719 (mobile)

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MEMORANDUM

TO: Jean Fraser, Planner
FROM: Lauren Swett, PE & Craig Sweet, EIT
DATE: September 7, 2016
RE: 75 Chestnut Street, Level III Site Plan Application

Woodard & Curran has reviewed the Level III Site Plan Application for the proposed development located at 75 Chestnut Street in Portland, Maine. The project involves The construction of a 7 Story building with 54 residential units.

Documents Reviewed by Woodard & Curran

- Level III site Plan Application and attachments, dated July 28, 2016, prepared by Pinkham & Greer Civil Engineers, on behalf of A&M Partners.
- Engineering Plans, Sheets C.1., C1.2, C1.3, C1.4,C.15. C2.1, C2.2, C2.3, and C2.4, dated July 28, 2016, prepared by Pinkham & Greer Civil Engineers, on behalf of A&M Partners.
- Architectural Plans, Sheets A1.01, A1.02, and A2.01 dated July 22, 2016, Prepared by Archetype Architects, on behalf of A&M Partners.
- Existing Conditions Survey, Dated July 2016, prepared by Maine Survey Consultants, Inc, on behalf of A&M Partners.

Comments

1) The Applicant has requested letters from utilities conforming capacity to serve the proposed development, evidence of confirmation of capacity to serve the proposed development should be provided upon receipt.
2) 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 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. However, details should be provided for stabilized construction entrance, and the location should be indicated on the drawings.
   b) General Standard: The project will result in an increase in impervious area of approximately 11,600 square feet. As such, the project is required to include specific stormwater management features for stormwater quality control. The Applicant will be utilizing an underdrained soil filter for stormwater treatment.
      - The detail for the soil filter notes an emergency overflow spillway. This area should be identified on the plan view of the soil filter.
      - A rip rap area is identified on the plans where the roof drain and foundation drains inlet to the underdrained soil filter. It is assumed that this area will serve as the sediment forebay. Additional design information and detail should be providing showing that this will conform with the Maine DEP design requirements for a sediment forebay.
   c) Flooding Standard: The project will result in a increase in impervious area of approximately 11,600 square feet. As such, the project is required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.
      - The Applicant has utilized a 0.10 CFS exfiltration rate to represent the infiltration of stormwater through the underdrain soil filter. This differs from the typical modeling value of 2.41 inches/hour (typically used per Maine DEP standards). The Applicant should provide background for this value.
      - Pre- and post-development stormwater figures should be provided with the final submission to accompany the stormwater models.

3) 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.
4) The Applicant should revise the Bituminous Pavement Sections detail to be in conformance with City of Portland Technical Manual for any pavement within the City of Portland Right of Way. The provided details include 9.5mm HMA as the surface pavement, where all City details require 12.5 mm HMA.
5) The proposed stormdrain connection has been reviewed with the City of Portland Department of Public Works. Please see the attached GIS figure. For a record of the combined sewer in the area. The Portland DPW have indicated that a stormdrain connection to the manhole identified on the GIS figure as SSMH-4779 would be acceptable.
6) A new utility pole is being proposed on the north side of Chestnut Street, with overhead utility lines connecting across Chestnut Street. The Applicant should provide underground electrical and communication lines across Chestnut Street, or provide justification from the utilities on why this method of connection is not possible. Underground utilities would eliminate public safety access concerns related to overhead utilities.

SWIN-5479
3412
24" BR
SSMH-4778 4778
10" VCP
SWMH-1886 8092
12" ABS
8"
SWMH-1887 8091
12"
SWIN-5773
3450
SSMH-5972
7710
SWIN-5771
3459
8" ABS
20" VCP
SSMH-4036
4837
12"
44" BR
SSMH-4779
4779
SSMH-5973
7709
SWIN-5770
3411
12" VCP
SSMH-2055 4781
SSMH-4787
4859
SWIN-1357
3850
44"
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4780
SSMH-4781 4838
SWIN-0899
3468
SSMH-5968
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SWIN-5430
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SWIN-6288 6999
SSMH-2054
4765
SWIN-5431
3377
10" VCP
44" BR
12" VCP
SWIN-5429
3461
20" VCP
SWIN-1322
3378
SSMH-5969
4836
SWIN-6287
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10"
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SSMH-4812 4988
SSMH-5907
4987
18" VCP
8" PVC
SSMH-2107
5005
18" BR
SSMH-0388
4831
SSMH-0379
4767
SWIN-6285
3379
12" PVC
10" PVC
18" BR
SWIN-0897
3465
City of Portland, DPS

Portland Maine | Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

75 Chestnut Street: Sidewalk/Curb Ramp/Public ROW Comments

1 message

Bruce Hyman <bhyman@portlandmaine.gov> Thu, Sep 8, 2016 at 1:55 PM
To: Jean Fraser <jf@portlandmaine.gov>
Cc: "Barhydt, Barbara" <bab@portlandmaine.gov>, "Errico, Thomas" <thomas.errico@tylin.com>, "Tarling, Jeff" <jst@portlandmaine.gov>, "Gautreau, Keith" <kng@portlandmaine.gov>, "Cameron, Caitlin" <ccameron@portlandmaine.gov>, "Swett, Lauren" <lswett@woodardcurran.com>, "Donaldson, Helen" <hcd@portlandmaine.gov>, "O'Brien, Stuart" <sgo@portlandmaine.gov>

Good afternoon, Jean,

My revised/clarified comments related to the 75 Chestnut Street project are:

- Since the applicant is not proposing to remove and reset the existing curb (or provide new curb) along Chestnut Street and Oxford Street, staff recommends the applicant provide a minimum of 8' of sidewalk on Oxford Street and Chestnut Street within the proposed project limits as measured from the back of curb where not precluded by the proposed building footprints as shown in the site plan dated July 28, 2016. This will allow for street trees and street lighting to be added within the sidewalk. This may trigger the need for a easement where the sidewalk is on the applicant's property.
- Staff recommends the applicant provide 2 curb ramps at the corner of Chestnut Street and Oxford Street as required by the Technical Manual unless it can be demonstrated that it is technically infeasible or cost prohibitive to do so based upon utility conflicts or other considerations. If the 2 curb ramps are found infeasible, staff recommends the addition of a minimum 4'x4' landing area at the top of the curb ramp located at the corner of Oxford and Chestnut Streets and associated transitions to sidewalks. This may trigger the need for an easement where the landing area and/or transitions to sidewalk are on the applicant's property.
- Staff recommends the applicant provide lighting along the site's Chestnut Street frontage in conformance with the Bayside Lighting District standards contained within the Technical Manual.
- Staff recommends the applicant illustrate on its design plans and applicable details the provision of a 4' minimum/5' desired ADA-compliant pedestrian access route (maximum 2% cross-slope) across the driveways within the project limits or demonstrate that it is technically infeasible to do so.
- Staff recommends the addition of a minimum 4'x4' landing area at the top of the curb ramp located at the corner of Lancaster and Chestnut Streets and associated

transitions to sidewalks. This may trigger the need for an easement where the landing area and/or transitions to sidewalk are on the applicant's property. It appears from the site plan that the existing sidewalk and curb ramp at this location extends into the applicant's property as well. An easement may be needed regardless of modifications at this location.

Please do not hesitate to contact me if you require additional information.

Bruce

MEMORANDUM

To: FILE

From: Jean Fraser

Subject: Application ID: 2016-184

Date: 9/8/2016

Comments Submitted by: Keith Gautreau/Fire on 9/7/2016

I would like to see a letter from the Portland Water District of their ability to serve domestic and fire protection demand for the proposed high rise building.

Comments Submitted by: Keith Gautreau/Fire on 9/7/2016

Emergency vehicle access is two sides only, Chestnut and Oxford. This is acceptable to the Fire Dept. although because of the arrangement and height of the building I would like to require the overhead power line on Chestnut Street going to the transformer to be underground. This will drastically restrict the Aerial Ladder trucks operation at this proposed site.

Comments Submitted by: Keith Gautreau/Fire on 9/7/2016

Fire Department Access shall have an unobstructed vertical clearance of not less than 13 ft 6 in. We will NOT be requiring this vertical clearance as emergency vehicles will not be entering the parking garage.

Comments Submitted by: Keith Gautreau/Fire on 9/7/2016

Premises Identification
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.
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.
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’).
Color: Addresses should be in a color that contrasts with the background.
Whenever possible, should be illuminated.
Provide additional address signs at entrances to the property when the building address is not legible from the public street.

Portland Maine Yes. Google's good here.

Jean Fraser <jf@portlandmaine.gov>

Re: PB Workshop on 75 Chestnnut Street (54 units)

1 message

Jeff Tarling <jst@portlandmaine.gov> Mon, Sep 12, 2016 at 12:17 PM
To: Jean Fraser <jf@portlandmaine.gov>

Jean -

The proposed project for 75 Chestnut Street is a substantial residential development that encompasses a portion of the existing parking structure. As proposed, the project eliminates the trees that line Chestnut Street that were planted as part of the original project. Knowing the goals of the Bayside Neighborhood include adding street trees or protecting the ones we have, the project should explore options to replace.

Street-tree recommendations - Incorporate 'street-tree' elements into the sidewalk streetscape design. Add additional street trees set back behind the sidewalk along the project frontage on Oxford Street. Contribution to the Tree Fund will help program plant new trees in the area however, the Chestnut Street frontage that is currently tree lined has the greatest need.

Green elements - landscape greening efforts should be included to the extent possible. Landscape planters, greenwalls / greenroofs, stormwater planters as shown in our City Technical Standards could be included in developments of this scale as they are important elements of desgin.

The Tree & Landscape review of the 75 Chestnut Street project acknowledges the challenges of finding the space needed at this site. Creative greening could be improved.

Thanks

Jeff

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Dept.
55 Portland Street
Portland, ME. 04101
(207) 874.8820

Planning and Urban Development Department
Planning Division

Subject: B7 Design Review – 75 Chestnut Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Wednesday, October 12, 2016

Design Review Criteria:
The project must meet the B-*7 Mixed Use Urban District Zone Design Principles & Standards* (Appendix 4 of the Design Manual).

Findings of the Design Review:
Below are the standards relevant to the Planning Board comments from the September 13, 2016 workshop.

Principle A: Urban Design
All development in Bayside shall be designed to create a strong urban identity and sense of place. Buildings may be a variety of architectural styles, particularly those that are innovative and express the aesthetic of the time in which they were built, and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. These principles shall . . . ensure sensitive transitions to surrounding neighborhoods, enhance the physical amenities of the neighborhood, and create a pedestrian oriented environment with safe and vital streets.

A-2: Edges and Transitions – *Transitions between larger scale, mixed use buildings and smaller-scale residential uses shall be designed so that there is a seamless connection to adjacent residential neighborhoods to ensure that these zones remain stable, quiet, and secure. This shall be achieved through the mitigation of height, massing, stepbacks, materials, and details and design of the façade at the pedestrian level. . . . Larger scale developments may use public open spaces to provide transitions to lower scale uses.*

A-5: Pedestrian Environment – *Development on public streets or public spaces shall be human scale at the pedestrian level and enhance the pedestrian environment through the use of elements at the first floor such as . . . fully functioning entries oriented to the street; active windows and storefronts; awnings and weather protection; outdoor seating and sales displays; adequately sized sidewalks; gathering spaces; trees and landscaping; street furniture; . . .*

A-7: Building Orientation – *The primary facades and entrances of buildings shall be oriented to streets, major pedestrian routes, or open spaces in order enhance the pedestrian-oriented environment.*

Principle D: Open Space and the Public Realm

D-1: Open Space Design – *Publicly-accessible parks, plazas, and other open space shall be accessible from sidewalks and surrounding buildings. . . . Pedestrian amenities such as seating, lighting, artwork, trash receptacles, etc. shall be compatible with the City's Streetscape Standards for Bayside. . . . Solar access, wind protection, and landscaping shall be considered to enhance pedestrian comfort and provide a variety of sunny and shaded areas.*

D-3: Landscaping and Street Furniture – *Landscaping for private property that is accessible to the public shall comply with the City of Portland Technical Manual at a minimum, and with the standards below.*
Landscaping – shall enhance the character and livability of Bayside

Plant Selection – shall consider the plant's tolerance for urban conditions

Compatibility – site improvements shall be considered in coordination with public streetscape improvements which occur or are planned for the immediate area

Irrigation and Drainage – adequate provision of a water source, irrigation system and method of drainage shall be provided for planted areas. Such areas shall also have drainage systems designed to prevent excess water accumulation or runoff onto pedestrian walk areas.

Lighting – lighting of plant materials shall complement existing City programs

Maintenance – a regular program of feeding, watering, pruning, damage repair, pest and weed control, and replacement of declining plant material shall be established at the time of initial design and installation, and maintained thereafter.

Principle E: Architectural Design

New development shall create a mixed-use, pedestrian-friendly setting that contributes to the context of the surrounding urban fabric and provides a sensitive transition to adjacent residential neighborhoods. . . . The scale, massing, and fenestration of new development shall reflect its context, . . .

E-1: Architectural Design – *New development in Bayside may be a variety of architectural styles, . . . and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. A respectful integration of contemporary design within the existing context shall complement, reinforce, and enhance the prevailing patterns and proportions of adjacent buildings without requiring imitation or repetition.*

E-2: Height –*Heights along the edges of the B-7 Zone shall transition to the scale of adjacent neighborhood development through design elements such as variations in massing; articulation of the facades in intervals that reflect exiting structures or platting pattern, stepping the architecture to adjacent buildings and/or contextual proportions of building elements, use of architectural style and details such as roof lines, belt courses, cornices, or fenestration, and color or materials that derive from the less intensive zone.*

E-3: Massing – *The composition of a proposed building façade shall be defined by horizontal and vertical articulation, with vertical articulation being predominant, in keeping with the local context of the urban form.*

New buildings that are four stories or higher shall have three components: base, middle, and top.

E-4: Articulation – *Façades visible from public rights of way shall incorporate design elements that break the facades into components scaled o the pedestrian, and to the context of other buildings on the street. This may be accomplished through an expression of the building's base, middle and top, vertical fenestration, variation in the planes of the façade, architectural details such as windows, doors, bays, balconies, cornices, reveals, expansion joints, trim, changes in color, texture, and material, permanent artwork, etc.*

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MEMORANDUM

TO: Jean Fraser, Planner
FROM: Lauren Swett, PE
DATE: October 12, 2016
RE: 75 Chestnut Street, Level III Site Plan Application

Woodard & Curran has reviewed the Level III Site Plan Application Response to Comments for the proposed development located at 75 Chestnut Street in Portland, Maine. The project involves the construction of a 7 Story building with 54 residential units.

Documents Reviewed by Woodard & Curran

- Level III site Plan Application response to comments and attachments, dated September 30, 2016, prepared by Pinkham & Greer Civil Engineers, on behalf of A&M Partners.
- Revised Engineering Plans, dated September 30, 2016, prepared by Pinkham & Greer Civil Engineers, on behalf of A&M Partners.

Comments *(comments repeated from previous memos are provided in italics)*

1) *The Applicant has requested letters from utilities conforming capacity to serve the proposed development, and evidence of confirmation of capacity to serve the proposed development should be provided upon receipt*. Applicant has noted that utility information is pending.
2) 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.
   b) General Standard: The project will result in an increase in impervious area of approximately 11,600 square feet. As such, the project is required to include specific stormwater management features for stormwater quality control. The Applicant will be utilizing an underdrained soil filter for stormwater treatment.
   c) Flooding Standard: The project will result in a increase in impervious area of approximately 11,600 square feet. As such, the project is required to include specific stormwater management features to control the rate or quantity of stormwater runoff from the site. The underdrained soil filter will provide adequate flow control for stormwater runoff in accordance with the Flooding Standard.
3) All comments have been addressed at this time.

Westerlea View Lofts

Planning Board Review – Second Round

In this round of Westerlea View loft images we are trying to address the architectural concerns that were brought to our attention by both the public and the board itself. This includes comments on the architecture itself as well as a need to use imagery that helps to explain the relationship to its surroundings.

The first three images are zoomed out and look at the scale of the surrounding city from the top of Congress Street all the way down to 295. These images highlight structures, existing and proposed that are of equal or greater scale to Westerlea, and it can be seen that the site lies in between the urban scale of Congress Street and the remaining industrial fabric down along Lancaster and Kennebec along with the more newly developed commercial scale of Marginal Way. It sits on the border of these larger scale zones and a strip of smaller scale residential. By diagraming the current zoning of the Bayside area, it can be seen to relate directly to the commercial and industrial zones while recognizing the pocketed areas of residential.

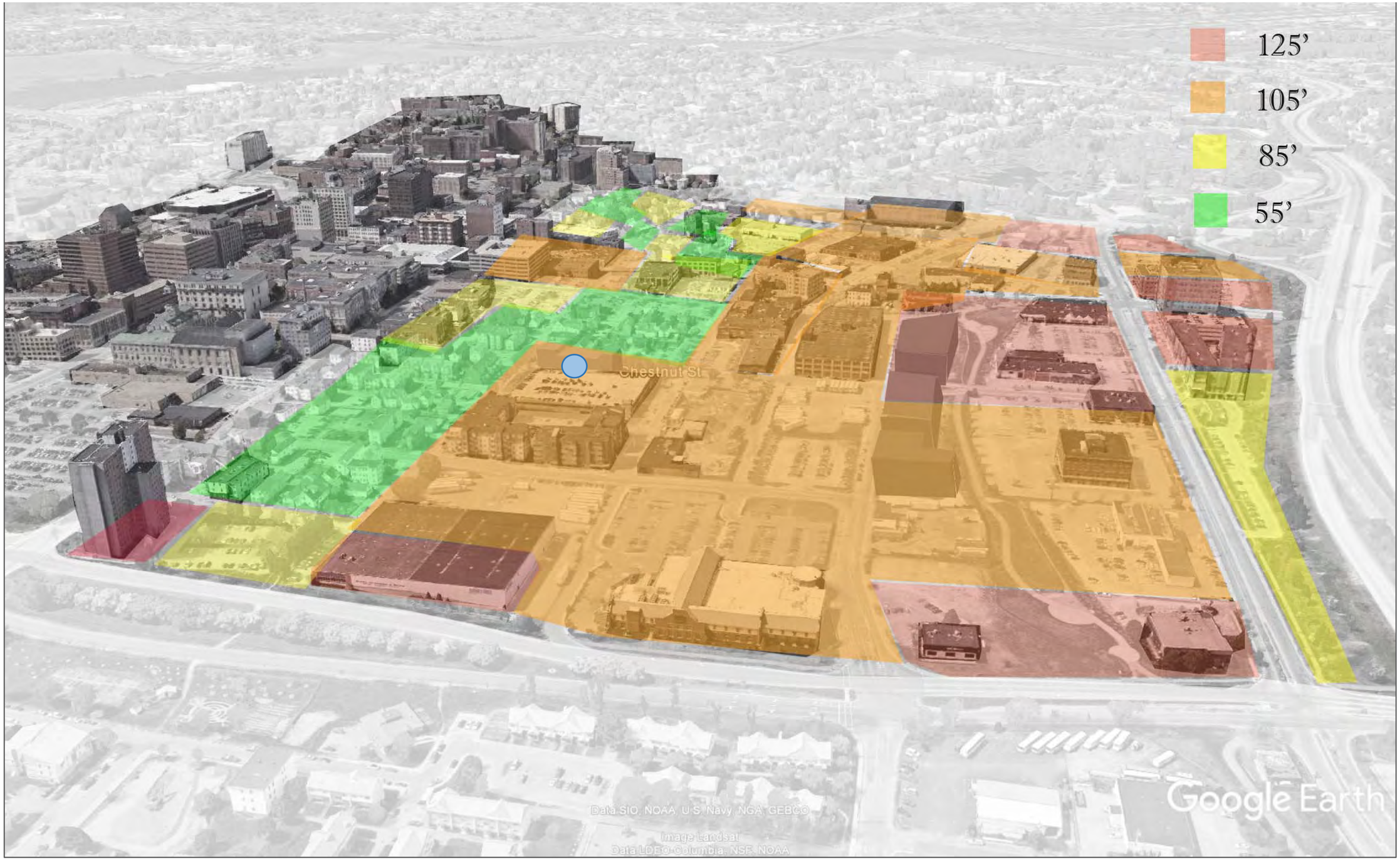
Zooming in to sections of the neighboring blocks and noting the zoned heights show where the transition of scale from the 55’ heavily residential zone to the 85’ transition areas and onto the 105’ and 125’. Westerlea lies in a 105’ zone that sits directly next to a 55’ zone and our proposal takes advantage of the higher zone without maxing out the allowable height and remaining sensitive to the lower residential zone.

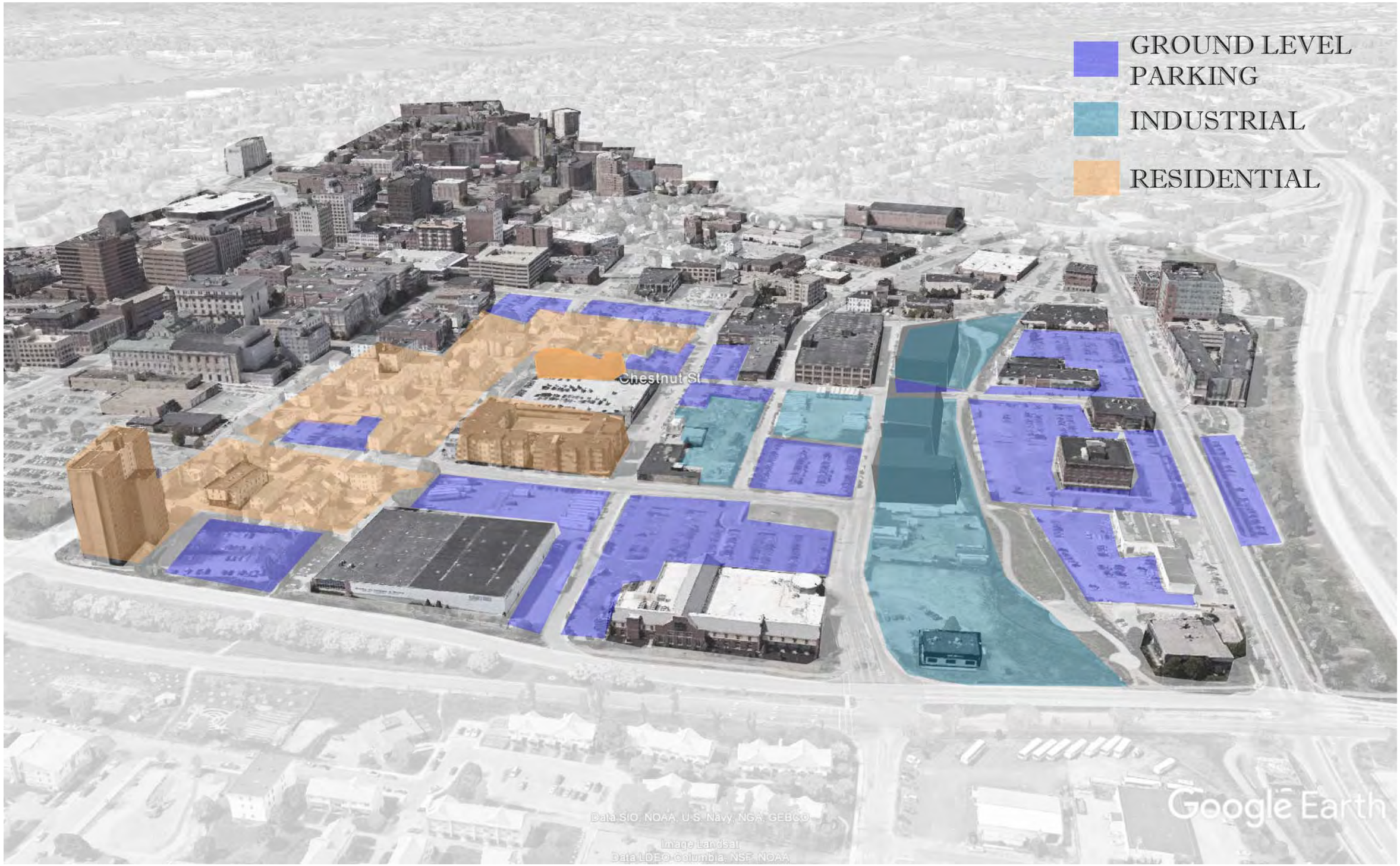
The floor plans have been updated and included and now match the renderings. There has been further development in the first floor to provide more shared resident space being sensitive to what is placed street side versus garage side. The entrance to the rentable first floor space has been relocated to face Chestnut Street to increase the building’s relationship to the street.

The elevations have also been updated. The entrances to the building have been rethought to bring more direct relationship to Chestnut Street and the secondary entrance to the rentable space is now wrapped in the wood Nichiha to highlight it across the lawn. The color scheme has been adjusted with only one shade of Nichiha being used for the apartment walls but a new material color being brought in for the underside of the roof and the deck ceilings. This color ties to that of the entrance Nichiha – the wood finish – and helps to accentuate the horizontal planes that occur with the faces of the building are carved to create decks. The vents for the unit have been added as well.

The remaining images are renderings of the building dropped into the site from multiple vantage points. This allows the viewer to see more clearly what the site is currently and how the form and scale of Westerlea View lofts relates to it.

