

CITY OF PORTLAND, MAINE

PLANNING BOARD



Brandon Mazer, Chair
Maggie Stanley, Vice Chair
Marpheen Chann
Sean Dundon
Bob Dunfey
David Silk
Austin Smith

AGENDA PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a remote meeting on August 10, 2021, 4:30 p.m. Due to the existence of an emergency or urgent issue, the Planning Board will conduct this meeting by remote methods/technology at the Zoom link provided below. In accordance with the requirements of 1 M.R.S. section 403-B and the City's Remote Participation Policy.

For more information on how to access the meeting remotely and how to give public comment, please go to <http://www.portlandmaine.gov/remotepud>

Public comment will be taken for each item on the agenda and written comments should be submitted to planningboard@portlandmaine.gov. **Please note that the placement of items on this agenda are subject to change – please check the Agenda & Minutes Center prior to the meeting for the item's approximate start time.**

Allow your computer to install the free Zoom app to get the best meeting experience. For public comment, you will need to use the “raise your hand” feature. To raise your hand via the telephone, please hit *9. You will be unmuted by the moderator when it is time for public comment.

ZOOM MEETING INSTRUCTIONS

You are invited to a Zoom webinar.

When: Aug 10, 2021 04:30 PM Eastern Time (US and Canada)

Topic: Planning Board Workshop and Public Hearing 8-10-2021

Please click the link below to join the webinar: <https://us02web.zoom.us/j/87292949290>

Or One tap mobile :

US: +19292056099,,87292949290# or +13017158592,,87292949290#

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Webinar ID: 872 9294 9290

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

WORKSHOP - 4:30 PM

- i. Major Site Plan, Master Development Plan Amendment, and Subdivision; 65 McAuley Way; DC Baxter Woods IV LLC, Applicant. (estimated time 4:30 – 6:00 p.m.) The Planning Board will hold a workshop to consider an application for Phase 2 of Stevens Square, including 140 multifamily dwelling units to be housed within four new five-story buildings totaling 201,640 square feet of floor

area, along with associated site improvements. The subject property, located at 65 McAuley Way, is 7.05 acres in size and is zoned R-5 and R-5a Residential.

PUBLIC HEARING - 6:00 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON JULY 27, 2021

Afternoon Workshop

638 Riverside Street: Chann, Dunfey, Mazer, Smith and Stanley present; Silk recused; Dundon absent.
57 Douglass Street: Chann, Dunfey, Mazer, Silk, Smith and Stanley present; Dundon absent.

Evening Hearing

Executive Session: Chann, Dunfey, Mazer, Silk, Smith and Stanley present; Dundon absent.

Remote Participation Policy: Chann, Dunfey, Mazer, Silk, Smith and Stanley present; Dundon absent.

4. REPORTS OF DECISIONS AT THE MEETING HELD ON JULY 27, 2021

- i. Executive Session Stanley moved and Dunfey seconded a motion to enter executive session. Vote 6-0. Stanley moved and Dunfey seconded a motion to exit executive session. Vote 6-0.
- ii. Remote Participation Policy Stanley moved and Silk seconded a motion to approve the Remote Participation Policy. Vote 6-0.

5. NEW BUSINESS

- i. Major Site Plan; 300 Fore Street; University of Maine System, Applicant. (estimated time 6:00 – 6:45 p.m.) The Planning Board will hold a public hearing to consider a change of use at 300 Fore Street in order to permit the occupancy of 63,841 square feet of floor area within the building by the Maine Law School and related programs. No exterior changes to the building are proposed. The subject property is 12,293 square feet in size, is zoned B-3 Downtown Business, and is within the Old Port Historic District.
- ii. Amendment to a Level II Site Plan/Subdivision; 7 India Street; J. Alfred Poor Block, LLC, Applicant. (estimated time 6:45 p.m.) The Planning Board will hold a public hearing to consider an amendment to the approved site plan and subdivision for a four-story mixed-use building within the India Street Form-based Code Zone. The amendment includes six new on-street parking spaces on India Street as well as revisions to the sidewalk amenities and site improvements to accommodate loading and service vehicles.

Memorandum
Planning and Urban Development Department



To: Brandon Mazer, Chair and Members of the Planning Board
From: James Rather, Development Review Manager
Date: August 6, 2021
Re: Master Development Plan Amendment, Major Site Plan, and Subdivision Amendment, 65 McAuley Way - Stevens Square Phase 2;, DC Baxter Woods IV, LLC.
Project #: PL-001649-2021
Meeting Date: August 10, 2021

I. INTRODUCTION

DC Baxter Woods, LLC has submitted a Master Development Plan (MDP) amendment, Major Site Plan, and Subdivision amendment application to facilitate Phase 2 of Stevens Square, a phased senior housing project located adjacent to Baxter Woods on a block that includes the Motherhouse and McAuley Girls School in the Deering Center neighborhood. The project before the Board during this phase of the project includes 140 multifamily condominium units housed within four new multistory buildings with 201,640 net square feet of floor area, along with 260 structured and surface parking spaces.



Figure 1: Development Site in context

The nine-acre assemblage of lots on which the project is located has been the site of a number of actions before the Planning Board over the last five years, including the 2016 approval of an MDP to facilitate a future buildout of the development to include 161 units spread among five buildings; a Level III Site Plan application to facilitate the renovation of the Motherhouse building with 88 dwelling units, and the 2016 approval of the five-story, 21-unit Stevens Square Building 1. The MDP does encumber the entire block; the St. Catherine's Hall and McAuley School buildings lie outside of the MDP area, while the Motherhouse, Building 1, and the current development site lie within it.

Actions before the Board to facilitate this project include an MDP amendment to modify the approved site circulation patterns to reflect a new common open space sited between the four new buildings and to extend the term of the MDP approvals for an additional two years; a Major Site Plan for approval of Phase 2's new buildings and associated site improvements; and a Subdivision amendment to split Lot 4, the subject parcel, into two lots, with the new buildings to be constructed on the new 7.05 acre parcel. As the 2016 Master Development Plan conferred pending proceeding status upon subsequent phases of this project, it is subject to the legacy Land Use Code that was in effect at that time in lieu of the current code, with all code citations made accordingly.

Applicant: DC Baxter Woods, LLC; Kevin Bunker

Applicant Team: Steve Bushey, Gorrill Palmer Consulting Engineers; Devin Cough, Archetype PA; Nick Aceto, Aceto Landscape Architects

II. PROJECT ACTIONS

Applicant's Proposal	Applicable Standards
Major Site Plan	Article V - Site Plan (Sec 14-521)
Master Development Plan Amendment	Article V - Site Plan (Sec 14-521)
Subdivision Amendment	Article IV – Subdivision (Sec 14-491)

III. PROJECT DATA

SUBJECT	DATA
Total area of the site	9.05 acres
Area of new lot to be created (Lot 5)	7.05 acres
Total Disturbed Area	243,064 square feet
Existing Zoning	R-5 Residential & R-5a Residential
Existing Use	Athletic fields (decommissioned)
Proposed Use	Multifamily Condominium Units for individuals 55+ in age
Impervious Surface Area	
--Existing	17,021 sq ft
--Proposed	150,041 sq ft
--Net Change	+133,020 sq ft
Building Footprint	
--Existing	0 sq ft
--Proposed	31,990 square feet
--Net Change	+31,990 square feet
Building Floor Area	
--Existing	0 sq ft
--Proposed	20,640 square feet
--Net Change	+20,640 square feet
Number of Units	140
Parking Spaces	260
Bicycle parking Spaces	64

IV. BACKGROUND AND EXISTING CONDITIONS

Site conditions

The block on which the proposed project would be constructed is bounded by Walton Street to the north, McAuley Way to the east and south, and Stevens Avenue to the west - a priority corridor identified in the City's Comprehensive Plan, *Portland's Plan 2030*. This enclave, approximately 19 acres in size, was originally the home of the Sisters of Mercy convent and is framed to the south and east by the Mayor Baxter Woods nature preserve, which is comprised of 30 acres of City parkland. Baxter Woods is the subject of an ongoing assessment and improvement program in association with the developer of this project. To the west of the site is Stevens Avenue with Evergreen Cemetery across the street, and to the east is the remainder of Lot #4 (currently decommissioned athletic fields).



Figure 2: Baxter Woods

Site History

Legacy Historic Development

- The Maine Girls' Academy: Built in 1881 and redesignated as the Catherine McAuley High School in 1971; this site was recently renovated and reprogrammed as a new community center by the applicant. The building itself lies outside of the MDP area, while the athletic fields located to the east of this building are within the MDP area and are the site on which the proposed development will be constructed.
- St Catherine's Hall: Originally constructed in 1888 as St Joseph's Home for Aged Women, this structure now houses 18 apartments operated by the Sisters of Mercy. It lies outside of the MDP area.
- The Motherhouse: completed in sections between 1909 and 1921 to serve as housing for up to 300 nuns, this National Register-designated landmark now contains 88 dwelling units, of which 66 are affordable. This building is included within the MDP area.



Figure 3: Motherhouse

Recent Development & City Approvals

In 2005, the Sisters of Mercy vacated the buildings on the block; the buildings, now in a disused state, were acquired by Sea Coast at Baxter Woods Associated, LLC, who re-envisioned the block as a master-planned senior housing community with the Motherhouse as the centerpiece; new, contextual multifamily housing would be developed on the inward side of the block, proximate to Baxter Woods, with the existing historic buildings renovated and preserved. The Stevens Square portion of the block was brought forward by DC Baxter Woods LLC, with Building 1 as the first structure built within the MDP area.



Figure 4: Stevens Square Building 1

The subject block has been the site of a series of actions over the last six years that were intended to provide zoning relief and to create a framework for the future buildout of the inner part of the block under the auspices of an MDP. Below is a history of these actions:

<u>Subject of application</u>	<u>Application Date</u>	<u>PB Workshop(s)</u>	<u>PB Hearing approval</u>	<u>City Council approval</u>
Rezoning of a portion of the block to R-5A, with R-5 buffer surrounding R-5a zone	February 2015	April 2015	May 2015	July 2015
R-5A Text Amendment	April 2015	April 2015	May 2015	June 2015
Level III Approval for Motherhouse, incl. 88 units (66 units affordable)	June 2015	July 2015	August 2015	--
Subdivision of the entire 20-acre site into 4 lots	June 2015	July 2015	August 2015	--
Master Development Plan for Stevens Square (161-unit buildout/13.5 acre site)	February 2016	Marc, 2016	June 2016	--
Level III Approval for Stevens Square Building 1 (21 units approved/20 constructed)	August 2017	October 2017	January 2018	--
Maj Site Plan + related actions for Stevens Square Phase 2 (140 units)	Filed July 2021, workshop #1 August 10, 2021			--

Prior Subdivision Approvals

In August of 2015, the Planning Board approved a plan for the reconfiguration of parcels within the subject block to define four lots within the Sisters of Mercy campus (The plan at right shows the R-5A zoning in yellow dots, Lot #3 in red outline, and Lot#4 is the southern part of the purple outlined area).

- Lot 1: St Catherine's Hall (2.36 acres)
- Lot 2: The former Catherine McAuley High School site (3.18 acres)
- Lot 3: Motherhouse (4.39 acres)
- Lot 4: Open area and fields (9.05 acres)

The Master Development Plan applies to Lot 3 (Motherhouse building) and Lot 4 (land to south and east of Motherhouse building). St. Catherine's Hall and the McAuley School property are not encumbered by the MDP.



Figure 5: Lot configuration

Zoning Framework

The zoning assessment is framed by a City Council decision to rezone a section of the interior of the block from R-5 to R-5A. At its public hearing, the Planning Board had recommended that the entirety of Lots 3 and 4 be rezoned to R-5A. In response to public comment, the City Council approved a smaller final boundary of the R-5A zone (shown right) which allows for a maximum of 249 dwellings on the Lot 3 (Motherhouse) and Lot 4 (land to south and east of Motherhouse) of the site. The R-5A zoning boundaries on this block are not coterminous with property or lot boundaries and extend to a point approximately 570 feet to the east and 150 feet to the south of the Motherhouse.

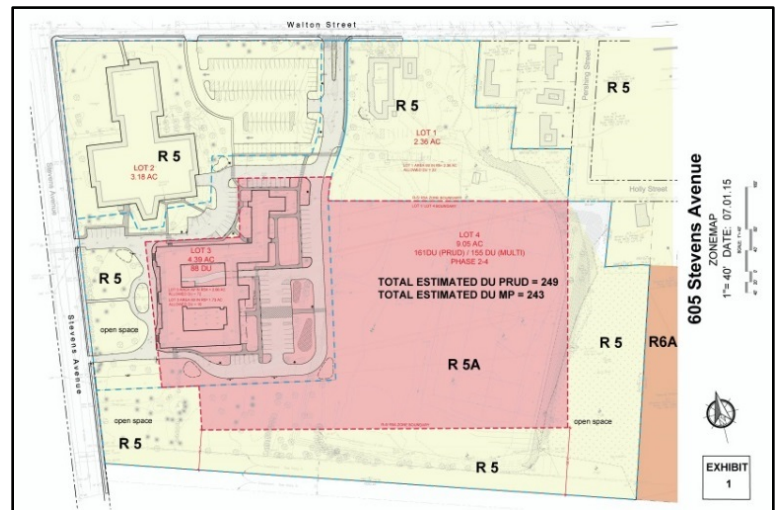


Figure 6: R-5a zoning area

The applicant has submitted a zoning analysis that references both R-5 and R-5A, as a small portion of the development site is within R-5. All four of the new buildings are located on the R-5A portion of the block.

V. PROPOSED DEVELOPMENT

Phase 2 of Stevens Square proposes four five-story multifamily buildings arrayed around a central greenspace, with 140 units housed within 201,640 square feet of new floor area; these buildings, numbered in a counterclockwise fashion as Building 2 through Building 5, employ two variants of Building 1's development prototype (one L shaped and one roughly rectangular), with enclosed ground floor parking beneath four residential floors; each building is approximately 55 feet in height. Associated site improvements proposed in connection with the new buildings include surface parking for guests and residents located to the north of each of the buildings, as well as open space, a perimeter walking trail, and interior walkways totaling 0.62 acres in size. Approximately 2.88 acres of new impervious area are proposed in connection with this project; 5.07 acres of the site are proposed to be developed.

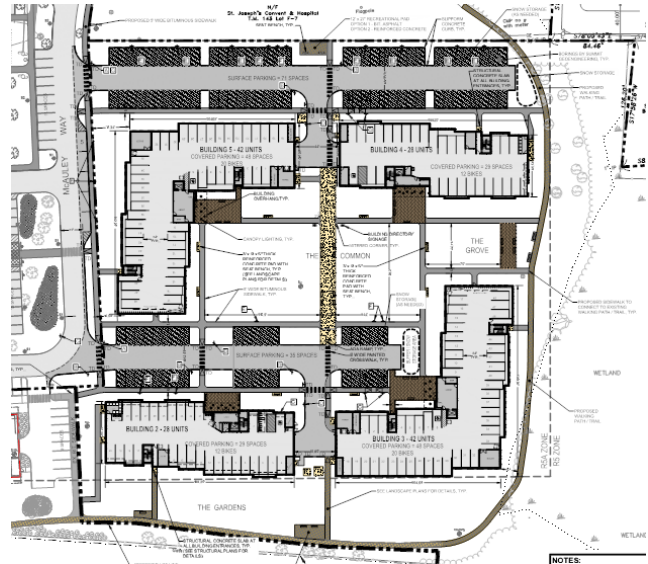


Figure 7: Site Layout Plan

Building #	No. of Dwelling Units	No. of Parking Spaces at Ground Level Within the Building Footprint
2	28	29 (plus 12 bikes)
3	42	48 (plus 20 bikes)
4	28	29 (plus 12 bikes)
5	42	48 (plus 20 bikes)
Total	140 units	154 spaces (plus 64 bikes)

Figure 8: Unit breakdown

A summary of the specific actions included within this application are below:

Major Site Plan

As a large-scale multifamily housing development, this proposal is subject to Major Site Plan review to address conformance with Article V – Site Plan Section 14-521. While this is a Major Site Plan application, given the pending proceeding status of the project through the 2016 MDP, Level III Site Plan standards apply to this project.

Master Development Plan Amendment

In order to reconcile proposed changes in circulation patterns within the central area of the site with the approved 2016 MDP, the applicant seeks a determination from the City that the changes are in alignment with the original intent of the MDP. Under the revised plan, the central parking area between the four buildings has been removed in favor of a common greenspace bisected north-south by a walking path. New parking areas located to the north of each building also deviate from the proposal set forth by the MDP; the northernmost of these surface lots encroach on the McAuley School playing fields in a manner not originally contemplated by the MDP.

In addition to an amendment of the MDP, the applicant also seeks an extension of the MDP approvals for an additional two years; as a 2016 approval, the original expiration date was to have been June 14, 2022. An extension of two years, to June 14, 2024, is sought at this time.

It should be noted that the 2016 MDP included a number of conditions related to the effect of the phased project on Baxter Woods, as well as on the provision of parking and on transportation-related impacts, with requirements that these conditions be reassessed under future Major Site Plans. Compliance with these conditions is addressed within the Master Development Plan subsection of the Staff Review section of this memo.



Figure 9: 2016 MDP Conceptual Master Plan

Subdivision Plat Amendment

The applicant seeks to amend the approved subdivision plat by splitting the 9.05 acre Lot 4 into two new parcels: a new 7.05 acre lot, Lot 5, will include the four new buildings proposed under this application, while Lot 4 will be reduced in size to 2.0 acres and will include the existing Building 1.

VI. RIGHT, TITLE AND INTEREST AND FINANCIAL/TECHNICAL CAPACITY

The owner of the property is DC Baxter Woods, LLC. The applicant has provided a copy of quitclaim deed, recorded at the Cumberland County Registry of Deeds (Book 36065 Page 326), which demonstrates their right, title and interest in the property.

The applicant has submitted a Statement of Financial Capacity letter from their financial institution, as demonstration of their financial capacity (Attachment F). A Statement of Technical Capacity has been provided by the applicant's representative, Gorrill Palmer Consulting Engineers, along with a summary of key members of the applicant team for the project. (Attachment G).

VII. ZONING ANALYSIS

A. DIMENSIONAL AND USE REQUIREMENTS

The subject parcels, Lot 4 and Lot 5, are split between R-5 and R-5a Residential zoning. As the 2016 MDP granted this project pending proceeding status under the prior Land Use Code, the dimensional and use standards in effect at that time govern this application. The proposed development for this phase of the project is located within the R-5A portion of the block. As per Sec. 14-127 of the City's previous Land Use Code, the proposed use of multifamily dwelling is permitted in this zone.

The following table is provided to show the dimensional requirements of the R-5a zone which are met by this proposal. As R-5a applies PRUD standards for all projects of four units or greater, the table references PRUD dimensional requirements.

<i>Standard</i>	<i>R-5a Zoning Requirement</i>	<i>Proposed</i>
Minimum Lot Area	2 acres	38,309 sq. feet
Minimum Lot Area Per Dwelling Unit	1,600 square feet	4,789 sq. feet
Minimum Street Frontage	50 feet	356 feet
Minimum Front Setback	25 feet	15.3 feet
Minimum Rear Setback	25 feet	23.7 feet
Minimum Side Setback (>2.5 stories)	16 feet	54.6 feet
Minimum Setback from External Subdivision Property Line	35 feet	96 feet
Maximum Lot Coverage	30%	17.60%
Minimum Lot Width	60 feet	341 feet
Maximum Structure Height	55 feet	55 feet
Minimum common recreational open space area	200 square feet per dwelling unit (27,200 square feet in this case)	28,000 square feet
Minimum off-street parking	2 spaces per unit	1.86 spaces per unit



Figure 10: Existing Zoning

B. INCLUSIONARY ZONING COMPLIANCE

The 140 proposed units will be market rate. The Inclusionary Zoning requirement for Stevens Square was met in an earlier phase of the project with the creation of 66 units of affordable rental housing. The Master Development Plan, approved for 249 dwelling units, carried with it a requirement for 25 workforce units site overall, at 100% of Area Median Income (AMI) for units for rent, and 120% AMI for units for sale. Of the 66 affordable units, 40 were for households earning 50% AMI, and 26 for households earning 60% AMI, exceeding both the number of required units and required affordability levels. The 2018 site plan and subdivision approval (#2017-188) for lot 4 affirmed that the previous provision of 66 affordable housing contributed to the Inclusionary Zoning for that phase of the site, as well.

Current Inclusionary Zoning has since changed, requiring 25% rather than 10% of total units be workforce housing, and 80% of AMI for both rental and sale dwelling units. As a new phase of a previous approval, the application is not subject to the current standards. §14.3.2.B of the City's Land Use Code states, in regard to Master Development Plans, that *"Approval shall confer pending proceeding status upon the development with the effect of maintaining the applicability of regulations in effect at the time of approval for as long as the master development plan approval remains valid, including permissible extensions if granted"*. In the event the applicant were to propose additional housing for the site beyond what has previously been approved, the new housing development would be subject to the current Inclusionary Zoning standards.

VII. DEVELOPMENT REVIEW

A. MASTER DEVELOPMENT PLAN

1. MASTER DEVELOPMENT PLAN OBJECTIVES

The Site Plan ordinance outlines that an approved Master Development Plan (MDP) establishes the general parameters to be adhered to for the development, including the supporting documentation for floor area ratio and/or residential density, general types of uses, building coverage, generalized open space plans and infrastructure systems. It is not a final authorization for development, but it does confer pending proceeding status upon the development with the effect of maintaining the applicability of regulations in effect at the time of the approval for as long as the MDP approval remains valid (6 years initially), including permissible extensions up to 10 years. All major site plans for each phase shall be in general conformance with the approved MDP. The required review is pursuant to *Section 14-524(a)3c(iii) Master Development Plan Review including Standards for Review*. The proposed MDP amendment must demonstrate compliance with what was approved under the 2016 MDP, and with MDP standards generally.

2. MASTER DEVELOPMENT PLAN SUBMISSION REQUIREMENTS (*Section 14-527(e)*)

Section 14-527 of the Land Use Code outlines Master Development Plan submission requirements. The Planning Authority or Planning Board may give direction regarding the form of the information required for the MDP review. In general, the submission requirements have been met, with updates to MDP plan sheets related to project phasing and internal circulation requested by staff in advance of this workshop. Staff understands that these materials are currently being drafted by the applicant for review at a subsequent Planning Board workshop.

3. MASTER DEVELOPMENT PLAN STANDARDS (*Section 14-524(a)3.c(iii)*)

Section 14-524 of the Land Use Code establishes standards under which Master Development Plan applications must be reviewed. Pursuant to this, section, Master Development Plans shall adhere to the following general requirements and features:

a. A designated tract of land consisting of a parcel or parcels of contiguous land or land on both sides of a public street, totaling one (1) acre or more;

Staff comments: The 13.5 acre site meets this requirement.

b. Developed in a comprehensive, design-integrated manner, according to an overall master development plan;

Staff comments: The buildings proposed for this phase of the project largely adhere to the approved MDP building footprints, with deviations to internal circulation patterns that are the subject of the current amendment request. With the exception of the new central greenspace, the various spaces within the development site have been programmed and depicted on the plans in accordance with the original MDP.

c. Consistent with the objectives of this ordinance; and d. Consistent with the City's Comprehensive Plan and consistent with City Council approved master plans and facility plans for off-premise infrastructure, including but not limited to, trails, pedestrian and bicycle network, view corridors, environmental management, sewer and stormwater, streets, or other facilities (see Section 15 of the Technical Manual);

Staff comments: There are no formal City Council approved plans in the vicinity except for the Evergreen Cemetery Master Plan. In 2019 and 2020, the applicant worked with staff on the design and siting of a new METRO bus shelter on Stevens Avenue, along with a related path through the Motherhouse site. These improvements required coordination with the Maine Historic Preservation Office and METRO and have since been constructed. MDP conditions related to monitoring of environmental conditions and preservation efforts within the adjacent Baxter Woods, including provision of funds by the applicant for improvements to City park facilities and water quality monitoring in the Woods, have been undertaken in collaboration with Parks staff in the years since the original MDP approval.

e. Developed so as to locate buildings and improvements in a manner that provides usable open space, preserves significant natural features, as defined by the site plan ordinance standards, and preserves existing trees to the maximum extent possible;

Staff comments: The development site for this phase of the project field is an athletic field associated with the McAuley School and does not include significant natural features; additionally, the four new buildings have been sited within the same footprints as shown on the 2016 MDP.

f. Ordinance standards for designated landmarks or for properties within designated historic districts or designated historic landscapes, if applicable. When proposed adjacent to or within one

hundred (100) feet of designated landmarks, historic districts or historic landscapes, the Master Plan shall be developed so as to be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity of the proposed development;

Staff comments: The four buildings proposed under Stevens Square Phase 2 are all greater than 100 feet from the Motherhouse, and all four use the same basic design as the existing Building 1, the closest of the five structures to the Motherhouse that was previously reviewed and approved in 2018. This standard does not apply.

g. An efficient use of land which properly considers topography and protects significant natural features including, but not limited to, waterways, wetlands, floodplains and wildlife;

Staff comments: The use of the land under this phase of the project is consistent with what was proposed under the 2016 MDP; building footprints, as well as the general site layout, relate to Mayor Baxter Woods and adjacent significant natural features in the manner that was contemplated under the 2016 MDP.

h. An efficient use of land demonstrating full coordination of its own site development and surrounding context including, but not limited to, the land uses and functions contemplated, architecture, open space and pedestrian networks, vehicular access and circulation, and all other infrastructure; and

i. Linked and coordinated with surrounding land uses, infrastructure and off-site public facilities, including but not limited to the public school system, where appropriate, in a manner that is safe, efficient, non-injurious to the public, and an improvement or benefit to the public where possible; and

Staff comments: The 2016 MDP included a number of approval conditions intended to mitigate the short- and long-term impact of Stevens Square's development on Baxter Woods, as well as its effects on local trip and parking generation, infrastructure usage, and pedestrian circulation within the wider neighborhood. These are addressed in Subsection 4 below.

j. Designed with sizing of street and other infrastructure systems to accommodate the overall service demand of the Master Plan;

k. Designed to create a street grid pattern that reflects average city block sizes of the neighborhood for street connectivity;

l. Staff comments: Under the 2016 MDP, the applicant proposed a full turn access on Walton Street and a one-way system in front of the Motherhouse that allows a right in and right out only with the egress being to the north. This was proposed to address concerns about congestion and

safety on Stevens Avenue and direct vehicles to the signaled turn locations. The circulation pattern proposed in the 2016 MDP is shown in the figure to the right, and an updated circulation plan is under development by the applicant. Under the revised plan, each of the new buildings is accessed via its own driveway, with the central traffic circle done away with. Other components of the proposed project are consistent with what was proposed and approved under the MDP, with additional information provided within the Major Site Plan subsection of the memo's Staff Review section.

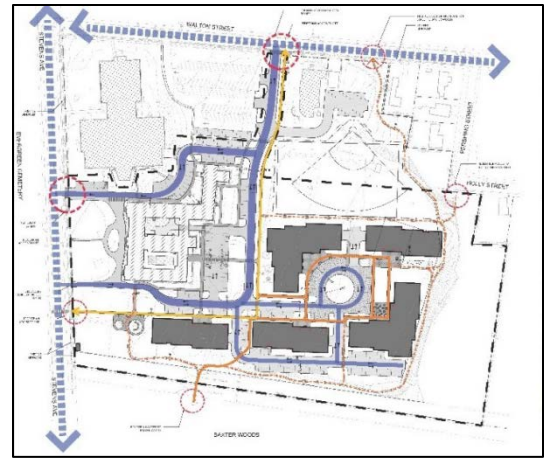


Figure 11: 2016 MDP Circulation Plan

m. Designed as to create a cohesive identity through building scale, massing, and articulation; use of quality exterior materials, architectural detailing at pedestrian scale; consistency of design and materials for streetscape and pedestrian amenities; framing of outdoor open space and linkages; a clear conveyance of the function and significance of various buildings, entrances, and features; and to generally comply with design and development standards of the zone in which it is located;

Staff comments:

All new phases of the project are subject to design review to determine consistency with the MDP's Architectural Characteristics Statement. Please see the Design Review section of this memo for staff's initial findings on this topic.

n. Inclusive of provisions for the ownership and maintenance of usable open space as appropriate;

Staff comments: The 2016 MDP submission included draft Condominium Documents that outlined the management arrangements for the MDP area, including the open space. An updated set of these documents should be provided prior to the next Planning Board meeting. A conservation easement along the edge of the development site, adjacent to Baxter Woods, was contemplated, but has not been included within the Right, Title, and Interest materials provided for this application. Corporation Counsel offers the following comments:

Please supplement the submissions on RTI with respect to easements 1 and 2 with particular attention paid to contemplated conservation easements over them as outlined in an earlier subdivision plat for the whole of the site.

o. For areas proposed as future development phase(s), the proposed interim conditions shall be managed and maintained to ensure stable, safe and attractive site conditions.

Staff comments: The applicant proposes to develop the current project in three phases: Building 2 would be the first phase, Building 3 the second, and Building 4 and 5 the third. While a basic phasing plan has been provided within the Major Site Plan materials, key details on the functionality of the site between phases have not yet been fleshed out. The applicant has yet to

provide an update to the original phasing plan included within the 2016 MDP, which contemplated a different phasing scheme for the buildout of Stevens Square.. Staff have asked that this be provided in advance of the next Planning Board workshop.

4. 2016 MASTER DEVELOPMENT PLAN CONDITIONS

Approval conditions within the 2016 MDP included the following:

- Overall Site Plan and Phasing
- Traffic and Parking
- Transit/Bus Shelter Provision
- Baxter Woods Preservation & Monitoring
- Lighting
- Conservation Easements
- Design

As stated elsewhere in the memo, the bus shelter was installed along the Stevens Avenue frontage of the Motherhouse in 2020 and is now operational. The status of the project's compliance with the remaining conditions are currently under review by staff.

A. SITE PLAN AND SUBDIVISION SUBMISSION REQUIREMENTS

The applicant has submitted a recording plat for review, and as of this writing, the plat is under review by the City Surveyor. Comments are expected to be forthcoming in advance of the Planning Board workshop for this item. As is customary, the final plat will need to be revised to reflect the aforementioned conservation easement(s) as well as any waivers and conditions of approval that relate to the subdivision plan. Any waivers granted must be recorded at the Registry of Deeds within two years of a Planning Board decision.

B. SUBDIVISION (Section 14-491)

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

1. Will Not Result in Undue Water or Air Pollution (Sec. 14-497(a)1)

The project is not anticipated to result in undue air or water pollution.

2. Sufficient Water Availability and Will Not Cause Unreasonable Burden on Existing Water Supply (Sec. 14-497(a)2) and (3)

Currently, a maintenance easement, fifty feet in width, currently exists on Lot 3 of the site (vicinity of existing Building 1) through which below grade utilities, including water, will be extended to serve the four new buildings. An ability to serve letter from Portland Water District has not yet been provided.

3. 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 (Sec. 14-497(a)4)

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated given the site. The Site Plan (Plan 6), Erosion Control Plan (Plan 12), and Grading & Drainage Plan (Plan 11) include measures designed to stabilize the site during and after construction.

4. 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) (Sec. 14-497(a)5)

The proposed development is located on the inner side of the former Sisters of Mercy block and has access points to the City street network via site driveways that connect to Stevens Avenue and Walton Street. The applicant contemplates a circulation scheme in which vehicles primarily enter the site via Walton Street and exit via Stevens Avenue in order to manage vehicles throughout and turning movements at each of the access points. Tom Errico, Consulting Traffic Engineer, has reviewed the proposed project materials and recommends the following preliminary comments:

- *A parking study of the Phase 1 building shall be conducted during peak demand time periods to determine parking generation rates for the future residential land use phases.*
 - *A trip generation study shall be conducted at the Phase 1 building as part of updating the trip generation estimate for the entire project site (existing and future uses) with the objective of determining the need for a MaineDOT Traffic Movement Permit.*
5. Will provide for adequate sanitary waste and storm water disposal and will not cause an unreasonable burden on municipal services if they are utilized (Sec. 14-497(a)6)
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 (Sec. 14-497(a)7)

The project is proposed to connect to an eight-inch common sewer line running beneath Holly Street that will be relined in anticipation of the increased flows that this project will generate. The applicant will need to submit a capacity letter from Department of Public Works (DPW) stating that there is sufficient sewer capacity to serve the project.