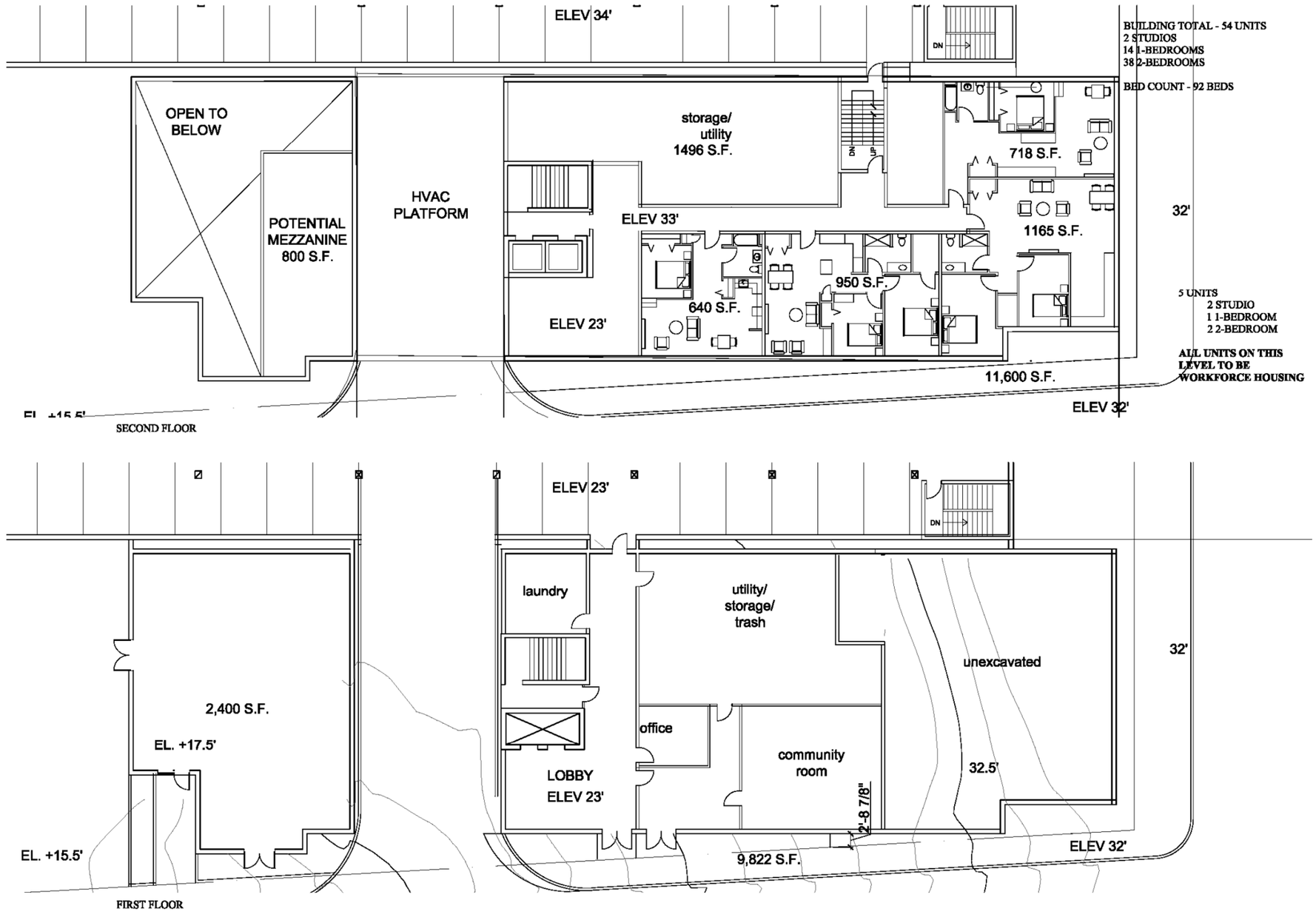
Chestnut St
Google Earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
Data LDEO-Columbia, NSF, NOAA

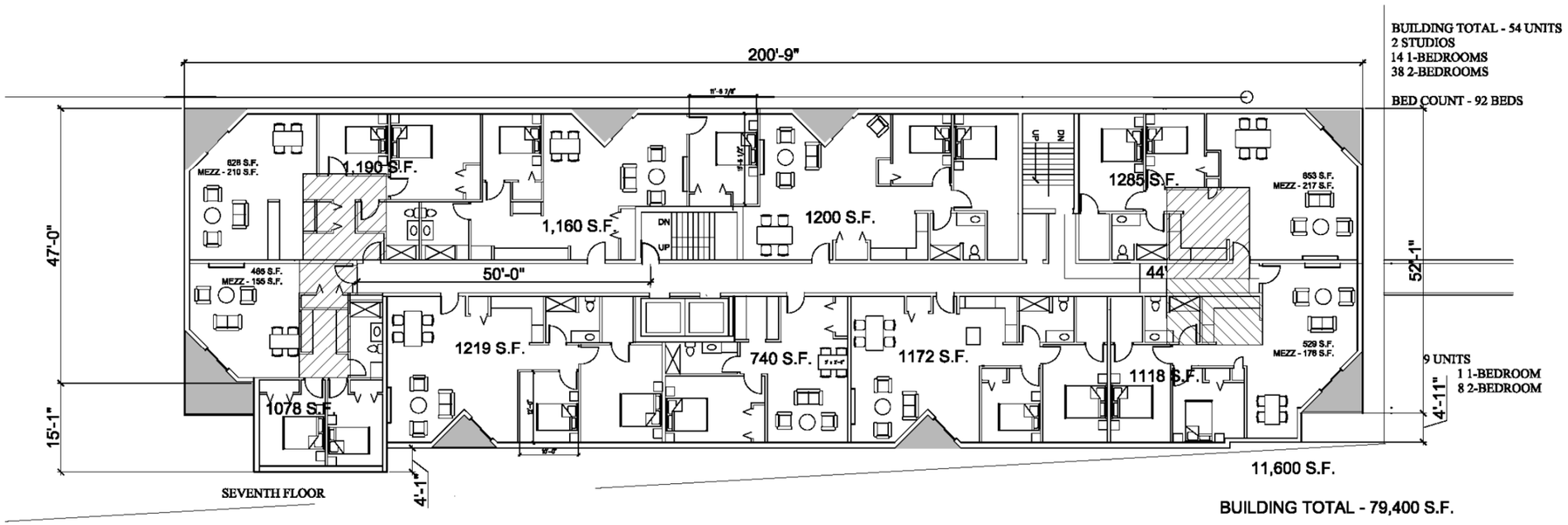

125’
105’
85’
55’
Chestnut St
Google Earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
Data LDEO-Columbia, NSF, NOAA

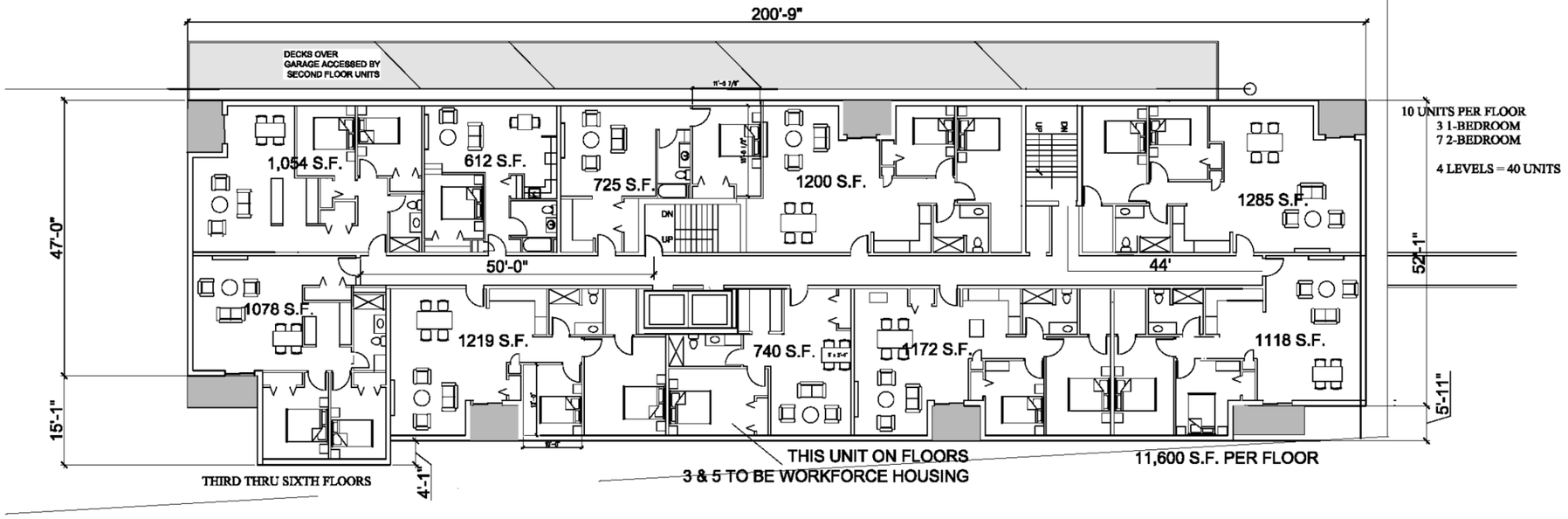

GROUND LEVEL PARKING
INDUSTRIAL
RESIDENTIAL
Chestnut St
Google Earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
Data LDEO-Columbia, NSF, NOAA

1 | NEIGHBORHOOD SECTION A
1/32" = 1'-0"

2 | NEIGHBORHOOD SECTION B
1/32" = 1'-0"


ELEV 34'
OPEN TO BELOW
POTENTIAL MEZZANINE 800 S.F.
HVAC PLATFORM
storage/ utility 1496 S.F.
ELEV 33'
ELEV 23'
640 S.F.
950 S.F.
718 S.F.
1165 S.F.
32'
11,600 S.F.
ELEV 32'
DN
UP
BUILDING TOTAL - 54 UNITS
2 STUDIOS
14 1-BEDROOMS
38 2-BEDROOMS
BED COUNT - 92 BEDS
5 UNITS
2 STUDIO
1 1-BEDROOM
2 2-BEDROOM
ALL UNITS ON THIS LEVEL TO BE WORKFORCE HOUSING
SECOND FLOOR
2,400 S.F.
EL. +17.5'
EL. +15.5'
FIRST FLOOR
laundry
utility/ storage/ trash
office
community room
LOBBY
ELEV 23'
unexcavated
32.5'
2'-8 7/8"
9,822 S.F.


200'-9"
47'-0"
15'-1"
4'-1"
SEVENTH FLOOR
828 S.F.
MEZZ - 210 S.F.
1,190 S.F.
1,160 S.F.
1200 S.F.
1285 S.F.
853 S.F.
MEZZ - 217 S.F.
486 S.F.
MEZZ - 155 S.F.
50'-0"
44'
52'-1"
1219 S.F.
740 S.F.
1172 S.F.
1118 S.F.
529 S.F.
MEZZ - 176 S.F.
1078 S.F.
4'-11"
11,600 S.F.
BUILDING TOTAL - 54 UNITS
2 STUDIOS
14 1-BEDROOMS
38 2-BEDROOMS
BED COUNT - 92 BEDS
9 UNITS
1 1-BEDROOM
8 2-BEDROOM
BUILDING TOTAL - 79,400 S.F.

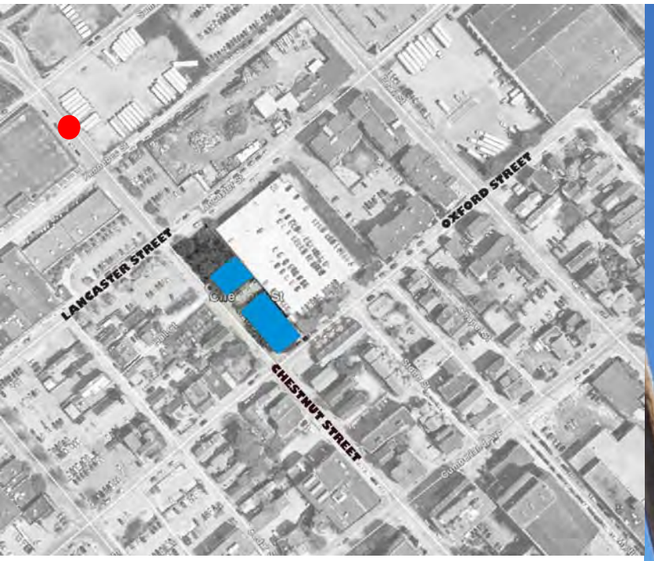

200'-9"
DECKS OVER
GARAGE ACCESSED BY
SECOND FLOOR UNITS
47'-0"
15'-1"
4'-1"
THIRD THRU SIXTH FLOORS
1,054 S.F.
612 S.F.
725 S.F.
1200 S.F.
1285 S.F.
50'-0"
44'
52'-1"
1078 S.F.
1219 S.F.
740 S.F.
1172 S.F.
1118 S.F.
5'-11"
THIS UNIT ON FLOORS
3 & 5 TO BE WORKFORCE HOUSING
11,600 S.F. PER FLOOR
10 UNITS PER FLOOR
3 1-BEDROOM
7 2-BEDROOM
4 LEVELS = 40 UNITS

LANCASTER STREET ELEVATION

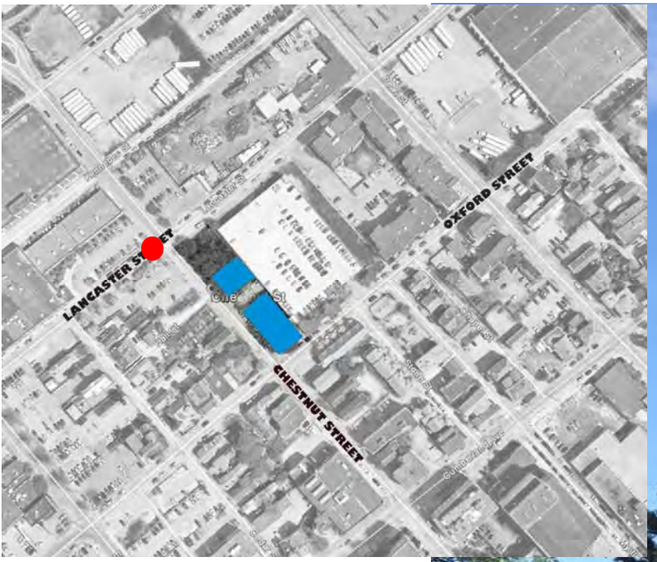
CHESTNUT STREET ELEVATION

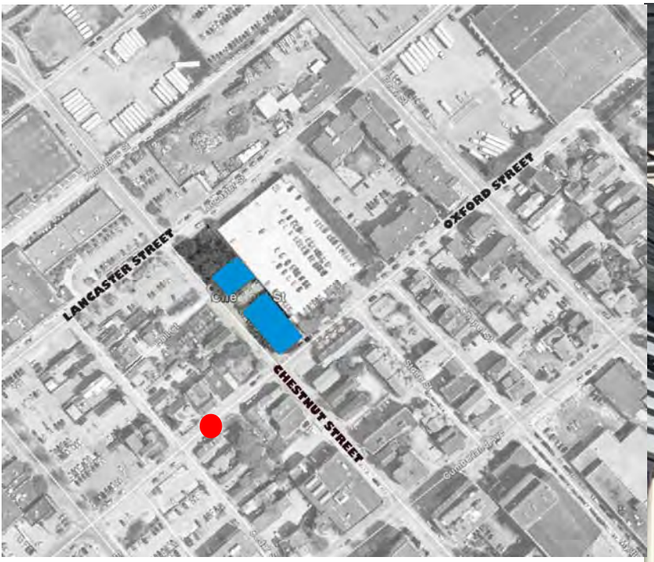
GARAGE ELEVATION

OXFORD STREET ELEVATION

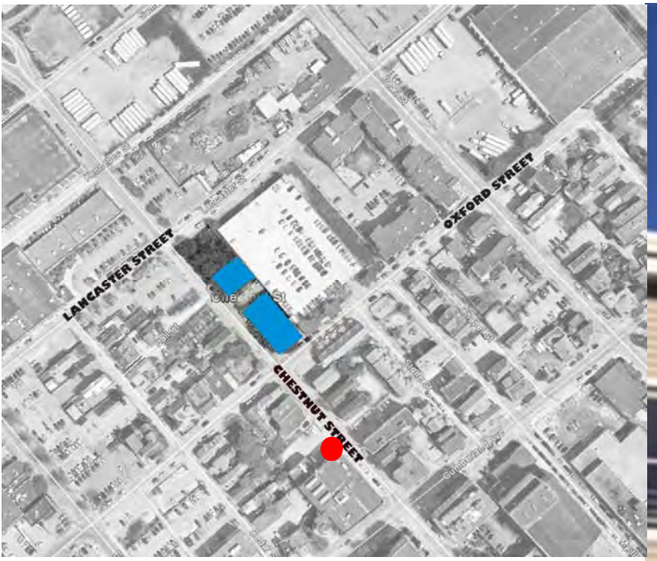

OXFORD STREET
LANCASTER STREET
CHESTNUT STREET

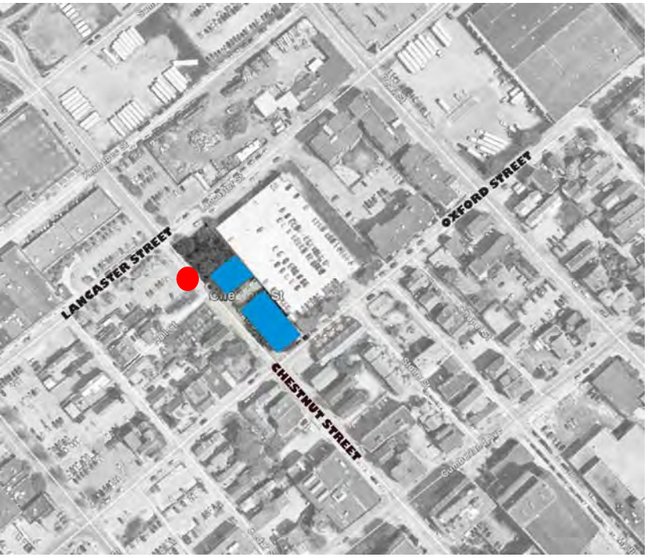
STOP


OXFORD STREET
CHESTNUT STREET


LANCASTER STREET
OXFORD STREET
CHESTNUT STREET

Oxford Street Homeless Shelter
Social Service Division
NO DRINKING OF ALCOHOLIC BEVERAGES
STOP


LANCASTER STREET
OXFORD STREET
CHESTNUT STREET


LANCASTER STREET
OXFORD STREET
CHESTNUT STREET

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

File: 16142

September 30, 2016

Ms. Jean Fraser
City of Portland, Planning Division
389 Congress Street, 4th Floor
Portland, ME 04101

RE: 75 CHESTNUT STREET, WESTERLEA VIEW LOFTS
RESPONSE TO COMMENTS BY LAUREN SWETT, DATED 9/7/16

Dear Jean,

Below are our responses to the above memo:

Comments

1) The Applicant has requested letters from utilities conforming capacity to serve the proposed development, evidence of confirmation of capacity to serve the proposed development should be provided upon receipt.

   As soon as the letter from PWD is obtained, we will provide it to the City. The flow test came out well, we expect there is no issue with water supply.

2) 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 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. However, details should be provided for stabilized construction entrance, and the location should be indicated on the drawings.

      We anticipate the lower section of the site will be used for construction. No roads are anticipated, so the site will be temporarily stabilized with gravel.

   b) General Standard: The project will result in an increase in impervious area of approximately 11,600 square feet. As such, the project is required to include specific stormwater management features for stormwater quality control. The

Applicant will be utilizing an underdrained soil filter for stormwater treatment.

- The detail for the soil filter notes an emergency overflow spillway. This area should be identified on the plan view of the soil filter

  The catchbasin acts as the emergency overflow. No riprap is required. We have added a permanent erosion control fabric at the overflow.

- A rip rap area is identified on the plans where the roof drain and foundation drains inlet to the underdrained soil filter. It is assumed that this area will serve as the sediment forebay.

  Additional design information and detail should be providing showing that this will conform with the Maine DEP design requirements for a sediment forebay.

  The sediment forebay is not required as all flow comes from the roof.

c) *Flooding Standard: The project will result in a increase in impervious area of approximately 11,600 square feet. As such, the project is required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.*

- *The Applicant has utilized a 0.10 CFS exfiltration rate to represent the infiltration of stormwater through the underdrain soil filter. This differs from the typical modeling value of 2.41 inches/hour (typically used per Maine DEP standards). The Applicant should provide background for this value.*
- *Pre- and post-development stormwater figures should be provided with the final submission to accompany the stormwater models.*

  Revised calculations have been provided.

3) *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.*

A maintenance program is attached.

4) *The Applicant should revise the Bituminous Pavement Sections detail to be in conformance with City of Portland Technical Manual for any pavement within the City of Portland Right of Way. The provided details include 9.5mm HMA as the surface pavement, where all City details require 12.5 mm HMA.*

The pavement details are revised.

5) *The proposed stormdrain connection has been reviewed with the City of Portland Department of Public Works. Please see the attached GIS figure. For a record of the combined sewer in the area. The Portland DPW have indicated that a stormdrain*

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CIVIL ENGINEERS

connection to the manhole identified on the GIS figure as SSMH-4779 would be acceptable.

The stormwater connection has been revised.

6) *A new utility pole is being proposed on the north side of Chestnut Street, with overhead utility lines connecting across Chestnut Street. The Applicant should provide underground electrical and communication lines across Chestnut Street, or provide justification from the utilities on why this method of connection is not possible. Underground utilities would eliminate public safety access concerns related to overhead utilities.*

The overhead line is now proposed as an underground feed.

Sincerely,

PINKHAM & GREER,
CIVIL ENGINEERS

Thomas S. Greer, P.E.

cc: (1) Lou Wood, (1) Bill Hopkins, (1) File

Enclosures

TSG/rjs

Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
(207) 774-3603
(207) 400-6890 mobile
trafficsolutions@maine.rr.com

September 28, 2016

Tom Greer, P.E.
Pinkham and Greer, Consulting Engineers
28 Vannah Avenue
Portland, Maine 04103

RE: 75 Chestnut Street Apartments – Response to Traffic Comments

Dear Tom:

This letter provides written response to Tom Errico's, P.E. preliminary comment requesting additional review of the proposed projects traffic impact on the Chestnut Street/Lancaster Street intersection. He specifically requested the following additional study:

> *"The applicant shall conduct a traffic and safety assessment of the Chestnut Street/Lancaster Street intersection. The assessment shall consist of conducting intersection turning movement counts during the weekday AM and PM peak periods and evaluating crash information. The assessment should determine the appropriateness of the current two-way STOP configuration (which may cause confusion given other area intersection control conditions) and whether a four-way STOP condition is warranted."*

Manual turning movement counts were collected at the Chestnut Street/Lancaster Street intersection on September 12/13, 2016 between the hours of 7:00 and 9:00 AM and, again, between the hours of 3:00 and 6:00 PM (Copies of the traffic data are attached). From a summary of the data, a peak hour was determined for both peak commuter time periods. The morning peak hour occurred between 7:30 and 8:30 AM and the afternoon peak hour occurs between 4:30 and 5:30 PM.

Traffic data collected during time periods other than the summer months of July and August require an adjustment to reflect peak travel conditions. MaineDOT provides, in their annual Traffic Count Report, factors for completing the required adjustment. MaineDOT's report suggests a factor of 1.03 is appropriate for converting September data to peak summer travel conditions. Figure 1 depicts the estimated 2016 design hour traffic volumes for the study intersection. A very modest volume of approximately 400 total vehicles enter the intersection during each peak hour time period.

The MaineDOT's Accident Records Section provided the most recent three-year (2013 through 2015) vehicle crash records for the subject intersection including copies of each reported vehicle crash. A total of three crashes were reported for the three years (Copies of the crash reports are attached). Each of the three vehicle collisions were "*angle*" crashes with a through vehicle traveling on Chestnut Street colliding with a vehicle entering the intersection from either Lancaster Street approach. Winter road conditions may have been a contributing factor with two of the three crashes.

The Chestnut Street/Lancaster Street intersection presently operates as a two-way STOP controlled intersection with both Lancaster Street approaches STOP controlled. Traffic flow at the intersection was observed for several minutes during both peak travel periods to determine if motorists experience hesitation and/or uncertainty in traveling through the intersection. The observations suggest that the majority of motorists are likely daily commuters very familiar with travel patterns on the full length of Chestnut Street and operate their vehicles accordingly.

The Manual on Uniform Traffic Control Devices (MUTCD), a federal publication, provides specific criteria that should be considered in recommending "*multi-way*" stop control at an intersection. That criterion, as presented in the 2009 edition of the MUTCD, is listed below followed by a general assessment as to whether existing conditions at the Chestnut Street/Lancaster Street intersection satisfy the minimum requirements:

A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
This criterion is not applicable to conditions at the intersection.

B. *A crash problem, as indicated by 5 or more reported crashes in a 12-month period, that is susceptible to correction by a multi-way stop installation. Such crashes include right and left-turn collisions, as well as, right-angle collisions.*
A total of three "angle" crashes were reported at the intersection by MaineDOT over a three-year time period. Criterion not met.

C. *Minimum Volumes:*

1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day and,
The following hourly volumes of traffic were for both approaches of Chestnut Street on September 12/13:

7:00 to 8:00AM = 216
8:00 to 9:00AM = 220
3:00 to 4:00PM = 144
4:00 to 5:00PM = 169
5:00 to 6:00PM = 148

As the data shows, the minimum value of 300 vehicles is not met during any of the five survey hours.

2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours with an average delay to minor street vehicular traffic of a least 30 seconds per vehicle during the highest hour but,*
The following hourly vehicular, pedestrian, and bicycle volumes were measured entering the intersection from both Lancaster Street approaches on September 12/13:

7:00 to 8:00AM = 82
8:00 to 9:00AM = 103
3:00 to 4:00PM = 175
4:00 to 5:00PM = 185
5:00 to 6:00PM = 176

The minimum traffic volumes are not met during any of the noted study hours.

3. *If the 85th percentile approach speed of the major-street traffic exceeds 65 km/h (40 mph), the minimum vehicular volume warrants are 70 percent of the above values.*
Field observations conducted at the intersection would suggest that the 85th percentile approach speed on Chestnut Street is well below 40mph.

D. *Where no single criterion is satisfied but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*
Prevailing traffic conditions found at the study intersection do not meet the warrant exception of 80%.

Existing traffic conditions at the Chestnut Street/Lancaster Street intersection do not currently satisfy the "*multi-way*" stop control warrants as stated in the 2009 MUTCD.

In summary:

- Traffic volumes of less than 400 entering vehicles were recorded at the Chestnut Street/Lancaster Street intersection during each peak commuter time period; a very low to modest volume of traffic.
- MaineDOT roadway safety report for the three year time period of 2013 through 2015 showed a total of three crashes occurred at the intersection. Each of the three vehicle collisions were "*angle*" crashes with a through vehicle traveling on Chestnut Street colliding with a vehicle entering the intersection from either Lancaster Street approach. Winter road conditions may have been a contributing factor with two of the three crashes.
- The Chestnut Street/Lancaster Street intersection presently operates as a two-way STOP controlled intersection with both approaches of Lancaster Street under STOP control. The primary user of the intersection during both peak commuter time periods is daily commuters traveling to/from their work location seeking the least congested travel route to their destination. Their travel through the intersection is generally without hesitation, based upon a number of field observations completed during both peak time periods.
- The results of a multi-way STOP control warrant analysis concludes that present conditions at the intersection do not satisfy the minimum standards for multi-way STOP control.

Modifying traffic control at the intersection from two-way STOP control to multi-way STOP control or reversing the STOP control from Lancaster Street to Chestnut Street is a simple low cost improvement easily implemented by the City if prevailing conditions in the future warrant.