6. 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, rare and irreplaceable natural areas, or any public rights for physical or visual access to the shoreline (Sec. 14-497(a)8)

The development site, currently Lot 4, is not within or proximate to an historic district. While the Motherhouse is a National Register-listed landmark, it is located greater than 100 feet from the closest of the four new buildings that comprise this project. The site is already developed with uses that include the legacy Sisters of Mercy buildings and an athletic field, with Baxter Woods located offsite to the south and east. The site is not proximate to the shoreline.

7. Is in conformance with the Comprehensive Plan, Portland's Plan 2030 (Sec. 14-497(a)9)

The proposed project supports a number of goals identified in *Portland's Plan 2030*, particularly the Housing Section. Those goals include increasing the overall supply of housing city-wide to meet the needs, preferences, and financial capabilities of all Portland residents, to encourage contextually appropriate housing density, and to enable people who work in Portland to live in Portland. Comprehensive Plan goals relevant to the application are included below:

Housing: A Livable City

State Goals: To encourage and promote affordable decent, housing opportunities for all Maine citizens

Local Goals:

- Increase, preserve, and modify the overall supply of housing City-wide to meet the needs, preferences and financial capabilities of all Portland households.
- Encourage additional contextually-appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.
- Pursue policies to enable people who work in Portland to have the option to live in Portland.
- Encourage quality, sustainable design in new housing development.

Goals from Future Strategies:

3. Remove Housing Barriers

- Identify priority growth areas.
- Allow for a range of housing models in City codes, whether small units, co-housing, or others that may suit changing needs and demographics.

8. The subdivider has adequate financial and technical capacity (Sec. 14-497(a)10)

The owner of the property is DC Baxter Woods, LLC. The applicant has provided a copy of quitclaim deed, recorded at the Cumberland County Registry of Deeds (Book 36065 Page 326), which demonstrates their right, title and interest in the property. The applicant has submitted a Statement of Financial Capacity letter from their financial institution, as demonstration of their financial capacity (Attachment F). A Statement of Technical Capacity has been provided by the applicant's representative, Gorrell Palmer Consulting Engineers, along with a summary of key members of the applicant team for the project. (Attachment G).

9. Wetland/Water Body Impacts (Sec. 14-497(a)11 and 14)

A forested wetland lies along the far eastern edge of the development site, downslope from the four new buildings. This aspect is still under review; no issues have been identified to date.

10. Will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater (Section 15.4.1 L) (Sec. 14-497(a)12)

There are no anticipated impacts to groundwater supplies.

11. Flood-Prone Area (Sec. 14-497(a)13)

As per the FEMA flood maps, the site is not located in a flood zone and therefore this standard is not applicable.

12. Shore Frontage (Sec. 14-497(a)15)

The parcel does not have shore frontage. No river, stream or brook within or abutting the proposed subdivision.

B. SITE PLAN STANDARDS (Section 14-526)

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

a) Transportation Standards**1. Impact on Surrounding Street Systems and Access and Circulation**

Please see Subdivision standards, Subsection 4 above.

2. Access and Circulation

This project will make use of the existing site driveways, with a two-way access point to Walton Street provided via McAuley Way and a secondary access point to Stevens Avenue through site driveways adjacent to the Motherhouse. Mike Tremblay, former Senior Engineer with DPW, commented as follows:

- *There is a tipdown south of the McAuley Way intersection of the 71-space surface lot that appears to lead to nowhere.*

3. Public Transit Access

In fulfillment of one of the 2016 MDP conditions, a bus shelter was installed along the Stevens Avenue frontage in 2020. The project is within a quarter mile of several existing bus stops (Routes 9A and 9B). This standard has been met.

4. Parking: Vehicle and Bicycle

This project proposes 260 vehicle and 64 bicycle parking spaces, including both surface and structured, first-floor parking spaces within the buildings. For the vehicle parking portion, this yields a parking ratio of 1.86 spaces per unit, an amount that aligns with the 2.0 spaces per unit required for multifamily residential uses under the Land Use Code that was in effect at the time of the 2016 MDP approval.

Mike Tremblay, former Senior Engineer with DPW, has reviewed this and recommends the following comments:

- *The number of accessible parking spaces in each parking area appears to be too few; for parking areas of 26 spaces or more, two HP spaces are required, one of which must be van accessible.*
- *Consider the use of structurally-reinforced grass for visitor spaces in lieu of pavement to reduce impervious surface levels at the site*
- *The floor plans for the garage do not show the first floor columns; the location of those columns has implications for turning movements. Please update the plans to include them.*
- *Consider the use of compact parking spaces to reduce impervious surface levels; all spaces appear full-size currently*

b) Environmental Quality Standards**1. Preservation of Significant Natural Features**

Potential impacts to significant natural features were reviewed in depth in connection with the 2016 MDP, and conditions related to the monitoring of the health of Baxter Woods via an agreement between the applicant and the City were included within the approvals. DPW Water Resources staff comment as follows:

- *Staff are concerned about stormwater flow to the proposed drainage swale and the impact that stormwater events may have on Baxter Woods. Please provide additional material demonstrating how the project will seek to minimize stormwater impacts on Baxter Woods.*

2. Landscaping and Landscape Preservation

The tree preservation proposals were reviewed in depth during the review of the MDP and the site plan proposals are in line with the MDP tree removal and planting proposals, with the exception of the surface parking lots located north of buildings 4 and 5, as at that time, surface parking was to have been provided within the space between the four buildings rather than via perimeter surface lots. As shown currently, these lots do not yet provide adequate landscaping around the edges along the property line. The landscaping plan has been included within Plan 19. Jeff Tarling, City Arborist, comments as follows:

- *The proposed Stevens Square project is next to one of the more significant natural areas in Portland, Mayor Baxter Woods. Given the site location, focusing on Maine's native plants should be an attraction for future residents; this could be an educational factor as well as helping native habitat. We would recommend the tree and plant pallet better reflect native Maine trees & shrubs. Percentage wise, a few 'exotic' specimen plants would be acceptable. This would also follow earlier tree and landscape themes for earlier phases of Stevens Square.*
- *The landscape buffer along Mayor Baxter Woods should be increased. A tree and landscape priority here would be to provide greater buffer plantings along the project edge abutting Mayor Baxter Woods. This also has been an important topic since Phase 1 and earlier work at McAuley Field. As shown, the parking lots are inadequately screened from the Baxter Woods natural areas. Night lighting should also be limited to low lighting standards and perhaps motion detection versus all night lighting. Mayor Baxter Woods is also an important ecological and habitat area as stated in the Baxter Deed; the Woods is a sanctuary for wild birds and is a municipal forest. This proximity to this important natural area needs to be respected and represented in the tree / landscape plan.*
- *Please also be advised the parking lot does not meet the tree & landscape standards as shown.*

3. Water Quality, Storm Water Management and Erosion Control

Staff have determined that the project is required to comply with Maine DEP Chapter 500 regulations as well as Section 5 of the Technical Manual for stormwater management. This requires compliance with the Basic, General, and Flooding Standards. The Applicant has provided a detailed Erosion and Sedimentation Control plan to meet the Basic Standards. The project will also require a Stormwater Maintenance Agreement; a draft Agreement has been provided and will need to be updated as needed for each of the three project phases. Lauren Swett, Consulting Stormwater Engineer, offers the following comments:

- *The Applicant has provided a stormwater O&M manual and draft maintenance agreement. The documents should take into consideration any phasing of the work. The way that the proposed agreement works in conjunction with any existing agreement should also be considered, as the proposed Filterra will be replacing a previously approved infiltration system on the adjacent developed site.*
- *A detailed plan for demolition has been provided. Some further clarification of stormwater demolition should be provided. It was specifically noted that additional information should be provided on capping of the remaining structure located to the west of the site, at the midpoint of the property line along McAuley Way, where the stormdrain piping has been called out to be removed. Further clarification on removal or protection of DMH 4 and CB 19 should also be provided, as there are some conflicts between the demolition plan and the grading plan.*
- *With the proposed phasing, the Applicant should consider the timing and the implications on site grading, utility installation, and landscaping. The plans show a comprehensive plan for the entire site for these features. The timing of phasing, and the need to stabilize and manage edges of the different phases should be considered.*
- *I would suggest a few more spot grades be added to the driveways leading to the building garage doors. Specifically, the driveway between Buildings 2 and 3 appears to show a higher grade to the north of the doorway entrances, implying that stormwater could flow from the driveway into the garage entrances.*

Public Infrastructure and Community Safety Standards

1. Consistency with City Master Plans

See Subdivision standards, subsection 7, above.

2. Public Safety and Fire Prevention (CPTED and Fire)

The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance addresses 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 general concept for the site's layout was reviewed and approved under the 2016 MDP, with building footprints, drive aisles, and curb radii largely in accordance with those plans. Jason Duval, Life Safety Reviewer, offers the following comment:

- *The turnaround for buildings 1 and 2 should be at the end, not in the middle. For Buildings 3 and 4, the City requires better access to the buildings in the rear - possibly via a fire lane near the walkway that goes around building 3. Alternately, the driveway could extend farther down and wrap somewhat around building 3.*

3. Availability and Adequate Capacity of Public Utilities

The Applicant has contacted the Portland Water District and Department of Public Works requesting ability to serve for water and sewer and awaits a response; confirmation of ability to serve letters should be forwarded to the Planning Authority.

c) Site Design Standards**1. Massing, Ventilation and Wind Impact**

The four new buildings proposed under this phase are not anticipated to impact any adjacent structures as it relates to their bulk, or diminution of available light and air to abutting properties. The closest structures to the new buildings at Stevens Square Building 1 and the Motherhouse, with the former building more than 50 feet from building 2 and the latter more than 100 feet from buildings 2 and 4. Rooftop HVAC mechanicals have been shown on the plans for each of the buildings.

2. Shadows

This standard was addressed during the 2016 MDP review and has not changed via this phase.

3. Snow and Ice Loading

The applicant is proposing on-site snow storage; Water Resources staff have noted that several of the pervious parking spaces have been used for snow storage, which is not ideal from a drainage perspective. The applicant is encouraged to explore alternate locations for onsite snow storage.

4. View Corridors

This standard was addressed during the 2016 MDP review and has not changed via this phase.

5. Historic Resources

The site is not within a historic district or within 100 feet of a historic district and is greater than 100 feet from the National Register-listed Motherhouse. No impacts to historic resources are anticipated.

6. Exterior Lighting

A site lighting and photometric plan has been provided. Staff request that the applicant provide cutsheets for each lighting fixture that include lumens, color temperature, and other metrics set forth in the Technical Manual. Jeff Tarling City Arborist, recommends that the applicant consider using motion detectors in lieu of night lighting for areas along the Baxter Woods property line.

7. Noise and Vibration

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

8. Signage and Wayfinding

This standard is still under evaluation by staff, as wayfinding signage materials were not provided within the initial application submission.

9. Zoning Related Design Standards

A design review according to the City of Portland Design Manual Standards was performed for the four buildings proposed under this phase. The review was performed by Caitlin Cameron, Urban Designer, Kevin Kraft, Deputy Director, and James Rather, Development Review Manager. The project was reviewed against the adopted Architectural Characteristics Summary from the 2016 MDP.



Figure 12: Building 2 Rendering

Staff finds that the buildings generally meet the intent of the MDP's Architectural Characteristics Statement, with alterations recommended as follows:

- Material Palette
 - Revise by applying the granite base from Building 1 to the four buildings within this phase
 - Swap placement of fiber cement cladding with brick for Buildings 3 and 5
 - Revisit the brick-clad massing projections; an inconsistency with faux mansard roof line is visible on the drawings
- Building Entry
 - Recommend that stone material be used at each building entry

Please see Attachment 5 for the full Design Memo.

VIII. PUBLIC COMMENT

A total of 114 notices were sent to property owners within 500 feet of the site and a legal ad ran in the *Portland Press Herald* on July 30th and 31st. A remote Neighborhood Meeting was held on July 28, 2021 with 19 members in attendance. Concerns raised include traffic impacts, impacts to Motherhouse residents during construction, requests for EV charging, and potential impacts to Baxter Woods.

At the time of writing this memo, the Planning Department has received two public comments (PC 1-2).

Public feedback at the neighborhood meeting and written comments submitted include support for new housing being created. Other comments included concerns about the modern looking aesthetics of the building and relationship to the neighborhood, lighting, traffic/safety, loss of natural rain absorption in soil, and measures to improve public safety in the recreational lawn area at night.

IX. NEXT STEPS

- Planning Board to provide feedback on:
 - Consistency of interior circulation and phasing changes with the 2016 MDP
 - Landscaping treatments at northerly surface parking lot and along edge condition adjacent to Baxter Woods
 - Design of new buildings and conformance with the MDP Architectural Characteristics Statement
- Applicant to:
 - Provide construction management plan
 - Provide updated MDP drawings to show changes to interior circulation and phasing
 - Carry out parking demand study pursuant to discussion with Consultant Traffic Engineer
- Second Planning Board workshop to be held at a date to be determined

X. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Department of Public Works Comments
2. Consulting Traffic Engineer Comments
3. Consulting Civil Engineer Comments
4. City Arborist Comments
5. Design Review Comments
6. Consolidated Staff Review Comments
7. 2016 Master Development Plan Hearing Report
8. 2016 MDP Architectural Characteristics Summary

APPLICANT'S SUBMITTAL

- A. Cover Letter & Project Description
- B. Major Site Plan Checklist
- C. Right, Title, and Interest
- D. Zoning Analysis
- E. Waiver Requests
- F. Financial Capacity
- G. Technical Ability
- H. Transportation Standards Compliance
- I. Environmental Standards Compliance & Stormwater Management
- J. Construction Management

- K. Public Infrastructure and Community Safety
- L. Site Design Standards Compliance
- M. Neighborhood Meeting Certification

PLANS

- Plan 1 – Cover Sheet
- Plan 2 – General Notes
- Plan 3 – Boundary & Topographic Survey
- Plan 4 – Seconded Amended Subdivision Plan
- Plan 5 – Overall Site Plan
- Plan 6 – Site Layout Plan
- Plan 7 – Building 2 Layout Plan
- Plan 8 – Building 3 Layout Plan
- Plan 9 – Building 4 Layout Plan
- Plan 10 – Building 5 Layout Plan
- Plan 11 – Grading & Drainage Plan
- Plan 12 – Erosion Control Plan
- Plan 13 – Phasing Plan
- Plan 14 – Utility Plan
- Plan 15 - Existing Conditions & Removals Plan
- Plan 16 – Building 2 Plans & Elevations
- Plan 17 – Building 3 Plans & Elevations
- Plan 18 – Building 1 Plans & Elevations
- Plan 19 – Landscape Plan & Details
- Plan 20 – Site Lighting & Photometric Plan
- Plan 21 – Utility & Storm Drain Profiles
- Plan 22 – Water Quality Plan
- Plan 23 – Access Drive Plan & Profile
- Plan 24 – Pre and Postdevelopment Watershed Plan
- Plan 25 – Site Detail Sheets

PUBLIC COMMENT

- PC1 – Tom Randall
- PC2 – Elizabeth Duffy

From: [Mike Tremblay](#)
To: [James Rather](#)
Cc: [Tom Errico](#); [John Peverada](#); [Jeff Tarling](#); [Ann Machado](#); [Jason Duval](#); [Swett, Lauren](#)
Subject: Re: Stevens Square Phase 2 @ Dev Rev
Date: Monday, July 12, 2021 8:42:16 AM

James,

We looked at this last week. Our initial comments include:

- The number of accessible parking spaces in each parking area appears to be too few; for parking areas of 26 spaces or more, two HP spaces are required, one of which must be van-accessible.
- Water Resources should approve the tie-in to Holly Street.
- There is a tipdown south of the McAuley Way intersection of the 71-space surface lot that appears to lead to nowhere.

Happy to discuss any additional issues further.

Mike Tremblay, P.E.
Senior Engineer
Engineering Division
Department of Public Works
City of Portland, ME
mtremblay@portlandmaine.gov
P. 207.874.8881 F. 207.874.8852



On Fri, Jul 9, 2021 at 4:58 PM <jrather@portlandmaine.gov> wrote:

Hi everyone,

This week, I presented Stevens Square Phase 2 (65 McAuley Way) at Wednesday Development Review. We are quite short staffed at the moment, so I've taken on management of the planning review for this project myself. A number of folks were out of office this week, so I'd like to bring it back to the group next Wednesday morning for an additional discussion. Please be ready to discuss the project at that meeting – we're currently targeting an **August 10th** Planning Board workshop, and I'd like to get a first round of comments to their team soon. It's PL-001649-2021 in e-plan.

Thanks,

-James

James J. Rather, AICP
Development Review Manager
Planning & Urban Development Department
389 Congress Street
Portland, Maine 04101
jrather@portlandmaine.gov
Ph: (207) 874-8699

From: [Lauren Swett](#)
To: jrather@portlandmaine.gov
Subject: 65 McAuley Way Comments
Date: Monday, July 26, 2021 4:42:56 PM

Hi James,

I've reviewed the application materials for 65 McAuley Way, and have the following preliminary comments to supplement our discussions during development review.

- The project is required to comply with Maine DEP Chapter 500 and Section 5 of the City of Portland's Technical Manual for stormwater management. The project must comply with the Basic, General, and Flooding Standards. I have the following comments:
 - Basic Standards – The plans include erosion and sedimentation control details and notes in compliance with the Basic Standards. An overall Erosion and Sediment Control Plan has been provided for the entire site, however it is our understanding that the project will be completed in 3 phases. Erosion control will be provided for each phase of construction, and should be reflected in this way in the plans.
 - General Standards – The project will meet the General Standards through the use of pervious pavers, focal point filters, and subsurface detention ponds. In addition, a Filterra Bioretention system will be installed to replace an existing infiltration trench on the adjacent site. Please provide information from the previous approval showing the area draining to the previous stormwater system, and now the proposed Filterra.
 - Flooding Standards – The project has been designed to mitigate flows, reducing flows in the evaluated storm events at the two points of interest, in compliance with the Flooding Standards.
- The Applicant has provided a stormwater O&M manual and draft maintenance agreement. The documents should take into consideration any phasing of the work. The way that the proposed agreement works in conjunction with any existing agreement should also be considered, as the proposed Filterra will be replacing a previously approved infiltration system on the adjacent developed site.
- A detailed plan for demolition has been provided. Some further clarification of stormwater demolition should be provided. It was specifically noted that additional information should be provided on capping of the remaining structure located to the west of the site, at the midpoint of the property line along McAuley Way, where the stormdrain piping has been called out to be removed. Further clarification on removal or protection of DMH 4 and CB 19 should also be provided, as there are some conflicts between the demolition plan and the grading plan.
- With the proposed phasing, the Applicant should consider the timing and the implications on site grading, utility installation, and landscaping. The plans show a comprehensive plan for the entire site for these features. The timing of phasing, and the need to stabilize and manage edges of the different phases should be considered.
- I would suggest a few more spot grades be added to the driveways leading to the building garage doors. Specifically, the driveway between Buildings 2 and 3 appears to show a higher grade to the north of the doorway entrances, implying that stormwater could flow from the driveway into the garage entrances.
- The Applicant has reached out to utilities with regards to ability to serve and has noted that confirmation of ability to serve will be forwarded upon receipt.

Let me know if there are any questions.

Thanks,
 Lauren

All Woodard & Curran consulting employees are currently working from home. I do not have regular access to mail or other deliveries made to the office. You can still reach me via email or at my direct or cell phone numbers.

Lauren Swett, P.E.*
Technical Manager
Woodard & Curran
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Chair, Leader Training Committee
American Society of Civil Engineers
<http://regions.asce.org/leader-training-committee/>

Planning and Urban Development Department Planning Division



Subject: Design Review – 65 McAuley Way – Buildings #2-#5

Written by: Caitlin Cameron, Urban Designer

Date of Review: Wednesday, July 21, 2021

The preliminary review for buildings #2-5 was conducted on Wednesday, July 21st by Caitlin Cameron, Urban Designer, James Rather, Development Review Manager, and Kevin Kraft, Deputy Planning Director. The applicable design standards are the adopted Architectural Characteristics Summary from the Master Development Plan.

The approved Master Plan design considerations include cohesiveness within the proposed development as well as compatibility with the context. In this case, the immediate context is the Motherhouse and campus property on which future developments will be situated.

Comments/Questions

- Consistently label drawings to reflect building numbering
- Provide elevations for all four buildings

Architectural Design

The Architectural Characteristics Summary describes those characteristics that should apply to all future architectural proposals.

1. Building Footprints – The scale, placement, orientation, and footprint of the buildings are consistent with the approved Master Development Plan. The proposed footprints successfully mitigate the scale of the building through the use of varied forms and change of building plane. The buildings are also placed interior to the lot and are therefore less visible from public rights-of-way and neighboring properties, buffered by space and trees. Consideration was given to the impact on Baxter Woods and the Motherhouse.
2. Roof Lines – Flat roof forms are prescribed.
3. Motherhouse Context – Characteristics taken from the Motherhouse to be applied to new development include: granite base; reference to the Motherhouse roofline and proportions through material changes and floor delineation; regular pattern of vertical proportioned windows, and brick elements using brick of similar color and pattern as the Motherhouse.
4. Material Palette – The material selection and color palette are consistent with the approved MDP. **Staff would like to see the granite base applied to all buildings and at primary entry points.**
 - o **Stone/granite base should consistently appear throughout all four buildings and should follow similar design to Building #1 by wrapping around whole building**

- o Buildings #3 and #5 – **Staff recommend swapping the placement of fiber cement cladding with the brick** to better relate the character of the buildings with the Motherhouse and convey the main building mass to be clad in the sturdier brick material.
 - o Buildings #2 and #4 have massing projections clad in brick – these have **an odd relationship with the faux mansard roof line**. In the Building #1 design, these were carried up to terminate with the roofline. Staff do not support these massing variations to have a different terminus that already-established datums within the building that visually conflict with the balconies and roof spring point.
5. **Building Entry** –The entry for each building is emphasized by a one-story porch, large windows, and special material placement. **Staff recommend that the stone material be used at all entrance locations.**
 6. **Massing** - The scale of the building is mitigated through the use of varied forms and change of building plane, deck spaces, and façade composition. Buildings #2 and #4 - resolve the awkward relationship of the massing projections with the balcony/roof line.
 7. **Parking** – Structured parking is proposed to be designed to have similar character to the residential building above.
 8. **Window types** will be consistent with vertical proportion throughout all buildings – the proposal meets this guideline. There are approximately three window types, all with vertical proportions and used consistently.

Additional Design Considerations:

The following guidelines will be taken into consideration for the architecture and design of future Site Plan development applications:

- Flat or hipped roof line referential of the Motherhouse would be acceptable provided the proportion and slope of the roof is comparable and compatible as well as consistent throughout all the buildings. - The project uses a material change on the fifth floor to create a visual effect similar to the hipped roof of the Motherhouse to meet this guideline. Staff feel that this faux roof line is successful and consistent with the MDP guidelines.
- In the new buildings, maintain the proportional relationship of “roof” to façade found in the Motherhouse. - The building design does not reflect these proportions. The base “water table” line should also be carried consistently around the building and possibly be lowered to improve the overall building proportions.
- Use as few material types as possible. – The proposal meets this guideline by limiting the materials to brick, stone base, and tile on the top floor.
- The building nearest the Motherhouse should be designed with the most sensitivity to the context of the historic structure. – the comments above reflect how the design might be revised in relationship to the Motherhouse context. Overall, the new buildings are set back from the street in deference to what should be the focal point of the property – the historic Motherhouse building. The proportions, materials, fenestration pattern, and roofline are the most critical elements for compatibility with the Motherhouse building.

GENERALCity Planning Staff

- Please provide an interim conditions plan depicting, in detail, the layout and configuration of the development site during each of the three phases. How will portions of the development site on which future phases of the project will be built and programmed during the interim between each phase?
- Please providing additional materials to address the proposed lighting scheme for the project and its compliance with Section 12 of the City's Technical Manual. Specifically:
 - The provided photometrics plan does not include a stamp
 - The photometrics plan appears to show lighting levels that fall below the 0.2 foot-candle standard within the parking lot – please verify that this standard has been met
 - While cutsheets for lighting fixtures have been provided, please include further data on how these fixtures meet color temperature, lumens, and other key metrics for lighting as set forth in the Technical Manual
- Please clarify - regarding the unit mix: are all of the units to be deed restricted to individuals 55+ in age, or are a portion of them to be unrestricted?

TRANSPORTATIONDPW Development Review Division

- There is a tipdown south of the McAuley Way intersection of the 71-space surface lot that appears to lead to nowhere; please clarify, or remove if unneeded
- As shown on the plans, the site is heavily parked, at a ratio of approximately 2:1 ratio; please provide additional rationale justifying the proposed parking allotment
- The number of accessible parking spaces in each parking area appears to be too few; for parking areas of 26 spaces or more, two HP spaces are required, one of which must be van-accessible.
- Consider the use of structurally-reinforced grass for visitor spaces in lieu of pavement to reduce impervious surface levels at the site
- Consider providing additional electric vehicle chargers, both within the garage spaces and surface lots
- Consider the use of compact parking spaces to reduce impervious surface levels; all spaces appear full-size currently
- The floor plans for the garage do not show the first floor columns; the location of those columns has implications for turning movements. Please update the plans to include them.

Consulting Traffic Engineer

- The Master Development Plan (MDP) had a condition of approval for the construction of a crosswalk on Stevens Avenue at Walton Street. City will review implementation details and will provide feedback in the future.
- The MDP had a condition of approval for the conduct of a traffic monitoring study as it relates to trip generation. It seems to make sense that the study be conducted now with the first

building occupied. With the McAuley School leaving the site, overall trip generation will likely not trigger a Traffic Movement Permit.

- The MDP had a condition of approval for conducting parking monitoring studies. The applicant should begin the process of detailing the scope of work and performing the work as appropriate, given changes since the closing of McAuley School.

WATER QUALITY, STORMWATER & INFRASTRUCTURE

DPW Water Resources Division

- Is the proposed stormwater system to be completely built out within the first phase of the project, or will the system itself also be phased? If the latter, please provide materials (narrative and plans) that speaks to how the system will be constructed in a phased manner and how it will operate during each phase
- Please be advised that the project will need a Stormwater Maintenance Agreement that will be recorded concurrently with the subdivision plat. The Agreement may require amendments to address each phase if the stormwater system is built out in a segmented fashion.
- Please provide a dewatering plan
- Staff are concerned about stormwater flow to the proposed drainage swale and the impact that stormwater events may have on Baxter Woods. Please provide additional material demonstrating how the project will seek to minimize stormwater impacts on Baxter Woods
- Staff note that the use of pervious parking spaces for snow storage is not ideal from a drainage perspective; are there alternate locations that could be explored?
- The eight-inch sewer beneath Holly Street will be lined in anticipation of the increased flows that this project will generate.

Consulting Stormwater Engineer

- The project is required to comply with Maine DEP Chapter 500 and Section 5 of the City of Portland's Technical Manual for stormwater management. The project must comply with the Basic, General, and Flooding Standards. Comments are as follows:
 - Basic Standards – The plans include erosion and sedimentation control details and notes in compliance with the Basic Standards. An overall Erosion and Sediment Control Plan has been provided for the entire site, however it is our understanding that the project will be completed in three phases. Erosion control will be provided for each phase of construction, and should be reflected in this way in the plans.
 - General Standards – The project will meet the General Standards through the use of pervious pavers, focal point filters, and subsurface detention ponds. In addition, a Filterra Bioretention system will be installed to replace an existing infiltration trench on the adjacent site. Please provide information from the previous approval showing the area draining to the previous stormwater system, and now the proposed Filterra.
 - Flooding Standards – The project has been designed to mitigate flows, reducing flows in the evaluated storm events at the two points of interest, in compliance with the Flooding Standards.
- The Applicant has provided a stormwater O&M manual and draft maintenance agreement. The documents should take into consideration any phasing of the work. The way that the proposed agreement works in conjunction with any existing agreement should also be considered, as the

proposed Filterra will be replacing a previously approved infiltration system on the adjacent developed site.

- A detailed plan for demolition has been provided. Some further clarification of stormwater demolition should be provided. It was specifically noted that additional information should be provided on capping of the remaining structure located to the west of the site, at the midpoint of the property line along McAuley Way, where the stormdrain piping has been called out to be removed. Further clarification on removal or protection of DMH 4 and CB 19 should also be provided, as there are some conflicts between the demolition plan and the grading plan.
- With the proposed phasing, the Applicant should consider the timing and the implications on site grading, utility installation, and landscaping. The plans show a comprehensive plan for the entire site for these features. The timing of phasing, and the need to stabilize and manage edges of the different phases should be considered.
- I would suggest a few more spot grades be added to the driveways leading to the building garage doors. Specifically, the driveway between Buildings 2 and 3 appears to show a higher grade to the north of the doorway entrances, implying that stormwater could flow from the driveway into the garage entrances.
- The Applicant has reached out to utilities with regards to ability to serve and has noted that confirmation of ability to serve will be forwarded upon receipt.

CONSTRUCTION MANAGEMENT

- Please provide a Construction Management Plan, including both a drawing and narrative, that accounts for the phased nature of this project. Review of previous phases of the project raised concerns over the tracking of dirt onto paved, developed portions of the site and into the public way due to a substandard construction entrance; the plan should include measures to mitigate this.
- Please also note that staff have concerns around porous pavement and staging during phased project construction, as experience has shown that porous pavement is highly vulnerable to destruction from equipment during staging on phased projects.

PUBLIC SAFETY

Life Safety Office

- The turnaround for buildings 1 and 2 should be at the end, not in the middle. For Buildings 3 and 4, the City requires better access to the buildings in the rear - possibly via a fire lane near the walkway that goes around building 3. Alternately, the driveway could extend farther down and wrap somewhat around building 3.

LANDSCAPING & ENVIRONMENTAL QUALITY

City Arborist

- The proposed Stevens Square project is next to one of the more significant natural areas in Portland, Mayor Baxter Woods. Given the site location, focusing on Maine's native plants should be an attraction for future residents; this could be an educational factor as well as helping native habitat. We would recommend the tree and plant pallet better reflect native Maine trees & shrubs. Percentage wise, a few 'exotic' specimen plants would be acceptable. This would also follow earlier tree and landscape themes for earlier phases of

Stevens Square. There are many suggested resources to reference tree and plant types that are well suited for this site:

See:

- o <https://extension.umaine.edu/gardening/manual/plants-for-the-maine-landscape/>
 - o <https://mainenativeplants.org>
 - o <http://nenativeplants.uconn.edu/nativePlants.php>
 - o <https://wildseedproject.net/native-trees-for-northeast-landscapes-further-resources/>
- In regard to the Mayor Baxter Woods edge condition: the landscape buffer along Mayor Baxter Woods should be increased. A tree and landscape priority here would be to provide greater buffer plantings along the project edge abutting Mayor Baxter Woods. This also has been an important topic since Phase 1 and earlier work at McAuley Field. As shown, the parking lots are inadequately screened from the Baxter Woods natural areas. Night lighting should also be limited to low lighting standards and perhaps motion detection versus all night lighting. Mayor Baxter Woods is also an important ecological and habitat area as stated in the Baxter Deed; the Woods is a sanctuary for wild birds and is a municipal forest. This proximity to this important natural area needs to be respected and represented in the tree / landscape plan.
 - In regard to perimeter fencing: the fencing installed in earlier phases should continue for the length of the project's border with Baxter Woods.
 - In regard to plant selection: the tree and plant landscape plan should include an increased number of native plants.
 - The sketch below shows the area of concern of needed buffering / landscape -



- Please also be advised the parking lot does not meet the tree & landscape standards as shown.

SITE & BUILDING DESIGN

- A design review memo is attached. Please review and respond.

Planning and Urban Development Department

Planning Division



Subject: Design Review – 65 McAuley Way – Buildings #2-#5

Written by: Caitlin Cameron, Urban Designer

Date of Review: Wednesday, July 21, 2021

The preliminary review for buildings #2-5 was conducted on Wednesday, July 21st by Caitlin Cameron, Urban Designer, James Rather, Development Review Manager, and Kevin Kraft, Deputy Planning Director. The applicable design standards are the adopted Architectural Characteristics Summary from the Master Development Plan.

The approved Master Plan design considerations include cohesiveness within the proposed development as well as compatibility with the context. In this case, the immediate context is the Motherhouse and campus property on which future developments will be situated.

Comments/Questions

- Consistently label drawings to reflect building numbering
- Provide elevations for all four buildings

Architectural Design

The Architectural Characteristics Summary describes those characteristics that should apply to all future architectural proposals.

1. Building Footprints – The scale, placement, orientation, and footprint of the buildings are consistent with the approved Master Development Plan. The proposed footprints successfully mitigate the scale of the building through the use of varied forms and change of building plane. The buildings are also placed interior to the lot and are therefore less visible from public rights-of-way and neighboring properties, buffered by space and trees. Consideration was given to the impact on Baxter Woods and the Motherhouse.
2. Roof Lines – Flat roof forms are prescribed.
3. Motherhouse Context – Characteristics taken from the Motherhouse to be applied to new development include: granite base; reference to the Motherhouse roofline and proportions through material changes and floor delineation; regular pattern of vertical proportioned windows, and brick elements using brick of similar color and pattern as the Motherhouse.
4. Material Palette – The material selection and color palette are consistent with the approved MDP. **Staff would like to see the granite base applied to all buildings and at primary entry points.**
 - o **Stone/granite base should consistently appear throughout all four buildings and should follow similar design to Building #1 by wrapping around whole building**

- o Buildings #3 and #5 – **Staff recommend swapping the placement of fiber cement cladding with the brick** to better relate the character of the buildings with the Motherhouse and convey the main building mass to be clad in the sturdier brick material.
 - o Buildings #2 and #4 have massing projections clad in brick – these have **an odd relationship with the faux mansard roof line**. In the Building #1 design, these were carried up to terminate with the roofline. Staff do not support these massing variations to have a different terminus that already-established datums within the building that visually conflict with the balconies and roof spring point.
5. **Building Entry** –The entry for each building is emphasized by a one-story porch, large windows, and special material placement. **Staff recommend that the stone material be used at all entrance locations.**
 6. **Massing** - The scale of the building is mitigated through the use of varied forms and change of building plane, deck spaces, and façade composition. Buildings #2 and #4 - resolve the awkward relationship of the massing projections with the balcony/roof line.
 7. **Parking** – Structured parking is proposed to be designed to have similar character to the residential building above.
 8. **Window types** will be consistent with vertical proportion throughout all buildings – the proposal meets this guideline. There are approximately three window types, all with vertical proportions and used consistently.

Additional Design Considerations:

The following guidelines will be taken into consideration for the architecture and design of future Site Plan development applications:

- Flat or hipped roof line referential of the Motherhouse would be acceptable provided the proportion and slope of the roof is comparable and compatible as well as consistent throughout all the buildings. - The project uses a material change on the fifth floor to create a visual effect similar to the hipped roof of the Motherhouse to meet this guideline. Staff feel that this faux roof line is successful and consistent with the MDP guidelines.
- In the new buildings, maintain the proportional relationship of “roof” to façade found in the Motherhouse. - The building design does not reflect these proportions. The base “water table” line should also be carried consistently around the building and possibly be lowered to improve the overall building proportions.
- Use as few material types as possible. – The proposal meets this guideline by limiting the materials to brick, stone base, and tile on the top floor.
- The building nearest the Motherhouse should be designed with the most sensitivity to the context of the historic structure. – the comments above reflect how the design might be revised in relationship to the Motherhouse context. Overall, the new buildings are set back from the street in deference to what should be the focal point of the property – the historic Motherhouse building. The proportions, materials, fenestration pattern, and roofline are the most critical elements for compatibility with the Motherhouse building.



PLANNING BOARD REPORT PORTLAND, MAINE

605 Stevens Avenue Senior Housing (Lots 3 and 4)
Master Development Plan

Level III Master Development Plan
Sea Coast at Baxter Woods Associates, LLC, Applicant

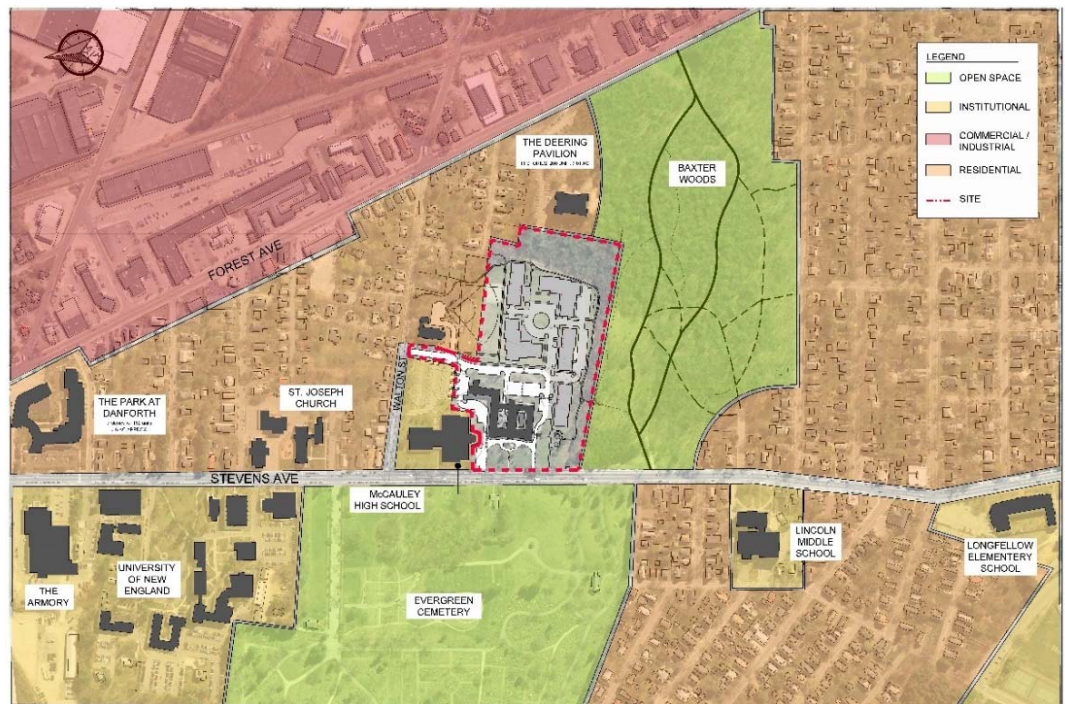
Submitted to: Portland Planning Board
Date: June 10, 2016
Public Hearing Date: June 14, 2016

Prepared by: Jean Fraser, Planner
CBL: 136 E006001
Project #: 2016-033

I. INTRODUCTION

Sea Coast at Baxter Woods Associates, LLC has requested approval of the Level III Master Development Plan (MDP) application for 249 dwelling units of senior housing on two lots (Lots 3 and 4, approximately 13.5 acres) at the corner of Walton Avenue and Stevens Avenue. The project has been considered by the Planning Board at two workshops, and the final proposals have been revised to address Board, staff and neighbor comments.

The site is located just north of Baxter Woods and abuts the Catherine McAuley High School and the Deering Pavilion. The MDP site is part of an approximately 20 acre site that was previously owned by the Sisters of Mercy and included the Motherhouse (now mostly vacant); the Catherine McAuley High School and associated playing fields; and the St Catherine apartments on Walton Street. The MDP does not include the ongoing uses of the School (except the playing field area) and the apartments, but does include the Motherhouse.



The MDP proposal for 249 units comprises the rehabilitation of the former convent (referred to as the Motherhouse) into 88 apartments, and the phased development 161 dwellings (condos) in five new 4-5 story new buildings nearby. The project includes 399 parking spaces and approximately 6 acres of open space. These proposals are consistent with previous reviews and approvals, including the rezoning from R5 to R5A for part of the site and Site Plan approval for the rehabilitation of the Motherhouse. A summary of the previous approvals is included in [Attachment 7](#) for reference.

Applicant: Sea Coast at Baxter Woods Associates, LLC

Consultants: Rick Licht of Licht Environmental Design LLC and Pat Carroll of Carroll Associates Landscape Architects

II. REQUIRED REVIEWS

Review	Applicable Standards
Master Development Plan	Section 14-524(a)3c(iii)
Site Location of Development Act	Note: First new building will trigger this delegated review (see para X)

III. PROJECT DATA for Lots 3 and 4 only (Lot #3 is Motherhouse site; Lot #4 is the area to south and east of the Motherhouse - see data sheet in updated Attachment B)

	<i>Existing</i>	<i>Proposed</i>
Zoning	R5 and R5a	Previously amended
Uses	Vacant Motherhouse; playing fields; open land	Senior housing and associated parking and open space; reconfigured playing field
Parcel Size	13.5 acres (585,176 sf)	13.5 acres (585,176 sf)
Dwelling Units	none	Motherhouse: 88 units (68 1-BR; 20 studios) Lot #4: 161 units, all 2BR
Building footprint	24,065 sf (Motherhouse)	Motherhouse: 24,065 sf Lot #4: 74,188sf
Building floor area	102,241 sf (Motherhouse)	Motherhouse; 102,241 sf Lot #4: 349,626 sf
Impervious Surface		261,188 sf
Parking spaces	Approx. 34	Motherhouse: 43 new (not all for Motherhouse occupants) Lot #4: 322 (183 covered; 139 surface)

IV. EXISTING CONDITIONS and BACKGROUND

The MDP site has 460 feet of frontage along Stevens Avenue between Catherine McAuley High School and Baxter Woods. To the south and south-east the site abuts Baxter Woods and the Deering Pavilion. The north and north-east parts of the site abut an area of single and multifamily homes and the Forest Avenue RP zone is nearby. The site is adjacent to two valued open areas, Evergreen Cemetery and Baxter Woods and located on an arterial street with good public transit. The wider neighborhood is a cohesive and family-focused community with a mix of institutions (including 2 existing senior housing developments, several schools and UNE) and some retail (see [Plan P4](#) Neighborhood Context Plan).

Evergreen Cemetery is located opposite the site on Stevens Avenue and is an historic landscape. None of the buildings on or near the site are formally designated as landmarks, but the Motherhouse is currently being reviewed at State/Federal level (at the applicant's request) for inclusion on the National Register.

The existing Catherine McAuley High School is currently accessed by two one-way drives from Walton Street direct into the existing parking lot (see [Plan P2](#)). There are two small drives with gates (currently closed) on Stevens Avenue that go directly to the front of the Motherhouse. Walton Street is a residential street connecting Stevens Avenue and Forest Avenue, with signals at both intersections. Under the Federal Street Classification system Stevens Avenue is classified as a "Minor Arterial" (other "Minor Arterials" in Portland are Warren Avenue and Washington Avenue) and Forest Avenue is classified a "Principal Arterial" (other "Principal Arterials" in Portland are Brighton Avenue and outer Congress Street).

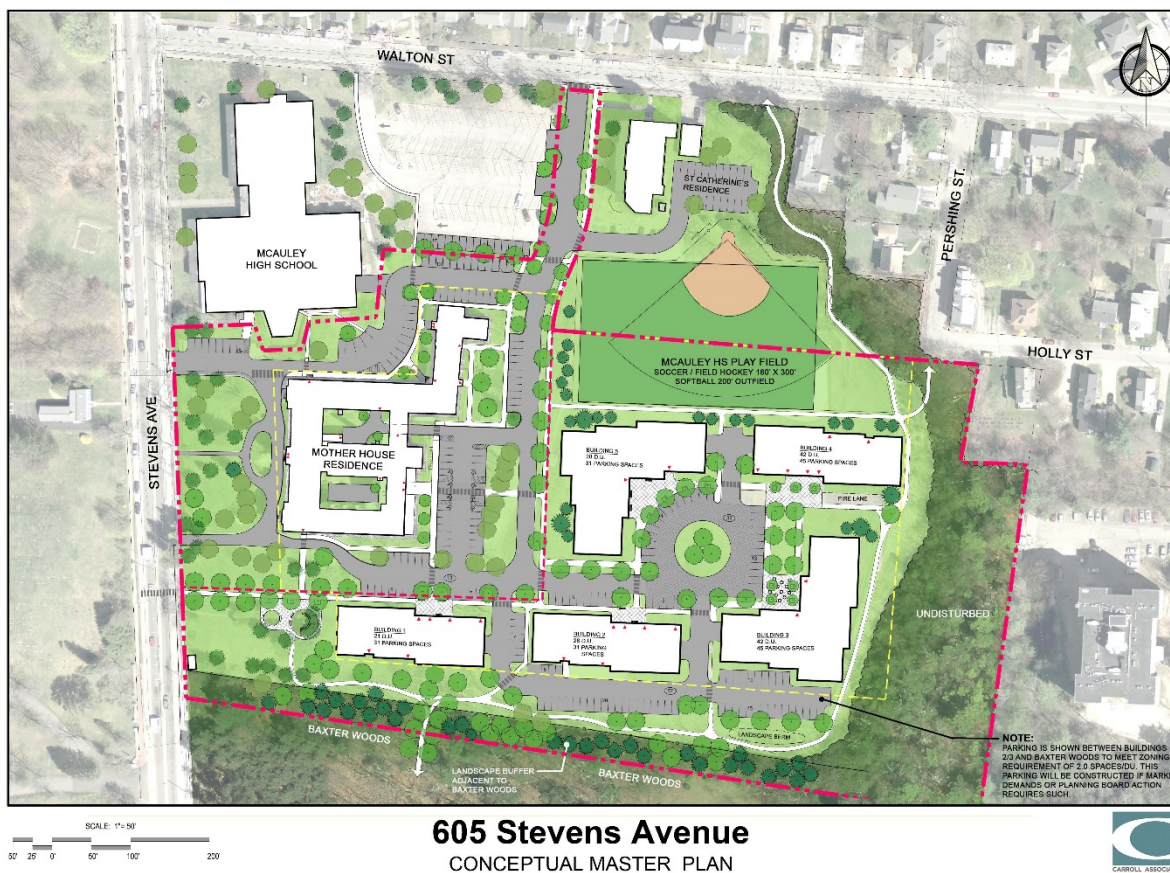
V. MASTER DEVELOPMENT PLAN PROPOSALS

The applicant has described the proposal in detail in the cover letter and narrative ([Attachment A](#)) which clarifies the revisions that have been made to the proposals over the course of the review between March and May. The final submissions include additional elevations, renderings and design information as well as a more detailed response to the issues that have been raised regarding the integration with/impacts on Baxter Woods and the location of pedestrian and transit facilities.

The [key features](#) of the final MDP proposals include (see [Plan Set P3 to P14](#))

- A five phase development (anticipated to be one new building per phase) to create 161 new units of senior housing (plus a first phase of 88 units located within the existing Motherhouse building to be converted and refurbished);
- Five new buildings, one at 4 stories (between the Motherhouse and Baxter Woods on the Stevens Avenue frontage) and four 5-story buildings behind the Motherhouse;
- A total of 395 new parking spaces, of which about half are underneath the new buildings;
- Several acres of open space, with connections to Baxter Woods and extensive new tree planting;
- A network of pedestrian walkways that link to Walton Street, Stevens and Forest Avenues and other pedestrian and transit facilities;
- Improved landscape along Baxter Woods, including replacement of the existing fencing and additional planting buffers (details in [Attachment A](#) and [Plans P12 and P15](#)).

The final Conceptual Master Plan (Plan P5) illustrates the key features for the overall build out:



VI. PUBLIC COMMENT and PB WORKSHOP DISCUSSIONS

A total of 129 notices were sent to property owners within 500 feet of the site and interested parties, and a legal ad was published in the *Portland Press Herald* on June 6 and 7, 2016. The required Neighborhood Meeting was held on March 14, 2016 (documented in [Attachment H](#)) which was attended by about 15 neighbors. A second (voluntary) Neighborhood Meeting was held at the site on May 19th, 2016 which was attended by about 10 members of the public and included a walk around the site where the applicant had placed markers showing the corners of the proposed new buildings. As of the time of completing this Memorandum, the Planning Division has received ten written public comments ([PC A and B](#); [PC 1-10](#)), with eight of these in support of the project with some suggestions. The other four comments, and many of the comments at the Workshop, raised concerns about the impact of the project on Baxter Woods.

The first Workshop on March 22, 2016 included a discussion about the potential traffic generation and noted that a Traffic Movement Permit (State but delegated to the City) was not required. Tom Errico, the City's Traffic consultant reviewer, clarified that the proposals would still be subject to a Traffic Study and further review of potential impacts, and that Transportation Demand Management measures would be expected as part of the proposals. Diane Moribito, the applicants Traffic consultant, outlined that the traffic analyses indicated that the proposals and the additional traffic would have very limited impacts, in part because much of the traffic would be off-peak.

The second Workshop concentrated on building and landscape design issues, including the relationship with Baxter Woods. The City's Urban Designer, Caitlin Cameron, and the City's Arborist Jeff Tarling commented on the proposals and the Board discussed the design (particularly the roofline and need to respect the Motherhouse context). The Board generally welcomed the applicant's willingness to contribute to the preservation of Baxter Woods, though the proximity of the parking to the Woods was a concern. The applicant clarified that the proposed parking was intended to ensure that all the parking demand could be accommodated on site, but that this could be modified in later stages if the parking demand in the early phases turned out to be less.

VII. RIGHT, TITLE, & INTEREST and FINANCIAL CAPACITY

The applicant has submitted a P&S Agreement and letter from the Bath Savings Institution (2.16.16) ([Atts C and E](#)).

VIII. ZONING ANALYSIS

The Master Development Plan proposals comply with the R5 and R5A requirements; the applicant has included this information on Plans P6 and P7 and the R5A dimensional standards are included in Attachment 9. It should be noted that the density and open space calculations are based on the R5A requirements but (based on the principle established by the City Council when the R5A area was reduced) the R5 parts of these lots is not built upon but the area is used to calculate the density and open space for a unified development plan.

IX. STAFF REVIEW

A. MASTER DEVELOPMENT PLAN OBJECTIVES

The Site Plan ordinance outlines that an approved Master Development Plan (MDP) establishes the general parameters to be adhered to for the development, including the supporting documentation for floor area ratio and/or residential density, general types of uses, building coverage, generalized open space plans and infrastructure systems. It is not a final authorization for development, but it does confer pending proceeding status upon the development with the effect of maintaining the applicability of regulations in effect at the time of the approval for as long as the MDP approval remains valid (6 years initially), including permissible extensions up to 10 years. All Level III site plans for each phase shall be in general conformance with the approved MDP. The required review is under *Section 14-524(a)3c(iii) Master Development Plan Review including Standards for Review*.

B. MASTER DEVELOPMENT PLAN SUBMISSION REQUIREMENTS (*Section 14-527(e)*)

Section 14-527 of the city's site plan ordinance outlines Master Development Plan submittal requirements. The Planning Authority or Planning Board may give direction regarding the form of the information required for the MDP review. In general the final submission requirements have been met and the applicant has submitted additional information as requested.

C. MASTER DEVELOPMENT PLAN STANDARDS (*Section 14-524(a)3.c(iii)*)

Section 14-524 of the City's land use code establishes standards under which Master Development Plan applications must be reviewed. Per this section, Master Development Plans shall adhere to the following general requirements and features:

- a. A designated tract of land consisting of a parcel or parcels of contiguous land or land on both sides of a public street, totaling one (1) acre or more;*

Staff comments: The 13.5 acre site meets this requirement.

- b. Developed in a comprehensive, design-integrated manner, according to an overall master development plan;*

Staff comments: The applicant has submitted a Master Development Plan for Lots #3 and #4 where the proposed senior housing development will be located, and shows how the proposed development integrates with the surrounding area.

- c. Consistent with the objectives of this ordinance; and d. Consistent with the City's Comprehensive Plan and consistent with City Council approved master plans and facility plans for off-premise infrastructure, including but not limited to, trails, pedestrian and bicycle network, view corridors, environmental management, sewer and stormwater, streets, or other facilities (see Section 15 of the Technical Manual);*

Staff comments: There are no formal City Council approved plans in the vicinity except for the Evergreen Cemetery Master Plan. The applicant has sought staff guidance in relation to ensuring consistency with the proposed sidewalk improvements in Stevens Avenue, with surrounding utilities, with METRO's bus service and with the City's preservation plans for Baxter Woods. The final plans reflect the existing and anticipated local infrastructure/facilities.

- e. Developed so as to locate buildings and improvements in a manner that provides usable open space, preserves significant natural features, as defined by the site plan ordinance standards, and preserves existing trees to the maximum extent possible;*

Staff comments: The trees to be preserved, removed and the new trees proposed to be planted are shown on the following plans: Tree Removal/Landscape Preservation Plan (Plan P11 and Landscape Master Plan (Plan P12)); and Conceptual Site Plan in Plan P5 and above. The tree removal analysis is provided in Plan

P11. The City Arborist has reviewed the plans and noted there is an historic allee linking the site to Baxter Woods which is impacted by building 1; he has indicated that proposed replacement planting to extend and reinforce the allee is acceptable as are the overall landscape and preservation proposals. (Attachment 6).

The Open Space Calculations Plan in Plan P8, clarify the extent of impervious surfaces, wetland and open space. Open space areas, excluding the wetland, total about 6 acres (45% of the MDP area) and the plan indicates the different sizes and functions of the open space areas.

- f. *Ordinance standards for designated landmarks or for properties within designated historic districts or designated historic landscapes, if applicable. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts or historic landscapes, the Master Plan shall be developed so as to be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity of the proposed development;*

Staff comments: Although the Motherhouse building is considered of historic and architectural significance, the building is not yet designated a local landmark under Portland's Historic Preservation ordinance nor is it located in a local Historic District. It is understood that the applicant is seeking to list the building in the National Register of Historic Places in conjunction with their interest in securing tax credits for its rehabilitation.

The review under the tax credit program will likely require the preservation of some existing site elements. A letter from the Maine Historic Preservation Commission (Attachment 5) confirms general support for the overall project based on the understanding that the “existing landscape and shrine located west of Building 1 (proposed new 4 story building fronting Stevens Avenue) will remain in place”. The new buildings nearest to the Motherhouse may also be subject to review by the Maine Historic Preservation Commission and National Park Service, given the fact that the buildings will be located on the original Motherhouse property and have a visual relationship with the Motherhouse.

It should be noted that the site is opposite and within 100 feet of Evergreen Cemetery, an Historic Landscape. Thus the proposals for the frontage along Stevens Avenue would be reviewed at site plan stage by the Historic Preservation Program Manager under the site plan requirement for compatibility. If the Motherhouse is designated as a local landmark, then this site plan requirement would extend to any new buildings within 100 feet of the Motherhouse.

The Motherhouse dominates the site and the anticipated historic reviews are likely to consider the detailed architectural design relationship of any new buildings in the context of the Motherhouse; this is considered to be an important influence on the architectural approach to the new buildings.

The submitted perspective (right; with gables, which have since been removed as shown in Exhibit B) of the proposed first building (building #1 on Plan P5, 4 story and 21 units) illustrates how this new building would be set back to minimize impacts on the Motherhouse building.



EXISTING VIEW - VIEW FROM EVERGREEN CEMETERY



PROPOSED VIEW - VIEW FROM EVERGREEN CEMETERY

A rendering of the Building 1 west elevation (directly facing Stevens Avenue) was added to the final submissions and is extracted at right.



Building 1 from Stevens Avenue

- g. *An efficient use of land which properly considers topography and protects significant natural features including, but not limited to, waterways, wetlands, floodplains and wildlife;*

Staff comments: The proposed layout has taken account of site features/constraints (see Exhibit B-16 and Plans P8 and P11). Public comments have included concerns about the impact of the development on the birds and wildlife in Baxter Woods- for example glare from headlights, site lighting and lights shining through curtain walls in the buildings. Staff suggest the following condition of approval (combined with a reference to the Urban Design comments):

That the site plan applications for the new buildings nearest to Baxter woods shall include an analysis and supporting information as to how all light sources (buildings, vehicles and site lighting) are proposed to be minimized to avoid impacts on the wildlife attracted to and in Baxter Woods; and

- h. *An efficient use of land demonstrating full coordination of its own site development and surrounding context including, but not limited to, the land uses and functions contemplated, architecture, open space and pedestrian networks, vehicular access and circulation, and all other infrastructure; and*
- i. *Linked and coordinated with surrounding land uses, infrastructure and off-site public facilities, including but not limited to the public school system, where appropriate, in a manner that is safe, efficient, non-injurious to the public, and an improvement or benefit to the public where possible; and*

Staff comments: The applicants plan set (Plans P3-P14) illustrate the coordination of the proposals in some detail. **Baxter Woods** is a key surrounding land use/public facility is Baxter Woods, which shares an approximately 1000 foot long boundary with the MDP site. The 29.5 acre Baxter Woods was presented to the “People of Portland” in 1946, a gift from then Governor Percival Baxter as a “municipal forest to be kept in its natural state” (see background leaflet with plan in Attachment 10). The use and maintenance of the Woods are dictated by deed restrictions and the City Arborist has been working with foresters over the years to meet the original intent of the gift, especially in the context of its high level of recreational use by the community.

Through the rezoning and MDP reviews the question of the potential impact of the future senior housing development on Baxter Woods has been raised by neighbors and staff. The City Arborist, Jeff Tarling, has provided the following comments (Attachment 6, at end) and been involved in all of the meetings with the applicants on this subject:

The proposed 605 Stevens Avenue project is adjacent to 'Mayor Baxter Woods' which is a significant natural, open space park donated to the City of Portland by Governor Percival Baxter in honor of his father, James P Baxter former Mayor of Portland. The woods was also formerly 'Forest Home' and throughout the last century and a half have have been a forested refuge. To minimize impact to the park both physically and view wise it will be important for the project team to work closely with the City objectively, so that visitors to the park have the natural experience as they have for over 75 years.

Recommendations include:

- a) *Enhance buffering along the property edge, including the roadway easement*
- b) *Future parking facing the park should be screened with native vegetation and earth berms.*
- c) *Building facades facing the park should be painted or stained using natural earth tones. Night lighting should be engineered to have minimal trespass into the park.*
- d) *Landscape treatment should be designed using native plants and plants that habitat friendly to birds.*
- e) *Park impact baseline & monitoring - baseline assessment of park conditions along with a five year monitoring program would be a recommended.*

The final proposals address these comments and now include a mechanism for ensuring that any potential impacts of the development would be identified and addressed and that the applicant would contribute to further preservation of Baxter Woods in accordance with Baxter's intentions for its future public use and enjoyment, including:

1. An assessment of the Wood's current condition and use as a baseline for future monitoring of its condition, use and associated impacts.
2. Monitoring (linked to phases and going beyond the final phase) of its condition over time, with monitoring data maintained and made available to interested parties; and
3. Development of a list of potential improvement proposals and timing based on 1 and 2 above.

This is documented by a *Letter of Intent LOI* ([Attachment I](#)) which clarifies the applicant's willingness to work with the City, and specifies in some detail the objectives and associated process related to these three items. The *LOI* is complemented by the recommended condition number *vii* that specifies the applicant's contribution to the costs of these items, so that as the development is implemented the program of monitoring continues and informs the nature and priority of the preservation projects. The *LOI* has evolved from the "*Memorandum of Understanding*" (*MOU*) presented to the April PB workshop and reflects Board, public and staff comments. An important principle is that the City would supervise these studies/associated projects, and make use of specialist advisors who were already familiar with the Woods.

The *LOI* ([Attachment I](#)) also confirms the applicant's intention to treat the 33 feet of their land between the fence the and property boundary as part of Baxter Woods. The most effective legal mechanism to achieve this requires further investigation and this is addressed by a suggested condition of approval.

In addition to the use and condition of the Woods, there are concerns about the height and proximity of the new buildings to and as viewed from the Woods. The applicants have addressed this issue in a number of ways (see narrative [Exhibit B-16 Massing and Baxter Woods](#)):

- The buildings are located approximately 90 to 140 feet from the property boundary (35 feet required by zoning ordinance- see [Att 9](#));
- The location and massing of the buildings and how they have responded to constraints is explained in the [Exhibit B-16](#);
- Introduced berms and landforms (see Sections in [Plan P15](#)) between the buildings and the Woods;
- Revised the phasing of the parking construction to reduce the spaces built near Baxter Woods (although staff are recommending that none be built there until the last phase, if needed (see below);
- The design of the buildings has been revised to incorporate flat roofs and more neutral colors as shown in the submitted (as part of the final submission) rendering at right, as located in the vicinity of the "Meadows" part of Baxter Woods (see discussion below regarding overall design issues).
- Submitted (March) a perspective from the "Meadows" area of



Baxter Woods (Exhibit B Arch Info) that gives an impression of how the new buildings would appear from that location. The perspectives are of the former design, with gables and extracted below:

Perspectives (see Exhibit B)



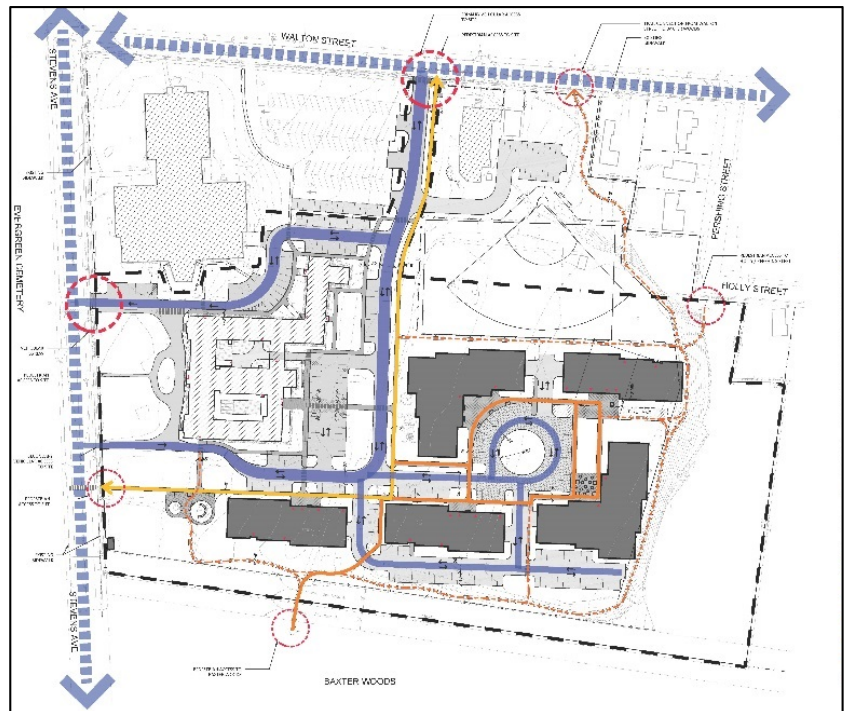
EXISTING VIEW - VIEW FROM BAXTER WOODS MEADOW



PROPOSED VIEW - VIEW FROM BAXTER WOODS MEADOW

- j. Designed with sizing of street and other infrastructure systems to accommodate the overall service demand of the Master Plan;
- k. Designed to create a street grid pattern that reflects average city block sizes of the neighborhood for street connectivity;

Staff comments: The applicant has proposed a full turn access on Walton Street and a one way system in front of the Motherhouse that allows a right in and right out only with the egress being to the north. This was proposed to address concerns about congestion and safety in Stevens Avenue and direct vehicles to the signaled turn locations. The circulation is shown in Plan P9 and to right:



The applicants consulting traffic engineer submitted a Traffic Impact Study and additional information as requested by the City's Traffic Reviewing Engineer (Att. F entitled "Exhibit D- Traffic".)

Tom Errico, the City's Traffic Engineering reviewer, has reviewed the final submissions and provided the following final comments (Attachment 1):

- *The applicant submitted a preliminary trip generation analysis that was based upon data from the Trip Generation Manual, Institute of Transportation of Engineers (ITE). The estimate was based upon Land Use Code 252 – Senior Adult Housing. I requested additional information on the ITE Land Use development type and is the data based upon current developments. Additionally, I requested the applicant provide local data for comparison. The applicant provided information that indicates the most recent publication provided by ITE does include current developments sites. Additionally, the applicant provided actual trip generation data collected at the Highlands in Topsham, which indicates similar trip levels as ITE. Based upon the applicant's analysis the project would be expected to generate 97 trips entering and exiting during the Weekday AM Peak hour and 87 trips entering and exiting during the Weekday PM Peak hour. This level of trip generation does not trigger the need for a Traffic Movement Permit, although it is very close to 100 peak hour vehicle trip threshold.*

The applicant shall conduct monitoring studies for each phase after the Motherhouse and the first and second new buildings are completed to confirm trip generation levels are consistent with ITE. This monitoring will also confirm that trip levels remain below the Traffic Movement Permit threshold of 100 peak hour vehicle trips. Details of the monitoring study scope will be defined in the future.