Very truly yours,

William J. Bray, P.E.

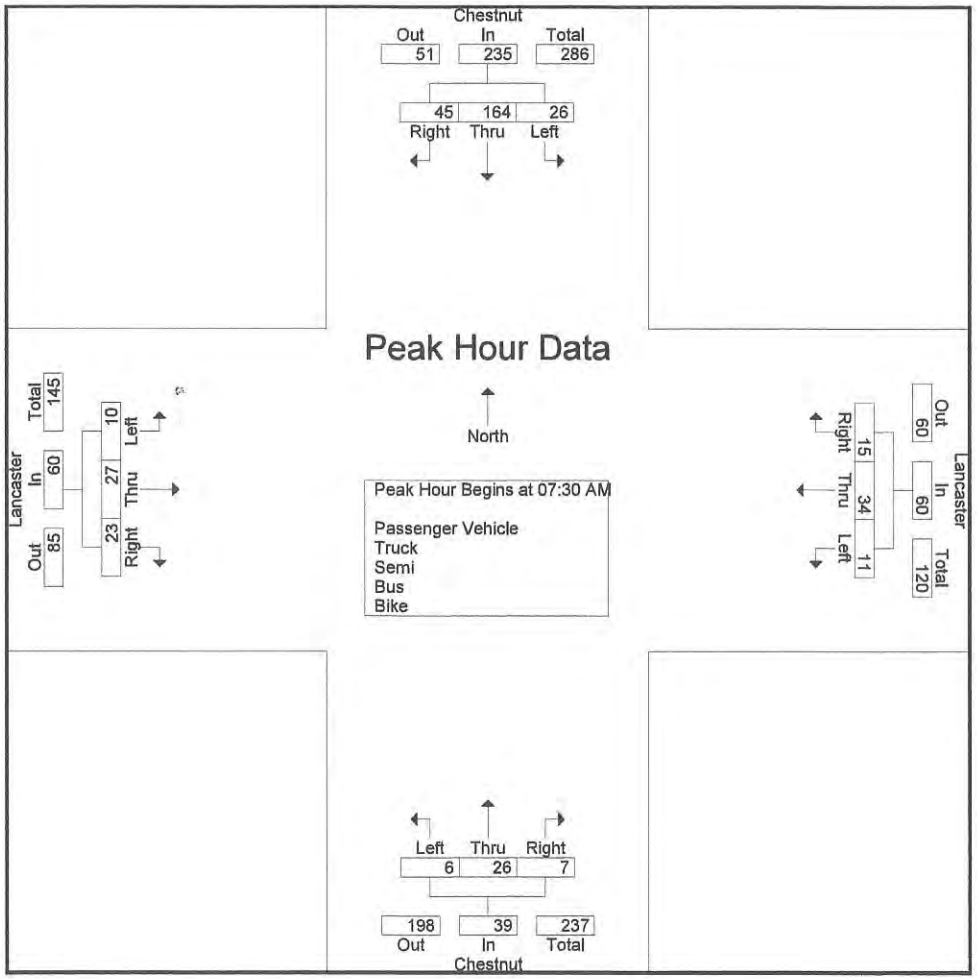
Portland: Lancaster & Chestnut
Tuesday September 13, 2016
Sunny
Count By: Dawn-Marie Fahey

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: 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 : 6



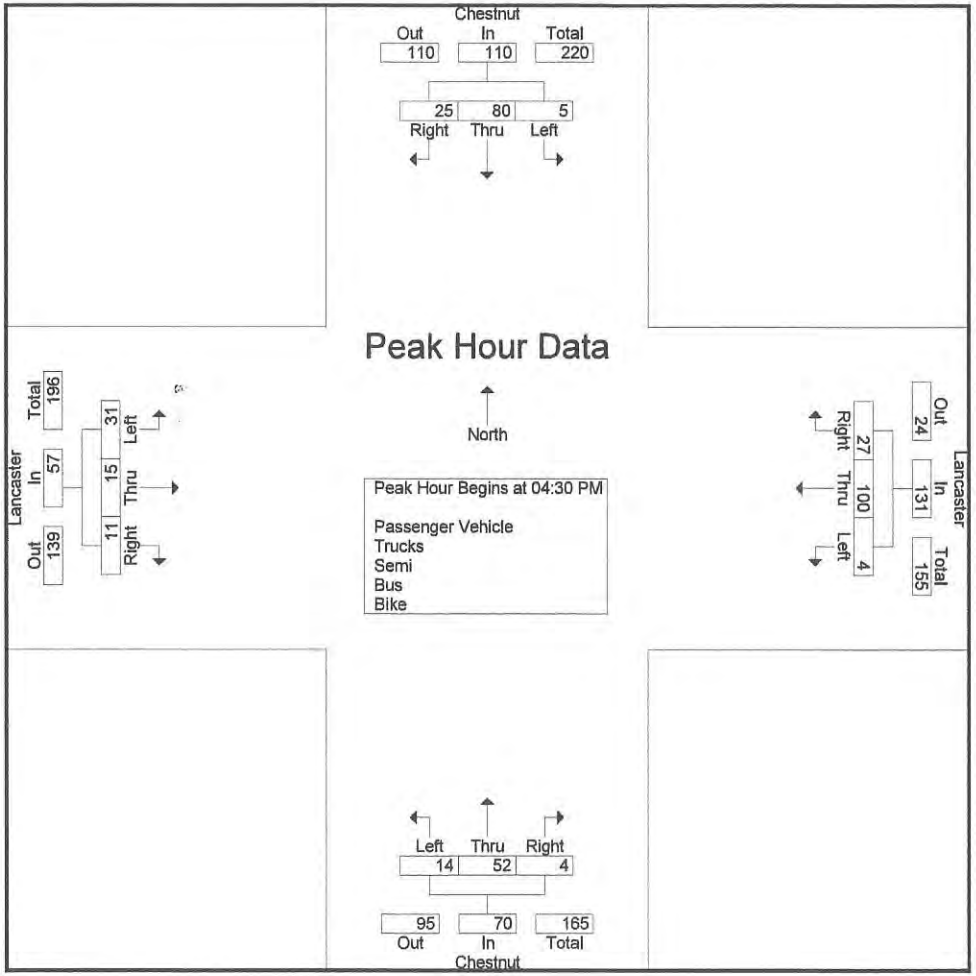
Portland: Lancaster & Chestnut
Monday September 12, 2016
Sunny
Count By: Dawn-Marie Fahey

File Name : Portland Lancaster & Chestnut 091216
Site Code : 00091216
Start Date : 9/12/2016
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 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	5	19	0	24	4	25	1	30	0	9	1	10	0	**7**	8	15	79
04:45 PM	**9**	**27**	**4**	**40**	5	25	**2**	32	0	11	3	14	3	3	**11**	**17**	**103**
05:00 PM	4	20	0	24	6	23	1	30	**2**	**17**	4	**23**	3	4	6	13	90
05:15 PM	7	14	1	22	**12**	**27**	0	**39**	2	15	**6**	23	**5**	1	6	12	96
Total Volume	25	80	5	110	27	100	4	131	4	52	14	70	11	15	31	57	368
% App. Total	22.7	72.7	4.5		20.6	76.3	3.1		5.7	74.3	20		19.3	26.3	54.4		
PHF	.694	.741	.313	.688	.563	.926	.500	.840	.500	.765	.583	.761	.550	.536	.705	.838	.893

Portland: Lancaster & Chestnut
Monday September 12, 2016
Sunny
Count By: Dawn-Marie Fahey

File Name : Portland Lancaster & Chestnut 091216
Site Code : 00091216
Start Date : 9/12/2016
Page No : 6



VEHICLE VOLUME COUNT
GRAPHIC SUMMARY SHEET

Intersection of CHESTNUT ST. @ LANCASTER ST. Date _____

Weather _____ Road Surface Condition _____ Time _____ to _____

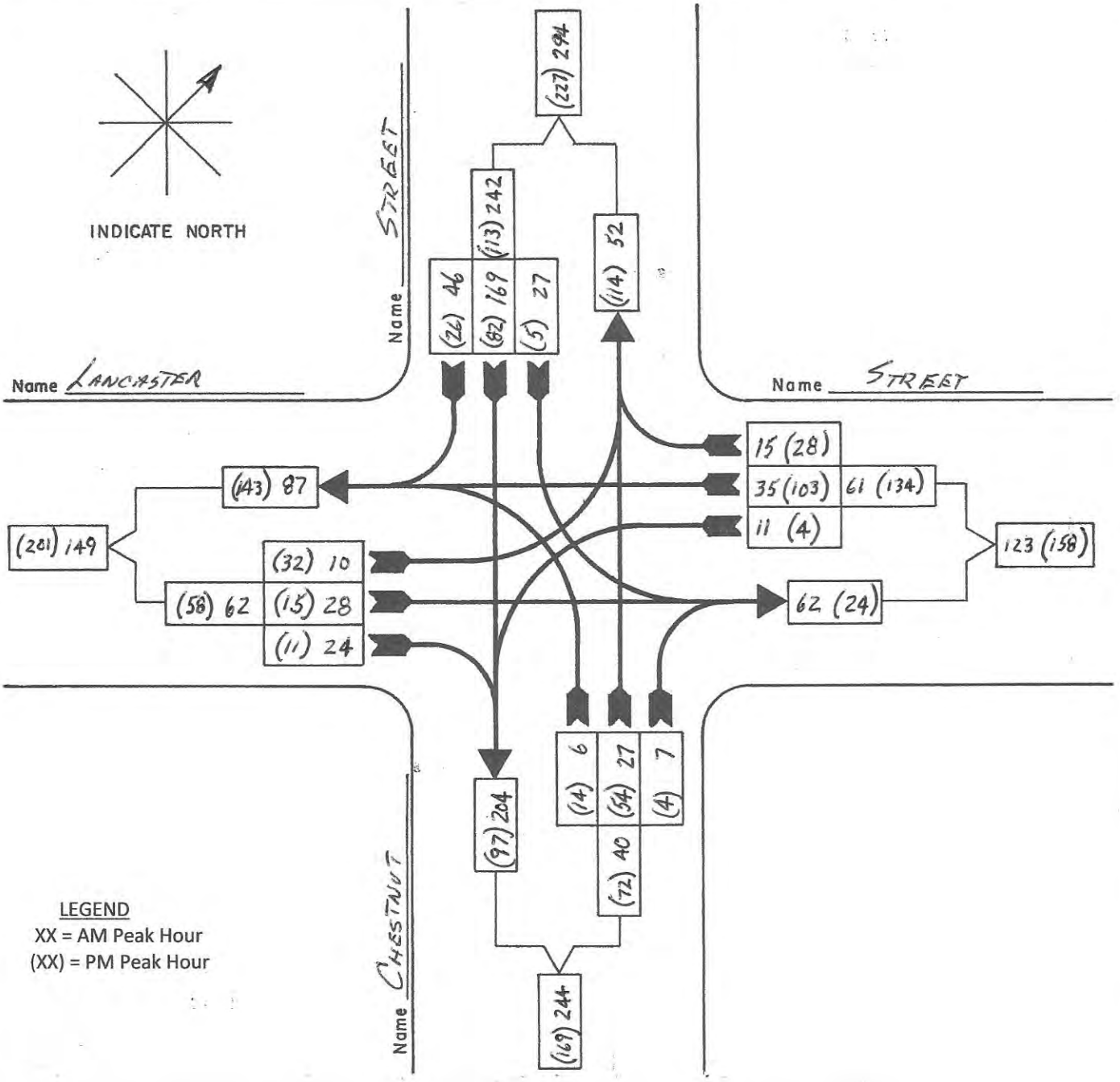


FIGURE 1: 2016 Design Hour Traffic – AM and PM Peak Hours

ME0030500/15-004160

Maine Crash Report Summary

2015-52415

Crash Date: **12/13/2015** Time: **15:20** City: **Portland** Street/Highway: **CHESTNUT ST**

Start Node: **19013** **Int of CHESTNUT ST LANCASTER ST** End Node: **0** Offset: **0**

OE Start Node: ***19013*** ***Int of CHESTNUT ST LANCASTER ST*** OE End Node:

Type of Crash: **4 - Intersection Movement**

Type of Location: **4 - Four Leg Intersection**

Weather: **1 - Clear**

Light: **3 - Dusk**

Road Grade: **1 - Level**

Surface Condition: **1 - Dry**

Traffic Control: **5 - Stop Signs - Other**

Cont. Circ. Env 1 **1 - None**

Cont. Circ. Env 2

Cont. Circ. Road 1 **1 - None**

Cont. Circ. Road 2

Narrative

U1 WAS HEADING SOUTHBOUND ON LANCASTER APPROACHING THE INTERSECTION OF CHESTNUT/LANCASTER.

U2 WAS HEADING EASTBOUND ON CHESTNUT APPROACHING THE INTERSECTION.

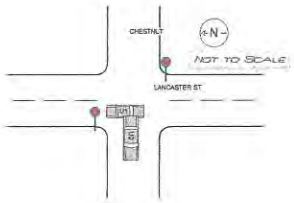
U1 HAD A STOP SIGN AND FAILED TO MAKE A FULL STOP ROLLING THROUGH THE INTERSECTION.

U2 DID NOT HAVE A STOP SIGN AND WAS CONTINUING TO DRIVE STRAIGHT THROUGH THROUGH THE INTERSECTION.

U1 ROLLED THROUGH THE STOP SIGN PRIOR TO NOTICING U2.

U2 THEN HIT U1 IN THE CENTER PASSENGER SIDE OF THE VEHICLE....

Diagram



Unit: 1

Type: **1 - Passenger Car**

Veh. Travel Dir.: **2 - Southbound**

Most Damaged Area: **3 - Center Passenger Side**

Most Harmful Event: **13 - Motor Vehicle in Transport**

Pre-Crash Actions: **1 - Following roadway**

Contrib Circ. - Vehicle: **1 - None**

Seq. Events 1: **21 - Motor Vehicle In Transport**

Seq. Events 2:

Seq. Events 3:

Seq. Events 4:

Driver Distracted By: **1 - Not Distracted**

Cond. at Time Crash: **1 - Apparently Normal**

Driver Action 1: **5 - Ran Stop Sign**

Driver Action 2:

Person Type	Age	Sex	Injury Degree
6 - Driver/Owner	**73**	**1 - Male**	**5 - No Injury**

Unit: 2

Type: **1 - Passenger Car**

Veh. Travel Dir.: **3 - Eastbound**

Most Damaged Area: **12 - Front**

Most Harmful Event: **13 - Motor Vehicle in Transport**

Pre-Crash Actions: **1 - Following roadway**

Contrib Circ. - Vehicle: **1 - None**

Seq. Events 1: **21 - Motor Vehicle In Transport**

Seq. Events 2:

Seq. Events 3:

Seq. Events 4:

Driver Distracted By: **1 - Not Distracted**

Cond. at Time Crash: **1 - Apparently Normal**

Driver Action 1: **1 - No Contributing Action**

Driver Action 2:

Person Type	Age	Sex	Injury Degree
6 - Driver/Owner	**30**	**1 - Male**	**5 - No Injury**

Run Date: 09/15/16

STATE OF MAINE CRASH REPORT

Report Number
15-004160

Narrative / Diagram Supplemental

U1 WAS HEADING SOUTHBOUND ON LANCASTER APPROACHING THE INTERSECTION OF CHESTNUT/LANCASTER.

U2 WAS HEADING EASTBOUND ON CHESTNUT APPROACHING THE INTERSECTION.

U1 HAD A STOP SIGN AND FAILED TO MAKE A FULL STOP ROLLING THROUGH THE INTERSECTION.

U2 DID NOT HAVE A STOP SIGN AND WAS CONTINUING TO DRIVE STRAIGHT THROUGH THROUGH THE INTERSECTION.

U1 ROLLED THROUGH THE STOP SIGN PRIOR TO NOTICING U2.

U2 THEN HIT U1 IN THE CENTER PASSENGER SIDE OF THE VEHICLE.

U2 WAS TOWED BY AAA.

Reviewed: Sgt. J. Titcomb 12/22/2015

ME0030500/15-000822

Maine Crash Report Summary

2015-6409

Crash Date: **2/16/2015** Time: **09:00** City: **Portland** Street/Highway: **CHESTNUT ST**

Start Node: **19013** **Int of CHESTNUT ST LANCASTER ST** End Node: **0** Offset: **0**

OE Start Node: ***19013*** ***Int of CHESTNUT ST LANCASTER ST*** OE End Node:

Type of Crash: **4 - Intersection Movement**

Type of Location: **4 - Four Leg Intersection**

Weather: **1 - Clear**

Light: **1 - Daylight**

Road Grade: **1 - Level**

Surface Condition: **3 - Snow**

Traffic Control: **5 - Stop Signs - Other**

Cont. Circ. Env 1 **1 - None**

Cont. Circ. Env 2

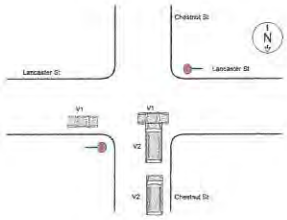
Cont. Circ. Road 1 **2 - Road Surface Condition (Wet, Icy, Snow, Slush, etc.)**

Cont. Circ. Road 2 **1 - None**

Narrative

Vehicle 1 was stopped at the stop sign, westbound on Lancaster Street at the intersection of Chestnut Street. Vehicle 2 was traveling southbound on Chestnut Street. The operator of vehicle 1 thought that she had enough time to cross the intersection and felt that vehicle 2 was speeding. The operator of vehicle 2 said that vehicle 1 had pulled out in front of him. There were no skid marks due to the road being snow covered.

Diagram



Unit: 1

Type: **1 - Passenger Car**

Veh. Travel Dir.: **3 - Eastbound**

Most Damaged Area: **3 - Center Passenger Side**

Most Harmful Event: **39 - Unknown**

Pre-Crash Actions: **9 - Starting in traffic**

Contrib Circ. - Vehicle: **1 - None**

Seq. Events 1: **47 - Unknown**

Seq. Events 2: **47 - Unknown**

Seq. Events 3: **47 - Unknown**

Seq. Events 4: **47 - Unknown**

Driver Distracted By: **1 - Not Distracted**

Cond. at Time Crash: **1 - Apparently Normal**

Driver Action 1: **3 - Failed to Yield Right-of-Way**

Driver Action 2:

Person Type	Age	Sex	Injury Degree
6 - Driver/Owner	**22**	**2 - Female**	**5 - No Injury**
2 - Passenger	**25**	**2 - Female**	**5 - No Injury**
2 - Passenger	**26**	**2 - Female**	**5 - No Injury**
2 - Passenger	**26**	**2 - Female**	**4 - Possible Injury**

Unit: 2

Type: **1 - Passenger Car**

Veh. Travel Dir.: **2 - Southbound**

Most Damaged Area: **12 - Front**

Most Harmful Event: **39 - Unknown**

Pre-Crash Actions: **1 - Following roadway**

Contrib Circ. - Vehicle: **1 - None**

Seq. Events 1: **47 - Unknown**

Seq. Events 2: **47 - Unknown**

Seq. Events 3: **47 - Unknown**

Seq. Events 4: **47 - Unknown**

Driver Distracted By: **1 - Not Distracted**

Cond. at Time Crash: **1 - Apparently Normal**

Driver Action 1: **1 - No Contributing Action**

Driver Action 2:

Person Type	Age	Sex	Injury Degree
6 - Driver/Owner	**39**	**1 - Male**	**5 - No Injury**

Run Date: 09/15/16

ME0030500/14-000269

Maine Crash Report Summary

2014-2759

Crash Date: **1/19/2014** Time: **10:39** City: **Portland** Street/Highway: **LANCASTER ST 2**

Start Node: **19013** **Int of CHESTNUT ST LANCASTER ST** End Node: **0** Offset: **0**

OE Start Node: ***19013*** ***Int of CHESTNUT ST LANCASTER ST*** OE End Node:

Type of Crash: **4 - Intersection Movement**

Type of Location: **4 - Four Leg Intersection**

Weather: **6 - Snow**

Light: **1 - Daylight**

Road Grade: **1 - Level**

Surface Condition: **3 - Snow**

Traffic Control: **5 - Stop Signs - Other**

Cont. Circ. Env 1 **2 - Weather Conditions**

Cont. Circ. Env 2 **1 - None**

Cont. Circ. Road 1 **2 - Road Surface Condition (Wet, Icy, Snow, Slush, etc.)**

Cont. Circ. Road 2 **1 - None**

Narrative

UNIT 2 WAS TRAVELING EAST ON LANCASTER ST. UNIT 1 WAS TRAVELLING SOUTH ON CHESTNUT ST. UNIT 2 FAILED TO YIELD THE RIGHT OF WAY. UNIT 1 STRUCK UNIT 2 NEAR THE CENTER OF THE INTERSECTION.

Diagram

Unit: 1

Type: **1 - Passenger Car**

Veh. Travel Dir.: **2 - Southbound**

Most Damaged Area: **11 - Front Driver Corner**

Most Harmful Event: **13 - Motor Vehicle in Transport**

Pre-Crash Actions: **1 - Following roadway**

Contrib Circ. - Vehicle: **1 - None**

Seq. Events 1: **21 - Motor Vehicle In Transport**

Seq. Events 2:

Seq. Events 3:

Seq. Events 4:

Driver Distracted By: **1 - Not Distracted**

Cond. at Time Crash: **1 - Apparently Normal**

Driver Action 1: **1 - No Contributing Action**

Driver Action 2:

Person Type	Age	Sex	Injury Degree
1 - Driver	**22**	**1 - Male**	**5 - No Injury**

Unit: 2

Type: **3 - Passenger Van**

Veh. Travel Dir.: **3 - Eastbound**

Most Damaged Area: **8 - Rear Driver Quarter Panel**

Most Harmful Event: **13 - Motor Vehicle in Transport**

Pre-Crash Actions: **1 - Following roadway**

Contrib Circ. - Vehicle: **1 - None**

Seq. Events 1: **21 - Motor Vehicle In Transport**

Seq. Events 2:

Seq. Events 3:

Seq. Events 4:

Driver Distracted By: **6 - Unknown if Distracted**

Cond. at Time Crash: **1 - Apparently Normal**

Driver Action 1: **3 - Failed to Yield Right-of-Way**

Driver Action 2:

Person Type	Age	Sex	Injury Degree
1 - Driver	**28**	**1 - Male**	**5 - No Injury**
2 - Passenger	**41**	**2 - Female**	**5 - No Injury**
2 - Passenger	**27**	**1 - Male**	**5 - No Injury**
2 - Passenger	**8**	**2 - Female**	**5 - No Injury**
2 - Passenger	**8**	**2 - Female**	**5 - No Injury**
2 - Passenger	**9**	**2 - Female**	**5 - No Injury**
2 - Passenger	**11**	**1 - Male**	**5 - No Injury**
2 - Passenger	**11**	**2 - Female**	**5 - No Injury**

Run Date: 09/15/16

2 - Passenger	29	1 - Male	5 - No Injury
2 - Passenger	15	1 - Male	5 - No Injury
2 - Passenger	14	1 - Male	5 - No Injury

PINKHAM & GREER
CIVIL ENGINEERS

28 VANNAH AVE. PORTLAND, ME. 04103
Tel: 207.781.5242 Fax: 207.781.4245

STORMWATER MANAGEMENT REPORT
WESTERLEA VIEW LOFTS
PORTLAND, MAINE

July 28, 2016
Revised September 30, 2016

Project Description:

This project is the construction of a 54 residential unit at 75 Chestnut Street. The site has an existing 3 story parking garage. This project will add an 11,600 sq. ft. footprint building to the site. As agreed to by staff the calculations are limited to the building area.

Existing Conditions:

The site has 49,326 sq. ft. of existing parking garage and a lawn area of 38,713 sq. ft. around the garage. The site has slopes in the 4-8% range. It has street frontage on Chestnut, Lancaster, and Oxford Street. It is considered an urban site.

Developed Conditions:

The Chestnut Street side of the site will be developed with an 11,600 sq. ft. building and a small grass area. The site will be landscaped and an underdrained soil filter will be installed at the low corner of Chestnut.

Methodology:

This stormwater analysis was performed using HydroCad Software based on TR-55 modeling conditions. This model requires assumptions as to the land cover, slopes and soils. These are enhanced by the topography mapping, soils mapping, and on-site observations. The flows were determined using a Type III coastal storm and rainfall totals for the 24 hour period for a 2 year storm, 3.1", for a 10 year storm, 4.6", and for a 25 year storm, 5.8". These data are published in the manual for Stormwater Management for Maine: Best Management Practices, published by the Maine Department of Environmental Protection.

Analysis:

A simple model of the site was developed to determine the relative impact of adding the 11,600 sq. ft. of building. This shows a slight decrease in peak flows with the underdrained soil filter (UDSF).

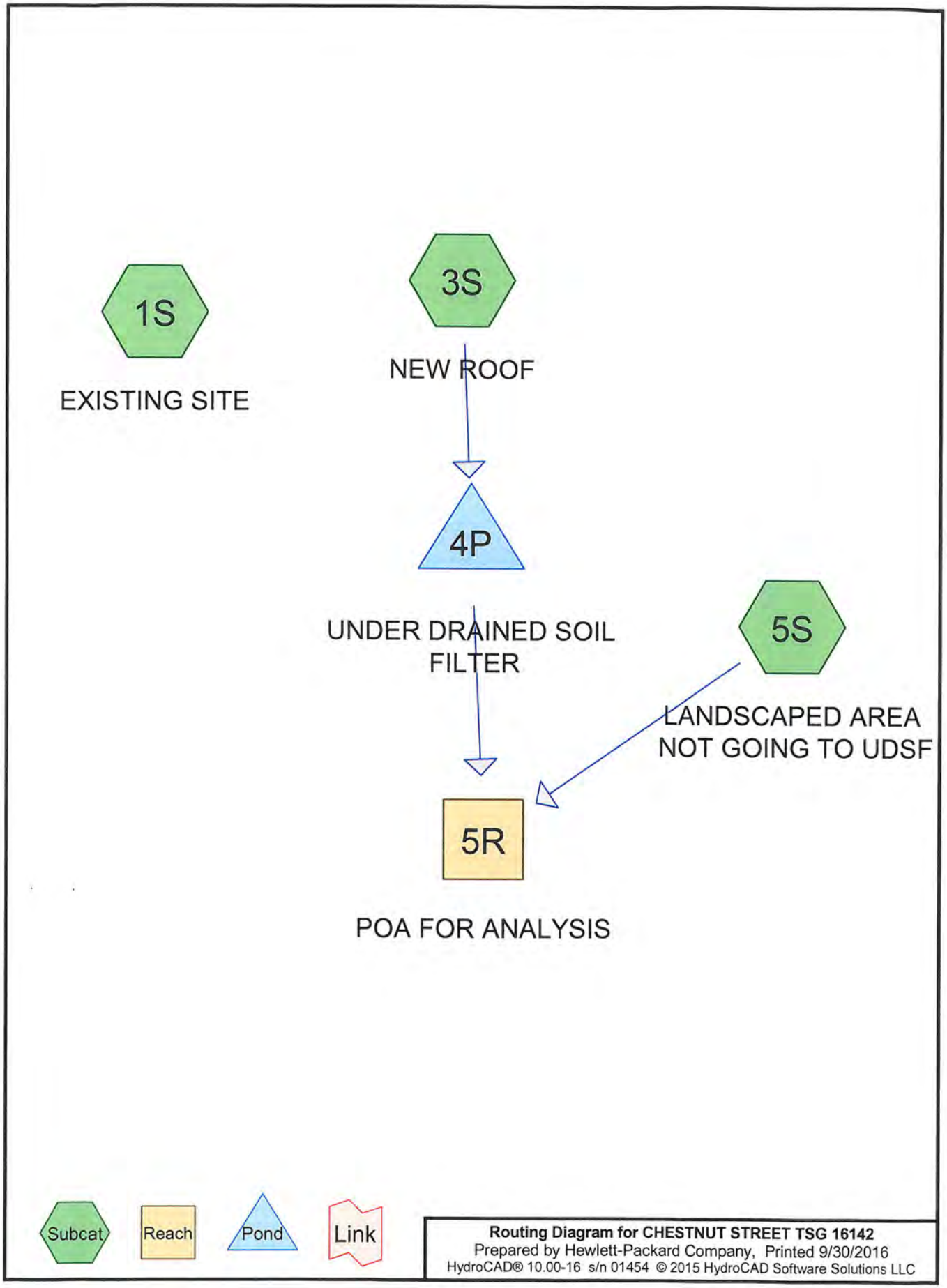
Peak Flows with UDSF Cubic Feet Per Second (cfs)		
	Existing	Developed
2 Year	0.6	0.21
10 Year	1.25	0.90
25 Year	1.80	1.76

Conclusion:

The use of the underdrained soil filter to capture and treat roof runoff will not result in any unreasonable impacts to downstream properties.

Thomas S. Greer, P.E.
10/3/16

STATE OF MAINE
THOMAS S. GREER
No. 4206
LICENSED PROFESSIONAL ENGINEER



Routing Diagram for CHESTNUT STREET TSG 16142
Prepared by Hewlett-Packard Company, Printed 9/30/2016
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=21,268 sf 9.51% Impervious Runoff Depth>1.05"
Tc=7.0 min CN=77 Runoff=0.60 cfs 0.043 af

Subcatchment 3S: NEW ROOF Runoff Area=17,133 sf 72.40% Impervious Runoff Depth>2.13"
Tc=5.0 min CN=92 Runoff=1.02 cfs 0.070 af

Subcatchment 5S: LANDSCAPED AREA Runoff Area=4,138 sf 15.59% Impervious Runoff Depth>1.16"
Tc=5.0 min CN=79 Runoff=0.14 cfs 0.009 af

Reach 5R: POA FOR ANALYSIS Avg. Flow Depth=0.12' Max Vel=3.82 fps Inflow=0.21 cfs 0.073 af
12.0" Round Pipe n=0.010 L=10.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=0.21 cfs 0.073 af

Pond 4P: UNDER DRAINED SOIL FILTER Peak Elev=10.68' Storage=1,341 cf Inflow=1.02 cfs 0.070 af
Outflow=0.09 cfs 0.064 af

Total Runoff Area = 0.977 ac Runoff Volume = 0.121 af Average Runoff Depth = 1.49"
64.57% Pervious = 0.631 ac 35.43% Impervious = 0.346 ac

Summary for Subcatchment 1S: EXISTING SITE

Runoff = 0.60 cfs @ 12.11 hrs, Volume= 0.043 af, Depth> 1.05"

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
*	2,023	98	IMPERVIOUS
*	19,245	75	LANDSCAPED
	21,268	77	Weighted Average
	19,245		90.49% Pervious Area
	2,023		9.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, DIRECT**

Summary for Subcatchment 3S: NEW ROOF

Runoff = 1.02 cfs @ 12.07 hrs, Volume= 0.070 af, Depth> 2.13"

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
*	12,405	98	ROOF
*	4,728	75	LANDSCAPED
	17,133	92	Weighted Average
	4,728		27.60% Pervious Area
	12,405		72.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Summary for Subcatchment 5S: LANDSCAPED AREA NOT GOING TO UDSF

Runoff = 0.14 cfs @ 12.08 hrs, Volume= 0.009 af, Depth> 1.16"

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
*	3,493	75	LANDSCAPED
*	645	98	IMPERVIOUS
	4,138	79	Weighted Average
	3,493		84.41% Pervious Area
	645		15.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Summary for Reach 5R: POA FOR ANALYSIS

Inflow Area = 0.488 ac, 61.35% Impervious, Inflow Depth > 1.80" for 2 YEAR event
Inflow = 0.21 cfs @ 12.09 hrs, Volume= 0.073 af
Outflow = 0.21 cfs @ 12.09 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.82 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.37 fps, Avg. Travel Time= 0.1 min

Peak Storage= 1 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 10.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -0.20'

Summary for Pond 4P: UNDER DRAINED SOIL FILTER

Inflow Area = 0.393 ac, 72.40% Impervious, Inflow Depth > 2.13" for 2 YEAR event
Inflow = 1.02 cfs @ 12.07 hrs, Volume= 0.070 af
Outflow = 0.09 cfs @ 12.97 hrs, Volume= 0.064 af, Atten= 91%, Lag= 54.1 min
Primary = 0.09 cfs @ 12.97 hrs, Volume= 0.064 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 10.68' @ 12.97 hrs Surf.Area= 1,372 sf Storage= 1,341 cf

Plug-Flow detention time= 145.8 min calculated for 0.064 af (92% of inflow)
Center-of-Mass det. time= 118.0 min (884.9 - 766.9)

Volume	Invert	Avail.Storage	Storage Description
#1	9.50'	3,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
9.50	900	0	0
11.00	1,500	1,800	1,800
12.00	2,250	1,875	3,675

Device	Routing	Invert	Outlet Devices
#1	Primary	9.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 5.00'
#2	Primary	11.00'	**2.0" x 2.0" Horiz. Orifice/Grate X 26.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.09 cfs @ 12.97 hrs HW=10.68' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.09 cfs)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

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=21,268 sf 9.51% Impervious Runoff Depth>2.13"
Tc=7.0 min CN=77 Runoff=1.25 cfs 0.087 af

Subcatchment 3S: NEW ROOF Runoff Area=17,133 sf 72.40% Impervious Runoff Depth>3.50"
Tc=5.0 min CN=92 Runoff=1.64 cfs 0.115 af

Subcatchment 5S: LANDSCAPED AREA Runoff Area=4,138 sf 15.59% Impervious Runoff Depth>2.29"
Tc=5.0 min CN=79 Runoff=0.27 cfs 0.018 af

Reach 5R: POA FOR ANALYSIS Avg. Flow Depth=0.25' Max Vel=5.78 fps Inflow=0.90 cfs 0.116 af
12.0" Round Pipe n=0.010 L=10.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=0.90 cfs 0.116 af

Pond 4P: UNDER DRAINED SOIL FILTER Peak Elev=11.05' Storage=1,880 cf Inflow=1.64 cfs 0.115 af
Outflow=0.78 cfs 0.098 af

Total Runoff Area = 0.977 ac Runoff Volume = 0.219 af Average Runoff Depth = 2.70"
64.57% Pervious = 0.631 ac 35.43% Impervious = 0.346 ac

Summary for Subcatchment 1S: EXISTING SITE

Runoff = 1.25 cfs @ 12.11 hrs, Volume= 0.087 af, Depth> 2.13"

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 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	2,023	98	IMPERVIOUS
*	19,245	75	LANDSCAPED
	21,268	77	Weighted Average
	19,245		90.49% Pervious Area
	2,023		9.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, DIRECT**

Summary for Subcatchment 3S: NEW ROOF

Runoff = 1.64 cfs @ 12.07 hrs, Volume= 0.115 af, Depth> 3.50"

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 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	12,405	98	ROOF
*	4,728	75	LANDSCAPED
	17,133	92	Weighted Average
	4,728		27.60% Pervious Area
	12,405		72.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Summary for Subcatchment 5S: LANDSCAPED AREA NOT GOING TO UDSF

Runoff = 0.27 cfs @ 12.08 hrs, Volume= 0.018 af, Depth> 2.29"

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 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	3,493	75	LANDSCAPED
*	645	98	IMPERVIOUS
	4,138	79	Weighted Average
	3,493		84.41% Pervious Area
	645		15.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Summary for Reach 5R: POA FOR ANALYSIS

Inflow Area = 0.488 ac, 61.35% Impervious, Inflow Depth > 2.85" for 10 YEAR event
Inflow = 0.90 cfs @ 12.27 hrs, Volume= 0.116 af
Outflow = 0.90 cfs @ 12.27 hrs, Volume= 0.116 af, Atten= 1%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.78 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.73 fps, Avg. Travel Time= 0.1 min

Peak Storage= 2 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 10.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -0.20'

Summary for Pond 4P: UNDER DRAINED SOIL FILTER

Inflow Area = 0.393 ac, 72.40% Impervious, Inflow Depth > 3.50" for 10 YEAR event
Inflow = 1.64 cfs @ 12.07 hrs, Volume= 0.115 af
Outflow = 0.78 cfs @ 12.27 hrs, Volume= 0.098 af, Atten= 52%, Lag= 11.8 min
Primary = 0.78 cfs @ 12.27 hrs, Volume= 0.098 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.05' @ 12.27 hrs Surf.Area= 1,540 sf Storage= 1,880 cf

Plug-Flow detention time= 135.4 min calculated for 0.098 af (85% of inflow)
Center-of-Mass det. time= 91.1 min (847.0 - 755.8)

Volume	Invert	Avail.Storage	Storage Description
#1	9.50'	3,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
9.50	900	0	0
11.00	1,500	1,800	1,800
12.00	2,250	1,875	3,675

Device	Routing	Invert	Outlet Devices
#1	Primary	9.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 5.00'
#2	Primary	11.00'	**2.0" x 2.0" Horiz. Orifice/Grate X 26.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.71 cfs @ 12.27 hrs HW=11.05' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.11 cfs)
└—**2=Orifice/Grate** (Weir Controls 0.60 cfs @ 0.72 fps)

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=21,268 sf 9.51% Impervious Runoff Depth>3.08"
Tc=7.0 min CN=77 Runoff=1.80 cfs 0.125 af

Subcatchment 3S: NEW ROOF Runoff Area=17,133 sf 72.40% Impervious Runoff Depth>4.60"
Tc=5.0 min CN=92 Runoff=2.12 cfs 0.151 af

Subcatchment 5S: LANDSCAPED AREA Runoff Area=4,138 sf 15.59% Impervious Runoff Depth>3.28"
Tc=5.0 min CN=79 Runoff=0.39 cfs 0.026 af

Reach 5R: POA FOR ANALYSIS Avg. Flow Depth=0.35' Max Vel=7.08 fps Inflow=1.75 cfs 0.156 af
12.0" Round Pipe n=0.010 L=10.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=1.76 cfs 0.156 af

Pond 4P: UNDER DRAINED SOIL FILTER Peak Elev=11.15' Storage=2,039 cf Inflow=2.12 cfs 0.151 af
Outflow=1.48 cfs 0.130 af

Total Runoff Area = 0.977 ac Runoff Volume = 0.302 af Average Runoff Depth = 3.71"
64.57% Pervious = 0.631 ac 35.43% Impervious = 0.346 ac

Summary for Subcatchment 1S: EXISTING SITE

Runoff = 1.80 cfs @ 12.10 hrs, Volume= 0.125 af, Depth> 3.08"

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
*	2,023	98	IMPERVIOUS
*	19,245	75	LANDSCAPED
	21,268	77	Weighted Average
	19,245		90.49% Pervious Area
	2,023		9.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry, DIRECT**

Summary for Subcatchment 3S: NEW ROOF

Runoff = 2.12 cfs @ 12.07 hrs, Volume= 0.151 af, Depth> 4.60"

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
*	12,405	98	ROOF
*	4,728	75	LANDSCAPED
	17,133	92	Weighted Average
	4,728		27.60% Pervious Area
	12,405		72.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Summary for Subcatchment 5S: LANDSCAPED AREA NOT GOING TO UDSF

Runoff = 0.39 cfs @ 12.08 hrs, Volume= 0.026 af, Depth> 3.28"

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
*	3,493	75	LANDSCAPED
*	645	98	IMPERVIOUS
	4,138	79	Weighted Average
	3,493		84.41% Pervious Area
	645		15.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, DIRECT**

Summary for Reach 5R: POA FOR ANALYSIS

Inflow Area = 0.488 ac, 61.35% Impervious, Inflow Depth > 3.82" for 25 YEAR event
Inflow = 1.75 cfs @ 12.15 hrs, Volume= 0.156 af
Outflow = 1.76 cfs @ 12.15 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.08 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.92 fps, Avg. Travel Time= 0.1 min

Peak Storage= 2 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 10.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -0.20'

Summary for Pond 4P: UNDER DRAINED SOIL FILTER

Inflow Area = 0.393 ac, 72.40% Impervious, Inflow Depth > 4.60" for 25 YEAR event
Inflow = 2.12 cfs @ 12.07 hrs, Volume= 0.151 af
Outflow = 1.48 cfs @ 12.16 hrs, Volume= 0.130 af, Atten= 30%, Lag= 5.4 min
Primary = 1.48 cfs @ 12.16 hrs, Volume= 0.130 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 11.15' @ 12.16 hrs Surf.Area= 1,615 sf Storage= 2,039 cf

Plug-Flow detention time= 110.3 min calculated for 0.130 af (86% of inflow)
Center-of-Mass det. time= 67.4 min (818.0 - 750.6)

Volume	Invert	Avail.Storage	Storage Description
#1	9.50'	3,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
9.50	900	0	0
11.00	1,500	1,800	1,800
12.00	2,250	1,875	3,675

Device	Routing	Invert	Outlet Devices
#1	Primary	9.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 5.00'
#2	Primary	11.00'	**2.0" x 2.0" Horiz. Orifice/Grate X 26.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.45 cfs @ 12.16 hrs HW=11.15' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.11 cfs)
└—**2=Orifice/Grate** (Orifice Controls 1.34 cfs @ 1.85 fps)

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET, PORTLAND, MAINE
September 30, 2016

INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

The owner is A&M Partners, INC., 120 Exchange Street, Portland, Maine 04101. 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)

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.

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.

UNDERDRAINED SOIL FILTERS:

There is one underdrained soil filter located on the project site. An underdrained soil filter is a landscaped depression with an underdrained soil bed or soil filter that exfiltrates the stormwater. The depression is designed to temporarily store runoff, which will drain through the soil filter into the underdrains; excess runoff will flow over the downhill lip.

Soil Filter Inspection: The soil filter 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 48 hours; and that, after storms that fill the system to overflow, it drains in no less than 24 hours. If the system drains too fast, the orifice on the underdrain outlet may need to be modified.

Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. The removed sediments should be disposed in an acceptable manner.

Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.

Mowing: Filters with grass cover should be mowed no more than 2 times per growing season to maintain grass heights less than 12 inches.

Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.

Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary. Add new mulch as necessary for bioretention cells.

Record all maintenance on forms provided.

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET, PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

CATCH BASINS, FIELD INLETS, DRAIN MANHOLES

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
7/31/15	ABC	I, C	EXAMPLE: Remove sand deposits and debris as necessary.

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET, PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

DRAIN PIPES

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
7/31/15	DEF	I, C	EXAMPLE: Cleared debris from ends of pipes. Called ACME to clean debris from field inlets.

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET, PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

SWALES, DITCHES, PAVED SURFACES

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
7/31/15	GHI	I, C	EXAMPLE: Removed sand along the edge of the road. Heavy rain over the weekend.

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET, PORTLAND, MAINE

INSPECTION / MAINTENANCE LOG

UNDERDRAINED OIL FILTER

I: INSPECTED - C: CLEANED - R: REPAIRED

DATE	INITIALS	ACTION	COMMENT
7/31/15	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	I 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	
Underdrain Soil Filter	Mow twice per year. Inspect for erosion.		X		

PLAN REFERENCES:

1) AS- BUILT SITE SURVEY FOR AVESTA PEARL STREET TWO LP DATED MARCH 07, 2013 PREPARED BY NORTHEAST CIVIL SOLUTIONS, RECORDED IN CCRD PB 211, PG 362.

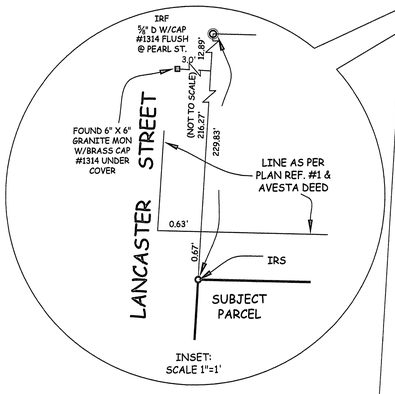
2) ALTA /ACSM LAND TITLE SURVEY FOR OXFORD DEVELOPMENT ASSOCIATES DATED 06-28-88 PREPARED BY SMRT SURVEYING RECORDED IN CCRD PB 171, PG 68.

3) PORTLAND RENEWAL AUTHORITY NEIGHBORHOOD DEVELOPEMENT PROJECT ME A-2 DATED MAY 22, 1974 PREPARED BY E.C. JORDAN.

4) CITY PLAN OF LANCASTER STREET DATED 1925 VOL 1, PG 57 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 9-48 DATED 9/7/1854.

5) CITY PLAN OF OXFORD STREET DATED 1925 VOL 1, PG 42 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 2-342 DATED 3-13-1824.

6) CITY PLAN OF CHESTNUT STREET DATED 1925 VOL 1, PG 44 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 1-398 DATED MAY 6, 1805.



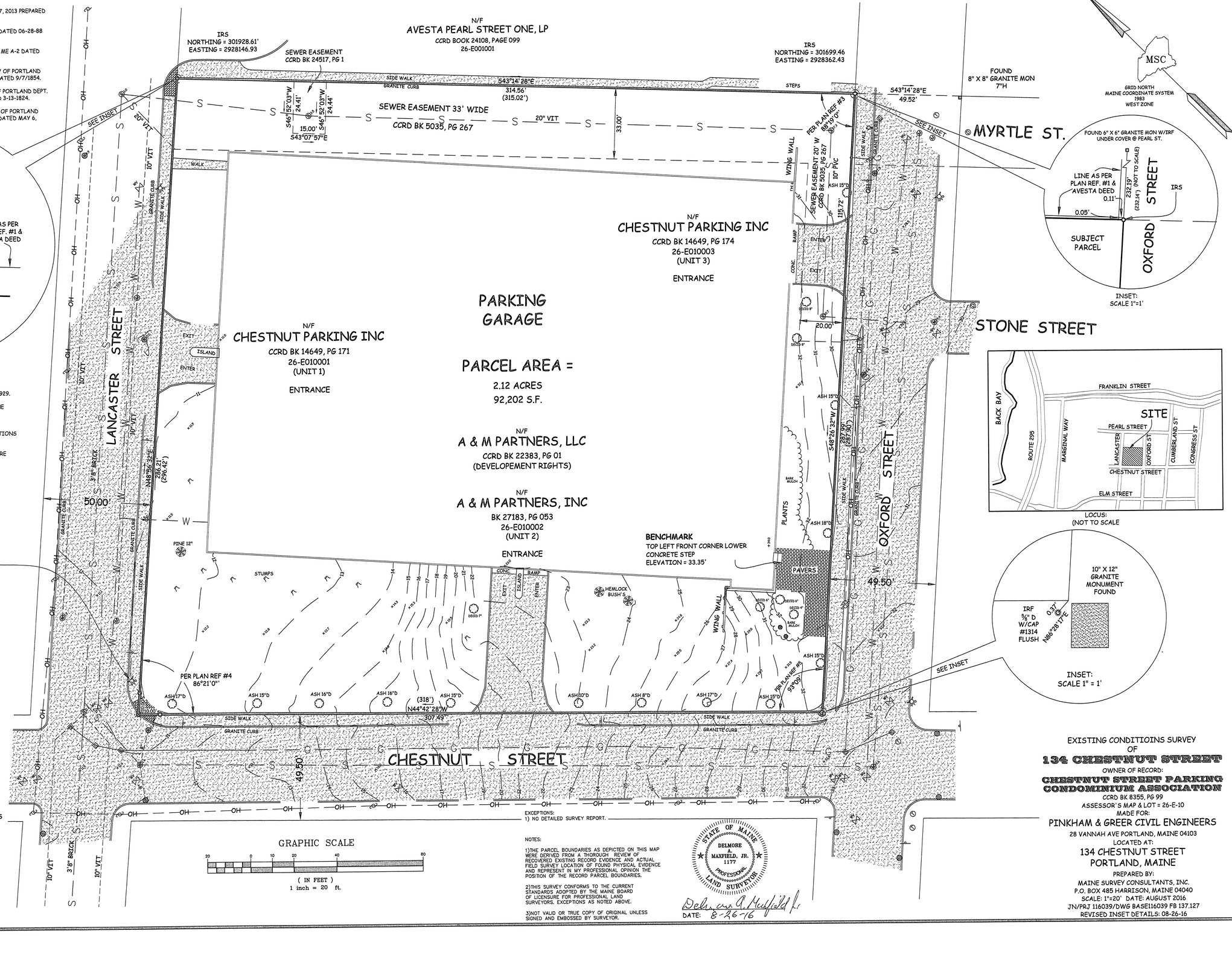
NOTES:

1) VERTICAL DATUM REFERS TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.

2) HORIZONTAL DATUM REFERS TO MAINE COORDINATE SYSTEM 1983 MAINE WEST ZONE AS DERIVED FROM STATIC GPS OBSERVATIONS MADE ON SITE 07-12-2016.

3) UNDERGROUND UTILITIES SHOWN WERE DERIVED FROM FIELD OBSERVATIONS AND EXISTING PLAN PROVIDED BY PORTLAND PUBLIC WORKS DEPARTMENT.

4) DIGSAFE SHOULD BE CONTACTED FOR ACURATE UTILITY LOCATION BEFORE ANY SITE EXCAVATION WORK IS PERFORMED.



LEGEND:

◎	IRON ROD FOUND
○	5/8" IRON ROD W/CAP #1177 SET
■	MONUMENT FOUND
⊠	ANGLE POINT (NO PIN SET)
	UTILITY POLE
	GUY WIRE
6" D	CONIFEROUS TREE & DIAMETER A.B.H.
6" D	DECIDUOUS TREE & DIAMETER A.B.H.
	SHRUB
	TREE STUMP
CB	ROUND CATCH BASIN
S	SEWER MANHOLE
T	TELEPHONE MANHOLE
E	ELECTRIC MANHOLE
HW	HYDRANT
WV	WATER VALVE
	WATER SHUTOFF
G	GAS COVER
	SIGN (SINGLE POST)
200.00	SPOT ELEVATION
N/F	NOW OR FORMERLY
026 E010001	PORTLAND ASSESSORS CBL #
BK 3200, PG 618	REGISTRY BOOK/PAGE
C.C.R.D.	CUMBERLAND COUNTY REGISTRY OF DEEDS
	PARCEL BOUNDARY
	EDGE PAVED TRAVELWAY
	EASEMENT LINE
	BUILDING
210	CONTOUR
OH	OVERHEAD UTILITY LINE
G	GAS LINE
	SIDEWALK
	E BARK LANDSCAPED LINE
W	WATER LINE
M	MANHOLE
S	SEWER LINE
(287.90')	RECORD DIMENSION

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

EXCEPTIONS:
1) NO DETAILED SURVEY REPORT.

NOTES:

1)THE PARCEL BOUNDARIES AS DEPICTED ON THIS MAP WERE DERIVED FROM A THOROUGH REVIEW OF RECOVERED EXISTING RECORD EVIDENCE AND ACTUAL FIELD SURVEY LOCATION OF FOUND PHYSICAL EVIDENCE AND REPRESENT IN MY PROFESSIONAL OPINION THE POSITION OF THE RECORD PARCEL BOUNDARIES.

2)THIS SURVEY CONFORMS TO THE CURRENT STANDARDS ADOPTED BY THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS. EXCEPTIONS AS NOTED ABOVE.