- *The applicant has recommended that on-street parking be prohibited on Stevens Avenue at the Motherhouse egress driveway to enhance safety by improving sight distance. The applicant is suggesting that 50 feet of a No Parking zone be established. I concur with this recommendation. The applicant shall be responsible for implementation of the No Parking restriction. Final details shall be reviewed and approved by the City.*
- *The applicant should provide details and clarification on proposed measures that will be implemented to reduce vehicle trips, such as car share vehicles; van service for local trips; bicycle facilities, etc. that would be considered to be a component of a Senior Housing development that would have been reflected in the developments surveyed by ITE for use in estimating trip generation.*
- *A traffic impact study has been submitted and in general I find the methods and conclusions to be acceptable with the following comments:*
 - *The Forest Avenue/Walton Street intersection is a High Crash Location and based upon the applicant's analysis no correctable crash patterns were identified. I have field reviewed the subject intersection and concur with the findings. Accordingly, no action by the applicant is required.*
 - *The applicant shall install a crosswalk on the south side of Stevens Avenue at Walton Street thus creating full intersection accessibility. This will include all work associated with a fully installed ADA compliant crossing and shall include, but not limited to, traffic signal equipment, sidewalk ramps, pavement markings, and signage.*

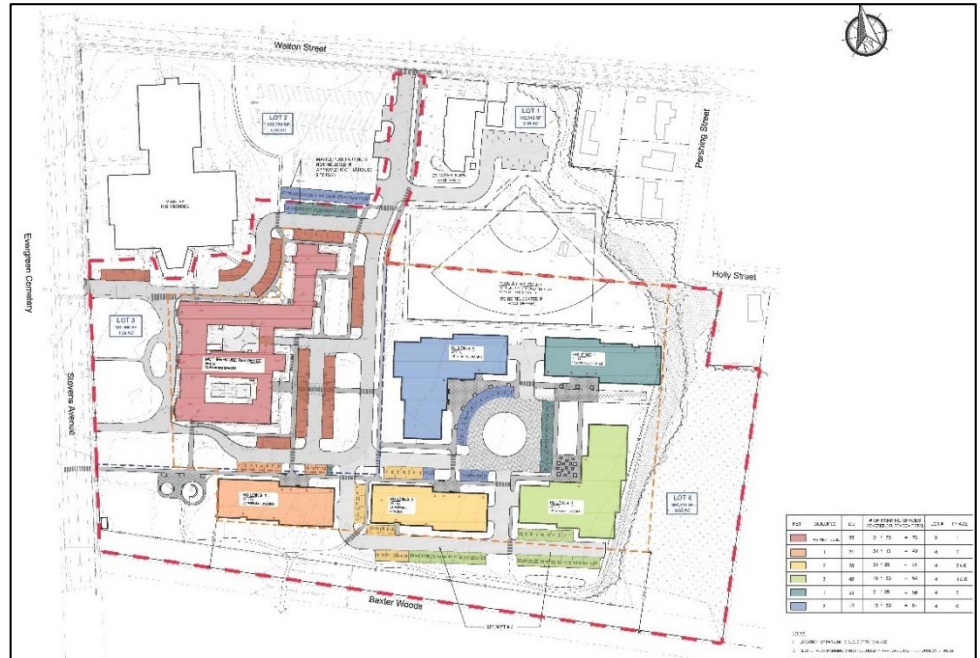
The applicant shall install a crosswalk on the south side of Stevens Avenue at Walton Street. This will include all work associated with a fully installed ADA compliant crossing and shall include, but not limited to, traffic signal equipment, sidewalk ramps, pavement markings, and signage. This work shall be installed at the time of occupancy of the first new building (anticipated to be between the Motherhouse and Baxter Woods).

- **Fire Access**

The Fire Department was concerned that previous layouts needed additional access routes to ensure rescues could be made from all of the buildings (Attachment 1). The Fire Department has verbally confirmed that the final MDP layout appears to be generally acceptable, and noted that at the Site Plan review stage they will require life safety and emergency access accommodations.

- *Parking*

The Parking Diagram (Plan P10) shows a total of 395 parking spaces, of which 212 spaces are on the surface and 183 are beneath the buildings. The allocation of the surface parking is shown as color-coded on the Parking Diagram:



The proposals outlined in the Master Development Plan are based on the approved parking ratio for the Motherhouse (73 dedicated parking spaces for the 88 units) and on the zoning requirement for the rest of the area (2 parking spaces per unit).

The objective is to ensure that the proposed parking levels will not result in overflow parking to streets outside of the site. Staff generally consider that the parking is adequate, but Tom Errico, the Traffic Engineering Reviewer, has recommended a requirement for monitoring as follows (Attachment 1):

- On-site traffic circulation and parking will need to be evaluated, particularly as it relates to interaction between the proposed project and the McAuley School (both typical school days and during events).
- The applicant shall conduct monitoring studies prior to the submission of site plan applications for each phase after the Motherhouse to confirm parking supply and circulation conditions at both the project site and at McAuley School are safe and acceptable. Associated with this is the requirement that the applicant confirm the parking generation assumptions for each phase are valid and the project does not impact the public street system and neighborhood. Details of the monitoring scope will be defined in the future

Some of the parking for the final build out is located between the new buildings and Baxter Woods and this was raised as a concern by many members of the public and some members of the Planning Board. In view of the fact that that monitoring of the parking demand may show that some of this parking is not required to meet future demand, staff requested (Attachment 5) that the applicant reconsider the way the parking was allocated during all but the last phases to avoid constructing the parking between the buildings and Baxter Woods until shown to be needed.

The revised phasing plan (Plan P7) has moved in that direction with less parking constructed in this location than in the earlier phases, but staff suggest that there should not be any parking in this location as described in the suggested condition of approval:

That the proposed parking may be reduced from the zoning requirement of 2 parking spaces per unit of new development (excludes the Motherhouse) if the parking monitoring studies show that the demand is less than 2 spaces per unit. No parking between the new buildings and Baxter Woods shall be constructed until after the fourth building is occupied, and only if the monitoring studies show that additional parking is necessary to meet demand. The phasing plan shall be revised to show all parking for phases II to V to be located to the north of the buildings southmost wall;

- **Street Connectivity, pedestrian and transit connections**

One of the public comments (PC3- C MilNeil) suggested that the project include improvements that would improve access to and from Forest Avenue and ensure public access at the eastern side of the development.

The Traffic Engineer Reviewer has commented (Attachment 1):

Given the likelihood of residents seeking destinations along Forest Avenue south of Walton Street, there may be benefits in providing a more direct pedestrian/bicycle connection between the east boundary of the site and Holly Street. Accordingly, the applicant shall provide a pedestrian connection to Holly Street as part of the site plan application for the third new building.

The applicant has addressed this by indicating a pedestrian link on Plan P8 between the site and the abutting Holly Street. A suggested condition of approval is included to ensure that this is implemented as part of the site plan for the third new building.

The Planning Board approval for the Motherhouse required the applicant to work with the City on the relocation of the existing crosswalk and the provision of a bus shelter for a bus stop along the frontage. Since then the applicant and staff have identified the likely location for the crosswalk, bus stop and associated bus shelter and these are indicated on the MDP final proposals. The suggested conditions on the MDP reiterate the requirements already approved in relation to the Motherhouse.

- **Utilities; Stormwater; other**

The applicant submitted additional information to assess the available capacity and the extent of upgrades and new infrastructure that may be required. The Peer Engineering Reviewer and the Department of Public Works have confirmed that the applicant has demonstrated that the full build out can be satisfactorily accommodated based on the engineering approaches outlined in the submissions (Attachment 2 and 3). At each site plan stage the applicant will need to show how the specific proposals relate to the overall MDP framework and calculations and obtain the associated detailed capacity letters.

l. Designed as to create a cohesive identity through building scale, massing, and articulation; use of quality exterior materials, architectural detailing at pedestrian scale; consistency of design and materials for streetscape and pedestrian amenities; framing of outdoor open space and linkages; a clear conveyance of the function and significance of various buildings, entrances, and features; and to generally comply with design and development standards of the zone in which it is located;

Staff comments:

Since the April PB workshop the applicant has revised the building renderings to show a different architectural approach, added renderings to show the elevation of building 1 from Stevens Avenue and the 5 story building nearest to Baxter Woods as viewed from the south. Massing models have also been submitted, which include an additional “closer” view.

The proposed building design originally incorporated gables as shown in the now-superseded rendering at right.



The roofline was discussed at the at the April PB workshop and the applicant has responded to comments by revising the roofline to be a flat roof and simplifying the design elements, as shown left and in Exhibit B (B6 shows the 4 story version):

The applicant submitted three “massing model” views at the April PB Workshop and staff requested a “closer” view, which was included in the final submissions and below (see [Exhibit B: B-11-B-13](#)):



PROPOSED BIRDSEYE VIEW - VIEW FROM THE SOUTH WEST

The City’s Urban Designer, Caitlin Cameron, has commented ([Attachment 4](#)):

The proposed master plan for multi-family residential buildings is only reviewed according to the Master Plan criteria. In future Site Plan design reviews, the projects will be subject to the R-5 and Multi-family design guidelines.

In the Master Plan level review, the design considerations include cohesiveness within the proposed development as well as compatibility with the context. In this case, the immediate context is the Motherhouse and campus property on which future developments will be situated. Though the design and placement of buildings should be sensitive to neighboring residential and park contexts, the multi-family building typology and the relationship to the Motherhouse are the primary considerations in evaluating the proposed design characteristics.

Building Footprints

The applicant was asked to consider whether there are strategies for reducing the impact of the buildings facing Baxter Woods. Suggested strategies included reducing the building footprints, varying building heights, turning buildings 90 degrees so that the shorter end faces the park. The applicant responded with a memorandum “Urban Design – Massing Relationship to Baxter Woods” ([Exhibit B](#)) describing the building footprints and the rationale for their placement. Staff has no further comment at this time and defers to the Planning Board on the evaluation of the impact of the master plan development on Baxter Woods. In each future Site Plan application, the applicant is expected to re-evaluate the scale, placement, orientation, and footprint of the buildings in consideration of impact on Baxter Woods and will mitigate that impact whenever feasible.

Architectural Design

The applicant has included architectural plans, elevations, and renderings ([Exhibit B](#)), as well as an Architectural Characteristics Summary ([Exhibit B.1](#)) as guiding documents for future development proposals with the expectation of creating cohesive design throughout the campus as well as defining how new development shall be compatible with the existing context. Staff considers all these documents together and recommends the Planning Board approve the Master Plan Development application with the expectation that these are guiding documents only, but should be considered applicable design guidelines for any future Site Plan application on this site.

The Architectural Characteristics Summary (Exhibit B.1) describes which characteristics found in the drawing set will apply to all future architectural proposals. The staff reviewers are generally in favor of the revisions made to the architectural character proposed for the site and support the guidelines proposed – brief staff comment on each guideline is provided below:

1. Building Footprints – Future development shall generally follow the MDP approved footprints. The proposed footprints – an L-type and a bar-type – successfully mitigate the scale of the buildings through the use of varied forms and change of building plane. The buildings are also placed interior to the lot and are therefore less visible from public rights-of-way and neighboring properties, buffered by space and trees.
2. Roof Lines – Flat roof forms are prescribed; the change to flat roofs is consistent with the building typology proposed and moves the architecture in a direction that is responsive to the Motherhouse context which has a hipped roof with gabled dormers.
3. Motherhouse Context – Characteristics taken from the Motherhouse be applied to new development include: granite base; reference to the Motherhouse roofline through material changes and floor delineation; brick elements using brick of similar color and pattern as the Motherhouse.
4. Material Palette – The material selection and color palette should be guided by the material indications on the elevations and renderings and as described in the narrative as having natural tone, brick, granite, and grey clapboard. The more subtle grey material palette with brick vertical elements is supported – the use of as few materials as possible is recommended.
5. Building Entry – Clearly delineated entries with porch elements shall be a common feature.
6. Massing - The scale of each building is proposed to be mitigated through the use of varied forms and change of building plane, deck spaces, and façade composition (see renderings for material placement and massing).
7. Parking – Structured parking is proposed to be designed to have similar character to the residential building above.

Conditions of Approval

Staff recommends the following design conditions of approval:

- That the documents included in Exhibit B – architectural plans, elevations, and renderings, as well as an Architectural Characteristics Summary (Exhibit B.1) – are considered together to be adopted guiding documents that will be applicable design guidelines for future development proposals on this site.
- That an additional guideline 8. be added to Exhibit B.1 Architectural Characteristics Summary as follows: 8. Window types will be consistent with vertical proportion throughout all buildings.

Additional Design Considerations (Site Plan)

The following guidelines will be taken into consideration for the architecture and design of future Site Plan development applications:

- Flat or hipped roof line referential of the Motherhouse would be acceptable provided the proportion and slope of the roof is comparable and compatible as well as consistent throughout all the buildings.
- In the new buildings, maintain the proportional relationship of “roof” to façade found in the Motherhouse. The four-story building design in the MDP guiding documents does not reflect these proportions.
- Use as few material types as possible.
- The building nearest the Motherhouse should be designed with the most sensitivity to the context of the historic structure.

The potential conditions of approval include the Urban Designer’s recommended condition (above) and an additional condition that “the comments of the Urban Designer dated 6.9.2016 be taken into account when finalizing the location, size and design of the new buildings generally”.

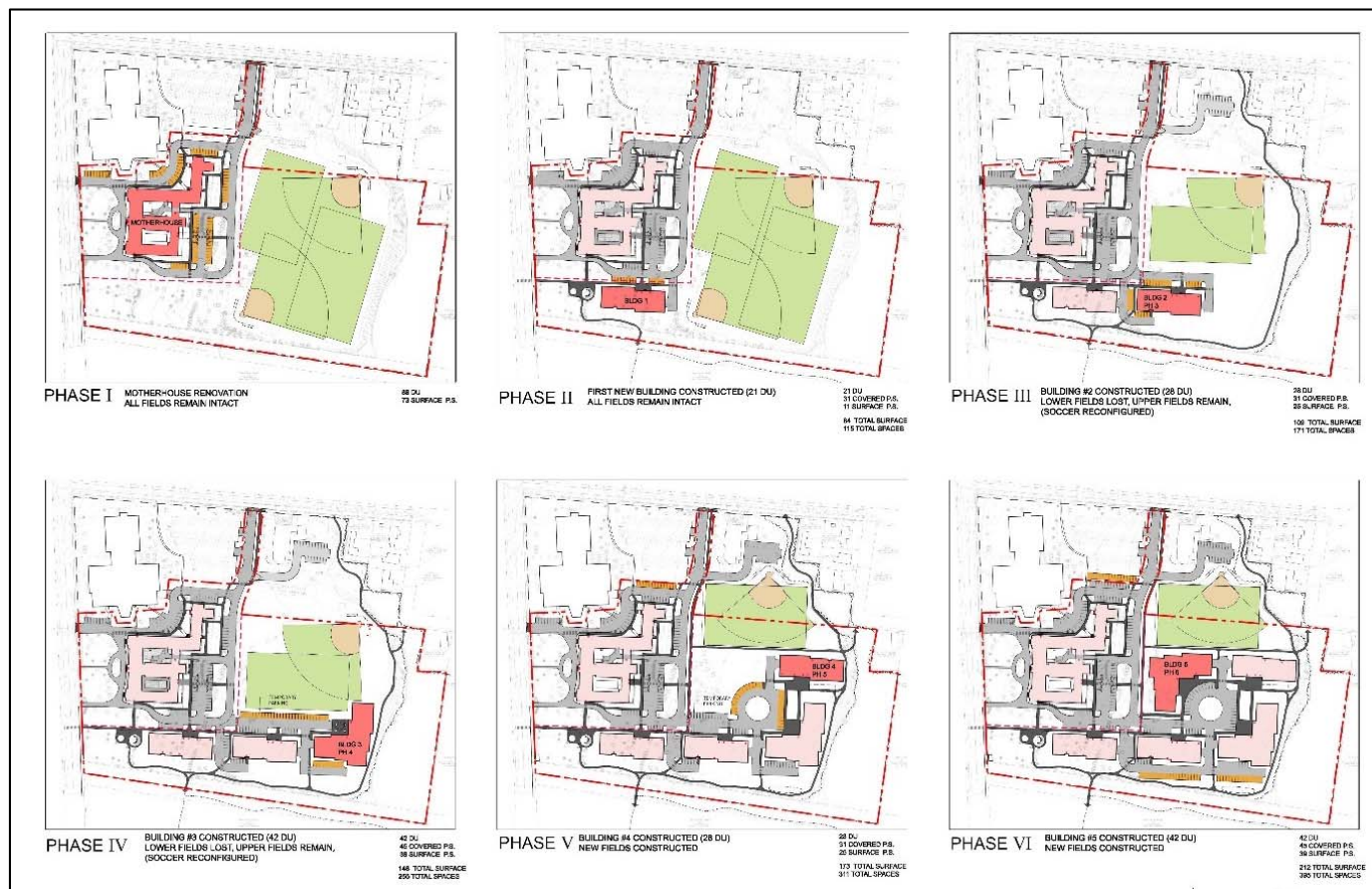
m. Inclusive of provisions for the ownership and maintenance of usable open space as appropriate;

Staff comments: The submission includes the draft Condominium Documents (**Attachment D**) that outline the management arrangements for the MDP area, including the open space. These will be finalized as required by the conditions of approval for the Motherhouse rehabilitation project. A suggested condition of approval requires the submission of further legal documents that clarify the use and operation of the MDP site.

n. For areas proposed as future development phase(s), the proposed interim conditions shall be managed and maintained to ensure stable, safe and attractive site conditions.

Staff comments: The applicant has submitted a revised Phasing Diagram (**Plan P7**) to reflect the intention of constructing one building per phase and to address comments regarding the interim parking and access for each phase and minimizing parking between the buildings and Baxter Woods (see discussions above). Staff consider that in phases III, IV and V the parking and paved areas should be omitted from the sides of the buildings facing Baxter Woods as it appears that interim parking (to serve that phase) could be provided on areas away from Baxter woods that are going to be disturbed and paved in any case. The suggested condition states:

That the proposed parking may be reduced from the zoning requirement of 2 parking spaces per unit of new development (excludes the Motherhouse) if the parking monitoring studies show that the demand is less than 2 spaces per unit. No parking between the new buildings and Baxter Woods shall be constructed until after the fourth building is occupied, and only if the monitoring studies show that additional parking is necessary to meet demand. The phasing plan shall be revised to show all parking for phases II to V to be located to the north of the buildings southmost wall;



X. SITE LOCATION OF DEVELOPMENT ACT

In consultation with the MDEP, staff confirm that this review will apply when the first new building is submitted for site plan review and will take into account both the Lot 3 and Lot 4 in terms of relevant data.

XI. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommends that the Planning Board approve the master development plan for the senior housing development proposed for Lots 3 and 4 at 605 Stevens Avenue.

XII. PROPOSED MOTIONS – MASTER DEVELOPMENT PLAN

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on June 14, 2016 for application 2016-033 (605 Stevens Avenue) relevant to the master development plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan **is/is not** in conformance with the master development plan standards of the land use code, subject to the following conditions of approval:

- i. That the applicant shall conduct traffic monitoring studies (methodology to be agreed with the Planning Authority prior to undertaking the first study) prior to the submission of site plan applications for each phase after the Motherhouse and the first and second new buildings are completed, to confirm to the Planning Authority that the trip generation levels are consistent with the levels predicted in the traffic studies (based on ITE) and remain below the Traffic Movement Permit threshold of 100 peak hour vehicle trips; and
- ii. That the applicant shall conduct parking monitoring studies (methodology to be agreed with the Planning Authority prior to undertaking the first study) prior to the submission of site plan applications for each phase after the Motherhouse, to confirm to the Planning Authority that the parking supply and circulation conditions at both the project site and at McAuley School are safe and acceptable. Associated with this is the requirement that the applicant confirm the parking generation assumptions for each phase are valid and the project does not impact the public street system and neighborhood; and
- iii. That the proposed parking may be reduced from the zoning requirement of 2 parking spaces per unit of new development (excludes the Motherhouse) if the parking monitoring studies show that the demand is less than 2 spaces per unit. No parking between the new buildings and Baxter Woods shall be constructed until after the fourth building is occupied, and only if the monitoring studies show that additional parking is necessary to meet demand. The phasing plan shall be revised to show all parking for phases II to V to be located to the north of the buildings southmost wall; and
- iv. That the applicant shall implement the following improvements in the ROW:
 - a. Implementation of a 50 feet No Parking Zone on Stevens Avenue at the Motherhouse egress driveway to enhance safety by improving sight distance. Final details of the Zone shall be reviewed and approved by the City prior to implementation;
 - b. Installation of a crosswalk on the south side of Stevens Avenue at Walton Street, to include all works associated with a fully installed ADA compliant crossing and shall include, but not limited to, traffic signal equipment, sidewalk ramps, pavement markings, and signage. This work shall be installed at the time of occupancy of the first new building (anticipated to be between the Motherhouse and Baxter Woods).
- v. That the applicant shall include the location (which may need to be on the applicant's property) and implementation proposals for a bus shelter along the Stevens Avenue frontage as part of the site plan application for the first building (between the Motherhouse and Baxter Woods), and all site plan applications shall include details and clarification of proposed measures that will be implemented to reduce vehicle trips, such as car share vehicles; van service for local trips; bicycle facilities etc; and
- vi. That the applicant shall include a pedestrian connection to Holly Street as part of the site plan application for the third new building, and continue to coordinate with the City on the location of the crosswalk on Stevens Avenue (to which a contribution has already been required as part of the Motherhouse rehabilitation site plan approval); and

(continued)

- vii. That the applicant shall contribute to the preservation of Baxter Woods by:
 - a. Implementation of the submitted and approved “*Letter of Intent*” that confirms that the applicant will work with the city to assist in the preservation of Baxter Woods. The City will oversee this work which shall include the assessment of the current condition of Baxter Woods, annual monitoring, and specific work identified as a priority by the monitoring;
 - b. Making a contribution of \$5000 per year (starting at the date of the issuance of the first building permit and ending 2 years after the final phase is occupied) towards the items identified in the *LOI*, except that the contributions will not exceed either 10 years or \$50,000 in total contributions;
 - c. Pursuing the creation of a *conservation easement*, or equally binding legal mechanism, for the 33 ft of applicant’s land between the existing fence and the property line along Baxter Woods.
- viii. That the site plan applications for the new buildings nearest to Baxter woods shall include an analysis and supporting information as to how all light sources (buildings, vehicles and site lighting) are proposed to be minimized to avoid impacts on the wildlife attracted to and in Baxter Woods; and that the comments of the Urban Designer dated 6.9.2016 be taken into account when finalizing the location, size and design of the new buildings generally; and
- ix. That the documents included in Exhibit B – architectural plans, elevations, and renderings, as well as an Architectural Characteristics Summary (Exhibit B.1) – are considered together to be the guiding documents that will be applicable design guidelines for future development proposals on this site. The applicable design guidelines shall also include an additional guideline 8. to be added to *Exhibit B.1 Architectural Characteristics Summary* as follows: 8. Window types will be consistent with vertical proportion throughout all buildings; and
- x. The applicant shall provide, as part of the site plan application for the first building, a summary of existing and/or proposed easements, covenants, public or private rights-of-way, public access agreements, parking management arrangements or other documents that augment the subdivision plat and condo documents and support the operation of the site as presented in the MDP application; and
- xi. For each phase the applicant shall submit an analysis (for review and approval) that documents how the specific proposals relate to the overall MDP stormwater and utility framework and calculations (eg re impervious surfaces, stormwater flows etc) and include evidence of water capacity from the Portland Water District and of sewer capacity from the Department of Public Works.

ATTACHMENTS

REPORT ATTACHMENTS

- 1. Traffic Engineer final review comments
- 2. Peer Engineer final review comments
- 3. Dept. of Public Works review comments
- 4. Urban Design review comments
- 5. Staff review comments May 2016
- 6. City Arborist review comments
- 7. Background and previous reviews and approvals
- 8. Lots & zoning data table based on R5A zone
- 9. R5A Zone Dimensional Requirements
- 10. Baxter Woods leaflet: history, plans & restrictions

PUBLIC COMMENTS

PC A and B; PC1-10

APPLICANT’S SUBMITTAL

- A. Cover Letter & Narrative 5.24.2016
- B. MDP updated Application 6.3.2016 & prelim 2.1.2016
- C. RTI
- D. Draft Condo Docs
- E. Financial Capability
- F. Exhibit D – Traffic final
- G. Exhibit E – Stormwater & Utilities final

APPLICANT’S SUBMITTAL

- H. Exhibit F - Neighborhood Meeting Documentation
- I. Letter of Intent (LOI) re Baxter Woods

PLANS (FINAL)

- P1 Draft Subdivision Plat (previously approved)
- P2 Overall Existing Conditions Plan
- P3 Cover Sheet
- P4 Neighborhood Context Plan
- P5 Conceptual Master Plan
- P6 Site Plan (full build out)
- P7 Phasing Diagram
- P8 Open space Calculations (full build out)
- P9 Circulation Plan (full build out)
- P10 Parking Diagram (full build out)
- P11 Tree Removal Plan (full build out)
- P12 Landscape Master Plan (full build out)
- P13 Concept Stormwater Plan (full build out)
- P14 Concept Utilities Plan (full build out)
- P15 Sections buildings & Baxter Woods

Exhibit B Architectural Info: B-1 to B-16 Design narratives, elevations, renderings, perspectives and views that comprise the Urban Design Package



605 STEVENS AVE
MDP APPLICATION
FINAL SUBMISSION 05-24-16

EXHIBIT B

URBAN DESIGN & ARCHITECTURE

Exhibit B contains the following materials:

- Architectural Plans, Archetype, PA
 - 4-Story Rendering
 - 5-Story Rendering
 - L-Building Rendering
 - A2.1 4 –Story Elevation
 - A2.1 5 - Story Elevation
 - A2.2 4 - Story Elevation
 - A 2.2 5 – Story Elevation
- Architectural Characteristics Summary, *Exhibit B.1*, attached.

EXHIBIT B.1

605 STEVENS AVENUE

ARCHITECTURAL CHARACTERISTICS

The following design guidelines are proposed to describe the context of the architectural program for the 605 Stevens Avenue Master Development Plan Architecture. Final details may vary as submitted with individual LIII Site Plans for each building phase but shall incorporate the following design elements into the overall campus masterplan for the site:

1. Final building footprints will generally follow the approved footprints and massing shown on the Site Master Development Plans.
2. All Gable roofs have been eliminated in favor of flat roofs. This has the effect of calming down the architecture and is more reflective of an honest architecture.
3. Elements of the Motherhouse have been reflected in the new buildings such as the granite base of the Mother house will be incorporated into the new designs . A modern version of the mansard on the Motherhouse will be incorporated, but in a vertical, not sloped version , with a zinc faced metal shingle to identify the top floor. Brick elements with brick matching the Mother house are incorporated into the design .
4. The colors of the new buildings are all natural toned, brick, granite and grey clapboard.
5. The entry ways into each building are clearly delineated with welcoming porch elements.
6. Each unit will have its own deck space which also works to help break down the building massing and add interest.
7. Parking is located under each building structure allowing more open green space . The facades of the parking garage are fenestrated with window openings which are similar to a living space yielding a more inviting look to the exterior .

From: [Tom Errico](#)
To: jrather@portlandmaine.gov
Cc: ["Mike Tremblay"](#)
Subject: 65 McAuley Way - Initial Traffic Comments
Date: Tuesday, July 20, 2021 11:10:02 AM

Hi James – I have reviewed the application materials and offer the following initial traffic review comments.

- The MDP had a condition of approval for the construction of a crosswalk on Stevens Avenue at Walton Street. I need to review implementation details and will provide feedback in the future.
- The MDP had a condition of approval for the conduct of a traffic monitoring study as it relates to trip generation. It seems to make sense that the study be conducted now with the first building occupied. My general sense is that with the McAuley School leaving the site, overall trip generation will not trigger a Traffic Movement Permit.
- The MDP had a condition of approval for conducting parking monitoring studies. The applicant should begin the process of detailing the scope of work and performing the work as appropriate, given changes since the closing of McAuley School.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TYLININTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
thomas.errico@tylin.com
Visit us online at www.tylin.com
[Twitter](#) | [Facebook](#) | [LinkedIn](#) | [Instagram](#)

From: [Tom Errico](#)
To: jrather@portlandmaine.gov
Cc: [Jeremiah Bartlett](#)
Subject: 65 McAuley Way - Traffic and Parking Study Requirements
Date: Thursday, August 5, 2021 11:27:12 AM

Hi James – A scoping meeting was held today with the applicant as it relates to parking and traffic study needs with the following summary of outcomes:

- A parking study of the Phase 1 building shall be conducted during peak demand time periods to determine parking generation rates for the future residential land use phases.
- A trip generation study shall be conducted at the Phase 1 building as part of updating the trip generation estimate for the entire project site (existing and future uses) with the objective of determining the need for a MaineDOT Traffic Movement Permit.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director

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thomas.errico@tylin.com
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From: [Jeff Tarling](#)
To: [James Rather](#)
Subject: Re: FW: Stevens Square Phase 2 @ Dev Rev
Date: Friday, July 16, 2021 4:04:08 PM

Have a good weekend !

The Baxter Woods projects at Stevens Square have had similar native plant requests since the very first

Phase 1, the Deering Center neighbors also support this concept, we have very few natural areas

like Baxter Woods, and if planned correctly the native plants would do fine and look good !

Thanks

Jeff
Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities
Forestry & Horticulture
212 Canco Road - Suite A
Portland, ME. 04103
(207) 808-5400
jst@portlandmaine.gov

On Fri, Jul 16, 2021 at 3:59 PM <jrather@portlandmaine.gov> wrote:

Thank you, Jeff – this is just what I needed. Have a great weekend.

From: Jeff Tarling <jst@portlandmaine.gov>
Sent: Friday, July 16, 2021 3:53 PM
To: James Rather <jrather@portlandmaine.gov>
Subject: Re: FW: Stevens Square Phase 2 @ Dev Rev

Hi James -

This sketch show the area of concern of needed buffering / landscape -

The parking lot does not meet the tree & landscape standards as shown

Jeff



Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities

Forestry & Horticulture

212 Canco Road - Suite A
Portland, ME. 04103
(207) 808-5400
jst@portlandmaine.gov

On Fri, Jul 16, 2021 at 3:14 PM <jrather@portlandmaine.gov> wrote:

Hi Jeff,

Any comments on the plans for 65 McAuley Way/Stevens Square? I've attached the Landscaping Plan. I'd like to get comments over to the applicant early next week. Thank you

James J. Rather, AICP
Development Review Manager
Planning & Urban Development Department
389 Congress Street
Portland, Maine 04101
jrather@portlandmaine.gov
Ph: (207) 874-8699

From: jrather@portlandmaine.gov <jrather@portlandmaine.gov>
Sent: Friday, July 9, 2021 4:59 PM
To: 'Mike Tremblay' <mtremblay@portlandmaine.gov>; 'Tom Errico' <thomas.errico@tylin.com>; 'John Peverada' <jbp@portlandmaine.gov>; 'Jeff Tarling' <jst@portlandmaine.gov>; 'Ann Machado' <amachado@portlandmaine.gov>; 'Jason Duval' <jduval@portlandmaine.gov>; lswett@woodardcurran.com
Subject: Stevens Square Phase 2 @ Dev Rev

Hi everyone,

This week, I presented Stevens Square Phase 2 (65 McAuley Way) at Wednesday Development Review. We are quite short staffed at the moment, so I've taken on management of the planning review for this project myself. A number of folks were out of office this week, so I'd like to bring it back to the group next Wednesday morning for an additional discussion. Please be ready to discuss the project at that meeting – we're currently targeting an **August 10th** Planning Board workshop, and I'd like to get a first round of comments to their team soon. It's PL-001649-2021 in e-plan.

Thanks,

-James

James J. Rather, AICP
Development Review Manager
Planning & Urban Development Department
389 Congress Street
Portland, Maine 04101
jrather@portlandmaine.gov
Ph: (207) 874-8699

May 27, 2021

Ms. Christine Grimando

Planning and Development Department
City of Portland, Maine
389 Congress Street
Portland, Maine 04101-3509

**Subject: Stevens Square at Baxter Woods
583 Stevens Avenue
Major Site Plan Application (New Development) – Lot 4 Phase 2 – 140 units
Amended Subdivision and Master Development Applications
Applicant: DC Baxter Woods IV, LLC**

Dear Christine:

On behalf of **DC Baxter Woods IV, LLC**, we are pleased to provide the accompanying Major Site Plan, Amended Subdivision, and Amended Master Plan Application package related to the proposed Phase 2 development of Lot 4 of the previously approved Master Development Plan for Sea Coast at Baxter Woods, LLC. This submission package is intended to meet the City's Submission Requirements as outlined in the Major Site Plan Application procedures. This submittal provides information in support of the Portland Land Use Code Article 15 – Subdivision and Article 14 – Major Site Plan Standards. Ultimately, we are seeking Major site plan approval, An Amended Subdivision approval, and Amended Master Development Plan approval.

The current proposal was originally contemplated and approved as a Master Development Plan¹ (MDP) in accordance with the figure on the next page. The MDP included within the proposed Lot 4 development area five residential buildings containing a total of 161 dwelling units as outlined below. In 2018, the Planning Board granted a Site Plan approval to the first of the five buildings, known as Building #1 containing 21 dwelling units². That project has been constructed and is nearly fully occupied. The current proposal includes the following elements:

- An Amended Subdivision Plan to subdivide the previously approved Lot 4 into two lots (Lots 4 & 5). Building #1 which was previously approved and under construction will occupy a 2-acre parcel area which will be identified as Lot 4 on the plan. The proposed new development of Buildings #2-5 will occupy the remaining 7.05-acre parcel and Lot 5 to be created as part of the Second Amended Subdivision plan. Property and building ownership considerations are the basis for the Lot 4 division into two lots.

¹ See Master Development Plan approval letter dated June 16, 2106 for Project ID #2016-033

² Building #1 now has only 20 units as two units have been combined into one.



- A Major Site Plan to include four multi-story structures containing a total of 140 Senior Adult housing units and 260 parking spaces. Site amenities for active outdoor space and connectivity to surrounding pedestrian infrastructure will provide vibrancy for residents and the surrounding community in general. This development will be a phased site plan which will include the following:
 - First Phase – Building 2
 - Second Phase – Building 3
 - Final Phase – Buildings 4 and 5
- Proposed Buildings 2-5 will include the following:

Building #	No. of Dwelling Units	No. of Parking Spaces at Ground Level Within the Building Footprint
2	28	29 (plus 12 bikes)
3	42	48 (plus 20 bikes)
4	28	29 (plus 12 bikes)
5	42	48 (plus 20 bikes)
Total	140 units	154 spaces (plus 64 bikes)



Original Approved Master Development Plan



EXISTING CONDITIONS

The existing site is located off McAuley Way to the east of the existing 88-unit Motherhouse Residence Senior Apartment Building (53 McAuley Way). The existing 9.05-acre site is currently developed with the recently completed 20 unit Building #1 as well as the former MGA athletic fields consisting of a soccer field, and two baseball fields. The field complex contains some drainage infrastructure and an irrigation system. The site's east side contains some mapped forested wetland that will largely remain unchanged as part of the proposed development. Surrounding land uses are described as follows:

- Building #1 on the west side of Lot 4 was recently completed;
- The Deering Pavilion is located to the east of the property;
- St. Catherine's Residence is located to the north side of the site within the Lot 1 of the Subdivision;
- The former Maine Girls Academy School and 92 space parking lot are on Lot 2. Recent renovations to the building have allowed for new uses including a daycare, offices, a café, and a community fitness center;
- The Motherhouse containing 88 apartments are located on Lot 3, west of the site; and
- Baxter Woods is located south of the site.

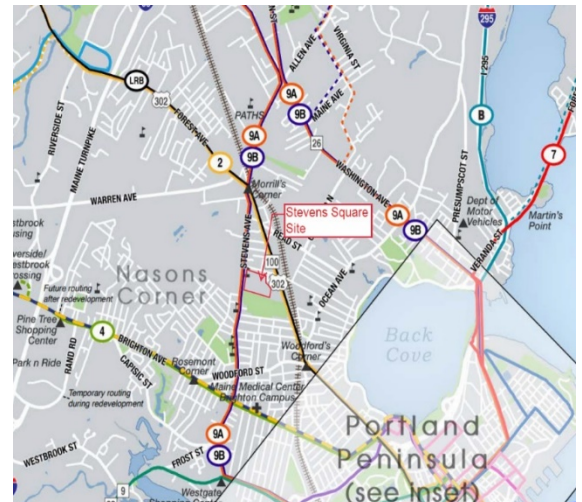
The existing buildings are served by various public utilities along Stevens Avenue and Walton Street. The Building 1 construction included utility improvements for water, sewer, gas and power/communications infrastructure within the subdivision. Water main extensions for Fire and Domestic service were completed during the Building #1 construction to serve proposed Buildings #2-5. Similarly, services for gas and power are ready for extension to serve the proposed buildings. There is an existing private sewer extending through the middle of the property that ties into the Walton Street system. There is also an existing 8" sewer main in Holly Street that will be used for three of the proposed buildings. Drainage from the development basically is collected in a closed drainage system with two small pipe discharge points on the east side of the property. This runoff flow ultimately drains towards Forest Avenue further to the east and is captured in the City's municipal drainage systems for conveyance down to Back Cove.

PROPOSED PROJECT

The Applicant is proposing to subdivide Lot 4 into two new lots; the remaining Lot 4 area will contain 2 acres and the existing Building 1. A proposed Lot 5 will be divided from Lot 4 and it will contain 7.05 acres and the four proposed structures. The project is generally consistent with the MDP issued June 14, 2016, #2016-033. The proposed layout contemplates four multistory buildings as presented on the previous page. The buildings will include ground level parking within the building footprints and four levels of apartments on the floors above. Unlike the MDP, the proposed layout is punctuated by a large common area that the four buildings will surround. Surface parking for residents and guests will be located on the north side of each of the buildings. Additional common areas will aid with the



robust landscaping/ pedestrian aspects of the site. A perimeter walking path will interconnect with multiple sidewalks within the Lot 5 area and these will also connect to a broader area of pedestrian sidewalks and pathways within the full subdivision. Ultimately, these sidewalks and paths will offer nearly a mile of onsite length and also several connections to various offsite pedestrian routes along Stevens Avenue, Baxter Woods and numerous others in this area of the City. The site will also have convenient access to the METRO as shown to the right. A total of 260 parking spaces are currently proposed. Vehicular access will be provided from either the existing Stevens Avenue one-way driveways or McAuley Way off Walton Street.





- General Application Documents
 - Cover Letter/Project Description
 - Major Site Plan Application Checklist
 - Right, Title and Interest
 - Zoning Assessment
 - Existing and/or Proposed Easements (please see Survey Plan)
 - Waiver Request and Waiver Table
 - Financial Capacity
 - Technical Capability
- Transportation
 - Transportation Narrative
- Environmental and Landscape Features & Stormwater
 - Narrative to Address Standards
- Public Infrastructure and Safety
 - Narrative to Address Standards
- Site Design
 - Narrative to Address Standards
- Construction Management Plan
- Site Plans, Second Amended Subdivision Plan, and Architectural Plans

On behalf of **DC Baxter Woods IV, LLC**, we look forward to your continued assistance on the project and we look forward to the next available workshop meeting with the Planning Board. As is required, once we complete the Planning Board workshop, the applicant will be conducting a Neighborhood Meeting. We anticipate this meeting will be conducted prior to the Public Hearing.

If you have any questions regarding the materials being submitted, please contact this office.

Sincerely,

GORRILL-PALMER

Stephen Bushey, PE

Senior Associate
sbushey@gorrillpalmer.com

Attachments

c: Kevin Bunker, DC Baxter Woods IV, LLC

U:\3564.03_Stevens Square-Lot 4 - Portland, ME\IP Applications\Local\Major Site Plan\appl1_ltr_grimando_major site plan_05.27.2021.docx

CITY OF PORTLAND
Planning & Urban Development Department

MAJOR SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST

Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes in the left-hand column.

**** PLEASE FILL OUT AND UPLOAD THE ZONING ASSESSMENT TABLE
AND WAIVER TABLE SEPARATELY AS NOTED BELOW ****

**At the time of application submission, please contact the Department of Public Works regarding E-911
addressing for your project.**

GENERAL APPLICATION DOCUMENTS

☒ Yes	☐ NA	Project Description Cover letter with detailed project description
☒ Yes	☐ NA	Completed Checklist (this document)
☒ Yes	☐ NA	Evidence of Right, Title, and Interest Deeds, leases, or purchase and sales agreements
☐ Yes	☒ NA	Evidence of State or Federal Approvals Permits or letters of non-jurisdiction, if applicable
☒ Yes	☐ NA	Zoning Assessment (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
☒ Yes	☐ NA	Site Plan Standards Assessment (see Section 14.6 of the land use code) Summary of project compliance with site plan standards of the land use code
☒ Yes	☐ NA	Summary of Existing and/or Proposed Easements or Covenants, applicable. Evidence of existing easements and any proposed easements, covenants, public or private rights-of-way
☐ Yes	☒ NA	Waiver Requests (see Waiver Table) Written request for waiver describing request and compliance with applicable waiver standards
☒ Yes	☐ NA	Financial Capability Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
☒ Yes	☐ NA	Technical Capability Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

MAJOR SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.
Please submit each document as a separate PDF file.

TRANSPORTATION		
☒ Yes	☐ NA	Impact on Surrounding Street Systems (14-14.6.1(A)) Describe incremental volume of traffic impacts and mitigation measures. If needed
☒ Yes	☐ NA	Access and Circulation (14-14.6.1(B)) Identify and describe the following: - Site access and internal circulation, including ADA access - Drive-up features, if applicable - Loading and servicing needs, routes, and geometry, providing turning templates for delivery vehicles, if applicable - Sidewalks and condition along street frontages and internal walkways - Engineered details for ADA ramps and public sidewalks, meeting sidewalk material policy and construction requirements (Technical Manual, Section 1)
☒ Yes	☐ NA	Public Transit (14-14.6.1(C)), if applicable Identify and describe the following: Existing available transit service and proposed transit improvements, including design details, such as easement, pad base, and shelter
☒ Yes	☐ NA	Off-Street Parking (14-14.6.1(D)), if applicable Identify and describe the following: - Proposed vehicular and bicycle parking supply (including ADA-compliant parking) in relation to applicable parking requirements in Article 19 of the land use code - Curb cut separation and parking layout (Technical Manual, Section 1) - Construction details for bicycle racks - Management plan for snow storage and removal
Yes	☒ NA	Transportation Demand Management (TDM) (14-14.6.1(E)), if applicable Provide TDM plan drafted in accordance with Technical Manual Section 1 requirements

ENVIRONMENTAL		
Yes	NA	Preservation of Significant Natural Features (14-14.6.2(A)), if applicable Identify and describe the following: • High and moderate value waterfowl and wading habitat • Aquifers (for Casco Bay Islands) • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental compliance consultants and determinations from applicable state and federal agencies
Yes	NA	Landscape Preservation (14-14.6.2(B)) Identify and describe the following: • Measures to preserve trees, including within required zoning setbacks (Technical Manual, Section 4) • Measures to protect existing vegetation during construction
Yes	NA	Site Landscaping and Buffers (14-14.6.2(C)) Identify and describe the following: • Overall landscaping approach and consistency with standards • The use of screening and buffering of service areas and between non-residential and residential uses • Existing Heritage or Feature Trees on site and measures to preserve • Compliance with street tree requirements
Yes	NA	Water Quality, Stormwater Management, and Erosion Control (14-14.6.2(D)) Identify and describe the following: • Erosion and sedimentation control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater law, as applicable • Subsurface sanitary sewage disposal and groundwater protection measures

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY		
Yes	NA	Consistency with City Master Plans (14-14.6.3(A)) Describe proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes	NA	Public Safety and Fire Prevention (14-14.6.3(B)) Identify and describe the following: - Compliance with Crime Prevention through Environmental Design (CPTED) requirements (Technical Manual, Section 3) - Emergency vehicle access - Consistency with public safety standards (Technical Manual, Section 3)
Yes	NA	Availability and Adequacy of Public Utilities (14-14.6.3(C)) (Technical Manual, Sections 2 & 9) Identify and describe the following: - Electrical services, including providing underground services - Existing and proposed connections for public utilities and required public utility upgrades - Sewer line connections
SITE DESIGN		
Yes	NA	Massing, Ventilations and Wind Impact (14-14.6.4(A)) Identify and describe the following: - Wind and ventilation impacts on adjoining structures and/or adjacent public spaces, including wind study, if applicable - Bulk, location, or height impacts on adjoining structures
Yes	NA	Shadows (14-14.6.4(B)), if applicable Provide shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes	NA	Snow and Ice Loading (14-14.6.4(C)) Describe building design measures to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes	NA	View Corridors (14-14.6.4(D)), if applicable Describe any protection of designated view corridors (Portland Design Manual, Appendix. 1)
Yes	NA	Historic Resources (14-14.6.4(E)), if applicable Identify and describe the following: - The site's status as a designated landmark, within a historic district or historic landscape district, or within 100 feet of any designated landmark, historic district, or historic landscape district - Compliance with standards for preservation and documentation of archaeological resources

Yes	NA	Exterior Lighting (14-14.6.4(F)) Describe how the proposed site lighting will adhere to photometrics requirements as it relates to light trespass and full cutoff fixture design, pursuant to Technical Manual Section 12
Yes	NA	Noise and Vibration (14-14.6.4(G)) Provide data on noise levels for HVAC and other mechanical equipment, such as design specifications, to demonstrate consistency with state and federal noise emissions requirements as well as City code
Yes	NA	Signage and Wayfinding (14-14.6.4(H)), if applicable - Provide signage plan showing the location, dimensions, height and setback of all existing and proposed signs - Provide drawings of all commercial and directional signage on site
Yes	NA	Zone-Related Design Standards (14-14.6.4(I)) Address any applicable design review standards by zone, including compliance with Design Manual

MAJOR SITE PLAN DRAWINGS CHECKLIST

Please upload the following DRAWINGS with the listed details into e-Plan as separate pdfs.

All drawings must be submitted in a 24 x 36 sheet size.

BOUNDARY SURVEY (stamped by a Maine Licensed Surveyor and drawn as per Technical Manual Sec. 13)

SITE PLAN(S) (stamped by a Maine Licensed Professional Engineer) including:

All sheets – Include a title block with project title and the following information:

- Project street address
- Name and address of property owner & applicant
- Licensed design professional, incl firm that produced plans
- North arrow
- Date of preparation and revision history block
- Tax parcel (chart, block, and lot) number

Existing Conditions Plan with the following:

- Existing structures, with distance from primary building façade(s) to the property line
- Approximate location of structures on abutting properties
- All streets and intersections adjacent to the site
- Existing driveways, pedestrian ways, and bicycle infrastructure, including dimensions and materials
- Existing public transit infrastructure
- Existing vehicle & bicycle parking areas
- Existing utilities on site and within adjacent rights-of-way
- Existing grades (two-foot contours preferred)
- Location of water courses, wetlands, and vegetation, or other significant natural features
- Existing soil conditions and location of test pits and borings
- Zoning boundary lines, including overlays
- Location of all existing easements and rights-of-way

Proposed Site Plan with the following:

- Proposed structures, including distance from primary building façade(s) to property lines
- Ground floor area, and finished floor elevations for all buildings
- Any proposed geometric modifications to streets and intersections adjacent to site
- Location, dimensions and materials of all proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- Location and dimensions of proposed loading areas, including turning templates
- Proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications
- Location of all snow storage areas
- Exterior lighting (please see Technical Manual Sec. 12 for photometrics requirements)
- Location of fire hydrants

• Location of solid waste management receptacles • Location of all proposed HVAC and mechanical equipment, including proposed screening, where applicable • Location of proposed easements and rights-of-way, including dimensions • Please utilize color-coding and/or hatches and shading to delineate changes between the pre and post development condition as needed
UTILITY PLAN including:
• Proposed electrical infrastructure • Location, sizing and directional flows of all proposed sewer and stormwater infrastructure • Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site • Electric utility infrastructure
GRADING AND DRAINAGE PLAN including:
• Proposed grades • Proposed stormwater management measures meeting Technical Manual (Section 5) standards • Any proposed alteration of a watercourse or wetlands • Any groundwater protection measures • Proposed buffers and preservation measures for wetlands or significant natural features
LANDSCAPE PLAN including:
• Existing vegetation to be preserved and preservation measures • Proposed landscaping, screening, and street trees, including caliper widths for trees • Planting schedule, including street trees
ARCHITECTURAL PLANS AND RENDERINGS including:
• Exterior building elevations, color renderings, illustrations of all sides • Axonometric and street-level views for structures greater than three stories in height • Provide context drawings, if applicable (Design Manual, page 1) • Floor plans
CONSTRUCTION MANAGEMENT PLAN including:
• Specifics on traffic control, sidewalk sheds, and pedestrian rerouting • Include a drawing and written narrative
OTHER
• Details and cross-sections, as necessary

RIGHT, TITLE & INTEREST

DC Baxter Woods IV, LLC currently owns the property as evidenced in the deed recorded in CCRD Book 36065; Page 326 attached to this section.

DLN 1001940075069

SHORT FORM QUITCLAIM DEED WITH COVENANT

KNOW ALL PERSONS BY THESE PRESENTS, that DC BAXTER WOODS LLC, a Maine limited liability company, in consideration of One Dollar and other valuable consideration paid by DC BAXTER WOODS IV LLC, a Maine limited liability company, whose mailing address is 100 Commercial Street, Suite 414, Portland, Maine 04101, its successors and assigns forever (collectively "Grantee"), the receipt whereof is hereby acknowledged, does hereby GRANT unto the Grantee, WITH QUITCLAIM COVENANT, the following described real estate:

A certain lot or parcel of land together with any buildings and improvements thereon, located in the City of Portland, County of Cumberland and State of Maine, being Lot #4 as shown on the Overall Subdivision Plan 605 Stevens Avenue, Stevens Avenue and Walton Street, Portland, Maine, made for Sea Coast at Baxter Woods Associates, LLC by Titcomb Associates, dated June 24, 2015, as revised through June 15, 2016, and recorded in the Cumberland County Registry of Deeds, Plan Book 216, Page 433, as amended by the First Amended Overall Subdivision Plan 605 Stevens Avenue, Stevens Avenue and Walton Street, Portland, Maine, made for Sea Coast at Baxter Woods Associates, LLC by Titcomb Associates, dated April 10, 2017, and recorded in the Cumberland County Registry of Deeds, Plan Book 217, Page 151 (collectively the "Plan").

Said #4 as described and conveyed above is conveyed subject to and with the benefit of:

1. Title to and rights of the public and others entitled thereto in and to those portions of the insured premises lying within the bounds of Stevens Avenue and Walton Street.
2. Such state of facts as shown on the Plan.
3. City of Portland Certificate of Subdivision Waiver Approval, dated September 8, 2015 and recorded in the Cumberland County Registry of Deeds, Book 32584, Page 153.
4. Rights and easements excepted and reserved by St. Joseph's Convent and Hospital in its deed to Sea Coast at Baxter Woods Associates, LLC, dated December 16, 2016 and recorded in the Cumberland County Registry of Deeds, Book 33698, Page 187.
5. Rights, covenants and easements set forth in the Stormwater Drainage System Maintenance Agreement from Sea Coast at Baxter Woods Associates, LLC to the City of Portland, dated December 23, 2016 and recorded in the Cumberland County Registry of Deeds, Book 33752, Page 170, as amended by an Addendum, dated June 1, 2017 and recorded in said Registry, Book 34050, Page 80.

6. Rights, easements and covenants set forth or references in the Declaration of Covenants and Easements dated May 5, 2017 and recorded in the Cumberland County Registry of Deeds, Book 33992, Page 172.

7. Subject to rights and easements reserved and set forth in the deeds from James P. Baxter to the Roman Catholic Bishop of Portland, dated March 10, 1908 and recorded in said Registry of Deeds in Book 821, Pages 58 and 59.

8. Stormwater Drainage System Maintenance Agreement entered into by Sea Coast at Baxter Woods Associates, LLC for the benefit of the City of Portland dated August 11, 2015, recorded in said Registry of Deeds in Book 33752, Page 170, as affected by Addendum to Stormwater Drainage System Maintenance Agreement dated December 23, 2016, recorded in said Registry of Deeds in Book 34050, Page 80.

9. Underground utility easement granted by Sea Coast at Baxter Woods Associates LLC to Central Maine Power Company and Northern New England Telephone Operations, LLC dated September 5, 2017, recorded in said Registry of Deeds in Book 34616, Page 110.

10. Underground utility easement granted by Sea Coast at Baxter Woods Associates LLC to Central Maine Power Company and Northern New England Telephone Operations, LLC dated September 5, 2017, recorded in said Registry of Deeds in Book 34616, Page 110.

11. Subject to rights and easements reserved and set forth in the deeds from James P. Baxter to the Roman Catholic Bishop of Portland, dated March 10, 1908 and recorded in said Registry of Deeds in Book 821, Pages 58 and 59.

12. Easement Agreement (Bus Stop) in favor of City of Portland to be recorded in said Registry of Deeds.

13. Rights of others in and to the appurtenant easements in favor of said Lot # 4.

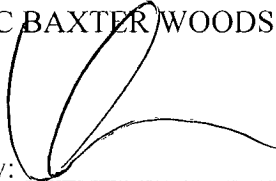
TO HAVE AND TO HOLD, the same, together with all the privileges and appurtenances thereunto belonging, to the said DC Baxter Woods IV LLC, its successors and assigns forever, to use and behoof forever.

IN WITNESS WHEREOF, the said DC Baxter Woods LLC has caused this instrument to be executed by Kevin R. Bunker, its Manager thereunto duly authorized, as of the 8th day of October, 2019.

WITNESS:

Teri Lorne

DC BAXTER WOODS LLC

By: 

Kevin R. Bunker, its Manager

STATE OF MAINE
Cumberland, ss.

October 8, 2019

Then personally appeared the above-named Kevin R. Bunker, Manager of DC Baxter Woods LLC as aforesaid and acknowledged the foregoing instrument to be his free act and deed in said capacity and the free act and deed of said limited liability company.

Before me,



Notary Public/Attorney-at-Law

Print Name: _____

My Commission Expires: _____



O:\DC Predevelopment LLC (20981)\Baxter Woods (331)\Lot 4\Transfer documents\Deed_QCWC_Lot 4.docx

Received
Recorded Register of Deeds
Oct 11, 2019 12:57:40P
Cumberland County
Nancy A. Lane

ZONING ANALYSIS

See attached Zoning Analysis Table and project site plans for additional information.

ZONING ANALYSIS TABLE

STANDARD	R-5	R-5A	LOT 4 Building 1 (20 DU)	LOT 5 Buildings 2-5 (140 DU)
Lot Area (min)	2 AC	2 AC	2.00 AC	7.05 AC
Net Land Area per Dwelling Unit (min.)	3,000 SF	1,600 SF	4,356 SF	2,194 SF
Units per Building (max.)	NA	NA	NA	NA
Lot Area per Multiplex Unit	4,500 SF	NA	NA	NA
Street Frontage (min)	50'	50'	140'	84.5'
Lot Width (min)	60'/90' Multiplex	60'	140'	525'
Front Setback (min)	20'	25'	196'	80'
Rear Setback (min)	20'	25'	58'	107'
Side Setback (min) >2.5 stories	14'	16'	78'	18'
Structure Height	35'	55'	43'-3"	55'
Stepbacks	NA	NA	NA	NA
Building Length	140	NA	NA	NA
Lot Coverage (max.)	40%	30%	17%	20%
Building Setback from External Subdivision Property Lines (min). >100'	35'	35'	84'	96'
Common Recreation Open Space Area (min.) (136 DU x 200 = 27,200 SF)	300 SF/DU	200 SF/DU	4,000 SF	28,000 SF
Off street Parking Spaces (136 DU/SP)	1 Space/DU	1 Space/DU 136	42 Spaces	260 Spaces
Loading Bays	NA	NA	NA	NA
Pavement Setback	NA	NA	NA	NA
Floor Area Ratio	NA	NA	NA	NA
Maximum Impervious Area	NA	NA	NA	NA

*No Dwelling Units proposed in the R-5 zone.

WAIVER REQUESTS

The Applicant is not requesting waivers at this time.

FINANCIAL CAPACITY

The Applicant has the means at its disposal for financing the proposed Stevens Square at Baxter Woods – Lot 4 Phase 2 project. A letter from Kennebec Savings Bank is attached to this section as evidence of the applicant's financial capacity to undertake the development.

A breakdown of the preliminary project cost for Lot 4-Phase 2 includes the following:

- Site Work: <\$1,000,000
- Structures: \$70 million; approximately \$14 million each for buildings 2 and 4 and approximately \$21 million each for buildings 3 and 5.

These values are considered preliminary and approximate and are subject to change as building design and project layout is refined.



Kennebec Savings Bank

181 Lower Main Street | Freeport, Maine 04032 | Telephone: (207) 402-1218

May 26, 2021

City of Portland
389 Congress Street
Portland, Maine 04101

Re: Kevin Bunker condo projects

To Whom It May Concern,

This letter is to confirm that Kevin Bunker possesses the financial resources to accommodate the continued development of condo buildings located at 631 Stevens Avenue in Portland, Maine.

Should you have any further questions or concerns, please feel free to contact me via e-mail at deldridge@kennebecsavings.bank or by cell phone at (207) 402-1218.

Sincerely,



David M. Eldridge
Regional VP & Commercial Banking Officer

www.KennebecSavings.Bank
Member FDIC

TECHNICAL CAPABILITY

The applicant has retained a highly qualified team of professionals to undertake planning, permitting and design tasks on this project. Services will be provided by the following companies and their respective team leaders:

<i>Civil Engineer</i>	Stephen Bushey, P.E. Gorrill-Palmer Consulting Engineers 707 Sable Oaks Drive South Portland, Maine 04106 (207) 772-2515 sbushey@gorrillpalmer.com
<i>Architect</i>	Devin Cough Archetype PA 48 Union Wharf Portland, ME 04101 (207) 772-6022 https://www.archetype-architects.com/
<i>Surveyor</i>	Rex Croteau Titcomb Associates 133 Gray Road Falmouth, ME 04105 (207) 797-9199 rcroteau@titcombsurvey.com
<i>Geotechnical</i>	Bill Peterlein, PE Summit Geoengineering Services, Inc. 145 Lisbon Street, Suite 701 Lewiston, ME 04240 (207) 576-3313
<i>Landscape Architecture</i>	Nick Aceto, PLA ASLA Aceto Landscape Architects PO Box 3787 Portland, ME 04104 (207) 221-3390 na@acetola.com

The team of consultants retained by developer has expertise and experience in the design of similar commercial projects. Resumes of key personnel for development team can be provided upon request.

The Applicant also has significant experience in the development and management of large commercial projects having managed the previous phases of this Master Plan Development as well as similar projects throughout southern Maine for many years.

TRANSPORTATION

The following statements are provided in accordance with the Section 14.6 Site plan review standards of the ordinance.

TRANSPORTATION

14.6.1 Transportation Standards

Impact on Surrounding Street Systems 14.6.1(A)

- *Describe incremental volume of traffic impacts and mitigation measures. If needed*

The development will fit in with the existing street system as it will use the primary existing site driveway off Walton Street onto McAuley Way. During the Master Development Plan process, Diane Morabito, PE, then of Maine Traffic Resources (now Sewell) completed a Traffic impact Study¹. That study included trip generation associated with the 88 Unit Motherhouse apartments and another 161 additional Senior Adult Housing units proposed in five buildings on Lot 5. The following table summarizes the expected trip generation for the development:

“	Time Period	ITE Trip Generation One-way Trip-Ends
	Weekday	856
	AM Peak Hour – adjacent street	50
	Entering Site	17
	Exiting Site	33
	AM Peak Hour – generator	97
	Entering Site	45
	Exiting Site	52
	PM Peak Hour – adjacent street	62
	Entering Site	33
	Exiting Site	29
	PM Peak Hour – generator	87
	Entering Site	48
	Exiting Site	39

“

Excerpt from Traffic Impact study March 2016

On the basis of these calculations the Lot 5 development will not trigger a Traffic Movement Permit. We note that the closure of the Maine Girls Academy influenced overall traffic conditions for the site. Recent Change of use approvals for the School building are in transition as new occupants of that site continue to transition into place. Overall, there remain conditions tied to the Master development Plan approval that include future traffic and parking data collection.

¹ See Traffic Impact Study 605 Stevens Avenue, March 15, 2016 and subsequent May 27, 2016 letter responding to Staff comments as part of the MDP.

Access and Circulation 14.6.1(B)

- *Site access and internal circulation, including ADA access*
- *Drive-up features, if applicable*
- *Loading and servicing needs, routes, and geometry, providing turning templates for delivery vehicles, if applicable*
- *Sidewalks and condition along street frontages and internal walkways*
- *Engineered details for ADA ramps and public sidewalks, meeting sidewalk material policy and construction requirements (Technical Manual, Section 1)*

- (i) The development provides primary two-way access via McAuley Way off Walton Street. Secondary access via a one-way entering drive and one-way exiting drive onto Stevens Avenue in front of the Motherhouse is also available. Two driveways from Lot 4 onto McAuley Way provide access to the parking lots and interior parking within each building. Ample turning movement is provided at each street entrance. Internal circulation has been reviewed and designed to accommodate the typical use of passenger vehicles. ADA Parking is provided within the ground level parking zones in each building and additional ADA parking will be provided for visitors/guests on the outside parking.
- (ii) There are no drive-up features proposed.
- (iii) Access and egress have been designed to avoid conflict with existing turning movements and traffic flows. Please see AutoTURN diagrams included in Section 10.
- (iv) Public sidewalks exist along both Walton and Stevens Avenue frontage and several connections into the site are provided. The applicant recently completed the installation of a public crosswalk and pedestrian signal beacons at the Walton/Stevens intersection in accordance with previous conditions of approval. Onsite connecting sidewalks are proposed for access around the site and to connect to the neighboring Motherhouse residential and Building 1 development. The Applicant is proposing to connect to the existing sidewalk on the easterly side of the Building 1 parking area to the existing walking trail south of the project. Additional internal connections are proposed to access the existing walking trail to the east of the site near Baxter Woods. Finally sidewalk access will be provided from the site directly to a new Bus shelter on the East (outbound) side of Stevens Avenue. This will provide excellent access to public transit.

Public Transit Access 14.6.1(C), if applicable

- *Existing available transit service and proposed transit improvements, including design details, such as easement, pad base, and shelter*

The site is served by nearby public bus shelters on Stevens Avenue. The applicant has previously installed a new bus shelter on the Stevens Square Lot 4 property. The City also previously installed a shelter on the west (inbound) side of Stevens Avenue along with a crosswalk for pedestrians/Transit users to gain access to the METRO service along that route.

Parking 14.6.1(D)

- *Proposed vehicular and bicycle parking supply (including ADA-compliant parking) in relation to applicable parking requirements in Article 19 of the land use code*
- *Curb cut separation and parking layout (Technical Manual, Section 1)*
- *Construction details for bicycle racks*
- *Management plan for snow storage and removal*

1. Vehicular Parking

The proposed project will include covered parking as well as surface parking area. Based upon the minimum required Zoning standard of 1 space/dwelling unit, the applicant is proposing the following parking spaces:

Use	Units	Total Spaces
Building 2 Covered Parking	28	29
Building 3 Covered Parking	42	48
Building 4 Covered Parking	28	29
Building 5 Covered Parking	42	48
Surface Parking Areas	--	106
Total Onsite Parking (Lot 5)	--	260
ADA Spaces (included in total above)		8 (2 standard, 6 van accessible)*

* Seven ADA spaces required for Total spaces of 201-300 per ADA Standards for Accessible Design 4.1.2(5)

2. Bicycle Parking

The site plan currently identifies 64 bikes required (2 spaces/5 units) which will be accommodated by an inside bike storage system. Buildings 2 and 4 will contain 12 bike spaces and Buildings 3 and 5 will contain 20 bike spaces each. Additional bike parking will also be provided outside of each building. See the Landscape plans by ALA for further information on the outside bike parking locations.

3. Snow Storage.

- a. Snow storage management will employ two strategies:
 1. On-site snow storage around the perimeter of the site as shown on the site plans; and
 2. Snow removal and off-site storage.

4. Electric Vehicle (EV) Charging

The Applicant will be providing conduit for EV Charging stations for all covered parking spaces and installation will be subject to user demand, as units are intended to be sold as condominiums

Traffic Demand Management (TDM) 14.6.1(E), if applicable

- *Provide TDM plan drafted in accordance with Technical Manual Section 1 requirements*

A TDM plan is not required for the proposed residential project.

ENVIRONMENTAL

The following statements are provided in accordance with the Section 14 of the Ordinance.