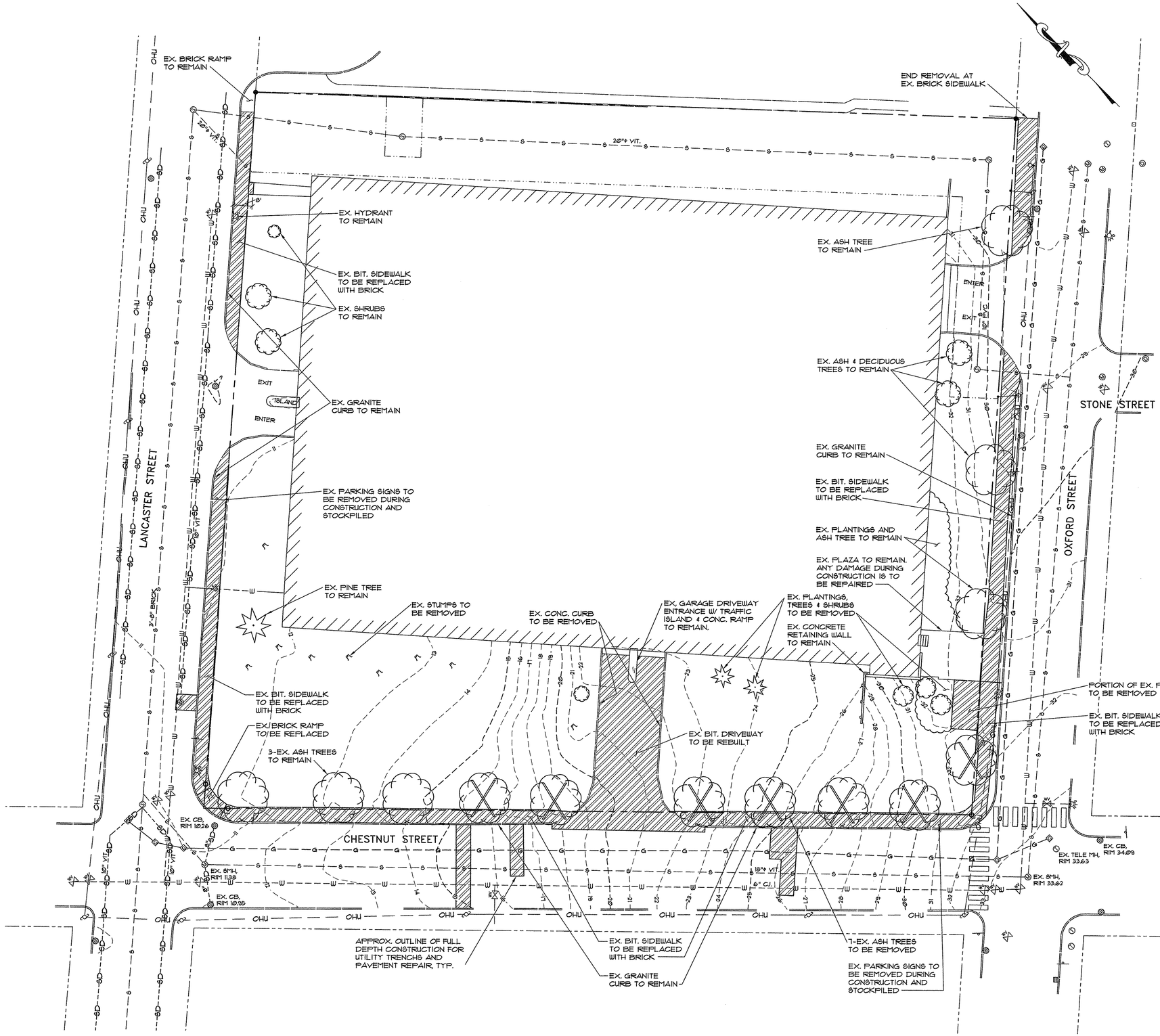
3)NOT VALID OR TRUE COPY OF ORIGINAL UNLESS SIGNED AND EMBOSSED BY SURVEYOR.

STATE OF MAINE
DELMORE A. MAXFIELD, JR. 1177
PROFESSIONAL LAND SURVEYOR

DATE: 8-26-16

EXISTING CONDITIOINS SURVEY
OF
134 CHESTNUT STREET
OWNER OF RECORD:
CHESTNUT STREET PARKING CONDOMINIUM ASSOCIATION
CCRD BK 8355, PG 99
ASSESSOR'S MAP & LOT = 26-E-10
MADE FOR:
PINKHAM & GREER CIVIL ENGINEERS
28 VANNAH AVE PORTLAND, MAINE 04103
LOCATED AT:
134 CHESTNUT STREET
PORTLAND, MAINE

PREPARED BY:
MAINE SURVEY CONSULTANTS, INC.
P.O. BOX 485 HARRISON, MAINE 04040
SCALE: 1"=20' DATE: AUGUST 2016
JN/PRJ 116039/DWG BASE116039 FB 137,127
REVISED INSET DETAILS: 08-26-16



LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- CONTOURS
- BUILDING
- EDGE OF GRAVEL
- CURB
- GAS LINE
- SANITARY SEWER
- STORMDRAIN
- OVERHEAD UTILITY
- WATER LINE
- CATCH BASIN
- COMBINED SYSTEM MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- ELECTRIC METER
- GAS METER
- HYDRANT
- WATER VALVE
- GAS VALVE
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- SIGN
- TREE
- IMPERVIOUS TO BE REMOVED
- BENCHMARK

DEMOLITION NOTES

1. ANY UNUSED SERVICE LINES ARE TO BE PROPERLY REMOVED TO THE MAIN. CAP EACH IN ACCORDANCE WITH THE APPROPRIATE UTILITY REQUIREMENTS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHN AVE. PORTLAND, ME. 04103
TEL: 207.781.5342 FAX: 207.781.4245

STATE OF MAINE
THOMAS S GREER
No. 10281
LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142

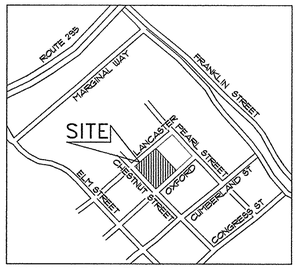
DRN BY: JDC
DESG BY: TSG
CHK BY:

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

EXISTING CONDITIONS AND DEMOLITION PLAN

C1.3

MAP/LOT 26 / E / 10



LOCATION PLAN

SCALE: 1"=750'±

LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- BUILDING
- CURB
- 40 CONTOURS
- ZONING DISTRICT
- IRON PIPE FOUND
- MONUMENT FOUND
- 5/8" IRON ROD W/CAP "1177 SET

PROPOSED

- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- FOOTING LICENSE
- SNOW STORAGE AREA

SUBDIVISION CONDITIONS OF APPROVAL

1.

SURVEY GENERAL NOTES AND PLAN REFERENCES

GENERAL NOTES:

1) VERTICAL DATUM REFERS TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.

2) HORIZONTAL DATUM REFERS TO MAINE COORDINATE SYSTEM 1983 MAINE WEST ZONE AS DERIVED FROM STATIC GPS OBSERVATIONS MADE ON SITE 01-12-2016.

3) UNDERGROUND UTILITIES SHOWN WERE DERIVED FROM FIELD OBSERVATIONS AND EXISTING PLAN PROVIDED BY PORTLAND PUBLIC WORKS DEPARTMENT.

4) DIGSAFE SHOULD BE CONTACTED FOR ACURATE UTILITY LOCATION BEFORE ANY SITE EXCAVATION WORK IS PERFORMED.

PLAN REFERENCES:

1) AS-BUILT SITE SURVEY FOR AVESTA PEARL STREET TWO LP DATED MARCH 01, 2013 PREPARED BY NORTHEAST CIVIL SOLUTIONS, RECORDED IN CCRD PB 211, PG 362.

2) ALTA /ACSM LAND TITLE SURVEY FOR OXFORD DEVELOPMENT ASSOCIATES DATED 06-28-88 PREPARED BY SMRT SURVEYING RECORDED IN CCRD PB 111, PG 68.

3) PORTLAND RENEWAL AUTHORITY NEIGHBORHOOD DEVELOPEMENT PROJECT ME A-2 DATED MAY 22, 1974 PREPARED BY E.C. JORDAN.

4) CITY PLAN OF LANCASTER STREET DATED 1925 VOL 1, PG 57 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 9-48 DATED 9/1/1854.

5) CITY PLAN OF OXFORD STREET DATED 1925 VOL 1, PG 42 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 2-342 DATED 3-13-1824.

6) CITY PLAN OF CHESTNUT STREET DATED 1925 VOL 1, PG 44 ON FILE AT CITY OF PORTLAND DEPT. OF PUBLIC WORKS OFFICE SEE ALSO CITY OF PORTLAND RECORDS 1-398 DATED MAY 6, 1825.

CITY OF PORTLAND SITE PLAN AND SUBDIVISION NOTES

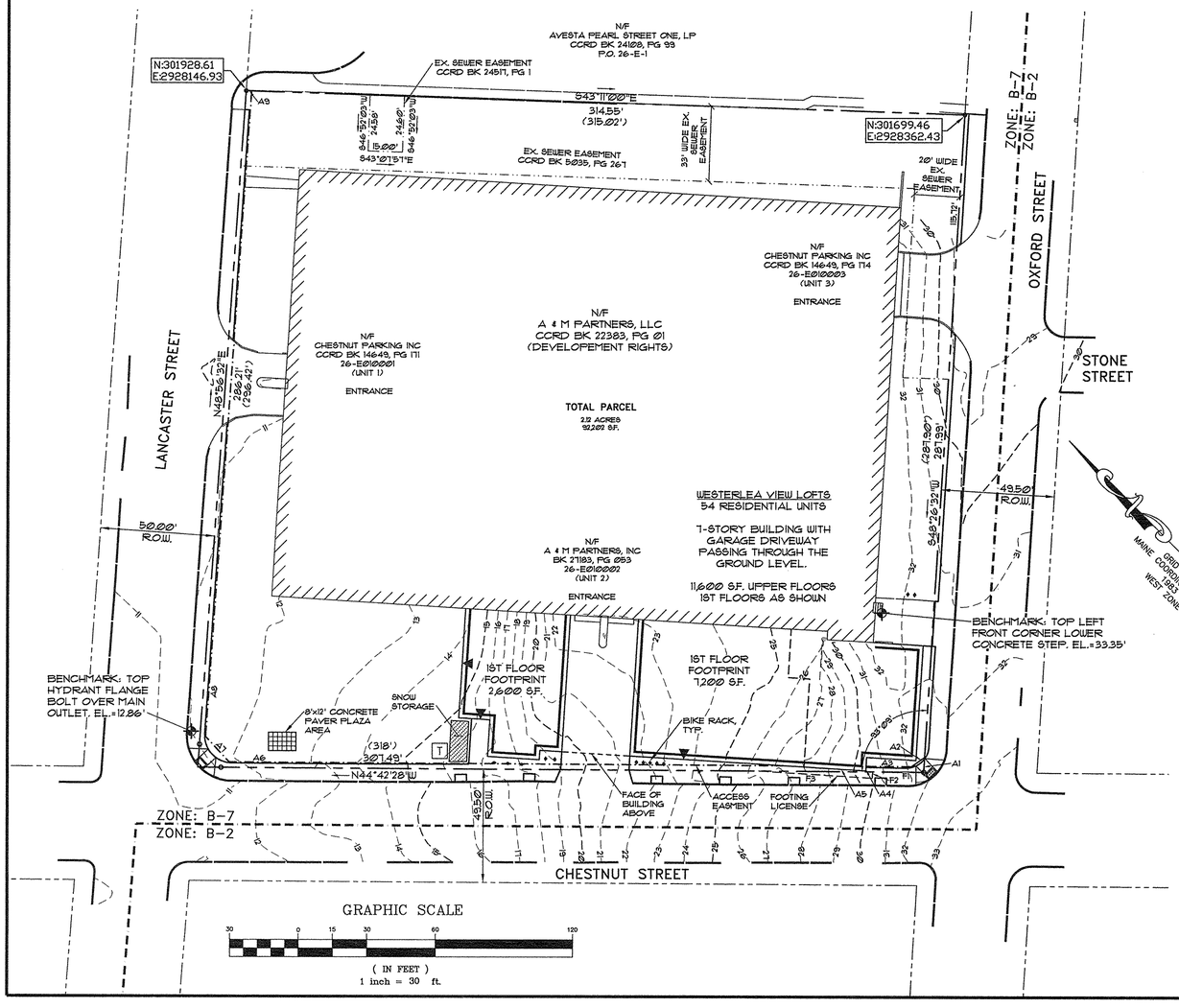
1. LANDSCAPING SHALL MEET THE "ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE AND LANDSCAPE GUIDELINES" OF THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS AND LOCATION AND SIZE OF BUILDINGS.
3. ALL POWERLINE UTILITIES SHALL BE UNDERGROUND.
4. SIDEWALKS AND CURBING SHALL BE DESIGNED AND BUILT WITH TIPDOWN RAMPS AT ALL STREET CORNERS, CROSSWALKS AND DRIVEWAYS IN CONFORMANCE WITH THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
5. 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 QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR REGRADING.
7. ALL DISTURBED AREAS ON THE SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL BE STABILIZED WITH LOAM AND SEED OR OTHER METHODS AS REQUIRED BY BEST MANAGEMENT PRACTICES (SEE ABOVE).
8. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC WORKS REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
9. EXISTING VEGETATION SHALL BE CONSERVED IN AREAS SHOWN ON THIS SITE. FENCING OR OTHER PROTECTIVE BARRIERS SHALL BE ERECTED OUTSIDE THE DRIP-LINE OF INDIVIDUAL, GROUPINGS OF TREES DESIGNATED FOR PRESERVATION PRIOR TO THE ONSET OF CONSTRUCTION. REGRADING SHALL NOT TAKE PLACE WITHIN THE DRIP-LINE OF TREES DESIGNATED FOR PRESERVATION. NO STORAGE OR CONSTRUCTION MATERIALS SHALL BE PERMITTED WITHIN THE DRIP-LINE OF TREES TO BE PRESERVED.
10. SUBDIVISION AT THE TIME OF APPROVAL IS DEFINED AS "SUBDIVISION SHALL MEAN THE DIVISION OF A LOT, TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE LOTS, INCLUDING LOTS OF FORTY (40) ACRES OR MORE, WITHIN ANY FIVE-YEAR PERIOD WHETHER ACCOMPLISHED BY SALE, LEASE, DEVELOPMENT, BUILDINGS OR OTHERWISE AND AS FURTHER DEFINED IN 30-A MRSA SECTION 4401. THE TERM SUBDIVISION SHALL ALSO INCLUDE THE DIVISION OF A NEW STRUCTURE OR STRUCTURES ON A TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD AND THE DIVISION OF AN EXISTING STRUCTURE OR STRUCTURES PREVIOUSLY USED FOR COMMERCIAL OR INDUSTRIAL USE INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD. THE AREA INCLUDED IN THE EXPANSION OF AN EXISTING STRUCTURE IS DEEMED TO BE A NEW STRUCTURE FOR THE PURPOSE OF THIS PARAGRAPH. A DWELLING UNIT SHALL INCLUDE ANY PART OF A STRUCTURE WHICH, THROUGH SALE OR LEASE, IS INTENDED FOR HUMAN HABITATION, INCLUDING SINGLE-FAMILY AND MULTIFAMILY HOUSING CONDOMINIUMS, TIME-SHARE UNITS AND APARTMENTS."

WAIVERS

1. ALLOW THE DEVELOPER TO PAY INTO THE STREET TREE FUND IN LIEU OF PLANTING STREET TREES.

GENERAL NOTES

1. OWNER: A&M PARTNERS, INC. 120 EXCHANGE STREET, PORTLAND MAINE 04101. DEEDS RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS BK. 27183, PG. 53, DATE 8/11/09.
2. ENGINEER: PINKHAM & GREER CIVIL ENGINEERS, 28 VANNAH AVENUE, PORTLAND, MAINE, 04103.
3. ARCHITECT: ARCHETYPE ARCHITECTS, 48 UNION WHARF, PORTLAND, MAINE 04101.
4. TOPOGRAPHIC & BOUNDARY: MAINE SURVEY CONSULTANTS, INC., PO BOX 485, HARRISON, MAINE, 04040.
5. UNDERLYING SOILS MAPPING TAKEN FROM SOIL CONSERVATION STUDY OF CUMBERLAND COUNTY. THE UPPER HALF OF THE SITE IS CLASSIFIED HINCKLEY (HIB), THE LOWER HALF IS CLASSIFIED AS AU GRES (Au). THE SURFACE OF THE SITE IS CURRENT URBAN LAND.
6. TAX MAP REFERENCE: MAP 26 / BLOCK E / LOT 10.
7. ZONE: B-7, MIXED DEVELOPMENT, PROPOSED USE: CONDOMINIUMS
8. TOTAL PARCEL = 2.12 acres
9. UNITS TO BE SERVICED BY PUBLIC WATER, SEWER, AND GAS FROM CHESTNUT STREET. THESE SERVICES, INCLUDING HYDRANTS, ARE AS SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
10. POWER, TELEPHONE AND CABLE SERVICES ARE TO BE OVERHEAD ACROSS CHESTNUT STREET. THESE SERVICES ARE SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
11. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
13. PROPOSED PARKING SPACES: NO NEW SPACES, EXISTING PARKING IS ALREADY ONSITE. 1 PER UNIT PROVIDED IN THE EXISTING GARAGE.
14. THE SUBJECT PARCEL SHOWN AS WESTERLEA VIEW LOFTS IS SUBJECT TO A CITY OF PORTLAND LEVEL II SITE PLAN AND SUBDIVISION PERMIT.
15. DETAILS OF STREET TREES ARE INCLUDED ON THE LANDSCAPE PLAN AS PART OF THE APPROVAL FOR WESTERLEA LOFTS SITE PLAN.
16. FLOODPLAIN: THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 230051 0013 B, EFFECTIVE DATE JULY 17, 1986. IT IS NOT IN A SPECIAL FLOOD HAZARD ZONE.
17. PROPERTY PINS TO BE SET AT THE EXPENSE OF THE DEVELOPER AT THE END OF CONSTRUCTION ON CORNERS NOT CURRENTLY MARKED.
18. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2003.



SNOW CLEARANCE NOTES

1. SNOW MAY BE STORED WITHIN THE TEMPORARY SNOW STORAGE AREAS ONLY.
2. ANY SNOW THAT CAN NOT BE STORED ON SITE SHALL BE PHYSICALLY REMOVED AND TRANSPORTED OFFSITE WITHIN 24 TO 48 HOURS FOLLOWING A SNOW STORM.
3. SNOW TRANSPORTED OFFSITE SHALL BE BROUGHT TO A MAINE DEP APPROVED "SNOW DUMP" OR MEET THE EXEMPTION REQUIREMENTS SPECIFIED WITHIN CHAPTER 513 WHEN THE ABOVE REQUIREMENTS CANNOT BE MET DUE TO AN ABUNDANCE OF SNOW.
4. THE SNOW CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO VEGETATION, LANDSCAPING, CURBING, LIGHTING, FENCING ETC. RESULTING FROM THEIR ACTIVITIES.
5. THE CONDOMINIUM ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL BEING UNDERTAKEN IN A TIMELY FASHION.

ACCESS EASEMENT

LINE	BEARING	DISTANCE
A1	N 48°26'32" E	6.50'
A2	N 80°46'36" W	6.95'
A3	N 44°42'28" W	20.00'
A4	S 48°29'08" W	2.01
A5	N 41°30'52" W	36.01
A6	N 44°42'28" W	242.61'
A7	N 02°07'02" E	15.05
A8	N 48°56'32" E	282.91'
A9	N 43°11'00" W	2.40'

FOOTING LICENSE

LINE	BEARING	DISTANCE
F1	N 44°42'28" W	22.39'
F2	S 48°29'08" W	2.11'
F3	N 41°30'52" W	49.70'

ZONE INFORMATION

B-7 MIXED DEVELOPMENT DISTRICT ZONE

PERMITTED USE: RESIDENTIAL CONDOMINIUMS

PARKING INFORMATION

OFF STREET PARKING	1 PER UNIT
BIKE RACKS	EXTERIOR: 12

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	53,826 SQ. FT.
PROPOSED IMPERVIOUS	64,844 SQ. FT.
NET IMPERVIOUS	+11,018 SQ. FT.

EASEMENTS & LICENSES

1. PROPOSED TEMPORARY EASEMENT: CONSTRUCTION EASEMENT FROM CITY OF PORTLAND TO WESTERLEA VIEW LOFTS.
2. PROPOSED LICENSE: FROM THE CITY OF PORTLAND TO WESTERLEA VIEW LOFTS FOR BUILDING FOOTINGS.
3. PROPOSED EASEMENT: ACCESS EASEMENT FROM WESTERLEA VIEW LOFTS TO THE CITY OF PORTLAND FOR SIDEWALKS ON OXFORD, CHESTNUT AND LANCASTER STREETS.

ZONE INFORMATION

ZONE: B-7, MIXED DEVELOPMENT DISTRICT
PERMITTED USE: RESIDENTIAL CONDOMINIUMS

SPACE STANDARDS	REQUIRED
MINIMUM LOT SIZE	NONE
MINIMUM STREET FRONTAGE	NONE
MINIMUM FRONT YARD SETBACK	NONE
MINIMUM REAR YARD SETBACK	NONE
MINIMUM SIDE YARD SETBACK	NONE
MINIMUM LENGTH OF BUILDING WALL	25% OF PERIMETER
MAXIMUM BUILDING LOT COVERAGE	100%
MAXIMUM RESIDENTIAL DENSITY	NONE
MAXIMUM BUILDING HEIGHT	75 FEET
MINIMUM BUILDING HEIGHT	-
OFF STREET PARKING	1 PER UNIT
BIKE RACKS	12

SUBDIVISION PLAN, APPROVED BY THE CITY OF PORTLAND PLANNING BOARD

DATE

PINKHAM & GREER CIVIL ENGINEERS
28 VANNAH AVE, PORTLAND, ME. 04103
TEL: 207.797.8242 FAX: 207.871.4245

STATE OF MAINE — THOMAS GREER No. 4206 — LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION
1	9/20/16	REV'D PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

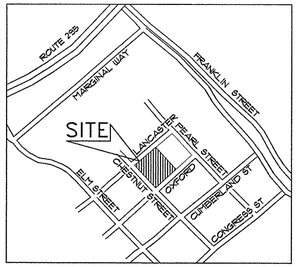
SCALE: AS SHOWN | DRN BY: JDC
DATE: JULY 28, 2016 | DESG BY: TSG
PROJECT: 16142 | CHK BY:

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SUBDIVISION PLAN

C1.1

MAP/LOT 26 / E / 10



LOCATION PLAN

SCALE: 1"=750'±

CITY OF PORTLAND SITE PLAN AND SUBDIVISION NOTES

1. LANDSCAPING SHALL MEET THE "ARBORICULTURAL SPECIFICATIONS AND STANDARDS OF PRACTICE AND LANDSCAPE GUIDELINES" OF THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS AND LOCATION AND SIZE OF BUILDINGS.
3. ALL POWERLINE UTILITIES SHALL BE UNDERGROUND.
4. SIDEWALKS AND CURBING SHALL BE DESIGNED AND BUILT WITH TIPDOWN RAMPS AT ALL STREET CORNERS, CROSSWALKS AND DRIVEWAYS IN CONFORMANCE WITH THE CITY OF PORTLAND TECHNICAL AND DESIGN STANDARDS AND GUIDELINES.
5. 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 QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003.
6. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR REGRADING.
7. ALL DISTURBED AREAS ON THE SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL BE STABILIZED WITH LOAM AND SEED OR OTHER METHODS AS REQUIRED BY BEST MANAGEMENT PRACTICES (SEE ABOVE).
8. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC WORKS REPRESENTATIVE AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
9. EXISTING VEGETATION SHALL BE CONSERVED IN AREAS SHOWN ON THIS SITE. FENCING OR OTHER PROTECTIVE BARRIERS SHALL BE ERECTED OUTSIDE THE DRIP-LINE OF INDIVIDUAL, GROUPINGS OF TREES DESIGNATED FOR PRESERVATION PRIOR TO THE ONSET OF CONSTRUCTION. REGRADING SHALL NOT TAKE PLACE WITHIN THE DRIP-LINE OF TREES DESIGNATED FOR PRESERVATION. NO STORAGE OR CONSTRUCTION MATERIALS SHALL BE PERMITTED WITHIN THE DRIP-LINE OF TREES TO BE PRESERVED.
10. SUBDIVISION AT THE TIME OF APPROVAL IS DEFINED AS "SUBDIVISION SHALL MEAN THE DIVISION OF A LOT, TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE LOTS, INCLUDING LOTS OF FORTY (40) ACRES OR MORE, WITHIN ANY FIVE-YEAR PERIOD, WHETHER ACCOMPLISHED BY SALE, LEASE, DEVELOPMENT, BUILDINGS OR OTHERWISE AND AS FURTHER DEFINED IN 30-A M.R.S.A. SECTION 4401. THE TERM SUBDIVISION SHALL ALSO INCLUDE THE DIVISION OF A NEW STRUCTURE OR STRUCTURES ON A TRACT OR PARCEL OF LAND INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD AND THE DIVISION OF AN EXISTING STRUCTURE OR STRUCTURES PREVIOUSLY USED FOR COMMERCIAL OR INDUSTRIAL USE INTO THREE (3) OR MORE DWELLING UNITS WITHIN A FIVE-YEAR PERIOD. THE AREA INCLUDED IN THE EXPANSION OF AN EXISTING STRUCTURE IS DEEMED TO BE A NEW STRUCTURE FOR THE PURPOSE OF THIS PARAGRAPH. A DWELLING UNIT SHALL INCLUDE ANY PART OF A STRUCTURE WHICH, THROUGH SALE OR LEASE, IS INTENDED FOR HUMAN HABITATION, INCLUDING SINGLE-FAMILY AND MULTIFAMILY HOUSING CONDOMINIUMS, TIME-SHARE UNITS AND APARTMENTS."