14.6.2 Environmental Quality Standards

A. Preservation of Significant Natural Features 14-14.6.2(A), if applicable

- *Populations of trees and plants that are endangered or threatened*
- *Habitat for species*
- *High and moderate value waterfowl and wading habitat*
- *Aquifers on Casco Bay Islands*
- *Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains)*
- *Proposed preservation areas and protection measures*
- *Documentation from environmental compliance consultants and determinations from applicable state and federal agencies*

1. Preservation of Significant Natural Features:

- a. The development site does not contain any significant natural features including wetlands of special significance, vernal pools or other protected resources. A forested wetland was identified on the east side of the property, along low-lying area. Several drainage outlets from the site's drainage systems provide water to the east side and likely support the prevalence of forested wetland. The existing ballfield area has no trees or shrubs that might be considered for protection. During the Master Development Phase various resource agencies were contacted regarding the site's potential to contain significant wildlife habitat, historic or archaeological resources. Findings from each of the agencies has been previously provided to the City. No further evidence will be provided for the current application, unless requested.

B. Landscape Preservation 14-14.6.2(B)

- *Measures to preserve trees, including within required zoning setbacks (Technical Manual, Section 4)*
 - *Measures to protect existing vegetation during construction*
1. The applicant is committed to preserving existing trees and providing supplemental plantings.
 2. The majority of the development footprint lies within the former ballfield area, where there are no trees to be preserved.
 3. Existing trees along the south side of the property facing Baxter Woods will be substantially preserved.
 4. The applicant is not seeking a waiver at this time.
 5. Due to the site's current use as a ballfield, there is little to no effect on existing vegetation. At the southeast corner of Building 2, some invasive plant material on the existing slope will be cleared for construction of the loop trail. Existing trees at this forest edge will have protection measures, detailed in the landscape plans, and erosion control measures, detailed in the civil plans.

The applicant is not seeking to replace trees, however a robust planting plan will be provided to increase the tree and shrub plantings on the property.

C. Site Landscaping and Buffers 14-14.6.2(C)

- *Overall landscape approach and consistency with standards*
- *The use of screening and buffering of service areas and between non-residential and residential uses*
- *Existing heritage or Feature Trees on site and measures to preserve*
- *Compliance with Street Tree requirements*

1. Landscaping

The proposed landscape plan meets (and exceeds) the site plan review standards in Section C of the technical manual. The applicant is proposing shade and flowering trees—as well as shrubs, ornamental grasses, and perennials—along development frontage and at the site’s interior that will add aesthetic interest, ecological value, and scale to the proposed development. All proposed trees are listed in the City of Portland Recommended Tree List. Due to the site’s current use as a ballfield, there are no existing trees or vegetation that need preservation. The proposed landscape plan has carried select plant species from the existing development to the proposed in order to give the final campus a cohesive design language. Along building frontages, the applicant is proposing shade or flowering tree in addition to the planting of ornamental grass, perennials, or shrubs at the understory level.

2. Buffers:

There are no service or loading areas observable from nearby sidewalks or residential properties and trash and recycling are internal to the proposed building. Various existing trees, at the edge of the site and in Baxter Woods, provide a significant buffer to the surrounding properties.

- (a) The applicant is the owner of all the land within these zoning boundaries. The existing woods on site will remain undisturbed and serves as a significant buffer to the proposed development. The proposed landscape plan further enhances the vegetated buffer with Baxter Woods, south of buildings 2 and 3. The applicant prefers to use vegetation to maintain connectivity within the campus and trail connections with Baxter Woods. The applicant reserves the right to monitor and address any buffering needs with vegetative screening in the future, if needed.
- (b) Not applicable
- (c) The applicant is avoiding any disturbance with the existing, mature evergreen and deciduous trees along the southern site border with Baxter Woods. Plantings south of Buildings 2 and 3 will further enhance the existing buffer with Baxter Woods.

3. Parking and Vehicle Display Lot Landscaping

The applicant is proposing a mix of shade trees, ornamental trees, and shrubs in raised landscape islands to screen, shade, and break up surface parking lots. Landscape islands (containing trees and shrubs or ornamental grasses) are also proposed.

4. Street Trees

The proposed development does not border any public streets. At the western edge of the development, shade trees and shrubs are proposed along the access road to buffer the residential development from vehicular traffic. All trees on site were selected using the City of Portland Recommended Tree List.

D. Water Quality, Stormwater Management and Erosion Control 14-14.6.2(D)

1. The proposed development results in 125,453± SF (2.88 ac) of proposed impervious area. A full Stormwater Management study including an analysis of predevelopment vs post development conditions has been prepared and accompanies this application. The design includes Stormwater Management measures to comply with both the flooding standards and water quality treatment standards. On the basis of the proposed Stormwater Water Management designs, we believe there will be no impacts to downstream or adjacent properties.
2. As evidenced in the accompanying Stormwater, Management Report, the proposed project will comply with the City's stormwater management standards of the Technical Manual. The project will employ various Best Management Practices including pervious pavers in the parking lots and proprietary devices with underground storage systems.
3. The development will include some amount of runoff infiltration into the underlying ground. This is due to the absorption capacity of the onsite soils and the depth to groundwater. This is a benefit/advantage of the site and the ability to provide some amount of infiltration practices as part of the Stormwater Management regime.

STORMWATER MANAGEMENT REPORT

STEVENS SQUARE AT BAXTER WOODS – PHASE 2
PORTLAND, MAINE

Prepared for

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MAY 2021

STORMWATER MANAGEMENT REPORT

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Figure

- 1 USGS Project Location Map

Attachments

- A Watershed Maps:
WS1 Pre-Development Watershed Map
WS2 Post-Development Watershed Map
C-7.0 Water Quality Map
- B Pre and Post Development HydroCAD Model
- C Water Quality Calculations
- D Operation & Maintenance Manual

1.0 **INTRODUCTION**

DC Baxter Woods IV LLC is proposing Phase 2 development of Lot 4 of the Stevens Square site at Baxter Woods. The Phase 2 proposal includes the redevelopment of the former athletic field complex associated with the former Maine Girls Academy. The proposed project includes the construction of four (4) new apartment buildings that will contain 140 new living units. The site development includes 260 parking spaces, access drives, and open spaces with walking trails. The site includes 154 parking spaces located within the ground floors of the proposed buildings, the remaining 106 surface parking spaces will be exterior spaces constructed with pervious pavers as the primary surface material. Figure 1 is a map showing the project location.

The purpose of this analysis and report is to document the following:

- The measures that will be implemented to provide stormwater management for the project,
- what is required to control the peak rate of discharge during large storm events, and
- to provide treatment to stormwater runoff as determined by Maine DEP's Chapter 500 Rules and City of Portland Technical Standards for Stormwater Management.

Both the impact on peak rates of runoff and water quality measures are considered in this evaluation.

Erosion and Sedimentation Controls satisfying the MDEP Basic Standards will be employed during the construction of this project and are summarized in the Erosion and Sedimentation Control Plans provided on Sheets C-8.6, and C-8.7 of the plan set.

2.0 **EXISTING SITE CONDITIONS**

The project site is located at 583 Stevens Avenue, to the north of Baxter Woods, and west of the Deering Pavilion as shown on the Location Map. The Phase 2 Lot area is 7.05 acres in size containing 5.07 acres of athletic fields, a vegetated side slope at the edge of the athletic fields and wooded wetlands to the east of the athletic fields.

Abutting land uses include:

- North – Residential
- East – Woods and Residential
- South – Open Space/Baxter Woods
- West – Residential consisting of the Motherhouse development

Stormwater runoff from the majority of the site is conveyed through overland flow into two storm drain/underdrain systems that drain to a wetland located on the eastern edge of the project site. Stormwater runoff from smaller vegetated areas of the site flow overland to the northeast and ultimately to properties to the south of Holly Street. Runoff from the Motherhouse to the west, and St. Josephs to the north, and the northern portion of the athletic field is collected and conveyed across the site via a 12" stormdrain. These flows ultimately discharge into a drainage channel within the wetland along the

eastern property line. The existing athletic field also contains an underdrain system which is connected to the stormdrain system that discharges to the wetland. Additionally, runoff from Building 1 to the southeast is conveyed via a 12" stormdrain, and ultimately discharges into a secondary channel (to the south of the previously mentioned channel) within the wetland to the southeast property line. The stormwater runoff to these existing stormdrain systems from the surrounding land uses was evaluated as part of previously approved site plans.

The site is currently developed with inactive athletic fields consisting of a soccer field, and two softball fields. Topography is relatively flat across the proposed construction area, with slopes of 1% to 2%. To the east-northeast of the proposed construction area is a steep embankment down to a forested wetland, with slopes ranging from 5% to 33%. Elevations range from elev. 95' (NGVD29) along the eastern property line, to elev. 117' along McAuley Way.

The soils on the site are shown on the watershed maps and are from the USDA NRCS Medium Intensity Soil Survey. The soils range from hydrologic soil group A to D. Runoff over the athletic fields is collected via several catch basin inlets and an underdrained pipe network. Since the underdrains collect some of the rainfall and convey the runoff to the outfall at the wetlands, the field area does not function as a vegetated HSG A soil would. For this analysis, the athletic field soils were assumed to be HSG C. Wetland areas were assumed HSG D.

There are no lakes located on, adjacent to or downstream of the project site. Stormwater runoff from the project site is tributary to Back Cove. Runoff from the site is not tributary to an Urban Impaired Stream. Based upon the FEMA maps, no part of the proposed development is located within the Zone A 100-year floodplain.

3.0 DEVELOPMENT DESCRIPTION

The proposed project includes the construction of two new apartment buildings each with a footprint of 19,410 SF, and two new apartment buildings with a footprint of 12,580 SF each. Two access drives will be constructed to provide access to tenant parking areas on the ground floor of the buildings, and the exterior parking for guests. The guest parking stalls will be constructed with pervious pavers to provide stormwater storage and treatment for runoff from the access drives. Approximately 0.62 acres of open space and walking trails are also incorporated in the site plans.

Changes in land cover will include removal of impervious surfaces to the north of the site and grassed areas within portions of the site, and the addition of roof, paved surfaces, and lawn areas. **Overall, the proposed project will create approximately 2.88 acres of impervious area within the site boundary. The developed area within the property boundary is approximately 5.07 acres.**

4.0 **REFERENCES**

The following reference sources were reviewed during preparation of the stormwater analysis:

1. Maine Erosion and Sedimentation Control Handbook for Construction: Best Management Practices, MaineDEP, current edition.
2. Stormwater Management for Maine, Volume III BMPS Technical Design Manual, MeDEP, May 2016.
3. Original Master Development Plan Stormwater Analysis May 2016, prepared by Stantec.

The following sources were used for preparation of the stormwater quality analysis:

1. Stormwater Management for Maine, Volume III BMPS Technical Design Manual, MaineDEP, May 2016
2. MeDEP Chapter 500, Stormwater Management Rules.

Computer programs used to assist in the various components of this analysis include:

1. HydroCAD 10.00, HydroCAD Software Solutions LLC – used for modeling watersheds for pre and post development conditions.
2. Microsoft Excel, Microsoft Corporation – used for spreadsheet computations.
3. AutoCAD Civil 3D 2010, 2011, and 2019, Autodesk - used to determine areas and graphical representation of design.

Data resources used to obtain the hydrologic input data for the stormwater models are identified later in this report.

5.0 **OVERVIEW OF STORMWATER RUNOFF MODELING**

The stormwater analysis evaluates the following elements:

- Predevelopment and post development stormwater runoff and peak discharge rates;
- The impacts of the proposed development and subsequent modification to site discharge rates;
- The effect of land cover modifications within the site, especially those that are expected to increase site runoff rates;
- The requirements for stormwater management including compliance with Chapter 500 flooding standards as compared to existing conditions;
- Storm drainage requirements for parking areas and other improvements; and
- Requirements for water quality measures based upon MDEP General Standards.

6.0 METHODS OF ANALYSIS – STORMWATER QUANTITY

6.1.1 Stormwater Quantity

The hydrologic analyses for predevelopment and post development conditions have been conducted based upon the methodology contained in the USDA Soil Conservation Service's Technical Releases No. 20 and 55 (SCS TR-20 and TR-55) as modified for special site conditions. For this section of Cumberland County SE, Maine, a 24-hour SCS Type III Storm distribution was used for the analysis using the following storm frequencies and rainfall amounts:

Storm Event	24-Hour Rainfall (Post 2014)
2-Year Storm	3.1
10-Year Storm	4.6
25-Year Storm	5.8

The SCS TR-20 methodology, using the HydroCAD computer program, was employed by Gorrill Palmer to analyze the pre- and post-development watersheds.

Land use, cover, delineation of watershed subcatchments, hydraulic flow paths, and hydrologic soil types were obtained using the following data:

1. Portland, Maine USGS 7.5-minute Quadrangle Maps.
2. USDA NRCS Web Soil Survey.
3. Onsite Topographic Survey with 1-foot contour intervals prepared by Titcomb Associates.
4. Previously approved plans for the Master Development Plan, the Motherhouse Expansion and Building 1.
5. Field reconnaissance.

6.1.2 Stormwater Quality

Water quality treatment for the development has been designed to meet the Stormwater Management Rules (Chapter 500) General Standard, which requires the treatment of at least 95% of impervious area and at least 80% of developed area generated. Treatment requirements were analyzed within the site area to meet the General Standard.

7.0 DESCRIPTION OF SITE WATERSHED MODEL

The watershed model was developed to predict peak discharge rates at the Points of Interest (POI) depicted on the watershed maps. The following sections describe the pre-development and the post-development conditions.

8.0 PRE-DEVELOPMENT CONDITIONS

The predevelopment conditions for this analysis were considered to be the current condition of the site as described in the Existing Site Conditions section above.

The predevelopment condition was analyzed as 21 subcatchments with two points of interest (POI) as shown in Figure WV-1. The majority of the 21 subcatchments are from the approved stormwater analysis for the Motherhouse and Building 1 projects. Subcatchments 19A, B, C and Subcatchment 20 encompass the currently proposed project. POI 1 and POI 2 are points within the wetland at the east side property line.

To account for off-site runoff tributary to the two POIs, Gorrill Palmer was able to obtain previously completed stormwater analyses and HydroCAD models for stormwater management systems from the Motherhouse, and Building 1 to the east of the project site. Four of the 21 subcatchments encompass the currently proposed development area. The following table summarizes the pre-development watershed characteristics:

PRE-DEVELOPMENT WATERSHEDS HYDRAULIC CHARACTERISTICS			
Watershed ID	Area (ac)	CN	Hydraulic Time of Concentration (min.)
1S	0.364	49	20.7
2S	0.033	80	6.0
3S	0.050	87	6.0
4S	0.077	98	6.0
5S	0.204	49	9.2
6S	0.269	98	6.0
7S	0.503	44	14.0
9S	0.059	49	6.0
10S	0.282	88	6.0
11S	0.258	69	6.0
12S	0.168	74	6.0
13S	0.360	81	6.0
14S	0.140	98	6.0
15S	0.220	93	6.0
16S	0.220	93	6.0
17S	0.399	93	6.0
18S	1.028	69	6.0
19A	1.059	76	21.0
19B	1.474	74	25.0
19C	0.471	75	21.6
20S	2.920	74	31.2
Total	10.558		

The following is a brief description of each predevelopment subcatchment:

- Subcatchment 1S-9S consists of off-site areas tributary to POI 1. These areas and stormwater management systems are obtained from the previously approved plans for Building 1.
- Subcatchment 10S-18S consists of off-site areas tributary to pond 8P which conveys runoff to POI 2 via a 12" pipe. These areas and stormwater management systems were obtained from the previously approved plans for the Motherhouse parking expansion.
- Subcatchments 19A-20S encompass the currently proposed development area.
- Subcatchment 19A is the off-site area of St. Joseph's roof and parking lot tributary to the existing stormdrain which conveys runoff to POI 2.
- Subcatchment 19B is athletic field area tributary to a field inlet, which ultimately ties into the existing pipe network which conveys runoff to POI 2. Since the field is underdrained, the hydrologic soil group is assumed to be C.
- Subcatchment 19C consists of wooded area and grassed playing fields. The runoff from this subcatchment is tributary to a channel within the wetland which conveys runoff to POI 2. Since the field is underdrained, the hydrologic soil group is assumed to be C for areas within the athletic field.
- Subcatchment 20S is grassed area tributary to the pipe network labeled 15R, which conveys runoff to POI 1. Since the field is underdrained, the hydrologic soil group is assumed to be C.

There is no impervious area onsite in the existing condition. The onsite developed area consisting of the athletic fields, is approximately 5.07 acres.

A watershed map for the predevelopment condition is attached to this section as drawing number WS1 in Attachment A. Attachment B contains the TR-20 calculations.

Per the Master Development Plan SWM analysis, the predevelopment watershed was originally analyzed as a single 13.30 acre watershed with a CN of 55.

Table 1 presents the peak flow rates at the POI for the design storms.

Table 1– Pre-Development Peak Flow Rates (cfs)			
Point of Interest	Peak Flow (cfs)		
	2 Year	10 Year	25 Year
POI # 1	1.77	3.90	6.97
POI # 2	2.99	7.55	11.40

9.0 POST DEVELOPMENT CONDITION

Analysis for the post development condition consists of determining post development peak flows and limiting the post development flows to predevelopment levels at each point of interest. Temporary runoff storage will be provided within the pervious pavers reservoir course, and also within several below grade manufactured storage chambers systems. The proposed sidewalk along McAuley Way will be constructed over an existing infiltration trench drain, however the existing piping to the infiltration trench drain will remain. To account for uncaptured surface runoff from McAuley Way, a 6x10 Filterra tree box filter system module is proposed to provide treatment for the 0.36 acre area currently draining to the infiltration trench.

The predevelopment subcatchments affected by the proposed development have been modified to reflect the post development conditions. The post development conditions contain 16 subcatchments tributary to the same two points of interest in addition to the subcatchments from outside the development area. The existing 12" storm drain running through the center of the site will be rerouted along the northern property boundary and will discharge at the same location. The overall watershed area slightly increases in the post development condition to collect the developed area that would otherwise discharge to Holly Street. The area draining to Holly Street is reduced in the post-development condition and was not included in the pre-development analysis and watershed model, since, by inspection, the runoff to Holly Street will be reduced in the post development condition. The following table summarizes the post-development watershed characteristics:

Post Development Watersheds Hydraulic Characteristics			
Watershed ID	Area (ac)	CN	Hydraulic Time of Concentration (min.)
1S	0.364	49	20.7
2S	0.033	80	6
3S	0.050	87	6
4S	0.077	98	6
5S	0.204	49	9.2
6S	0.269	98	6
7S	0.503	44	14
9S	0.041	69	6
10S	0.282	88	6
11S	0.258	69	6
12S	0.168	74	6
13S	0.356	85	6
14S	0.140	98	6
15S	0.220	93	6
16S	0.220	93	6
17S	0.399	93	6
18S	1.028	69	6
19A	1.319	60	19.8
20A	0.440	82	6

Post Development Watersheds Hydraulic Characteristics			
Watershed ID	Area (ac)	CN	Hydraulic Time of Concentration (min.)
20B	0.366	82	6
21A	0.446	98	6
21B	0.289	98	6
22A	0.812	46	23
22B	0.203	47	6
23A	0.432	77	6
23B	0.227	76	6
24A	0.289	98	6
24B	0.446	98	6
25A	0.514	65	25
25B	0.208	76	6
25C	0.055	79	6
26S	0.241	62	22.1
27S	0.318	76	27.3
28S	0.108	39	13.2
Total	11.324		

The following is a brief description of each post development subcatchment.

- Subcatchment 1S-7S were not affected by the proposed development and are unchanged.
- Subcatchment 9S was modified from the existing conditions and consists of landscaped area and access entrance.
- Subcatchment 10S-12S were not affected by the proposed development and are unchanged.
- Subcatchment 13S is the area within McAuley Way tributary to the proposed Filtterra treatment system.
- Subcatchment 14S-18S were not affected by the proposed development and are unchanged.
- Subcatchment 20A consists of grassed and paved areas tributary to the pervious pavers which are tributary to the proposed stormdrain system which conveys runoff to POI 2.
- Subcatchment 20B consists of grassed and paved areas tributary to the pervious pavers which are tributary to the proposed stormdrain system which conveys runoff to POI 2.
- Subcatchment 21A consists of the roof drain from the proposed building 5, which is tributary to Detention Pond 1, which outlets to the proposed stormdrain system that conveys runoff to POI 2.

- Subcatchment 21B consists of the roof drain from the proposed building 4, which is tributary to Detention Pond 1, which outlets to the proposed stormdrain system that conveys runoff to POI 2.
- Subcatchment 22B consists of the vegetated area tributary to the proposed stormdrain system, which conveys runoff to POI 2.
- Subcatchment 22A is the grassed and paved areas tributary to Focal Point Filter 1, which outlets to the proposed stormdrain system that conveys runoff to POI 2.
- Subcatchment 23A consists of grassed and paved areas tributary to the pervious pavers which are tributary to the proposed stormdrain system which conveys runoff to POI 2.
- Subcatchment 23B consists of grassed and paved areas tributary to the pervious pavers which are tributary to the proposed stormdrain system which conveys runoff to POI 2.
- Subcatchment 24A consists of the roof drain from the proposed building 2, which is tributary to Detention Pond 2, which outlets to the stormdrain system that conveys runoff to POI 1.
- Subcatchment 24B consists of the roof drain from the proposed building 3, which is tributary to Detention Pond 2, which outlets to the stormdrain system that conveys runoff to POI 1.
- Subcatchment 25A is the grassed and paved areas tributary to Focal Point Filter 2, which outlets to the stormdrain system that conveys runoff to POI 1.
- Subcatchment 25B consists of the vegetated area which is tributary to the proposed stormdrain system which conveys runoff to POI 1.
- Subcatchment 25C consists of an untreated open space area which is tributary to the stormdrain system that conveys runoff to POI 1.
- Subcatchment 26S consists of grassed, paved, and wooded areas tributary to the channel labeled 44R which conveys runoff to POI 2.
- Subcatchment 27S consists of grassed, paved, and wooded areas tributary to the channel labeled 28R which conveys runoff to POI 2.
- Subcatchment 28S consists of grassed and paved areas tributary to the proposed stormdrain network that conveys runoff to POI 2.

The total impervious area onsite in the proposed condition is 2.88 acres, and the total developed area onsite in the proposed condition is 5.07 acres. The total watershed area analyzed contains 5.39 acres including 2.86 acres of impervious and 2.54 acres of non-impervious.

A watershed map for the post development condition is attached as drawing number WS2 in Attachment A. Attachment B contains the TR-20 calculations.

The following table reflects the pre- and post-development peak flow rates comparison at the two points of interest:

Table 2 – Comparison of Peak flows (cfs)						
Point of Interest	Peak Flow (cfs)					
	2 Year		10 Year		25 Year	
	Pre	Post	Pre	Post	Pre	Post
POI #1	1.77	1.72	3.90	2.60	6.97	4.55
POI #2	2.99	2.77	7.55	6.75	11.40	11.37

As shown in Table 2 above, the Post development peak flows for the 2, 10, and 25-yr storm events are less than the pre-development peak flows at POI 1 and POI 2. Thus, we conclude that the proposed onsite management of stormwater runoff will result in no impacts to the downstream conditions.

10.0 STORMWATER MANAGEMENT SUMMARY

Under the General Standards, the project is required to meet the BMP water quality Standards, as the development site is not tributary to a lake watershed. As part of the original Master Development Plan various SWM BMP's had been suggested for use including the following:

- Filtering roof drip strips
- Four small bioretention cells
- An infiltration trench
- Areas of porous pavement

The filtering roof drip strips have not been used due to changes in building design and roof architecture. The MDP also contemplated extensive infiltration capacity of runoff into the site's underlying soils. We have reduced the effects of infiltration on the model in order to arrive at a conservative estimate of onsite storage capacity need and peak discharge release.

The following sections summarize the BMP's that are being employed to meet the water quantity and quality standards for the proposed development.

10.1.1 Pervious Pavers

Underdrained pervious pavers will be installed in all exterior parking stalls throughout the project. Direct absorption or sheet flow from adjacent areas will flow down through the pervious pavers and through a sand filter treatment section before being collected in underdrain pipes that will connect to the closed collection system that ultimately outfalls to POI 2. The pervious paver filter section was designed in accordance with Section 7.7 of the MDEP Stormwater BMPS Technical Design Manual dated May 2016.

The pervious paver section consists of the pavers, a choker course, a reservoir course with a 40% void ratio, a sand filter layer, and an underdrain course. The reservoir course has been sized to store the runoff generated by the 25-year storm for controlled release through the outlet

control structures. The outlet control structure for each pervious paver storage volume allows for a 24-48 hour release of the channel protection volume, which is filtered through the sand section for treatment. Runoff from larger storms is temporarily stored within the reservoir course and released from the storage volume through the outlet control structure.

In the HydroCAD model, the pervious paver filters are broken down into four main subcatchment areas that can be seen on the Post-Development Watershed Map. These areas are identified as storage volumes identified as PP1, PP2, PP3, and PP4. Although they are broken into four areas, each section of parking has been sized individually to be at least 20% of the contributing impervious area running onto it. It should be noted that in all cases, the pervious paver surface areas are oversized, for flood control purposes, compared to the area draining to it. Sizing calculations are provided in Attachment C.

In total, the pervious pavers will provide treatment for 43,950 SF of impervious area and 63,810 SF of developed area. This accounts for 35% of the total impervious and 29% of the total developed area. Design calculations for the pervious pavers are included in Attachment C. The pavers are expected to look like below once installed:



Fig. 1 Pervious Pavers

10.1.2 Focal Point Filters

Focal Point filters will be installed in the center of the open space area to the south of Building 4, and to the south of Building 2. Two separate filters will be used primarily to treat surface runoff resulting from paved and landscaped areas throughout the site. Direct absorption or sheet flow from adjacent areas will flow to the Focal Points and through the filter section before being collected in R-Tanks that will ultimately discharge to the two points of interest via existing and proposed stormdrain networks. The Focal Point Filters are designed in accordance with the MDEP approval letter dated February 2, 2017.

The approval letter requires that the treated runoff and the overflow runoff be directed to a treatment row. The treatment row needs to be sized to treat the peak flow from the 1-year storm event. Additional storage downstream of the treatment row is required to store the water quality volume and release the volume over a 24-48 hour period.

The tributary area to Focal Point #1 consists of a small, paved area and HSG A lawn. The subcatchment does not produce any runoff for storms up to the 2-year storm, so the water quality volume typically generated by smaller storms will not be present. Larger storms will generate runoff that produces a volume equal to or greater than the water quality volume,

therefore the required water quality volume storage has been provided. The treatment row sizing is based upon the flow from the 1-year storm which will be zero for this subcatchment. A single treatment R-Tank has been provided for this filter.

The tributary area to Focal Point #2 produces the typical runoff from smaller storms, and the required treatment and storage have been provided.

The outflow from the R-Tanks will be controlled by outlet control structures that will limit the outflow of the water quality volume to 24-48 hours and allow for bypass of larger flows.

In total, the Focal Point filters will provide treatment for 13,085 SF of impervious area and 57,750 SF of developed area. This accounts for 10% of the total impervious area and 26% of the total developed area. Design calculations for the Focal Point filters are included in Attachment C.

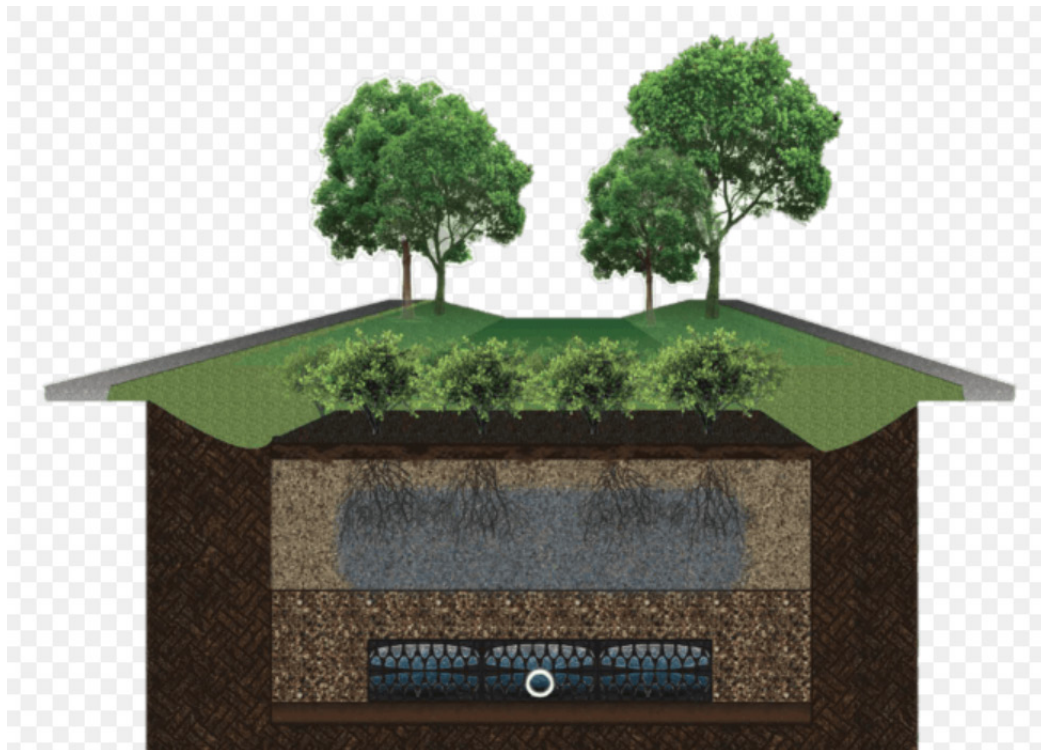


Fig 2 Focal Point System

10.1.3 Detention Ponds

Underground Storage volumes will be installed to the north and south of Building 3. The roof drains from the buildings will be tributary to these storage areas. In the post-development HydroCAD model, these BMP's are labeled as Detention Pond 1 & 2 (R1 & R2). The two separate ponds will be used primarily to provide treatment for thermal impact from the roof runoff in accordance with Chapter 500 Part 4.C(5)(f). The detention ponds will consist of subsurface storage using R-Tanks. The ponds and outlet control structures have been sized to provide a 24-48 hour outflow for the runoff generated by the 2-year storm. The subsurface storage and slow discharge will provide cooling of the roof runoff before it is conveyed to the

outlet points. The Chapter 500 Roof exception from the General Standard is applicable for the runoff from the roofs. The exception states that runoff from sloped non-asphalt roofs needs to be treated for thermal impact and channel protection only. The proposed non-asphalt roofs will slope to roof drains that will convey the runoff to the subsurface detention ponds. The roof area has been included in the treatment summary since the thermal and channel protection provisions have been met in accordance with Chapter 500.

In total, the underground storage volumes will provide treatment for 63,980 SF of impervious area and 63,980 SF of developed area. This accounts for 51% of the total impervious area and 29% of the total developed area. It should be noted that all landscaped and impervious areas draining to the detention ponds (with the exception of roof areas) are not considered to be “treated” in treatment calculations. Design calculations for the detention ponds are included in Attachment C.



Fig 3. R Tank Underground Storage

10.1.4 Filtrerra Bioretention System (FBS)

A 6x10 Filtrerra Bioretention System will be installed along the eastern edge of McAuley Way to replace the treatment of surface runoff provided by the existing infiltration trench. The FBS was sized in accordance with the MDEP Approval Letter dated February 2017.

In total, the FBS will provide treatment for 12,000 SF of impervious area and 15,500 SF of developed area. This accounts for the developed and impervious surface runoff that was draining to the infiltration trench. The total area draining to the FBS is 0.36 acres, which requires a 6'x10' Filtrerra Module. Since this treatment is occurring off-site, it should be noted that all landscaped and impervious areas draining to the FBS are not considered a treated area in treatment calculations for the project.



Fig 4. Filterra System

11.0 **WATER QUALITY SUMMARY**

The construction of BMPs employed as part of the development will allow the project to meet the standards set forth in Chapter 500 and the City's stormwater management standards. The pervious pavers, Focal Point filters, and detention ponds successfully treat approximately 2.78 acres of impervious area and 4.26 acres of developed area. This equates to overall treatment percentages of 96% and 84% for impervious and developed area, respectively. A summary of the calculations is provided below:

Treatment Summary

Treatment Method	Impervious		Developed	
	sf	%	sf	%
Pervious Pavers	45,890	35	89,310	29
Focal Point Filter	13,085	10	57,750	26
Detention Ponds	63,980	51	63,980	29
Total:	125,638	96	220,670	84

Water Quality Calculations that demonstrate compliance with The Chapter 500 General Standards for the development are provided in Attachment C. A summary of the calculations is provided below:

Treatment Summary

Total Impervious Area =	2.88 acres
Total Developed Area =	5.07 acres
Impervious Area Treated =	2.78 acres
Percent Impervious Area Treated =	96%
Developed Area Treated =	4.26 acres
Percent Developed Area Treated =	84%

12.0 MASTER DEVELOPMENT PLAN

This stormwater management report is a detailed analysis of the stormwater impacts for Lot 5 Phase 2 of Stevens Square at Baxter Woods. The original Master Development Plan (MDP) was an overall concept which included the conceptual development of Lot 5 Phase 2. In accordance with the City of Portland requirements, this proposed development has been designed to conform to MDEP Chapter 500 Stormwater Management Law for general and flooding standards. The basic standard is presented in the erosion and sedimentation control plan for the project. The proposed development of Lot 5 Phase 2 meets the MDP overall stormwater framework by providing a design in compliance with Chapter 500.