WAIVERS

1. ALLOW THE DEVELOPER TO PAY INTO THE STREET TREE FUND IN LIEU OF PLANTING STREET TREES.

LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- BUILDING
- CURB
- TREE
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- AREA LIGHT ON POLE
- SIGN
- CONCRETE PAD
- BENCHMARK

PROPOSED

- FOOTING EASEMENT
- EDGE OF PAVEMENT
- GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- UTILITY POLE W/ GUY WIRE
- FULL DEPTH BITUMINOUS PVMT
- BITUMINOUS OVERLAY
- BRICK PAVERS
- CONCRETE PAD
- FLAGSTONE PAVERS

ZONE INFORMATION

ZONE: B-7, MIXED DEVELOPMENT DISTRICT
PERMITTED USE: RESIDENTIAL CONDOMINIUMS

SPACE STANDARDS	REQUIRED
MINIMUM LOT SIZE	NONE
MINIMUM STREET FRONTAGE	NONE
MINIMUM FRONT YARD SETBACK	NONE
MINIMUM REAR YARD SETBACK	NONE
MINIMUM SIDE YARD SETBACK	NONE
MINIMUM LENGTH OF BUILDING WALL	25% OF PERIMETER
MAXIMUM BUILDING LOT COVERAGE	100%
MAXIMUM RESIDENTIAL DENSITY	NONE
MAXIMUM BUILDING HEIGHT	75 FEET
MINIMUM BUILDING HEIGHT	-
OFF STREET PARKING	1 PER UNIT
BIKE RACKS	12

PROJECT SITE DRAWINGS

C1.1 SUBDIVISION PLAN
C1.2 SITE PLAN
C1.3 EXISTING CONDITIONS AND DEMOLITION PLAN
C1.4 GRADING AND UTILITIES PLAN
C1.5 LANDSCAPE PLAN, NOTES AND DETAILS
C1.6 EROSION CONTROL PLAN

C2.1 DETAILS
C2.2 DETAILS
C2.3 DETAILS
C2.4 DETAILS

D1.1 DRAINAGE ANALYSIS

EXISTING CONDITIONS SURVEY

PARKING INFORMATION

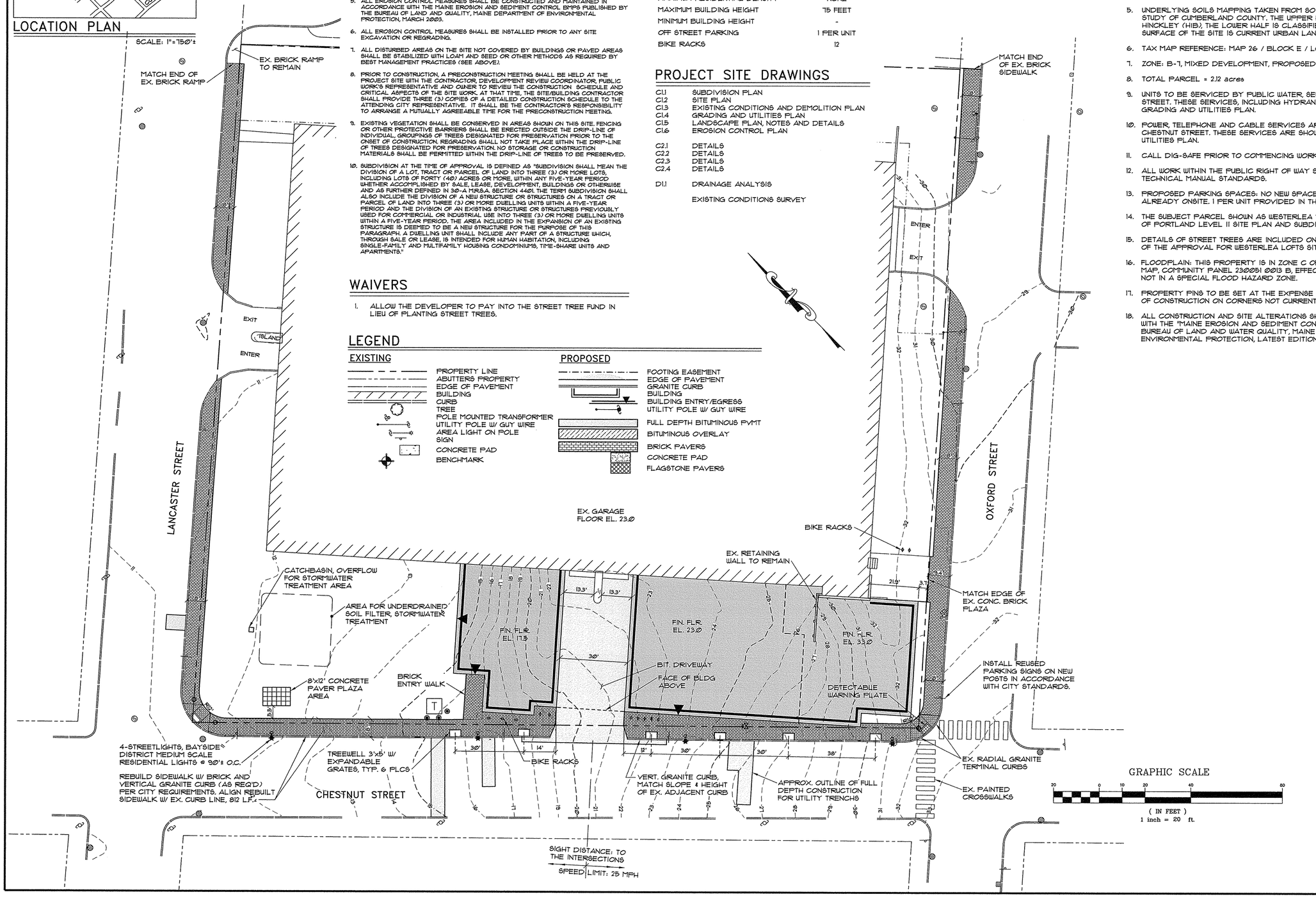
OFF STREET PARKING	1 PER UNIT
BIKE RACKS	EXTERIOR: 12

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	53,826 SQ. FT.
PROPOSED IMPERVIOUS	64,844 SQ. FT.
NET IMPERVIOUS	+11,018 SQ. FT.

GENERAL NOTES

1. OWNER: A&M PARTNERS, INC. 120 EXCHANGE STREET, PORTLAND MAINE 04101. DEEDS RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS BK. 27183, PG. 53, DATE 8/17/09.
2. ENGINEER: PINKHAM & GREER CIVIL ENGINEERS, 28 VANNAH AVENUE, PORTLAND, MAINE, 04103.
3. ARCHITECT: ARCHETYPE ARCHITECTS, 48 UNION WHARF, PORTLAND, MAINE 04101.
4. TOPOGRAPHIC & BOUNDARY: MAINE SURVEY CONSULTANTS, INC., PO BOX 485, HARRISON, MAINE, 04040.
5. UNDERLYING SOILS MAPPING TAKEN FROM SOIL CONSERVATION STUDY OF CUMBERLAND COUNTY. THE UPPER HALF OF THE SITE IS CLASSIFIED HINCKLEY (HIB), THE LOWER HALF IS CLASSIFIED AS AU GRES (AU). THE SURFACE OF THE SITE IS CURRENT URBAN LAND.
6. TAX MAP REFERENCE: MAP 26 / BLOCK E / LOT 10.
7. ZONE: B-7, MIXED DEVELOPMENT, PROPOSED USE: CONDOMINIUMS
8. TOTAL PARCEL = 2.12 acres
9. UNITS TO BE SERVICED BY PUBLIC WATER, SEWER, AND GAS FROM CHESTNUT STREET. THESE SERVICES, INCLUDING HYDRANTS, ARE AS SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
10. POWER, TELEPHONE AND CABLE SERVICES ARE TO BE OVERHEAD ACROSS CHESTNUT STREET. THESE SERVICES ARE SHOWN ON SHEET C1.4, GRADING AND UTILITIES PLAN.
11. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
12. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
13. PROPOSED PARKING SPACES: NO NEW SPACES, EXISTING PARKING IS ALREADY ONSITE. 1 PER UNIT PROVIDED IN THE EXISTING GARAGE.
14. THE SUBJECT PARCEL SHOWN AS WESTERLEA VIEW LOFTS IS SUBJECT TO A CITY OF PORTLAND LEVEL II SITE PLAN AND SUBDIVISION PERMIT.
15. DETAILS OF STREET TREES ARE INCLUDED ON THE LANDSCAPE PLAN AS PART OF THE APPROVAL FOR WESTERLEA LOFTS SITE PLAN.
16. FLOODPLAIN: THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 230051 0013 B, EFFECTIVE DATE JULY 17, 1986. IT IS NOT IN A SPECIAL FLOOD HAZARD ZONE.
17. PROPERTY PINS TO BE SET AT THE EXPENSE OF THE DEVELOPER AT THE END OF CONSTRUCTION ON CORNERS NOT CURRENTLY MARKED.
18. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION, MARCH 2003.



PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE., PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE · THOMAS GREER No. 4206 · REGISTERED PROFESSIONAL ENGINEER

9/30/16

REV.	DATE	DESCRIPTION
1	9/30/16	REV'D PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

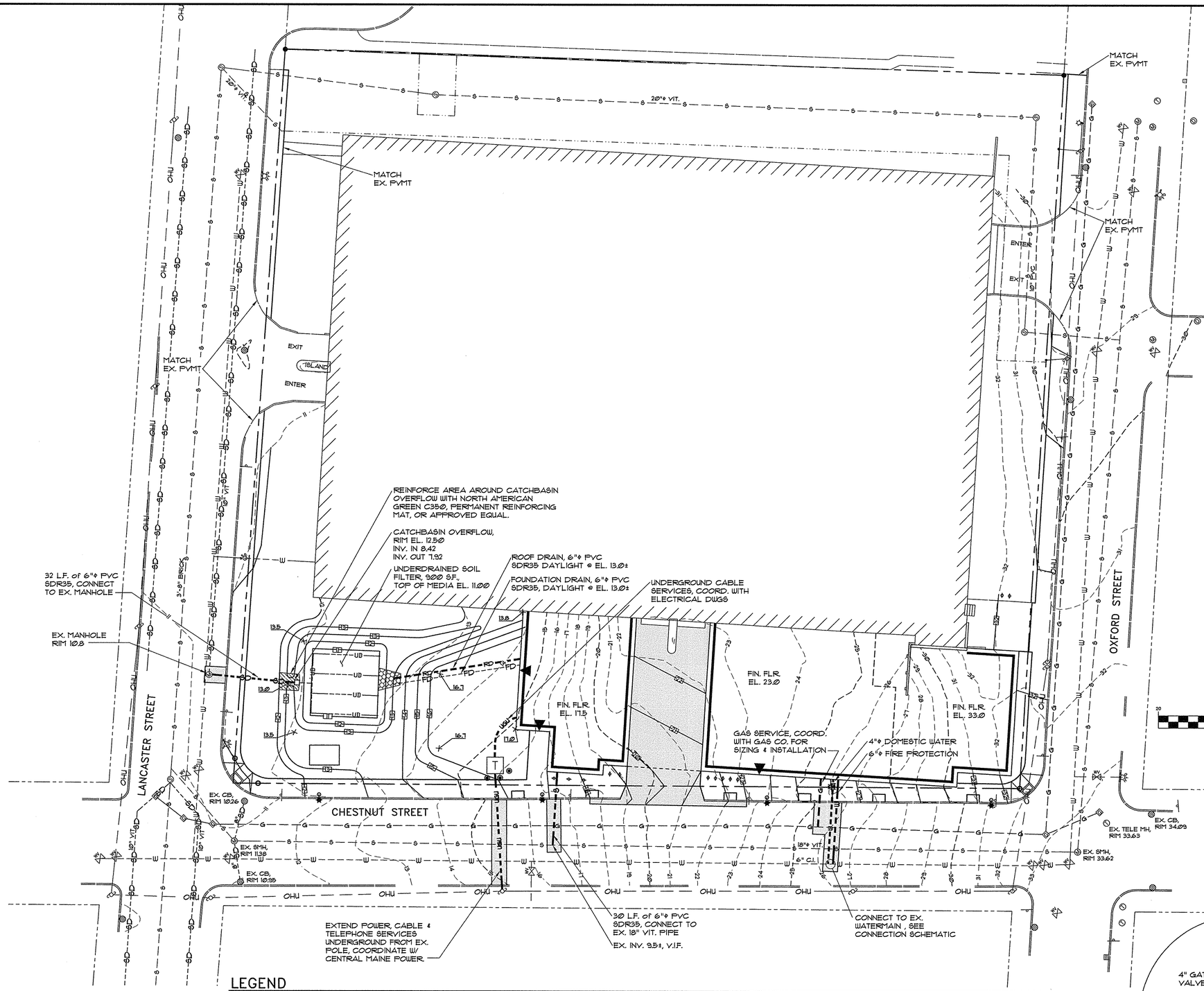
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC
DESG BY: TSG
CHK BY: AJD

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

SITE PLAN

C1.2

MAP/LOT 26 / E / 10



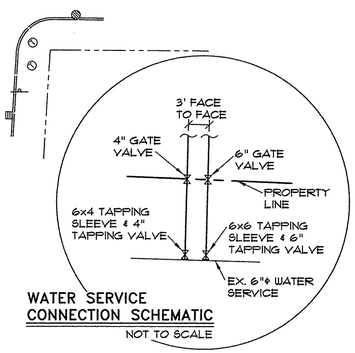
LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- 45 CONTOURS
- BUILDING
- EDGE OF GRAVEL
- CURB
- G GAS LINE
- S SANITARY SEWER
- SD STORMDRAIN
- OHU OVERHEAD UTILITY
- W WATER LINE
- CATCH BASIN
- COMBINED MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- GAS METER
- HYDRANT
- WATER VALVE
- GAS VALVE
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- SIGN
- LIGHT POLE

PROPOSED

- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- 24 CONTOURS
- G GAS LINE
- S SANITARY SEWER
- SD STORMDRAIN
- UGU UNDERGROUND UTILITY
- W WATER LINE
- 18.2ø SPOT GRADE
- CATCH BASIN
- LIGHT POLE
- WATER SHUT OFF
- T TRANSFORMER
- BOLLARD
- FULL DEPTH BITUMINOUS PVMT
- BRICK PAVERS
- CONCRETE PAVERS



WATER SERVICE CONNECTION SCHEMATIC
NOT TO SCALE

PINKHAM & GREER
CIVIL ENGINEERS
28 VANNAH AVE, PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE
THOMAS GREER No. 4206
LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

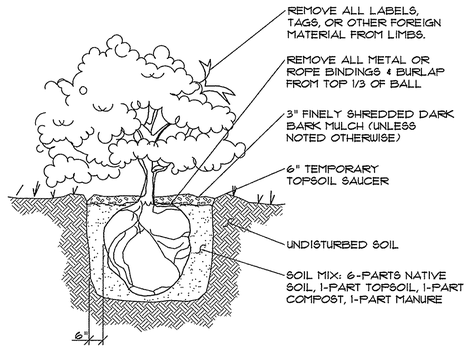
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC
DESG BY: TSG
CHK BY:

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

GRADING AND UTILITIES PLAN

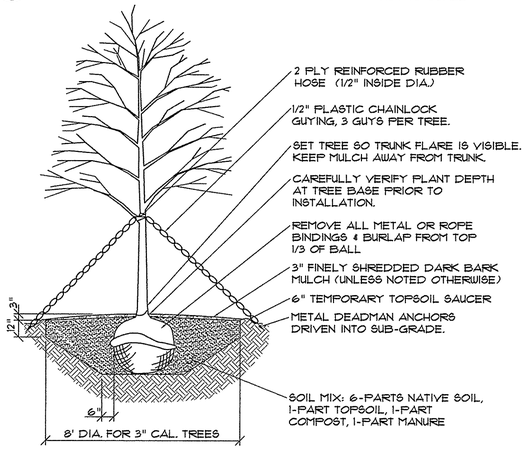
C1.4

MAP/LOT 26 / E / 10



1 SHRUB PLANTING DETAIL

NOT TO SCALE



NOTES:
1. PRUNE ALL DEAD AND BROKEN BRANCHES. RETAIN NATURAL SHAPE, NEVER CUT LEADER.
2. IN LEDGE CONDITIONS, BLASTING SHALL BE 10' DIA AND 4' BELOW TREE HOLE BOTTOM GRADE.

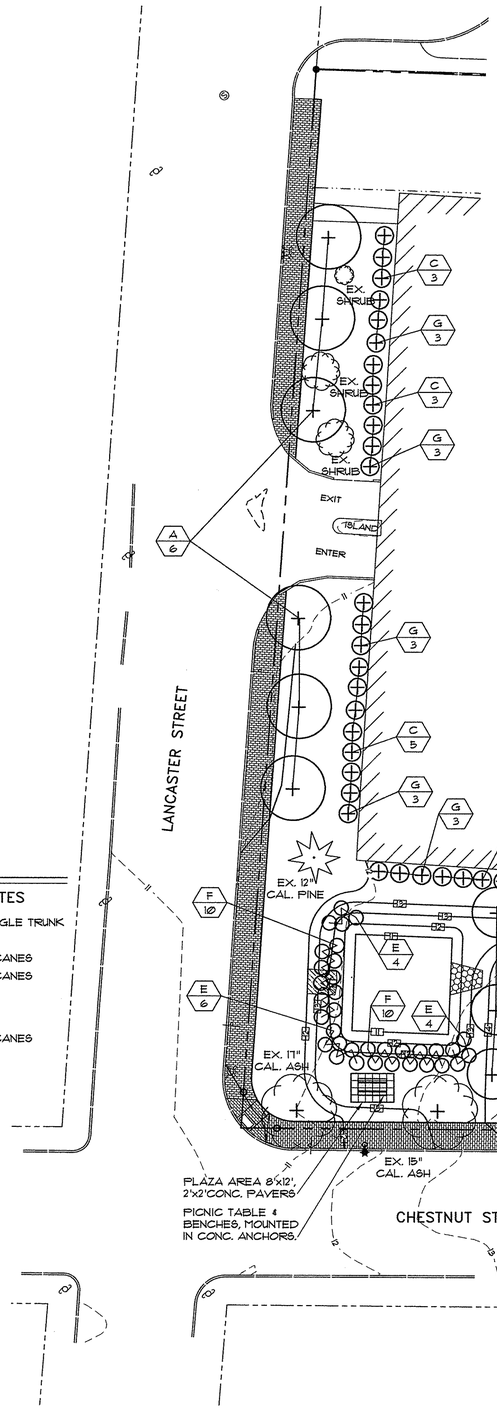
2 DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

PLANT LIST

(A / 12 = SYMBOL / QUANTITY)

KEY	COMMON NAME/BOTANICAL NAME	SIZE	ROOT	QUAN.	NOTES
A	HONEY LOCUST / g. triacanthos 'inermis' Streetkeeper	1.75" cal.	B&B	6	SINGLE TRUNK
B	HORNBEAM / carpinus caroliniana	1.5" cal.	B&B	3	
C	SHASTA VIBURNUM / v. plicatum tomentosum 'shasta'	3-4' tall	B&B	20	3 CANES
D	SHOSHONI VIBURNUM / v. plicatum var. tomentosum 'Summer Snowflake'	18" tall	B&B	11	3 CANES
E	SWITCH GRASS / panicum virgatum 'Northwind'	--	POTTED	14	
F	SWITCH GRASS / panicum virgatum 'Shenandoah'	--	POTTED	20	
G	MOHICAN VIBURNUM / v. lantana 'mohican'	3-4' tall	B&B	18	3 CANES
H	ARMSTRONG MAPLE / a. freemanii 'Armstrong'	2 1/2" cal.	POTTED	6	



LANDSCAPE PLAN

SCALE: 1"=20'

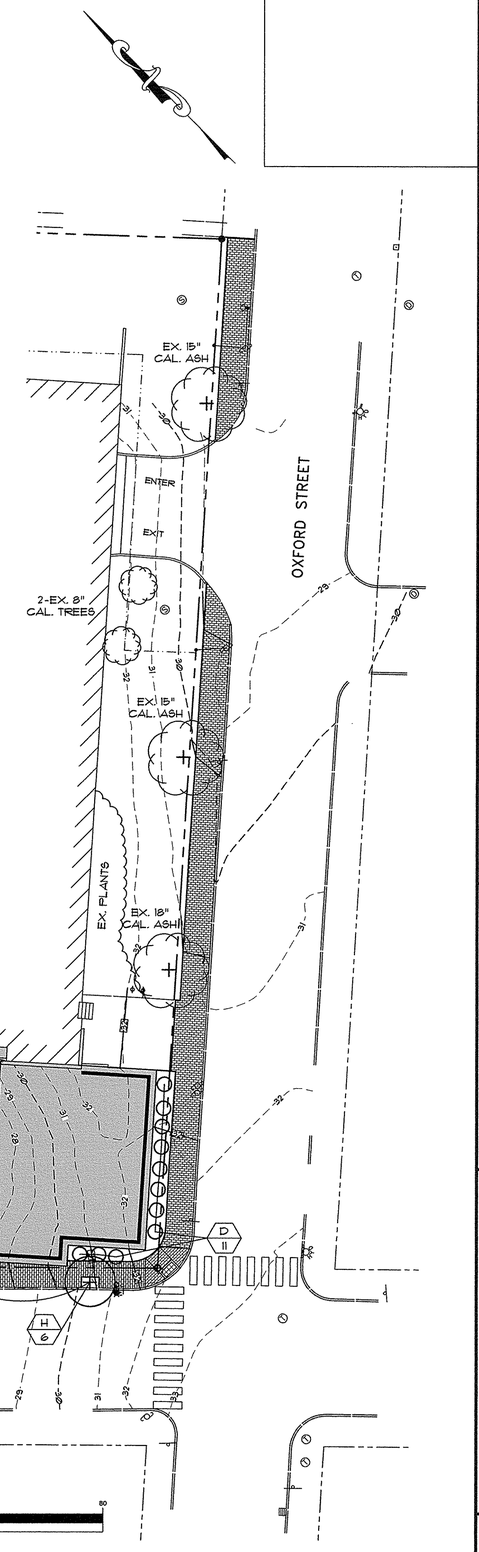
LANDSCAPE NOTES

GENERAL:

1. SAVE EXISTING TREES AS SHOWN. DO NOT CUT OR CLEAR ANY VEGETATION BEYOND THE IMPACT LIMIT LINE.
2. ALL PLANT MATERIALS INSTALLED ARE TO MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
3. ALL PROPOSED PLANT LOCATIONS SHALL BE AS SHOWN ON PLANS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO PLANTING AND WILL NOTIFY OWNER'S REPRESENTATIVE IN THE EVENT OF CONFLICTS.
4. PLANT LOCATIONS ARE TO BE SCALED FROM THELANDSCAPE PLAN UNLESS NOTED OTHERWISE.
5. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL FINAL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
6. FINAL QUANTITY FOR EACH PLANT TYPE IS NOTED IN THE PLANT LIST. THIS NUMBER SHALL TAKE PRECEDENCE IN THE CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE LIST AND ON THE PLAN.
7. ANY PROPOSED SUBSTITUTIONS MUST BE APPROVED BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
8. ALL DISTURBED AREAS TO BE LOAMED AND SEEDED.

MAINTENANCE:

1. LAWNS: SHALL BE WATERED, FERTILIZED AND MOWN ON A REGULAR BASIS ACCORDING TO SEASON AND RAINFALL, TO PRODUCE A STRONG TURF OF 80% MIN. COVERAGE WITHIN THE FIRST YEAR, FREE FROM SIZABLE THIN OR BARE SPOTS. REGRADING AND RESEEDING WILL BE PERFORMED ON BARE SPOTS UNTIL COVERAGE IS COMPLETE.
2. TREES & SHRUBS: THE ESTABLISHMENT PERIOD SHALL BE TWO CALENDAR YEARS FROM THE DATE OF FINAL ACCEPTANCE. DURING THE ESTABLISHMENT PERIOD THE OWNER OR OWNER'S CONTRACTOR SHALL WATER, CULTIVATE AND PRUNE AS REQUIRED TO MAINTAIN A HEALTHY GROWING CONDITION.
3. AT THE END OF THE ESTABLISHMENT PERIOD AND UPON SUBSEQUENT ANNUAL INSPECTIONS, PLANTS WHICH HAVE DIED OR FAILED TO THRIVE SHALL BE REPLACED WITH EQUIVALENT SIZE AND SPECIES. AFTER THE CONTRACTOR'S GUARANTEE PERIOD HAS ENDED, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN AND REPLACE PLANTINGS.
4. TREES, SHRUBS AND LAWNS WHICH ARE NOT IRRIGATED WITH AN AUTOMATIC SPRINKLER OR DRIP SYSTEM SHALL BE THOROUGHLY WATERED ON A REGULAR BASIS DURING PERIODS OF BELOW AVERAGE RAINFALL. SOIL SHOULD BE SAMPLED AT A DEPTH OF 12" AND IF DRY, WATER TO DEPTH OF 24".
5. MULCH IS TO BE MAINTAINED AT A DEPTH TO COMPLETELY COVER THE SOIL AND TO PRESERVE MOISTURE AND MINIMIZE WEEDS.
6. TREES, SHRUBS AND LAWNS SHALL BE FERTILIZED ANNUALLY AND TREATED WITH INSECTICIDES AND/OR FUNGICIDES AS REQUIRED FOR CONTINUED HEALTHY GROWTH.
7. SUCKERS, WEEDS, AND DEAD WOOD SHALL BE REMOVED ON A SEASONAL BASIS, AND SHRUBS SHALL BE PRUNED TWICE A YEAR ACCORDING TO THE REQUIREMENTS OF EACH SPECIES (I.E. SOME SPECIES SHOULD NOT BE PRUNED AT ALL). SHRUBS SHALL NOT BE PRUNED INTO INDIVIDUALS BUT ALLOWED TO GROW INTO A MASS.
8. WHERE TREES ARE LOCATED NEAR SIDEWALKS OR PARKING LOTS, THE CANOPY SHALL BE LIMBED UP TO PROMOTE SAFE CLEARANCE TO 8' ABOVE GRADE.
9. LAWN AREAS SHALL BE MOWN AS OFTEN AS NECESSARY TO KEEP LAWNS TO A 2 1/2 - 3" HEIGHT, AND AERATED ON A SEASONAL BASIS.
10. BEDS AND LAWN EDGES SHALL BE REGULARLY TRIMMED AND EDGED.
11. PERENNIAL AND ANNUAL BEDS SHALL BE DESIGNED, PLANTED AND MAINTAINED FOR SEASONAL COLOR AND INTEREST. ANNUALS MAY BE INCORPORATED TO A MAXIMUM LIMIT OF 25% OF THE BED AREA OF MAINTAINED BEDS FROM MAY 15 THROUGH NOVEMBER 15. PERENNIAL BEDS SHALL BE WATERED AS REQUIRED FOR HEALTHY PLANT GROWTH, AND WEEDED AND DEADHEADED ON A MONTHLY BASIS.