13.0 MAINTENANCE OF FACILITIES

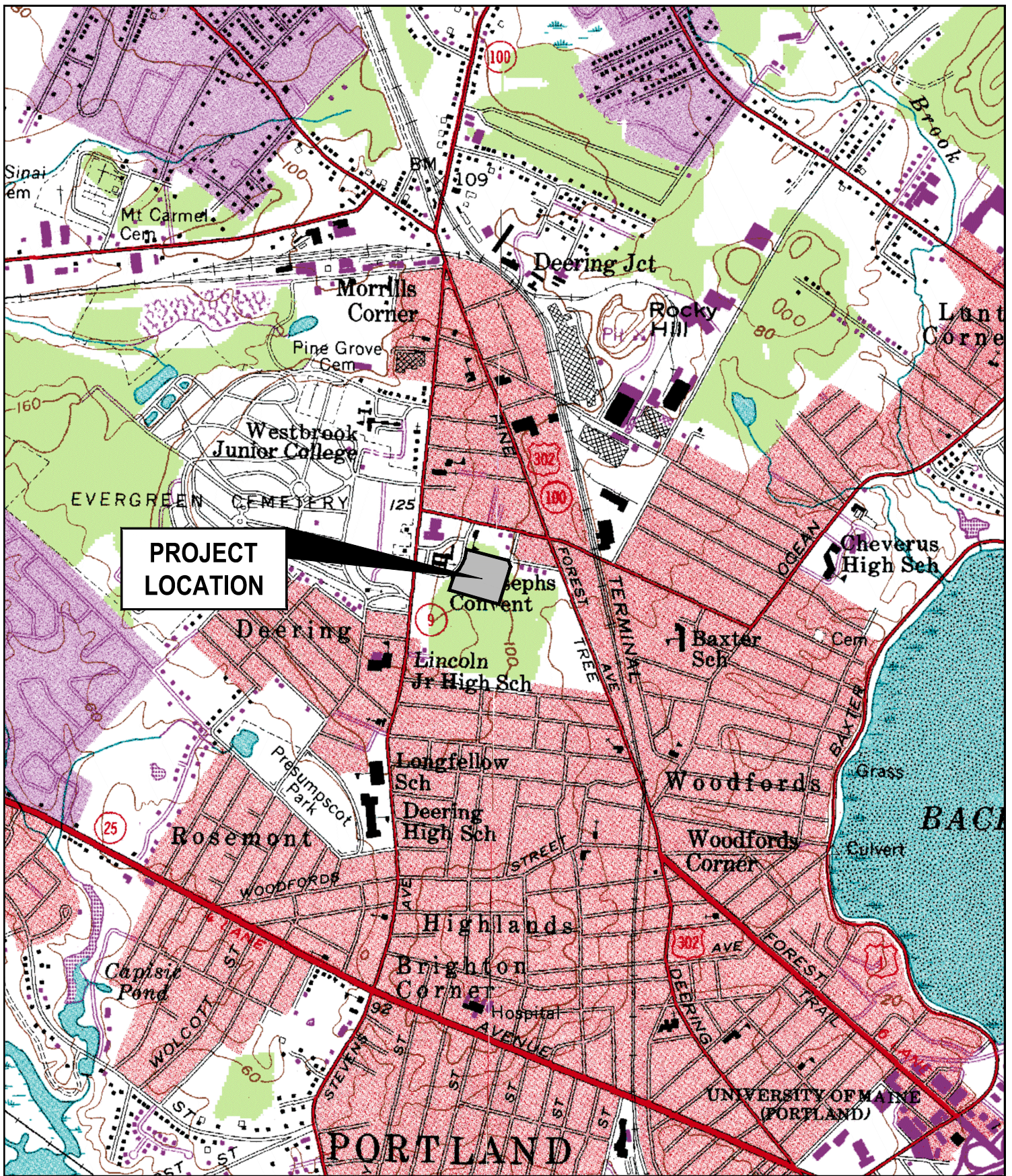
The stormwater management facilities will be maintained by the Applicant or their assigns after construction is completed. The general contractor will be responsible for maintenance during construction. The contract documents will require that the contractor designate a person for maintenance of the facilities during construction as required by this application. Long-term operation/maintenance schedules for the facilities are provided in the O&M Manual included in Attachment D of this report. A draft maintenance agreement is also included in the O&M Manual.

The owner will be required to hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs. In addition, the qualified post-construction stormwater inspector shall, on or by June 30 of each year, provide a completed and signed certification to DPW in a form provided by DPW certifying that the person has inspected the BMPs and they are adequately maintained and functioning as intended.

14.0 CONCLUSION

The Stormwater Management Plan for this project outlines the measures proposed to achieve compliance with the Chapter 500 Stormwater Management standards for water quality treatment. The design includes stormwater quantity controls including storage components within the pervious paver cross section, and within the detention ponds.

Based on the proposed design, the runoff from the proposed development will be captured and conveyed in a manner that will not have an adverse impact to the surrounding stormwater systems or the environment.



USGS LOCATION MAP

STEVENS SQUARE AT BAXTER WOODS - LOT 4 PHASE 2
583 Stevens Avenue, Portland, Maine



Design: SRB	Date: APRIL 2021
Draft: CDD	Job No.: 3564.03
Checked: SRB	Scale: NOT TO SCALE
File Name: 356403-COVER.dwg	



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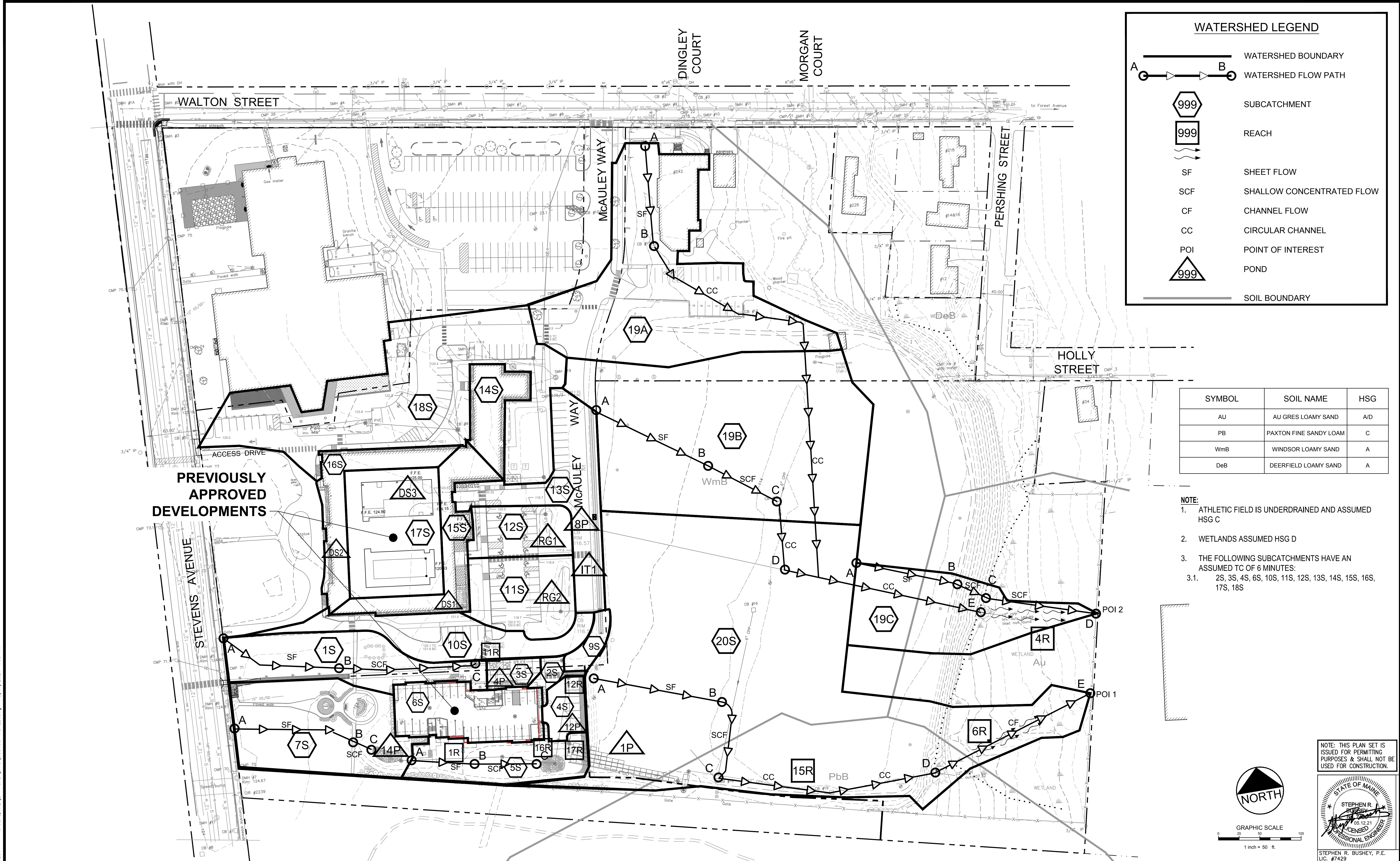
Figure

1

ATTACHMENT A

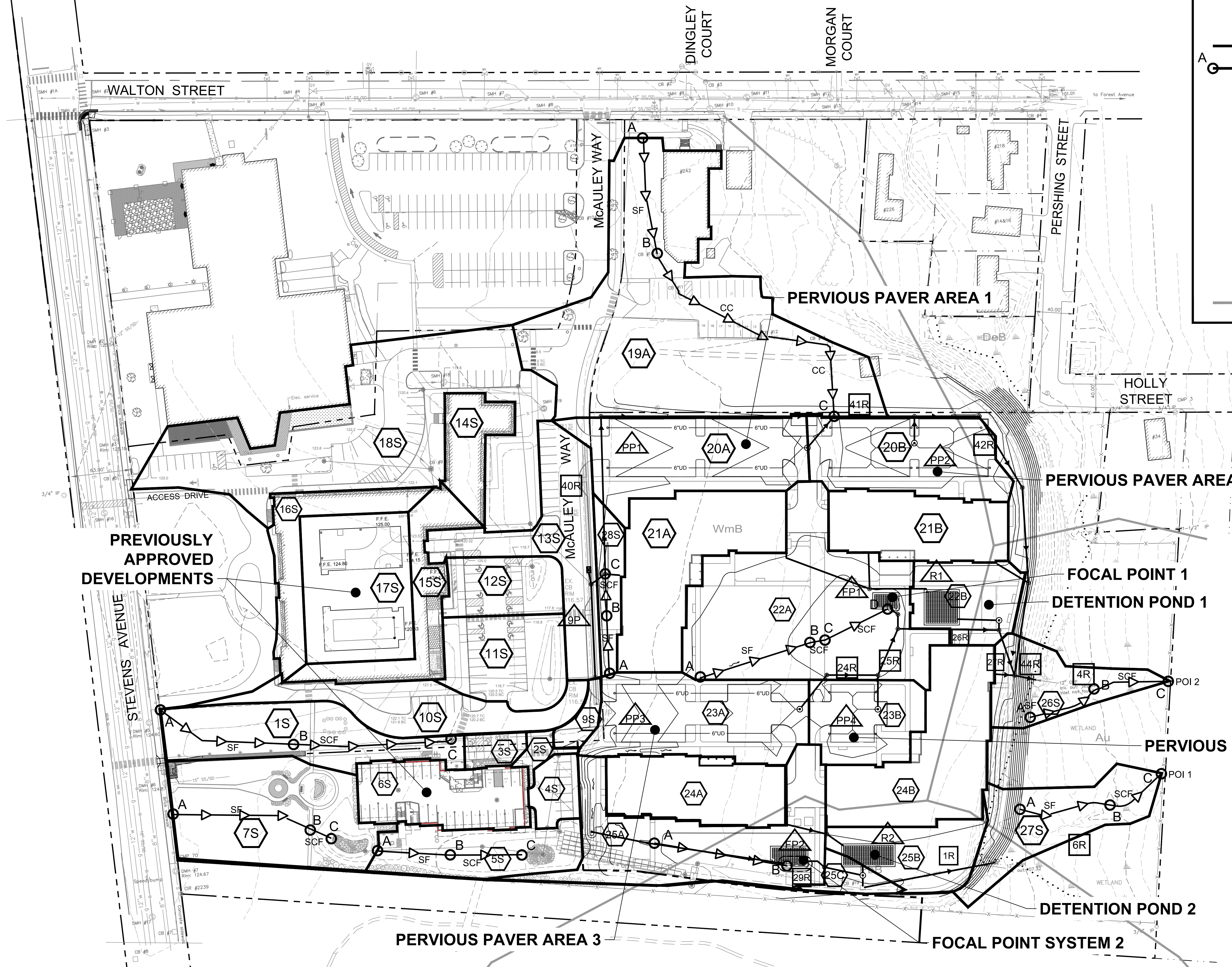
WATERSHED MAPS

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Rev.	Date	Revision	Design: SRB Checked: SRB File Name: 356403-WSHED.dwg	Draft: CDD Scale: AS NOTED Job No.: 3564.03	Date: MAY 2021		Relationships. Responsiveness. Results. www.gorrillpalmer.com 207.772.2515	Drawing Name: PREDEVELOPMENT WATERSHED PLAN	Project: Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine	Client/Owner: DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696	Drawing No. WS1
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW	This plan shall not be modified without written permission from Gorrill Palmer. Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to Gorrill Palmer.								

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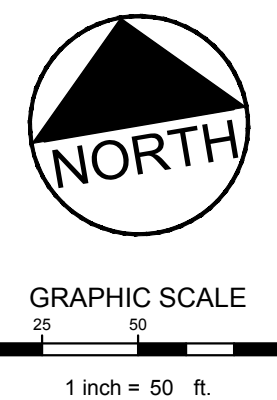
WATERSHED LEGEND

— A — B — WATERSHED BOUNDARY
— A — B — WATERSHED FLOW PATH

999 SUBCATCHMENT
999 REACH
SF SHEET FLOW
SCF SHALLOW CONCENTRATED FLOW
CF CHANNEL FLOW
CC CIRCULAR CHANNEL
POI POINT OF INTEREST
999 POND
— SOIL BOUNDARY

SYMBOL	SOIL NAME	HSG
AU	AU GRES LOAMY SAND	A/D
PB	PAXTON FINE SANDY LOAM	C
WmB	WINDSOR LOAMY SAND	A
DeB	DEERFIELD LOAMY SAND	A

- NOTE:**
- ATHLETIC FIELD IS UNDERDRAINED AND ASSUMED HSG C
 - WETLANDS ASSUMED HSG D
 - THE FOLLOWING SUBCATCHMENTS HAVE AN ASSUMED TC OF 6 MINUTES:
3.1. 2S, 3S, 4S, 6S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 20A, 20B, 21A, 21B, 22B, 23A, 23B, 24A, 24B, 25B



NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
STEPHEN R. BUSHEY, P.E.
LICENSED PROFESSIONAL ENGINEER
U.C. #7429

Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB Draft: CDD Date: MAY 2021
Checked: SRB Scale: AS NOTED Job No.: 3564.03
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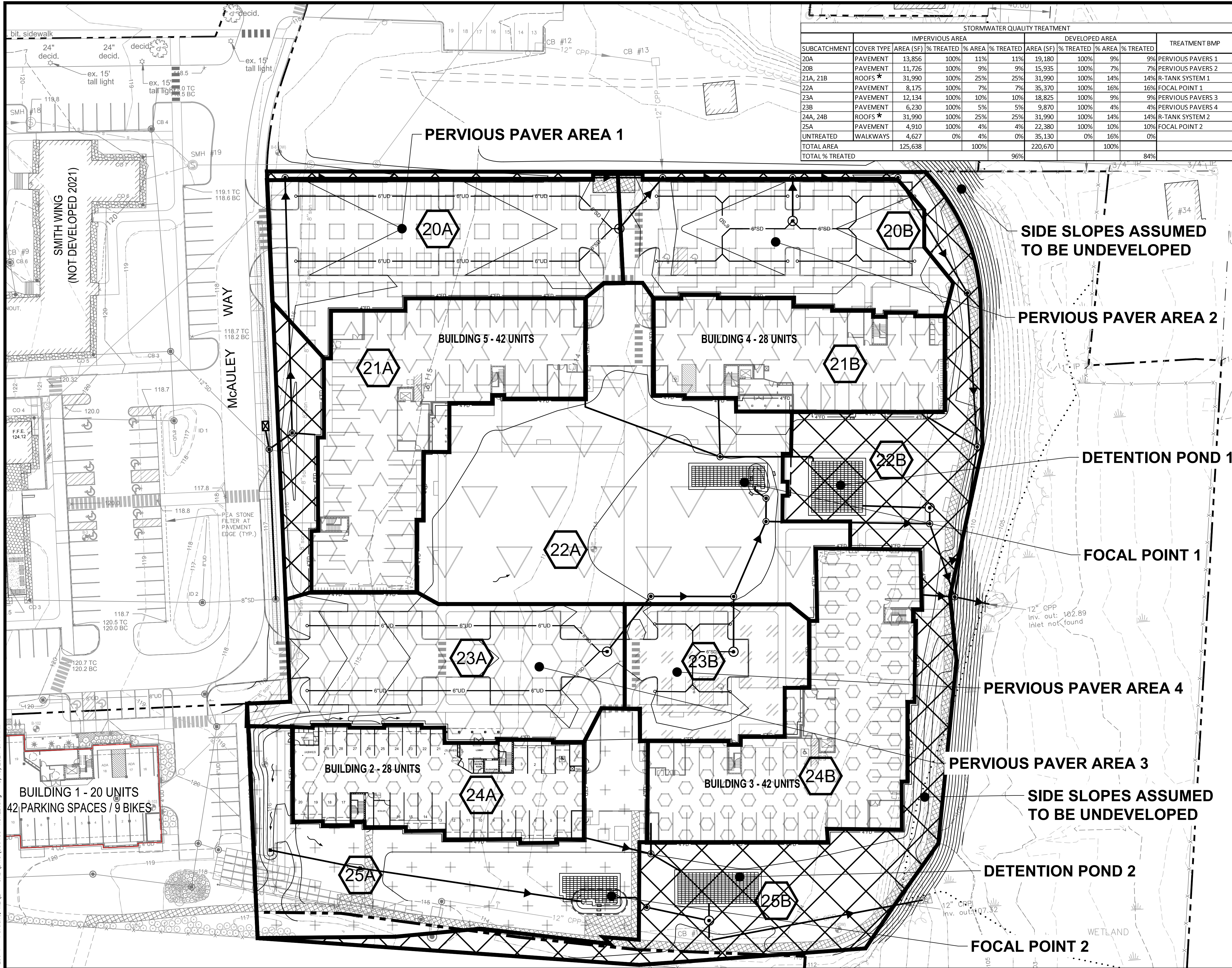
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Drawing Name: POSTDEVELOPMENT WATERSHED PLAN

Project: **Stevens Square at Baxter Woods - Phase 2**
583 Stevens Avenue, Portland, Maine

Client/Owner: **DC BAXTER WOODS LLC**
100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
WS2



WATERSHED LEGEND

DEVELOPED AREA BOUNDARY

SUBCATCHMENT

AREA TREATED BY PERVIOUS PAVER AREA 1

AREA TREATED BY PERVIOUS PAVER AREA 2

AREA TREATED BY PERVIOUS PAVER AREA 3

AREA TREATED BY PERVIOUS PAVER AREA 4

AREA TREATED BY FOCAL POINT 1

AREA TREATED BY FOCAL POINT 2

AREA TREATED BY DETENTION POND 1

AREA TREATED BY DETENTION POND 2

UNTREATED

*ROOF AREA TREATED FOR THERMAL IMPACTS IN ACCORDANCE WITH CHAPTER 500 ROOF EXCEPTION FROM THE GENERAL STANDARDS.

GRAPHIC SCALE

1 inch = 30 ft.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

STEPHEN R. BUSHEY, P.E.
LIC. #7429

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Date

Revision

1

2021.05.12

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Draft: CDD

Date: MAY 2021

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Drawing Name:

WATER QUALITY PLAN

Project:

Stevens Square at Baxter Woods - Phase 2

583 Stevens Avenue, Portland, Maine

Client/Owner:

DC BAXTER WOODS LLC

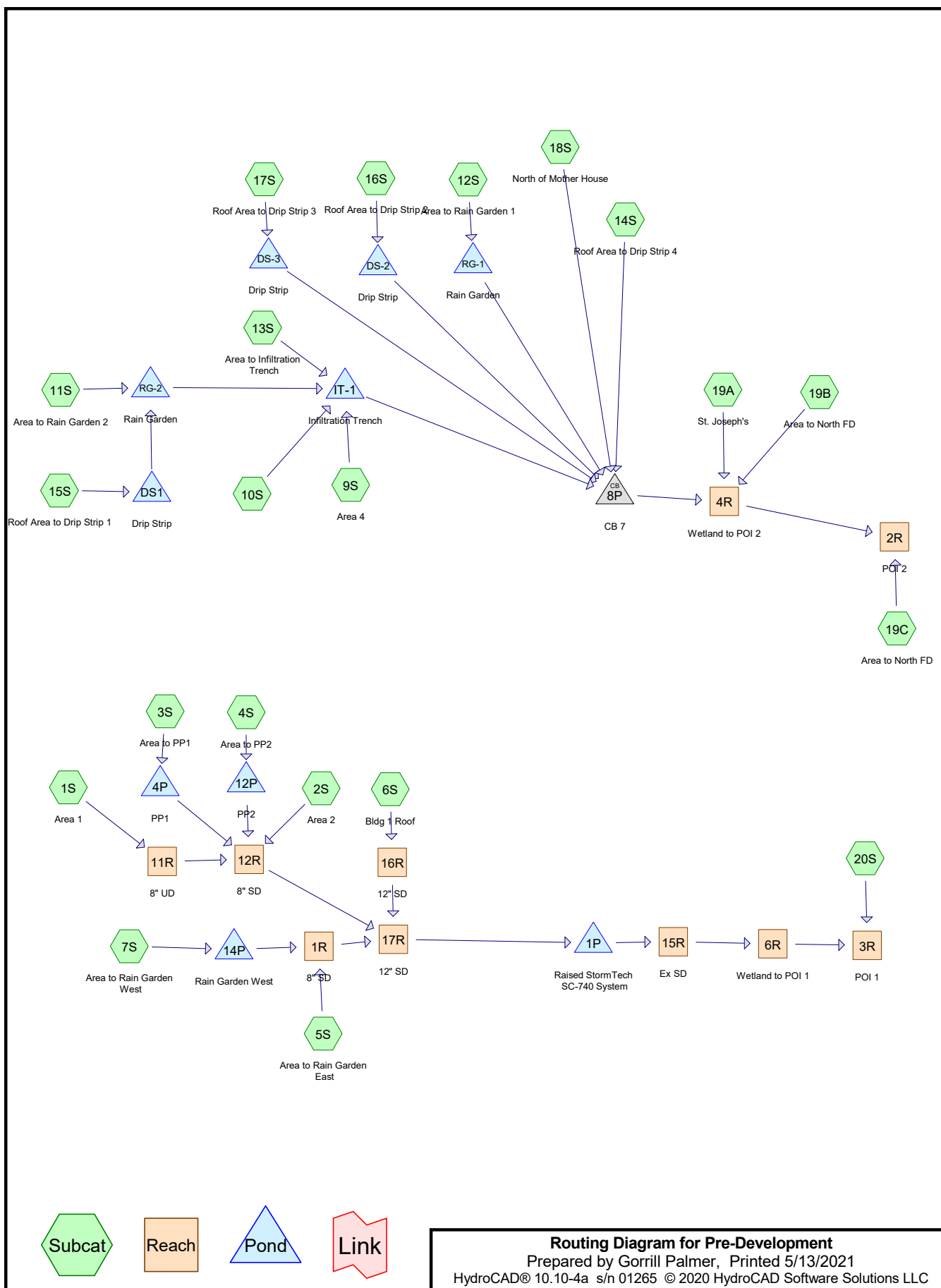
100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.

C-7.0

ATTACHMENT B

PRE AND POST DEVELOPMENT HYDROCAD MODEL



Pre-Development

Prepared by Gorrill Palmer

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Type III 24-hr 2-Yr Rainfall=3.10"

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Page 2

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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: Area 1	Runoff Area=15,851 sf 17.16% Impervious Runoff Depth=0.09" Flow Length=300' Tc=20.7 min CN=49 Runoff=0.00 cfs 0.003 af
Subcatchment 2S: Area 2	Runoff Area=1,429 sf 70.05% Impervious Runoff Depth=1.33" Tc=6.0 min CN=80 Runoff=0.05 cfs 0.004 af
Subcatchment 3S: Area to PP1	Runoff Area=2,173 sf 81.59% Impervious Runoff Depth=1.83" Tc=6.0 min CN=87 Runoff=0.11 cfs 0.008 af
Subcatchment 4S: Area to PP2	Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.23 cfs 0.018 af
Subcatchment 5S: Area to Rain Garden East	Runoff Area=8,904 sf 17.46% Impervious Runoff Depth=0.09" Flow Length=150' Slope=0.0200 ' ' Tc=9.2 min CN=49 Runoff=0.00 cfs 0.002 af
Subcatchment 6S: Bldg 1 Roof	Runoff Area=11,717 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.81 cfs 0.064 af
Subcatchment 7S: Area to Rain Garden	Runoff Area=21,901 sf 7.99% Impervious Runoff Depth=0.02" Flow Length=170' Tc=14.0 min CN=44 Runoff=0.00 cfs 0.001 af
Subcatchment 9S: Area 4	Runoff Area=2,569 sf 17.32% Impervious Runoff Depth=0.09" Tc=6.0 min CN=49 Runoff=0.00 cfs 0.000 af
Subcatchment 10S:	Runoff Area=12,293 sf 82.32% Impervious Runoff Depth=1.91" Tc=6.0 min CN=88 Runoff=0.63 cfs 0.045 af
Subcatchment 11S: Area to Rain Garden 2	Runoff Area=11,240 sf 51.56% Impervious Runoff Depth=0.72" Tc=6.0 min CN=69 Runoff=0.19 cfs 0.016 af
Subcatchment 12S: Area to Rain Garden 1	Runoff Area=7,303 sf 58.87% Impervious Runoff Depth=0.97" Tc=6.0 min CN=74 Runoff=0.18 cfs 0.014 af
Subcatchment 13S: Area to Infiltration	Runoff Area=15,676 sf 71.60% Impervious Runoff Depth=1.39" Tc=6.0 min CN=81 Runoff=0.58 cfs 0.042 af
Subcatchment 14S: Roof Area to Drip	Runoff Area=6,080 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.42 cfs 0.033 af
Subcatchment 15S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=2.35" Tc=6.0 min CN=93 Runoff=0.59 cfs 0.043 af
Subcatchment 16S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=2.35" Tc=6.0 min CN=93 Runoff=0.59 cfs 0.043 af
Subcatchment 17S: Roof Area to Drip	Runoff Area=17,390 sf 76.31% Impervious Runoff Depth=2.35" Tc=6.0 min CN=93 Runoff=1.07 cfs 0.078 af

Pre-Development

Prepared by Gorrill Palmer

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Type III 24-hr 2-Yr Rainfall=3.10"

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Page 3

Subcatchment 18S: North of Mother House Runoff Area=44,775 sf 50.92% Impervious Runoff Depth=0.72"
Tc=6.0 min CN=69 Runoff=0.75 cfs 0.062 af

Subcatchment 19A: St. Joseph's Runoff Area=46,128 sf 40.42% Impervious Runoff Depth=1.08"
Flow Length=842' Tc=21.0 min CN=76 Runoff=0.85 cfs 0.096 af

Subcatchment 19B: Area to North FD Runoff Area=64,219 sf 1.18% Impervious Runoff Depth=0.97"
Flow Length=566' Tc=25.0 min CN=74 Runoff=0.96 cfs 0.119 af

Subcatchment 19C: Area to North FD Runoff Area=20,520 sf 0.00% Impervious Runoff Depth=1.03"
Flow Length=300' Tc=21.6 min CN=75 Runoff=0.35 cfs 0.040 af

Subcatchment 20S: Runoff Area=127,215 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=735' Tc=31.2 min CN=74 Runoff=1.74 cfs 0.237 af

Reach 1R: 8" SD Avg. Flow Depth=0.02' Max Vel=0.69 fps Inflow=0.00 cfs 0.002 af
8.0" Round Pipe n=0.013 L=28.0' S=0.0100 ' ' Capacity=1.21 cfs Outflow=0.00 cfs 0.002 af

Reach 2R: POI 2 Inflow=2.99 cfs 0.359 af
Outflow=2.99 cfs 0.359 af

Reach 3R: POI 1 Inflow=1.77 cfs 0.333 af
Outflow=1.77 cfs 0.333 af

Reach 4R: Wetland to POI 2 Avg. Flow Depth=0.13' Max Vel=2.33 fps Inflow=2.65 cfs 0.318 af
n=0.035 L=145.0' S=0.0500 ' ' Capacity=57.05 cfs Outflow=2.64 cfs 0.318 af

Reach 6R: Wetland to POI 1 Avg. Flow Depth=0.01' Max Vel=0.47 fps Inflow=0.04 cfs 0.097 af
n=0.035 L=210.0' S=0.0500 ' ' Capacity=57.05 cfs Outflow=0.04 cfs 0.097 af

Reach 11R: 8" UD Avg. Flow Depth=0.03' Max Vel=0.68 fps Inflow=0.00 cfs 0.003 af
8.0" Round Pipe n=0.012 L=104.0' S=0.0050 ' ' Capacity=0.93 cfs Outflow=0.00 cfs 0.003 af

Reach 12R: 8" SD Avg. Flow Depth=0.22' Max Vel=2.81 fps Inflow=0.28 cfs 0.031 af
8.0" Round Pipe n=0.013 L=76.0' S=0.0100 ' ' Capacity=1.21 cfs Outflow=0.28 cfs 0.031 af

Reach 15R: Ex SD Avg. Flow Depth=0.08' Max Vel=1.31 fps Inflow=0.04 cfs 0.097 af
12.0" Round Pipe n=0.013 L=268.0' S=0.0069 ' ' Capacity=2.95 cfs Outflow=0.04 cfs 0.097 af

Reach 16R: 12" SD Avg. Flow Depth=0.36' Max Vel=3.21 fps Inflow=0.81 cfs 0.064 af
12.0" Round Pipe n=0.012 L=17.0' S=0.0059 ' ' Capacity=2.96 cfs Outflow=0.81 cfs 0.064 af

Reach 17R: 12" SD Avg. Flow Depth=0.33' Max Vel=4.55 fps Inflow=1.03 cfs 0.097 af
12.0" Round Pipe n=0.013 L=12.0' S=0.0150 ' ' Capacity=4.36 cfs Outflow=1.03 cfs 0.097 af

Pond 1P: Raised StormTech SC-740 System Peak Elev=112.96' Storage=0.058 af Inflow=1.03 cfs 0.097 af
Outflow=0.04 cfs 0.097 af

Pond 4P: PP1 Peak Elev=115.89' Storage=110 cf Inflow=0.11 cfs 0.008 af
Outflow=0.06 cfs 0.006 af

Pre-Development

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Type III 24-hr 2-Yr Rainfall=3.10"

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Page 4

Pond 8P: CB 7

Peak Elev=112.71' Inflow=1.17 cfs 0.103 af
12.0" Round Culvert n=0.012 L=465.0' S=0.0199 '/' Outflow=1.17 cfs 0.103 af

Pond 12P: PP2

Peak Elev=115.86' Storage=106 cf Inflow=0.23 cfs 0.018 af
Outflow=0.18 cfs 0.018 af

Pond 14P: Rain Garden West

Peak Elev=120.09' Storage=42 cf Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.000 af

Pond DS-2: Drip Strip

Peak Elev=115.29' Storage=187 cf Inflow=0.59 cfs 0.043 af
Discarded=0.28 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.043 af