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

PINKHAM & GREER
CIVIL ENGINEERS
28 MARKET AVE. PORTLAND, ME. 04101
TEL: 207.780.1626 FAX: 207.761.1245

STATE OF MAINE — THOMAS GREER No. 4206 — LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION
1	9/20/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN — DRN BY: JDC
DATE: JULY 28, 2016 — DESG BY: TSG
PROJECT: 16142 — CHK BY:

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

LANDSCAPE PLAN, NOTES AND DETAILS

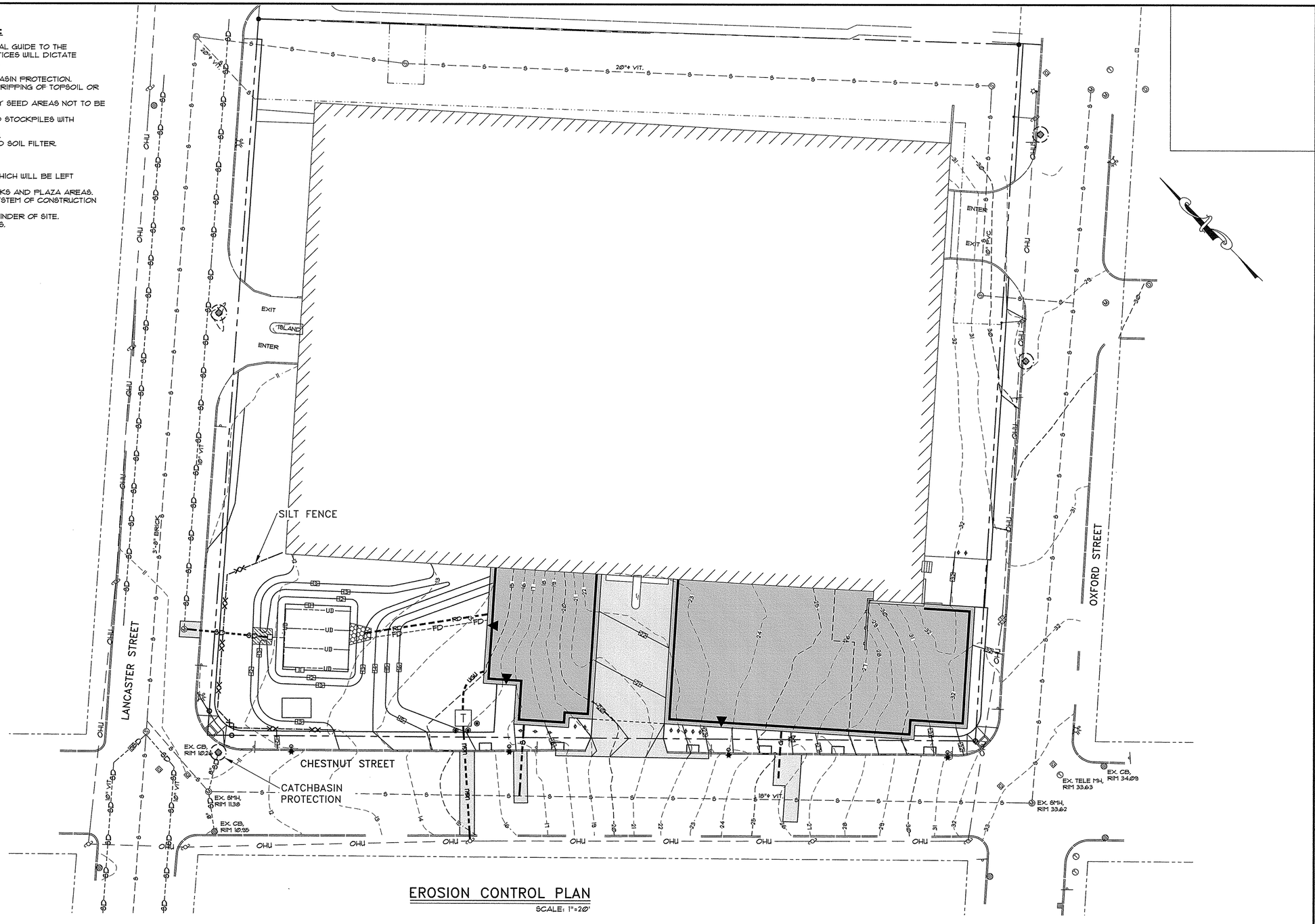
C1.5

MAP/LOT 26 / E / 10

SUGGESTED SEQUENCE OF CONSTRUCTION TO CONTROL EROSION:

THIS SEQUENCE OF CONSTRUCTION IS A GENERAL GUIDE TO THE CONTRACTOR. ACTUAL CONSTRUCTION PRACTICES WILL DICTATE VARIATIONS IN THE ORDER OF MAJOR EVENTS.

1. INSTALL PERIMETER SILT FENCE AND CATCH BASIN PROTECTION.
2. INSTALL SILTATION BASINS. (PRIOR TO ANY STRIPPING OF TOPSOIL OR OTHER EARTHWORK)
3. CLEAR AND GRUB WORK AREAS. TEMPORARILY SEED AREAS NOT TO BE WORKED ON WITHIN 14 DAYS.
4. STRIP AND STOCKPILE ON-SITE TOPSOIL. SEED STOCKPILES WITH TEMPORARY SEED MIX.
5. BEGIN EARTHWORK FOR BUILDING FOUNDATION. STABILIZE AREAS DRAINING TO UNDERDRAINED SOIL FILTER.
6. CONSTRUCT UNDERDRAINED SOIL FILTER.
7. BEGIN BUILDING CONSTRUCTION.
8. ROUGH GRADE SITE.
9. RESEED OR TEMPORARILY SEED ANY AREA WHICH WILL BE LEFT UNDISTURBED FOR MORE THAN 14 DAYS.
10. COMPLETE FINE GRADING AND PAVING OF WALKS AND PLAZA AREAS.
11. CLEAN SILTATION BASIN AND STORM DRAIN SYSTEM OF CONSTRUCTION SEDIMENTATION.
12. FINE GRADE, LOAM SEED AND FERTILIZE REMAINDER OF SITE.
13. REMOVE TEMPORARY SOIL EROSION MEASURES.



EROSION CONTROL PLAN
SCALE: 1"=20'

LEGEND

EXISTING

- PROPERTY LINE
- ABUTTERS PROPERTY
- EDGE OF PAVEMENT
- 45 CONTOURS
- BUILDING
- EDGE OF GRAVEL
- CURB
- G GAS LINE
- S SANITARY SEWER
- SD STORMDRAIN
- OHU OVERHEAD UTILITY
- W WATER LINE
- CATCH BASIN
- COMBINED MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- GAS METER
- HYDRANT
- WATER VALVE
- GAS VALVE
- POLE MOUNTED TRANSFORMER
- UTILITY POLE W/ GUY WIRE
- SIGN
- LIGHT POLE

PROPOSED

- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BUILDING
- BUILDING ENTRY/EGRESS
- 24 CONTOURS
- G GAS LINE
- S SANITARY SEWER
- SD STORMDRAIN
- UGU UNDERGROUND UTILITY
- W WATER LINE
- 18.20 SPOT GRADE
- CATCH BASIN
- LIGHT POLE
- WATER SHUT OFF
- T TRANSFORMER
- BOLLARD
- FULL DEPTH BITUMINOUS PVMT
- BRICK PAVERS
- CONCRETE PAVERS

EROSION CONTROL

- CB CATCH BASIN PROTECTION WITH SILTSACK
- SILT FENCE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PINKHAM & GREER
CIVIL ENGINEERS
28 WINTHROP ST. PORTLAND, ME 04101
TEL: 207.780.1020 FAX: 207.780.1295

STATE OF MAINE
THOMAS J. GREER
No. 4206
REGISTERED PROFESSIONAL ENGINEER
7/30/16

REV.	DATE	DESCRIPTION
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142

DRN BY: JDC
DESG BY: TSG
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WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

EROSION CONTROL PLAN

C1.6

MAP/LOT 26 / E / 10

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 WATERBODIES 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%

9. INSTALL EROSION CONTROL MESH IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. MESH TO BE EQUAL TO NORTH AMERICAN GREEN PRODUCT C125BN.

10. FOLLOW SILT FENCE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS FOR INSTALLATION OF SILT FENCE. SECURE ENTIRE BOTTOM OF FENCE EITHER BY BURYING BOTTOM 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 - 215 LBS	WINDY AREAS
SHREDDED OR CHOPPED	185 - 215 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

STABILIZING SITE FOR THE WINTER:

1. STANDARD CONDITIONS REQUIRING THE TIMELY STABILIZATION OF DITCHES AND CHANNELS - THE CONTRACTOR WILL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY NOVEMBER 1. THE CONTRACTOR WILL CONSTRUCT AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 15. IF THE CONTRACTOR FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER:

   a. INSTALL A SOD LINING IN THE DITCH - THE CONTRACTOR WILL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, 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 THE SOD WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS.

   b. INSTALL A STONE LINING IN THE DITCH - THE CONTRACTOR WILL LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 1. THE CONTRACTOR WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE CONTRACTOR WILL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING SO TO PREVENT THE STONE LINING FROM REDUCING THE DITCH'S CROSS-SECTIONAL AREA.

2. STANDARD CONDITIONS REQUIRING THE TIMELY STABILIZATION OF DISTURBED SLOPES - THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 1. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. ANY AREA HAVING A GRADE GREATER THAN 15% (10H:1V) IS A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL 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 1 THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BEFORE NOVEMBER 1, THEN THE CONTRACTOR WILL COVER THE SLOPE WITH A LAYER OF WOODWASTE COMPOST AS DESCRIBED IN ITEM C OF THIS CONDITION OR WITH STONE RIPRAP AS DESCRIBED IN ITEM D OF THIS CONDITION.

   b. STABILIZE THE SLOPE WITH SOD - THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. 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 TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).

   c. STABILIZE THE SLOPE WITH WOODWASTE COMPOST - THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF WOODWASTE COMPOST ON THE SLOPE BY NOVEMBER 1. PRIOR TO PLACING THE WOODWASTE COMPOST, THE CONTRACTOR WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE CONTRACTOR WILL NOT USE WOODWASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

   d. STABILIZE THE SLOPE WITH STONE RIPRAP - THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 1. THE CONTRACTOR WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR DRAINAGE AND SOIL SEPARATION.

3. STANDARD CONDITIONS REQUIRING THE TIMELY STABILIZATION OF DISTURBED SOILS - BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

   a. STABILIZING THE SOIL WITH TEMPORARY VEGETATION - BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1, THEN THE CONTRACTOR WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM C OF THIS STANDARD CONDITION.

   b. STABILIZE THE SOIL WITH SOD - THE CONTRACTOR WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

   c. STABILIZE THE SOIL WITH MULCH - BY NOVEMBER 1 THE CONTRACTOR WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1,000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE CONTRACTOR WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE CONTRACTOR WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

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 SF. (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 SF. (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 SF. OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75 LBS/1,000 SF. 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 SF. (3 TONS/ACRE) AND ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THOUGH THE MULCH.

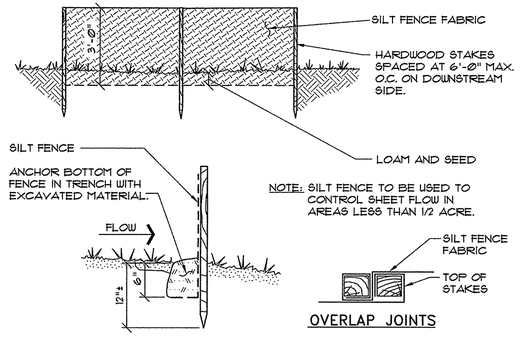
   BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL TACK, OR WOOD CELLULOSE FIBER. WHEN GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH THEN COVER IS SUFFICIENT.
   AFTER NOVEMBER 1, MULCH AND ANCHORING OF ALL BARE SOIL 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/1000 SF. 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 THIS SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND BE SEEDED AT AN APPLICATION RATE OF 5 LBS/1000 SF. 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.

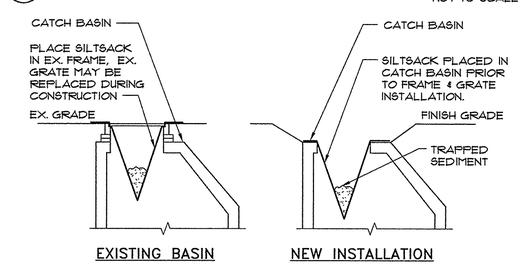
6. TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION
   WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION WILL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE OR EROSION CONTROL MIX LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED 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.



1 SILT FENCE DETAIL

NOT TO SCALE



2 CATCH BASIN PROTECTION

NOT TO SCALE

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHAN AVE. PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE — THOMAS S. GREER No. 4836 — REGISTERED PROFESSIONAL ENGINEER

9/30/16

REV.	DESCRIPTION	DATE
1	REVD PER CITY REVIEW	9/30/16

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

DRN BY: JDC/RJS
DESG BY: DEF
CHK BY: TSG

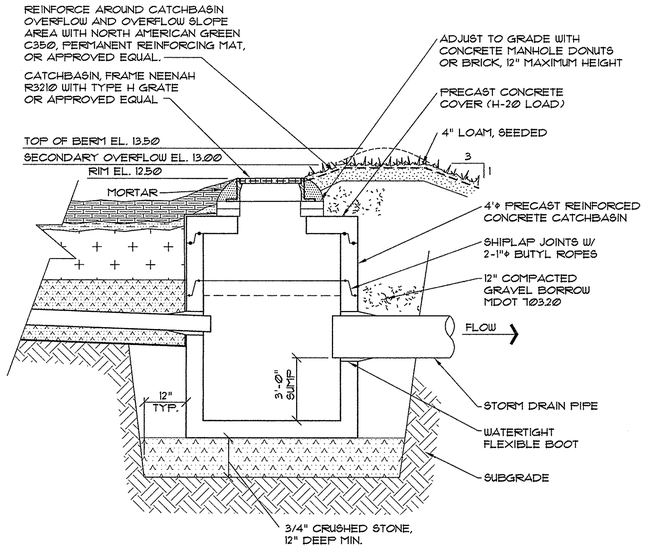
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

DETAILS

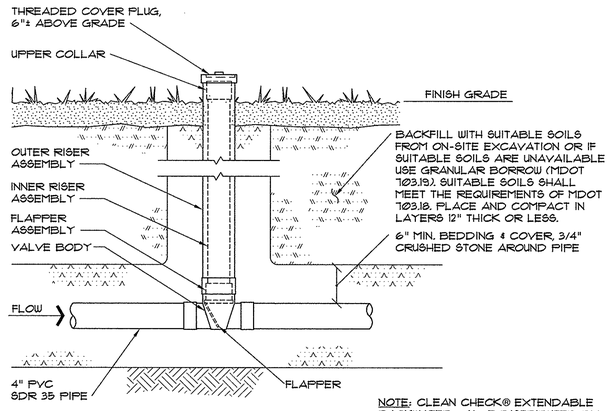
C2.1

MAP/LOT 26 / E / 10



6 UDSF CATCHBASIN OVERFLOW

NOT TO SCALE

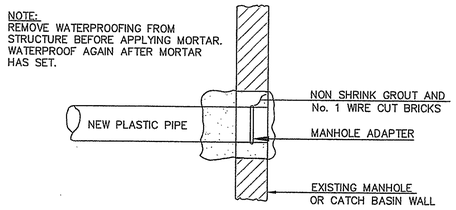


NOTE: CLEAN CHECK® EXTENDABLE BACKWATER VALVE DISTRIBUTED BY RECTORSEAL (www.rectorseal.com) OR APPROVAL EQUAL.

5 TYPICAL BACKFLOW PREVENTOR DETAIL

NOT TO SCALE

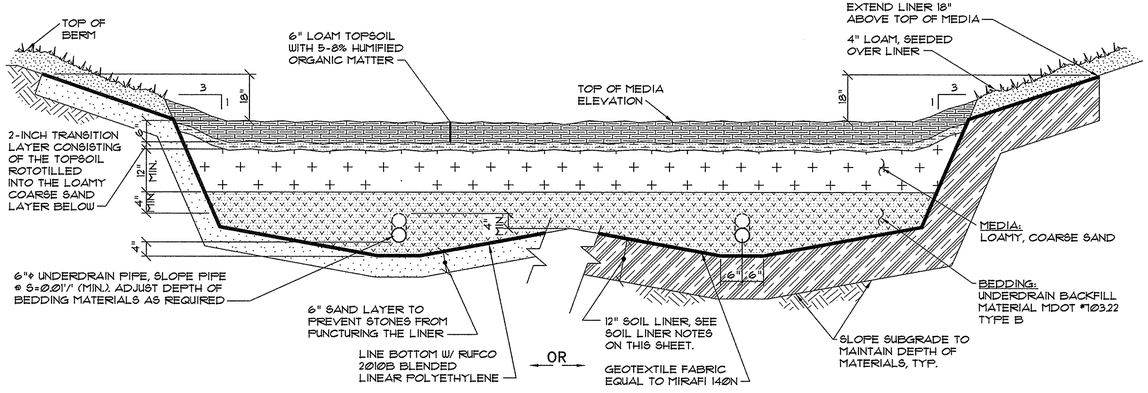
NOTE: EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION. IF PIPE DIAMETER IS SO LARGE THAT CORE DRILLING IS PROHIBITED, THE CONTRACTOR MAY SAW CUT THE STRUCTURE TO CREATE PIPE OPENING. THE NEW OPENING MUST THEN BE SEALED AND WATERTIGHT BOTH INSIDE AND OUTSIDE THE STRUCTURE.



METHOD 3 – NEW PIPE INTO EXISTING STRUCTURE

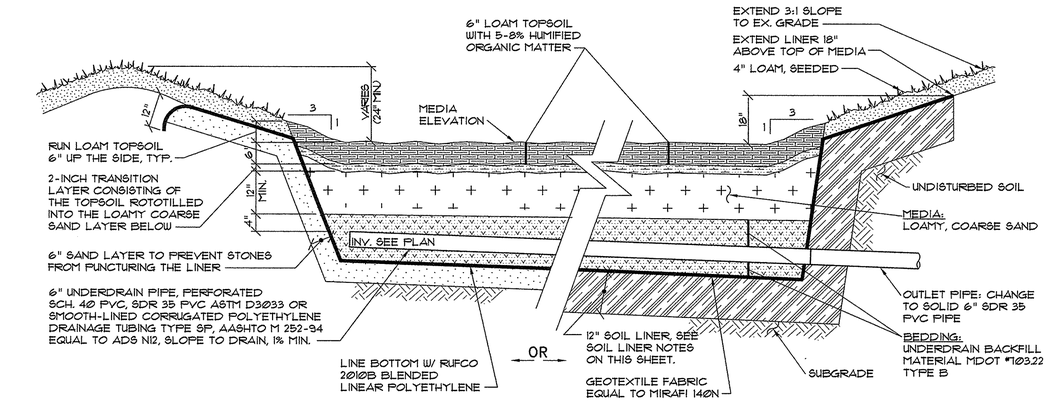
4 PLASTIC PIPE CONNECTION METHOD 3 (II-14)

NOT TO SCALE



3 UNDERDRAINED SOIL FILTER CROSS-SECTION

NOT TO SCALE



2 UNDERDRAINED SOIL FILTER LONGITUDINAL SECTION

NOT TO SCALE

SOIL FILTER MEDIA NOTES

1. THE SOIL FILTER MUST BE AT LEAST 12 INCHES DEEP AND MUST EXTEND ACROSS THE BOTTOM OF THE ENTIRE FILTER AREA AND UP THE SIDES TO THE DEPTH OR ELEVATION SPECIFIED. THIS SOIL MIXTURE SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS CAN BE MIXED WITHIN THE FILTER. THE RESULTANT MIXTURE SHOULD HAVE MINIMAL CLAY CONTENT WITH NO LESS THAN 5% FINES PASSING THE #200 SIEVE. DURING CONSTRUCTION, CARE SHOULD BE TAKEN TO AVOID COMPACTION OF BOTH THE GRAVEL AND SOIL FILTER. COMPACTION SHOULD BE BY SATURATION ONLY, UNLESS SPECIAL LOW COMPACTION EQUIPMENT IS AVAILABLE.
2. CARE SHOULD BE TAKEN, ESPECIALLY IN AREAS WHERE THE PREDOMINANT SOIL AND OVERBURDEN CONTAINS MARINE CLAY, TO BE SURE THAT THE SAND AND TOPSOIL USED IN THE MIXTURE HAVE VERY LITTLE OR NO CLAY CONTENT. USE OF SOILS WITH MORE THAN 2% CLAY CONTENT COULD CAUSE FAILURE OF THE SYSTEM.
3. THE SOIL FILTER MEDIA MUST BE COMPOSED OF A THOROUGHLY BLENDED MIXTURE OF MATERIALS MEETING THE SPECIFICATIONS IN TABLE B. ADJUST THE PROPORTIONS BASED ON THE ORGANIC CONTENT AND AMOUNT OF FINES OF EACH COMPONENT. IF THE SAND IS VERY CLEAN OR THE MULCH IS RELATIVELY COARSE, USE MORE MULCH AND LESS SAND WHILE STAYING WITHIN THE ESTABLISHED RANGES. IF THE SAND IS SILTY OR THE MULCH LOAMY, USE MORE SAND AND LESS MULCH.

TABLE A

ME DOT SPECIFICATIONS FOR UNDERDRAINS (MDOT #703.22)

SIEVE SIZE	% BY WEIGHT
UNDERDRAIN TYPE C	
1"	100
3/4"	90-100
3/8"	0-75
#4	0-25
#10	0-5

TABLE B

SOIL FILTER MEDIA

FILTER MEDIA	MIXTURE BY VOLUME	SPECIFICATION
SAND	70%-80%	MEDOT SPECIFICATION #703.01 FINE AGGREGATE FOR CONCRETE (SEE TABLE C)
MULCH	20%-30%	MODERATELY FINE, SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 8%-10% PASSING THE 200 SIEVE

TABLE C

ME DOT SPECIFICATIONS FOR UNDERDRAINS (MDOT #703.01)

SIEVE SIZE	% BY WEIGHT
3/8"	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	10-30
#100	2-10
#200	0-5

SOIL LINER NOTES

THE COMPACT SOIL LINER SHALL HAVE THE FOLLOWING CHARACTERISTICS:

1. A LIQUID LIMIT GREATER THAN OR EQUAL TO 20, AND A PLASTICITY INDEX GREATER THAN OR EQUAL TO 8 BUT LESS THAN OR EQUAL TO 30, AS DETERMINED USING ASTM D-4318, STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS. GLACIAL TILL SOILS DO NOT NEED TO MEET LIQUID LIMIT AND PLASTICITY INDEX REQUIREMENTS.
2. A MINIMUM FINES CONTENT OF 35%.
3. A MAXIMUM PARTICLE SIZE OF LESS THAN OR EQUAL TO 3 INCHES.
4. HAVE A MINIMUM IN-PLACE DENSITY OF 92% OF THE MAXIMUM DRY DENSITY AS MEASURED BY ASTM D-698, STANDARD TEST METHOD FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT (12,400 FT-LBF/FT3 (600 KN-M/M3)).
5. BE COMPACTED USING A KNEADING ACTION TO REMOLD THE SOIL WITHIN 0-4% ABOVE OPTIMUM MOISTURE CONTENT AS DETERMINED USING ASTM D-698.
6. HAVE A MAXIMUM COMPACTED LIFT THICKNESS OF 9 INCHES AND PROVIDE A MEANS TO ENSURE LIFT INTERFACE BONDING.

UNDERDRAINED SOIL FILTER CONSTRUCTION NOTES

1. PRIOR TO CONSTRUCTION OF UNDERDRAINED SOIL FILTER STABILIZE AREAS THAT DRAIN TO THEM WITH EITHER TEMPORARY OR PERMANENT EROSION CONTROL MEASURES IN ACCORDANCE WITH THE EROSION & SEDIMENT CONTROL PLAN, NOTES & DETAILS.
2. DO NOT PLACE THE FILTER MEDIA UNTIL AFTER THE SOIL FILTER AREA IS USED FOR A SETTLING BASIN DURING CONSTRUCTION AND ALL AREAS THAT DRAIN TO THE BASIN HAVE BEEN STABILIZED. PRIOR TO PLACEMENT OF THE FILTER MEDIA ALL SEDIMENT RESULTING FROM CONSTRUCTION ACTIVITIES MUST BE REMOVED.
3. EXCAVATE UNDERDRAINED SOIL FILTER AND DITCH IN A MANNER THAT WILL NOT COMPACT THE SUBGRADE. DO NOT OPERATE HEAVY MACHINERY INSIDE THE UNDERDRAINED SOIL FILTER.
4. THE TOP 6" OF SOIL FILTER MEDIA SHALL CONSIST OF LOAM TOPSOIL WITH 5-8% HUMIFIED ORGANIC MATTER. SCREENED TOPSOIL FROM THE DEVELOPMENT MAY BE APPROPRIATE BUT SHOULD BE TESTED FOR ORGANIC CONTENT. THE MEDIA SHOULD HAVE SUFFICIENT NUTRIENT CONTENT TO SUPPORT A GOOD STAND OF GRASS TYPE VEGETATION, OR ORGANIC MATTER (SUCH AS SUPERHUMUS OR EQUIVALENT) CAN BE ADDED IF NECESSARY AND PROVIDED THAT THE TEXTURE IS SUITABLE.
5. IF 20 MIL GEOMEMBRANE IS USED:
   THE CONTRACTOR SHALL PROVIDE DETAILS FOR THE PROPOSED RUFCO 2010B BLENDED LINEAR POLYETHYLENE LINER SYSTEM TO BE INSTALLED WITHIN THE SOIL FILTER BASIN. INFORMATION SHALL INCLUDE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION PROCEDURES THAT ADDRESS:
   - SEAMING OF LINER PANELS
   - BOOT INSTALLATION FOR PIPE PENETRATIONS
   - SEAM TESTING PROCEDURES
   - METHOD OF SUBGRADE PREPARATION
   - PLACEMENT AND COMPACTION OF STONE (TO MINIMIZE RISK OF PUNCTURING OF INSTALLED LINER)
6. PLACE UNDERDRAIN BEDDING, UNDERDRAIN PIPE AND BACKFILL MATERIAL IN A MANNER THAT DOES NOT COMPACT THE SUBGRADE, BEDDING OR BACKFILL.
7. PLACE SOIL FILTER BED OVER THE PREPARED SURFACES WITH AN EXCAVATOR WORKING FROM OUTSIDE THE SWALE OR DITCH SO THAT WHEN SHAPED TO FINISH GRADE DEPTH IS AT LEAST 18 INCHES. DO NOT COMPACT.
8. SUBMIT SAMPLES OF THE SCREENED SOIL FILTER BED MATERIAL TO A SOIL TESTING LABORATORY FOR TESTING TO DETERMINE LIME AND FERTILIZER APPLICATION NECESSARY FOR THE TOPSOIL FILTER TO GROW GRASS.
9. APPLY LIMESTONE AND FERTILIZER OVER THE TOPSOIL FILTER ACCORDING TO THE SOIL TEST RECOMMENDATIONS USING LIGHT SPREADING EQUIPMENT. WORK LIME AND FERTILIZER INTO TOPSOIL FILTER TO A DEPTH OF 2 INCHES USING LIGHT EQUIPMENT.
10. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL OR HYDROSEEDER (USING A SLURRY INCLUDING SEED AND FERTILIZER).

SEED MIXTURE	LBS/ACRE	LBS/1000 SF
CREEPING RED FESCUE (PENNLAWN, ENSYLVA OR WINTERGREEN)	20	0.46
RED TOP	2	0.05
TALL FESCUE (KENTUCKY 31)	20	0.46
TOTAL	42	0.97

11. MAINTENANCE: GRASS SHOULD BE MOWED NO MORE THAN 2 TIMES PER GROWING SEASON TO MAINTAIN GRASS HEIGHTS LESS THAN 12 INCHES. REMOVE CLIPPINGS. REMOVE SEDIMENT BUILD-UP WHEN IT HAS ACCUMULATED TO APPROXIMATELY 25% OF CHANNEL CAPACITY.
12. IF BEDROCK IS ENCOUNTERED IN THE UNDERDRAINED SOIL FILTER, OVER EXCAVATE AND REPLACE WITH ONE FOOT OF SOIL.

1 UNDERDRAINED SOIL FILTER NOTES

NOT TO SCALE

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHAN AVE. PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE
THOMAS S. GREER No. 4206
REGISTERED PROFESSIONAL ENGINEER
9/30/16

NO.	REV.	DATE	DESCRIPTION
	1	9/30/16	REV'D PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

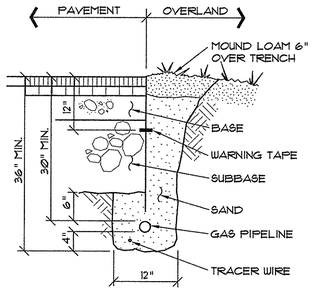
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC/RJS
DESG BY: DEP
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

DETAILS

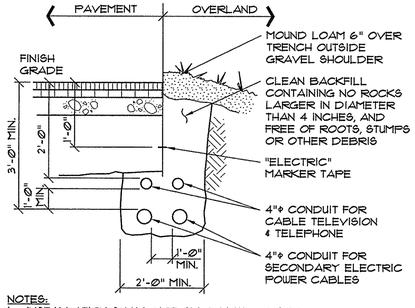
C2.2

MAP/LOT 26 / E / 10



4 GAS PIPING TRENCH SECTION

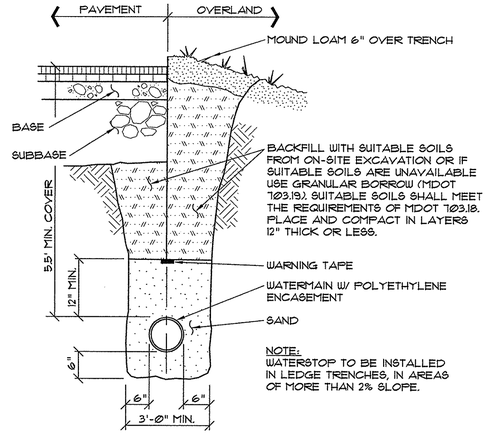
NOT TO SCALE



NOTES:
1. INSTALLATION SHALL NOT ALLOW INTER-TWINING OF CABLES.
2. DIRECT BURY CABLES EXCEPT UNDER PAVED AREAS. PROVIDE SCH. 40 PVC CONDUIT UNDER PAVED AREAS, EXTEND CONDUIT 5'-0" BEYOND EDGE OF PAVEMENT.

3 CABLE TRENCH SECTION

NOT TO SCALE



2 TYPICAL WATER MAIN SECTION ON-SITE

NOT TO SCALE

UNDERGROUND UTILITIES WARNING TAPE

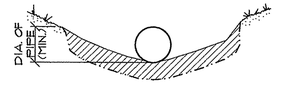
IDENTIFICATION TAPE TO BE INSTALLED ABOVE ALL NEW UNDERGROUND UTILITIES AND ABOVE ANY EXISTING UTILITIES THAT MAY BE EXPOSED BY THIS CONSTRUCTION.

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.

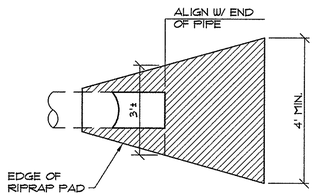
APWA UNIFORM COLOR CODE:

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

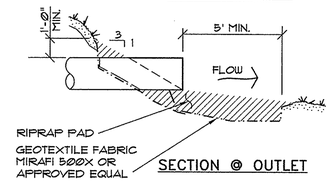
1 UNDERGROUND UTILITIES WARNING TAPE



CROSS SECTION



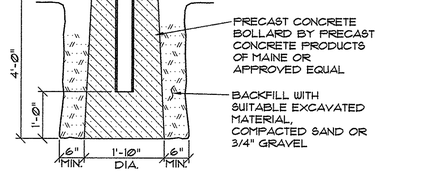
PLAN @ OUTLET



SECTION @ OUTLET

6 PIPE INLET/OUTLET DETAILS

NOT TO SCALE

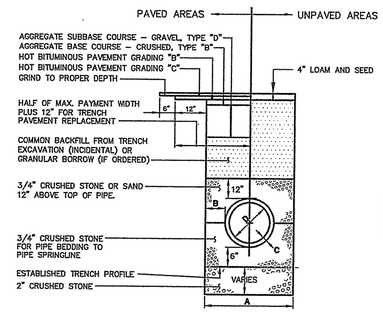


7 STEEL BOLLARD DETAIL

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

5 TYPICAL PIPE TRENCH INSTALLATION (11–12)

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHAN AVE. PORTLAND, ME. 04103
TEL: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE
THOMAS S GREER No. 4245
LICENSED PROFESSIONAL ENGINEER
9/30/16

REV.	DATE	DESCRIPTION
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC/RJS
DESG BY: DEF
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

DETAILS

C2.3

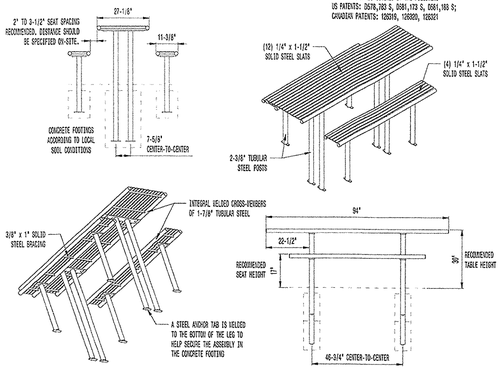
MAP/LOT 26 / E / 10

VICTOR STANLEY, INC.®
Manufacturers of Quality Site Furnishings since 1963

P.O. DRAWER 380 - DUNKIRK, MD 20754 USA
TOLL FREE: (800) 368-2370 (USA & CANADA)
TEL: (301) 855-8220 - FAX: (410) 257-7328
WEB SITE: HTTP://WWW.VICTORSTANLEY.COM

THIS PRODUCT IS COVERED BY THE FOLLOWING US PATENTS: D578,783 S, D581,173 S, D581,188 S; CANADIAN PATENTS: 126016, 126900, 122821

* ALL DIMENSIONS ARE IN INCHES *



AVAILABLE OPTIONS:
POWDER COATING
12 STANDARD COLORS, CUSTOM COLORS (INCLUDING THE RAL RANGE)
MOUNTING
STANDARD SURFACE AND IN-GROUND
AVAILABLE WITH ADA COMPLIANT LEG POSITIONING
(ADA COMPLIANT TABLE/BENCH CONFIGURATION: 8' TABLE WITH 6' BENCHES)

LENGTHS
STANDARD 6'
STANDARD 8' LENGTH SHOWN

NOTES:
1. DRAWINGS NOT TO SCALE. DO NOT SCALE DRAWINGS.
2. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PRIMERED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PRETREATED, PRIMERED AND COATED WHILE HOT TO FULL COVERAGE AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
3. THIS VICTOR STANLEY, INC. PRODUCT MUST BE PERMANENTLY ANCHORED IN THE GROUND. CONSULT YOUR LOCAL CODES FOR REGULATIONS.
4. FOR HIGH SALT AEROSOL CLIMATES, HOT DIP GALVANIZING BEFORE POWDER COATING IS AVAILABLE. SEE WRITTEN SPECIFICATIONS FOR DETAILS.
5. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.
6. THIS PRODUCT IS SHIPPED PARTIALLY UNASSEMBLED.

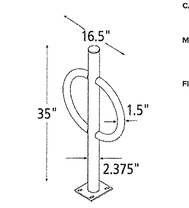
FBF-56
STREETSITES SERIES™
STANDARD ALL STEEL TABLE
SHOWN: STANDARD 8-FOOT LENGTH (ADA COMPLIANT)
STANDARD IN-GROUND MOUNT

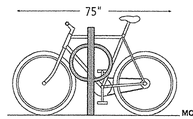
Standard Color: BLACK
( ) Required

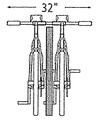
PICNIC TABLE & BENCHES TO BE INSTALLED IN THE PLAZA AREA. PLAZA AREA CONCRETE PAVERS: GRAY CONCRETE STEP STONE PAVESTONE MODEL #73700, 24"x24" OR APPROVED EQUAL

9 STEEL PICNIC TABLE

NOT TO SCALE







CAPACITY 2 Bikes

MATERIALS Centerbeam: 2" schedule 40 pipe (2.375" OD)
Ring: 1.5" OD 11 gauge tube

FINISHES
- ☐ **Galvanized** An after fabrication hot dipped galvanized finish is our standard option.
- ☐ **Powder Coat** Our powder coat finish assures a high level of adhesion and durability by following these steps: 1. Sandblast 2. Epoxy primer electrostatically applied 3. Final thick TGIC polyester powder coat
- ☐ **Thermoplastic** In addition to an increased thickness (8-10mils), the thermoplastic finish covers a galvanized layer and offers superior impact resistance over powder coating.
- ☐ **PVC Dip** (plastisol) Other colors available by special order (minimum orders apply)
- ☐ **Stainless** Stainless Steel: 304 grade stainless steel material finished in either a high polished shine or a satin finish.

MOUNT OPTIONS
- ☐ **In-ground** In ground mount is embedded into concrete base. Specify in ground mount for this option.
- ☐ **Surface** Foot Mount has a5"x6"x.25" foot with four anchors per foot. Specify foot mount for this option.

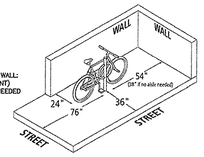
SETBACKS

FOR RACKS SET PARALLEL TO A WALL:
MINIMUM: 12"
RECOMMENDED: 24"

FOR RACKS SET PERPENDICULAR TO A WALL:
MINIMUM: 35" (CENTERLINE MEASURMENT)
RECOMMENDED: 36" (54" IF AISLE IS NEEDED BETWEEN BIKE AND WALL)

DISTANCE BETWEEN RACKS:
MINIMUM: 24"
RECOMMENDED: 36"

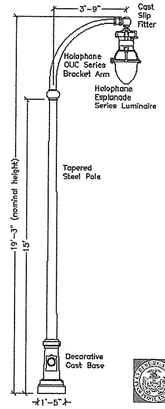
STREET SETBACKS:
MINIMUM: 36"



DERO BIKE HITCH AS MANUFACTURED BY DERO BIKE RACKS

8 BICYCLE RACK SPECIFICATION – BIKE HITCH (I-33a)

NOT TO SCALE



LUMINAIRE
Holophane Lighting model ESU17SU612A4-R
Luminaire shall be furnished and installed by The Central Maine Power Company under the municipal lease agreement for street lighting.
Luminaire shall be custom color RAL-7016 (Dark Grey).

LAMP
Holophane Lighting model S-M175/U 64471
Vertical mounted, 175 watt mogul base clear metal halide lamp.

BRACKET ARM
Holophane Lighting model OUC 5063-T6
Aluminum crossarm with a post-top fitting for a 3-1/2" by 8" tenon.
Bracket arm shall be custom color RAL-7016 (Dark Grey).

SLIP FITTER
Holophane Lighting model BHLF200-SCA/AS (Boston Harbor Series)
2-3/8" O.D. with swivel cast fitter.
Slip fitter shall be custom color RAL-7016 (Dark Grey).

LIGHTING POLE
Tapered steel pole shaft rated for a 90mph wind load with a 1.3 gust factor. Provide four hot-dipped galvanized steel L-type anchor bolts.
Lighting pole shall be custom color RAL-7016 (Dark Grey).

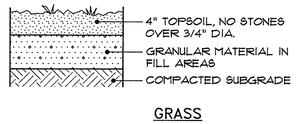
DECORATIVE POLE BASE
Holophane Lighting model Cambridge Series
Decorative clamshell cast aluminum base.
Hardware shall be stainless steel.
Decorative pole base shall be custom color RAL-7016 (Dark Grey).

APPLICATION
Street/Sidewalk lighting for two-way streets with parking on one sides, or one-way streets.
Suggested layout:
80-100 ft on center (one side only)
150-200 ft on center (staggered pattern both sides)

City of Portland, Maine
Street & Sidewalk Lighting
BAYSIDE RESIDENTIAL DISTRICT
Medium Scale Lighting Pole
03/25/07

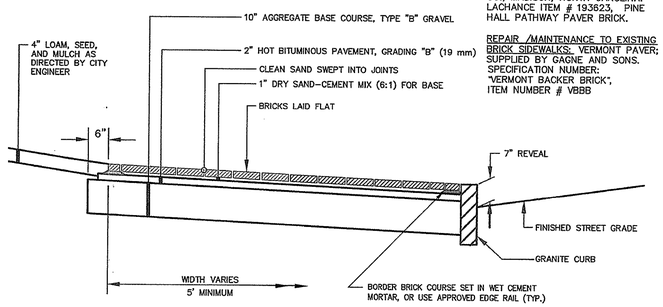
10 BAYSIDE DISTRICT MEDIUM SCALE RESIDENTIAL LIGHT (X-2D)

NOT TO SCALE



4 LANDSCAPE SURFACE FINISHES

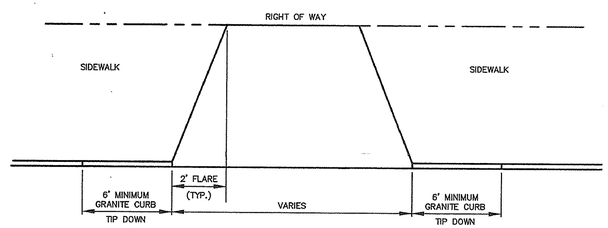
NOT TO SCALE



5 BRICK SIDEWALK WITH BITUMINOUS BASE (I-10)

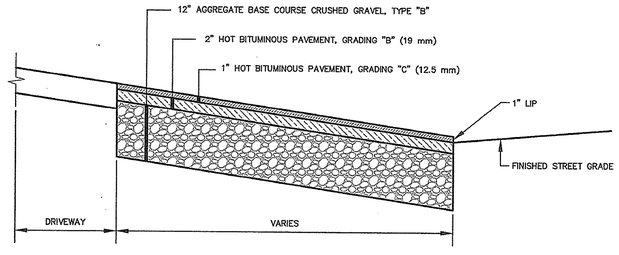
NOT TO SCALE

NOTE:
MATCH GRADE OF EXISTING DRIVEWAY AT R. O. W. LINE, EXCEPT WHEN DIRECTED OTHERWISE BY CITY ENGINEER.



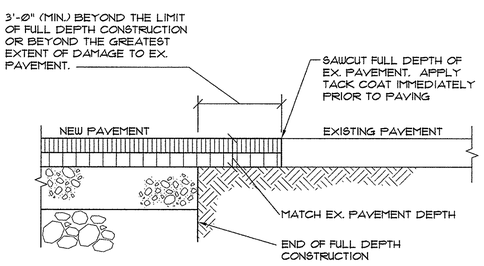
6 DRIVEWAY APRON LAYOUT (I-9)

NOT TO SCALE



7 BITUMINOUS DRIVEWAY APRON (I-13)

NOT TO SCALE



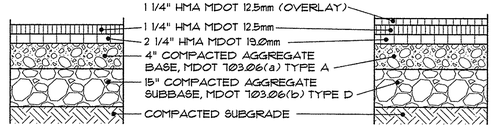
1 PAVEMENT CUTTING & MATCHING SECTION

NOT TO SCALE

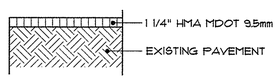
BRICKS TO BE USED:

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



NEW PAVEMENT



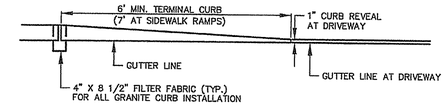
PAVEMENT REPAIR AT TRENCHES

PAVEMENT OVERLAY

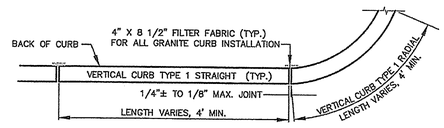
NOTES:
1. HMA = HOT MIX ASPHALT.
MDOT = MAINE DEPARTMENT OF TRANSPORTATION.
2. ALL COURSE THICKNESS AFTER FINAL COMPACTION.

2 BITUMINOUS PAVEMENT SECTIONS

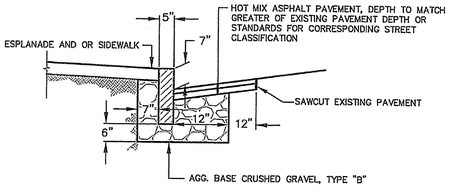
NOT TO SCALE



TERMINAL CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

3 VERTICAL GRANITE CURB INSTALLATION IN EXISTING STREET (I-17)

NOT TO SCALE

PINKHAM & GREER
CIVIL ENGINEERS
28 VAUGHAN AVE. PORTLAND, ME. 04103
TEL.: 207.781.5242 FAX: 207.781.4245

STATE OF MAINE — THOMAS S GREER No 4256 — REGISTERED PROFESSIONAL ENGINEER — BENJAMIN J LANDRY

REV	DATE	DESCRIPTION
1	9/30/16	REVD PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

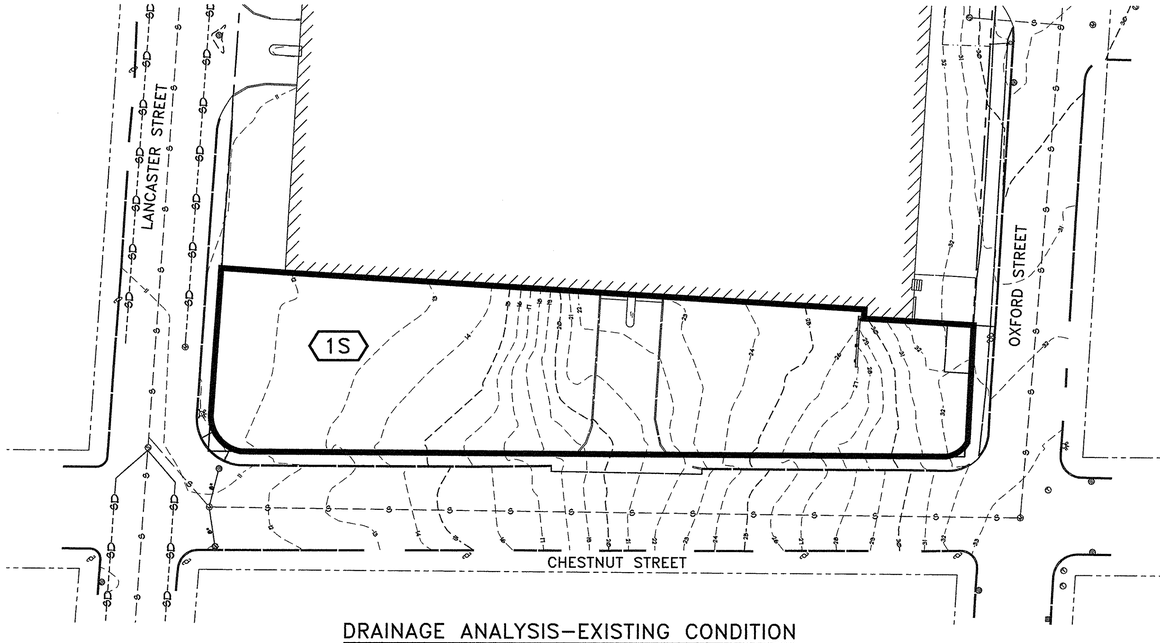
SCALE: AS SHOWN
DATE: JULY 28, 2016
PROJECT: 16142
DRN BY: JDC/RJS
DESG BY: DEP
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

DETAILS

C2.4

MAP/LOT 26 / E / 10



DRAINAGE ANALYSIS–EXISTING CONDITION

SCALE: 1"=30'

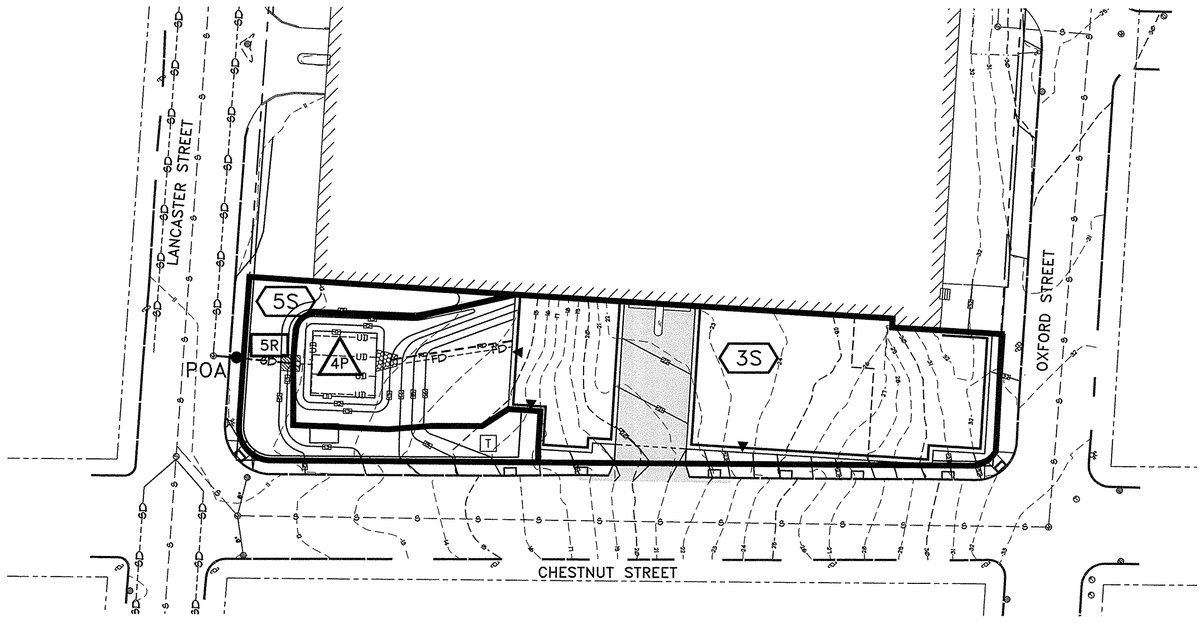
GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

DRAINAGE LEGEND

- SUBCATCHMENT PERIMETER
- 10S — SUBCATCHMENT NUMBER
- POA ● — POINT OF ANALYSIS
- 10R — REACH
- 1P — POND



DRAINAGE ANALYSIS–DEVELOPED CONDITION

SCALE: 1"=30'

ANALYSIS IS LIMITED TO THE CONSTRUCTION ZONE ONLY.

PINKHAM & GREER
CIVIL ENGINEERS
28 HAMMA AVE., PORTLAND, ME. 04103
TEL. 207.781.5242 FAX. 207.781.4245

STATE OF MAINE
THOMAS GREER No. 4206
LICENSED PROFESSIONAL ENGINEER

9/30/16

REV.	DATE	DESCRIPTION
1	9/30/16	REV'D PER CITY REVIEW

A & M PARTNERS, INC.
120 EXCHANGE STREET
PORTLAND, ME 04101

SCALE: AS SHOWN
DATE: JULY 28, 2016
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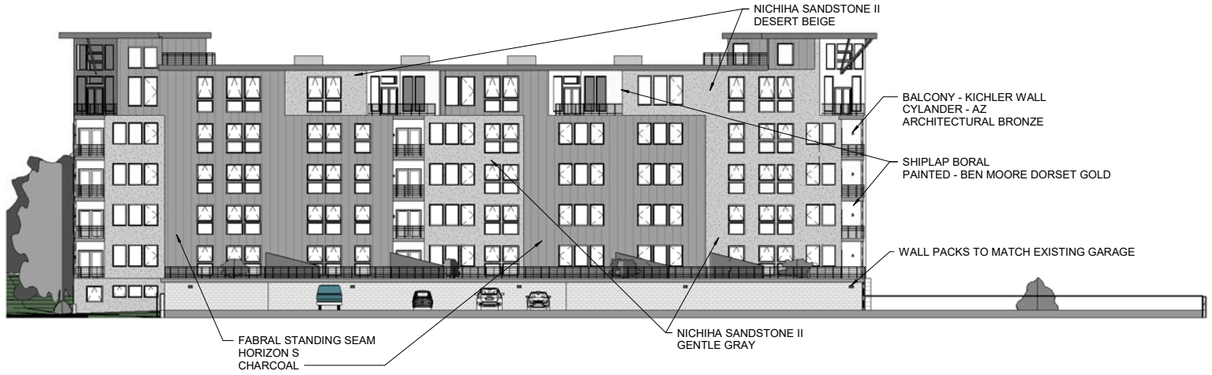
DRN BY: JDC
DESG BY: TSG
CHK BY: TSG

WESTERLEA VIEW LOFTS
75 CHESTNUT STREET
PORTLAND, ME

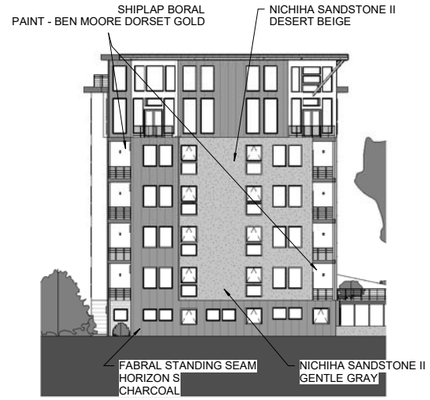
DRAIANGE ANALYSIS

D1.1

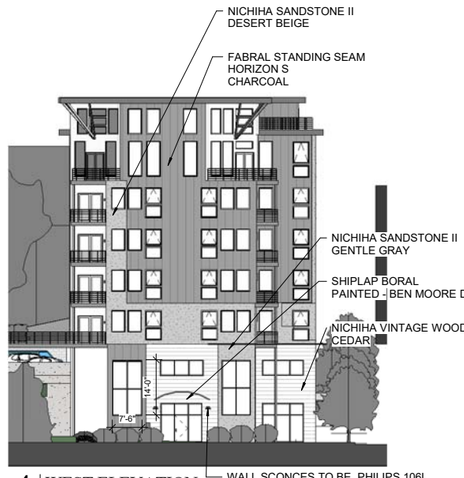
MAP/LOT 26 / E / 10



2 | NORTH ELEVATION
1/16" = 1'-0"



1 | EAST ELEVATION
1/16" = 1'-0"



4 | WEST ELEVATION
1/16" = 1'-0"

3 | SOUTH ELEVATION
1/16" = 1'-0"

Prepared For:
A&M Partners

Consultant:

Architect:
ARCHETYPE architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 Fax (207) 772-4056

Project:
Westerlea View Lofts
Chestnut Street
Portland, Maine

Revisions:

Scale: 1/16" = 1'-0"

Date: 7-22-2016

Building Elevations

A2.01