Pond DS-3: Drip Strip

Peak Elev=116.05' Storage=665 cf Inflow=1.07 cfs 0.078 af
Discarded=0.28 cfs 0.077 af Primary=0.06 cfs 0.001 af Outflow=0.34 cfs 0.078 af

Pond DS1: Drip Strip

Peak Elev=115.29' Storage=187 cf Inflow=0.59 cfs 0.043 af
Discarded=0.28 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.043 af

Pond IT-1: Infiltration Trench

Peak Elev=113.34' Storage=644 cf Inflow=1.21 cfs 0.087 af
Discarded=0.28 cfs 0.080 af Primary=0.28 cfs 0.007 af Outflow=0.56 cfs 0.087 af

Pond RG-1: Rain Garden

Peak Elev=114.92' Storage=63 cf Inflow=0.18 cfs 0.014 af
Discarded=0.08 cfs 0.014 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.014 af

Pond RG-2: Rain Garden

Peak Elev=114.51' Storage=8 cf Inflow=0.19 cfs 0.016 af
Discarded=0.17 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.016 af

Total Runoff Area = 10.558 ac Runoff Volume = 0.967 af Average Runoff Depth = 1.10"
71.19% Pervious = 7.517 ac 28.81% Impervious = 3.042 ac

Pre-Development

Prepared by Gorrill Palmer

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Type III 24-hr 10-Yr Rainfall=4.60"

Printed 5/13/2021

Page 5

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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: Area 1	Runoff Area=15,851 sf 17.16% Impervious Runoff Depth=0.49" Flow Length=300' Tc=20.7 min CN=49 Runoff=0.08 cfs 0.015 af
Subcatchment 2S: Area 2	Runoff Area=1,429 sf 70.05% Impervious Runoff Depth=2.55" Tc=6.0 min CN=80 Runoff=0.10 cfs 0.007 af
Subcatchment 3S: Area to PP1	Runoff Area=2,173 sf 81.59% Impervious Runoff Depth=3.19" Tc=6.0 min CN=87 Runoff=0.18 cfs 0.013 af
Subcatchment 4S: Area to PP2	Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=0.35 cfs 0.028 af
Subcatchment 5S: Area to Rain Garden East	Runoff Area=8,904 sf 17.46% Impervious Runoff Depth=0.49" Flow Length=150' Slope=0.0200 ' ' Tc=9.2 min CN=49 Runoff=0.05 cfs 0.008 af
Subcatchment 6S: Bldg 1 Roof	Runoff Area=11,717 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=1.21 cfs 0.098 af
Subcatchment 7S: Area to Rain Garden	Runoff Area=21,901 sf 7.99% Impervious Runoff Depth=0.29" Flow Length=170' Tc=14.0 min CN=44 Runoff=0.04 cfs 0.012 af
Subcatchment 9S: Area 4	Runoff Area=2,569 sf 17.32% Impervious Runoff Depth=0.49" Tc=6.0 min CN=49 Runoff=0.02 cfs 0.002 af
Subcatchment 10S:	Runoff Area=12,293 sf 82.32% Impervious Runoff Depth=3.29" Tc=6.0 min CN=88 Runoff=1.07 cfs 0.077 af
Subcatchment 11S: Area to Rain Garden 2	Runoff Area=11,240 sf 51.56% Impervious Runoff Depth=1.67" Tc=6.0 min CN=69 Runoff=0.49 cfs 0.036 af
Subcatchment 12S: Area to Rain Garden 1	Runoff Area=7,303 sf 58.87% Impervious Runoff Depth=2.05" Tc=6.0 min CN=74 Runoff=0.40 cfs 0.029 af
Subcatchment 13S: Area to Infiltration	Runoff Area=15,676 sf 71.60% Impervious Runoff Depth=2.63" Tc=6.0 min CN=81 Runoff=1.11 cfs 0.079 af
Subcatchment 14S: Roof Area to Drip	Runoff Area=6,080 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=0.63 cfs 0.051 af
Subcatchment 15S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=3.81" Tc=6.0 min CN=93 Runoff=0.93 cfs 0.070 af
Subcatchment 16S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=3.81" Tc=6.0 min CN=93 Runoff=0.93 cfs 0.070 af
Subcatchment 17S: Roof Area to Drip	Runoff Area=17,390 sf 76.31% Impervious Runoff Depth=3.81" Tc=6.0 min CN=93 Runoff=1.68 cfs 0.127 af

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Type III 24-hr 10-Yr Rainfall=4.60"

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Subcatchment 18S: North of Mother House Runoff Area=44,775 sf 50.92% Impervious Runoff Depth=1.67"
Tc=6.0 min CN=69 Runoff=1.95 cfs 0.143 af

Subcatchment 19A: St. Joseph's Runoff Area=46,128 sf 40.42% Impervious Runoff Depth=2.21"
Flow Length=842' Tc=21.0 min CN=76 Runoff=1.80 cfs 0.195 af

Subcatchment 19B: Area to North FD Runoff Area=64,219 sf 1.18% Impervious Runoff Depth=2.05"
Flow Length=566' Tc=25.0 min CN=74 Runoff=2.15 cfs 0.252 af

Subcatchment 19C: Area to North FD Runoff Area=20,520 sf 0.00% Impervious Runoff Depth=2.13"
Flow Length=300' Tc=21.6 min CN=75 Runoff=0.76 cfs 0.084 af

Subcatchment 20S: Runoff Area=127,215 sf 0.00% Impervious Runoff Depth=2.05"
Flow Length=735' Tc=31.2 min CN=74 Runoff=3.86 cfs 0.499 af

Reach 1R: 8" SD Avg. Flow Depth=0.09' Max Vel=1.70 fps Inflow=0.05 cfs 0.017 af
8.0" Round Pipe n=0.013 L=28.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.05 cfs 0.017 af

Reach 2R: POI 2 Inflow=7.55 cfs 0.790 af
Outflow=7.55 cfs 0.790 af

Reach 3R: POI 1 Inflow=3.90 cfs 0.663 af
Outflow=3.90 cfs 0.663 af

Reach 4R: Wetland to POI 2 Avg. Flow Depth=0.23' Max Vel=3.26 fps Inflow=6.79 cfs 0.706 af
n=0.035 L=145.0' S=0.0500 '/' Capacity=57.05 cfs Outflow=6.79 cfs 0.706 af

Reach 6R: Wetland to POI 1 Avg. Flow Depth=0.03' Max Vel=0.98 fps Inflow=0.27 cfs 0.165 af
n=0.035 L=210.0' S=0.0500 '/' Capacity=57.05 cfs Outflow=0.27 cfs 0.164 af

Reach 11R: 8" UD Avg. Flow Depth=0.13' Max Vel=1.61 fps Inflow=0.08 cfs 0.015 af
8.0" Round Pipe n=0.012 L=104.0' S=0.0050 '/' Capacity=0.93 cfs Outflow=0.08 cfs 0.015 af

Reach 12R: 8" SD Avg. Flow Depth=0.30' Max Vel=3.32 fps Inflow=0.51 cfs 0.062 af
8.0" Round Pipe n=0.013 L=76.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.51 cfs 0.062 af

Reach 15R: Ex SD Avg. Flow Depth=0.20' Max Vel=2.35 fps Inflow=0.27 cfs 0.165 af
12.0" Round Pipe n=0.013 L=268.0' S=0.0069 '/' Capacity=2.95 cfs Outflow=0.27 cfs 0.165 af

Reach 16R: 12" SD Avg. Flow Depth=0.45' Max Vel=3.58 fps Inflow=1.21 cfs 0.098 af
12.0" Round Pipe n=0.012 L=17.0' S=0.0059 '/' Capacity=2.96 cfs Outflow=1.21 cfs 0.098 af

Reach 17R: 12" SD Avg. Flow Depth=0.43' Max Vel=5.19 fps Inflow=1.68 cfs 0.177 af
12.0" Round Pipe n=0.013 L=12.0' S=0.0150 '/' Capacity=4.36 cfs Outflow=1.68 cfs 0.177 af

Pond 1P: Raised StormTech SC-740 System Peak Elev=113.78' Storage=0.084 af Inflow=1.68 cfs 0.177 af
Outflow=0.27 cfs 0.165 af

Pond 4P: PP1 Peak Elev=115.97' Storage=138 cf Inflow=0.18 cfs 0.013 af
Outflow=0.15 cfs 0.012 af

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Type III 24-hr 10-Yr Rainfall=4.60"

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Pond 8P: CB 7

Peak Elev=113.79' Inflow=4.04 cfs 0.259 af
12.0" Round Culvert n=0.012 L=465.0' S=0.0199 '/' Outflow=4.04 cfs 0.259 af

Pond 12P: PP2

Peak Elev=115.94' Storage=137 cf Inflow=0.35 cfs 0.028 af
Outflow=0.28 cfs 0.028 af

Pond 14P: Rain Garden West

Peak Elev=120.27' Storage=143 cf Inflow=0.04 cfs 0.012 af
Outflow=0.02 cfs 0.009 af

Pond DS-2: Drip Strip

Peak Elev=115.82' Storage=522 cf Inflow=0.93 cfs 0.070 af
Discarded=0.28 cfs 0.070 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.070 af

Pond DS-3: Drip Strip

Peak Elev=116.55' Storage=903 cf Inflow=1.68 cfs 0.127 af
Discarded=0.28 cfs 0.107 af Primary=0.70 cfs 0.020 af Outflow=0.98 cfs 0.127 af

Pond DS1: Drip Strip

Peak Elev=115.82' Storage=522 cf Inflow=0.93 cfs 0.070 af
Discarded=0.28 cfs 0.070 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.070 af

Pond IT-1: Infiltration Trench

Peak Elev=114.25' Storage=1,122 cf Inflow=2.19 cfs 0.160 af
Discarded=0.28 cfs 0.120 af Primary=0.95 cfs 0.040 af Outflow=1.22 cfs 0.160 af

Pond RG-1: Rain Garden

Peak Elev=115.42' Storage=139 cf Inflow=0.40 cfs 0.029 af
Discarded=0.08 cfs 0.023 af Primary=0.21 cfs 0.005 af Outflow=0.29 cfs 0.029 af

Pond RG-2: Rain Garden

Peak Elev=115.15' Storage=208 cf Inflow=0.49 cfs 0.036 af
Discarded=0.17 cfs 0.035 af Primary=0.05 cfs 0.001 af Outflow=0.21 cfs 0.036 af

Total Runoff Area = 10.558 ac Runoff Volume = 1.894 af Average Runoff Depth = 2.15"
71.19% Pervious = 7.517 ac 28.81% Impervious = 3.042 ac

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Type III 24-hr 25-Yr Rainfall=5.80"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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: Area 1	Runoff Area=15,851 sf 17.16% Impervious Runoff Depth=0.98" Flow Length=300' Tc=20.7 min CN=49 Runoff=0.21 cfs 0.030 af
Subcatchment 2S: Area 2	Runoff Area=1,429 sf 70.05% Impervious Runoff Depth=3.60" Tc=6.0 min CN=80 Runoff=0.14 cfs 0.010 af
Subcatchment 3S: Area to PP1	Runoff Area=2,173 sf 81.59% Impervious Runoff Depth=4.33" Tc=6.0 min CN=87 Runoff=0.25 cfs 0.018 af
Subcatchment 4S: Area to PP2	Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=0.44 cfs 0.036 af
Subcatchment 5S: Area to Rain Garden East	Runoff Area=8,904 sf 17.46% Impervious Runoff Depth=0.98" Flow Length=150' Slope=0.0200 ' ' Tc=9.2 min CN=49 Runoff=0.15 cfs 0.017 af
Subcatchment 6S: Bldg 1 Roof	Runoff Area=11,717 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=1.53 cfs 0.125 af
Subcatchment 7S: Area to Rain Garden	Runoff Area=21,901 sf 7.99% Impervious Runoff Depth=0.66" Flow Length=170' Tc=14.0 min CN=44 Runoff=0.16 cfs 0.028 af
Subcatchment 9S: Area 4	Runoff Area=2,569 sf 17.32% Impervious Runoff Depth=0.98" Tc=6.0 min CN=49 Runoff=0.05 cfs 0.005 af
Subcatchment 10S:	Runoff Area=12,293 sf 82.32% Impervious Runoff Depth=4.43" Tc=6.0 min CN=88 Runoff=1.42 cfs 0.104 af
Subcatchment 11S: Area to Rain Garden 2	Runoff Area=11,240 sf 51.56% Impervious Runoff Depth=2.56" Tc=6.0 min CN=69 Runoff=0.77 cfs 0.055 af
Subcatchment 12S: Area to Rain Garden 1	Runoff Area=7,303 sf 58.87% Impervious Runoff Depth=3.02" Tc=6.0 min CN=74 Runoff=0.59 cfs 0.042 af
Subcatchment 13S: Area to Infiltration	Runoff Area=15,676 sf 71.60% Impervious Runoff Depth=3.70" Tc=6.0 min CN=81 Runoff=1.55 cfs 0.111 af
Subcatchment 14S: Roof Area to Drip	Runoff Area=6,080 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=0.79 cfs 0.065 af
Subcatchment 15S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=4.99" Tc=6.0 min CN=93 Runoff=1.20 cfs 0.092 af
Subcatchment 16S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=4.99" Tc=6.0 min CN=93 Runoff=1.20 cfs 0.092 af
Subcatchment 17S: Roof Area to Drip	Runoff Area=17,390 sf 76.31% Impervious Runoff Depth=4.99" Tc=6.0 min CN=93 Runoff=2.17 cfs 0.166 af

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Type III 24-hr 25-Yr Rainfall=5.80"

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Subcatchment 18S: North of Mother House Runoff Area=44,775 sf 50.92% Impervious Runoff Depth=2.56"
Tc=6.0 min CN=69 Runoff=3.05 cfs 0.219 af

Subcatchment 19A: St. Joseph's Runoff Area=46,128 sf 40.42% Impervious Runoff Depth=3.21"
Flow Length=842' Tc=21.0 min CN=76 Runoff=2.63 cfs 0.283 af

Subcatchment 19B: Area to North FD Runoff Area=64,219 sf 1.18% Impervious Runoff Depth=3.02"
Flow Length=566' Tc=25.0 min CN=74 Runoff=3.19 cfs 0.371 af

Subcatchment 19C: Area to North FD Runoff Area=20,520 sf 0.00% Impervious Runoff Depth=3.11"
Flow Length=300' Tc=21.6 min CN=75 Runoff=1.12 cfs 0.122 af

Subcatchment 20S: Runoff Area=127,215 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=735' Tc=31.2 min CN=74 Runoff=5.74 cfs 0.734 af

Reach 1R: 8" SD Avg. Flow Depth=0.18' Max Vel=2.57 fps Inflow=0.20 cfs 0.041 af
8.0" Round Pipe n=0.013 L=28.0' S=0.0100 ' ' Capacity=1.21 cfs Outflow=0.20 cfs 0.041 af

Reach 2R: POI 2 Inflow=11.40 cfs 1.194 af
Outflow=11.40 cfs 1.194 af

Reach 3R: POI 1 Inflow=6.97 cfs 0.978 af
Outflow=6.97 cfs 0.978 af

Reach 4R: Wetland to POI 2 Avg. Flow Depth=0.29' Max Vel=3.76 fps Inflow=10.29 cfs 1.072 af
n=0.035 L=145.0' S=0.0500 ' ' Capacity=57.05 cfs Outflow=10.28 cfs 1.072 af

Reach 6R: Wetland to POI 1 Avg. Flow Depth=0.08' Max Vel=1.76 fps Inflow=1.26 cfs 0.244 af
n=0.035 L=210.0' S=0.0500 ' ' Capacity=57.05 cfs Outflow=1.23 cfs 0.244 af

Reach 11R: 8" UD Avg. Flow Depth=0.21' Max Vel=2.13 fps Inflow=0.21 cfs 0.030 af
8.0" Round Pipe n=0.012 L=104.0' S=0.0050 ' ' Capacity=0.93 cfs Outflow=0.20 cfs 0.030 af

Reach 12R: 8" SD Avg. Flow Depth=0.37' Max Vel=3.63 fps Inflow=0.73 cfs 0.092 af
8.0" Round Pipe n=0.013 L=76.0' S=0.0100 ' ' Capacity=1.21 cfs Outflow=0.73 cfs 0.092 af

Reach 15R: Ex SD Avg. Flow Depth=0.46' Max Vel=3.61 fps Inflow=1.28 cfs 0.244 af
12.0" Round Pipe n=0.013 L=268.0' S=0.0069 ' ' Capacity=2.95 cfs Outflow=1.26 cfs 0.244 af

Reach 16R: 12" SD Avg. Flow Depth=0.51' Max Vel=3.80 fps Inflow=1.53 cfs 0.125 af
12.0" Round Pipe n=0.012 L=17.0' S=0.0059 ' ' Capacity=2.96 cfs Outflow=1.53 cfs 0.125 af

Reach 17R: 12" SD Avg. Flow Depth=0.51' Max Vel=5.62 fps Inflow=2.28 cfs 0.258 af
12.0" Round Pipe n=0.013 L=12.0' S=0.0150 ' ' Capacity=4.36 cfs Outflow=2.28 cfs 0.258 af

Pond 1P: Raised StormTech SC-740 System Peak Elev=113.90' Storage=0.088 af Inflow=2.28 cfs 0.258 af
Outflow=1.28 cfs 0.244 af

Pond 4P: PP1 Peak Elev=116.01' Storage=152 cf Inflow=0.25 cfs 0.018 af
Outflow=0.20 cfs 0.017 af

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Type III 24-hr 25-Yr Rainfall=5.80"

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Pond 8P: CB 7

Peak Elev=116.63' Inflow=6.03 cfs 0.418 af
12.0" Round Culvert n=0.012 L=465.0' S=0.0199 '/' Outflow=6.03 cfs 0.418 af

Pond 12P: PP2

Peak Elev=115.99' Storage=160 cf Inflow=0.44 cfs 0.036 af
Outflow=0.36 cfs 0.036 af

Pond 14P: Rain Garden West

Peak Elev=120.32' Storage=174 cf Inflow=0.16 cfs 0.028 af
Outflow=0.13 cfs 0.025 af

Pond DS-2: Drip Strip

Peak Elev=116.14' Storage=706 cf Inflow=1.20 cfs 0.092 af
Discarded=0.28 cfs 0.087 af Primary=0.26 cfs 0.005 af Outflow=0.54 cfs 0.092 af

Pond DS-3: Drip Strip

Peak Elev=117.08' Storage=1,168 cf Inflow=2.17 cfs 0.166 af
Discarded=0.28 cfs 0.129 af Primary=0.98 cfs 0.036 af Outflow=1.26 cfs 0.166 af

Pond DS1: Drip Strip

Peak Elev=116.14' Storage=706 cf Inflow=1.20 cfs 0.092 af
Discarded=0.28 cfs 0.087 af Primary=0.26 cfs 0.005 af Outflow=0.54 cfs 0.092 af

Pond IT-1: Infiltration Trench

Peak Elev=115.23' Storage=1,748 cf Inflow=3.07 cfs 0.233 af
Discarded=0.28 cfs 0.151 af Primary=1.33 cfs 0.082 af Outflow=1.61 cfs 0.233 af

Pond RG-1: Rain Garden

Peak Elev=115.86' Storage=206 cf Inflow=0.59 cfs 0.042 af
Discarded=0.08 cfs 0.031 af Primary=0.35 cfs 0.012 af Outflow=0.43 cfs 0.042 af

Pond RG-2: Rain Garden

Peak Elev=115.78' Storage=408 cf Inflow=0.77 cfs 0.060 af
Discarded=0.17 cfs 0.047 af Primary=0.33 cfs 0.012 af Outflow=0.50 cfs 0.060 af

Total Runoff Area = 10.558 ac Runoff Volume = 2.723 af Average Runoff Depth = 3.09"
71.19% Pervious = 7.517 ac 28.81% Impervious = 3.042 ac

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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 1S: Area 1

Runoff = 0.21 cfs @ 12.37 hrs, Volume= 0.030 af, Depth= 0.98"

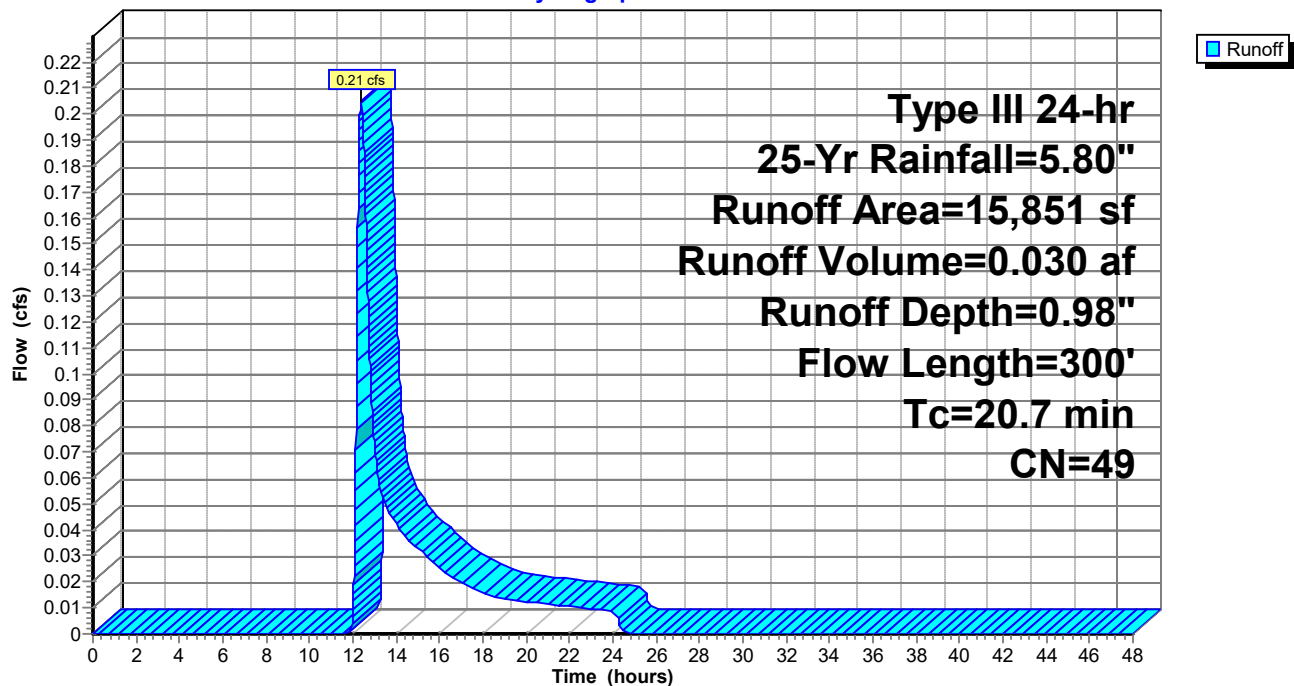
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
2,720	98	Paved parking, HSG A
13,131	39	>75% Grass cover, Good, HSG A
15,851	49	Weighted Average
13,131		82.84% Pervious Area
2,720		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	150	0.0100	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
2.5	150	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.7	300	Total			

Subcatchment 1S: Area 1

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 2S: Area 2

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 0.010 af, Depth= 3.60"

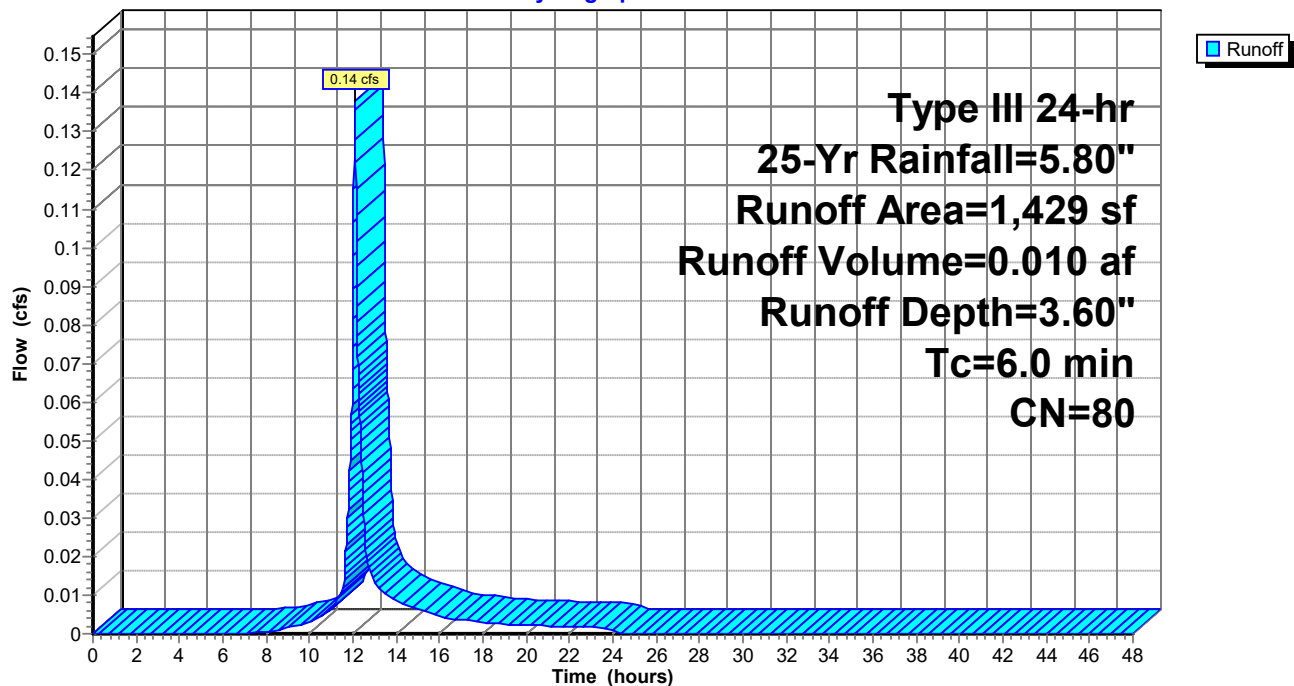
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
428	39	>75% Grass cover, Good, HSG A
1,001	98	Paved parking, HSG A
1,429	80	Weighted Average
428		29.95% Pervious Area
1,001		70.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: Area 2

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 3S: Area to PP1

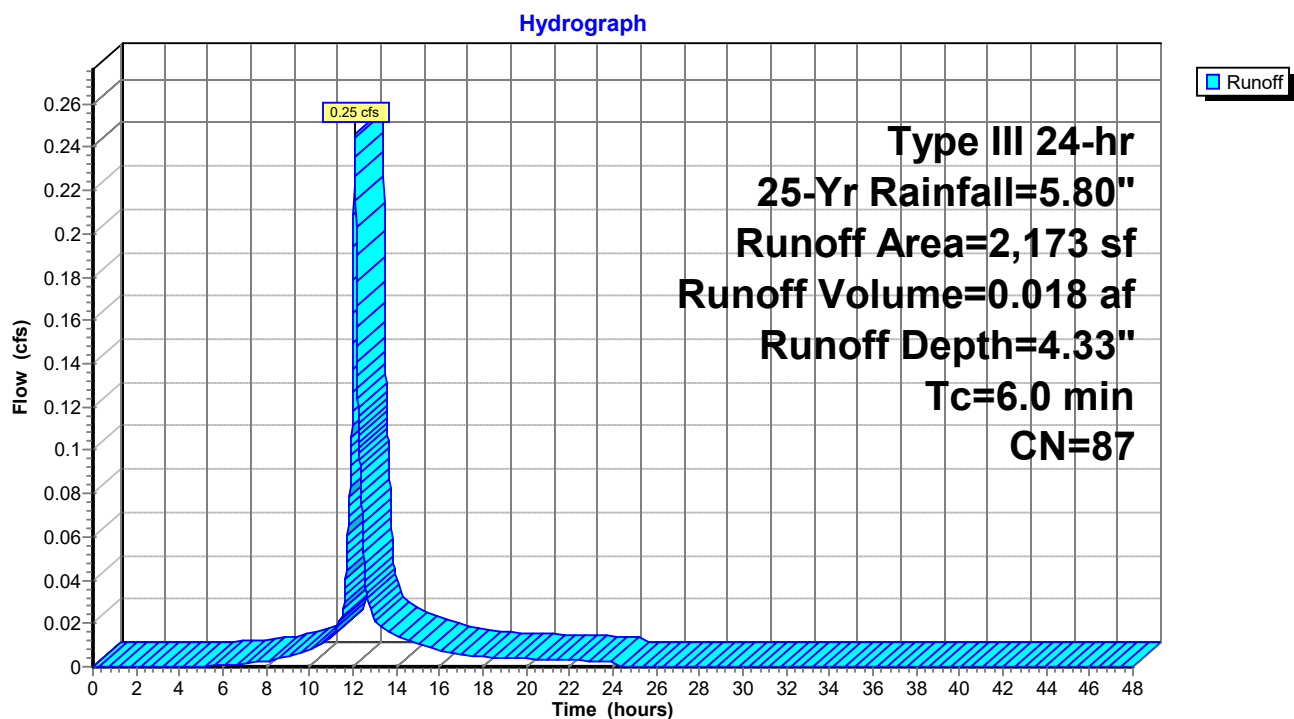
Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.018 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
400	39	>75% Grass cover, Good, HSG A
1,773	98	Paved parking, HSG A
2,173	87	Weighted Average
400		18.41% Pervious Area
1,773		81.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 3S: Area to PP1



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 4S: Area to PP2

Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 5.56"

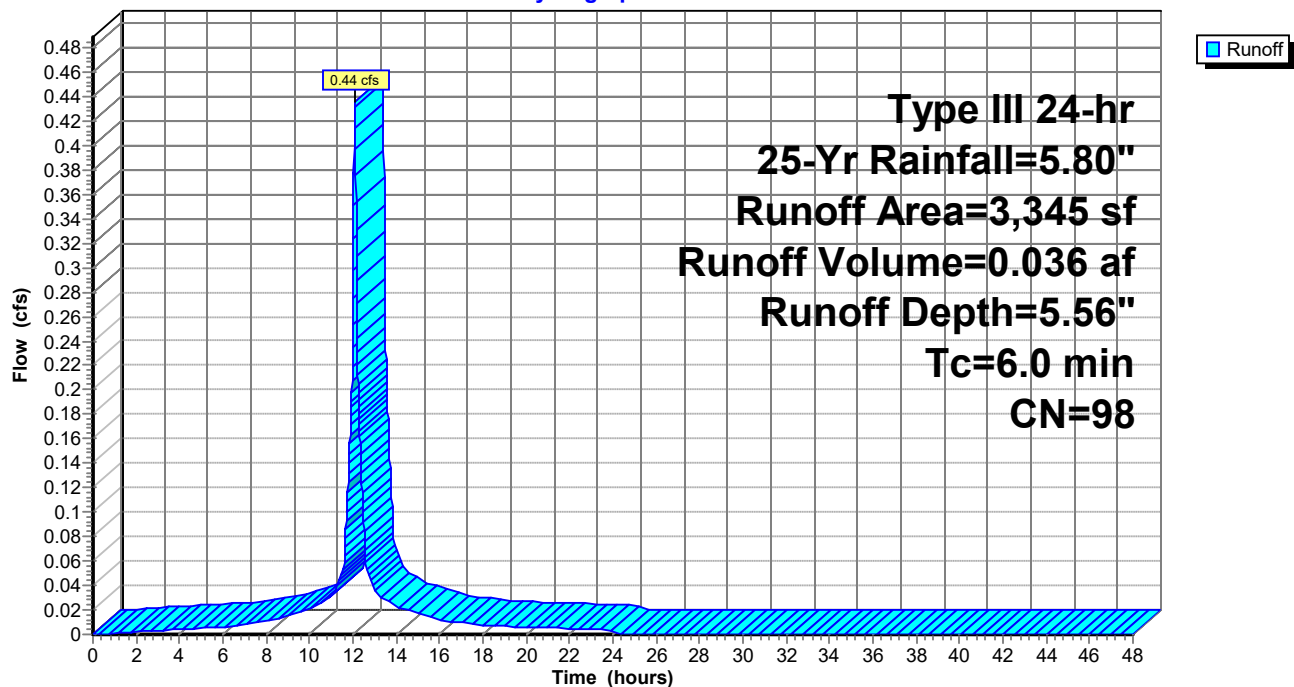
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
3,345	98	Paved parking, HSG A
3,345		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 4S: Area to PP2

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 5S: Area to Rain Garden East

Runoff = 0.15 cfs @ 12.16 hrs, Volume= 0.017 af, Depth= 0.98"

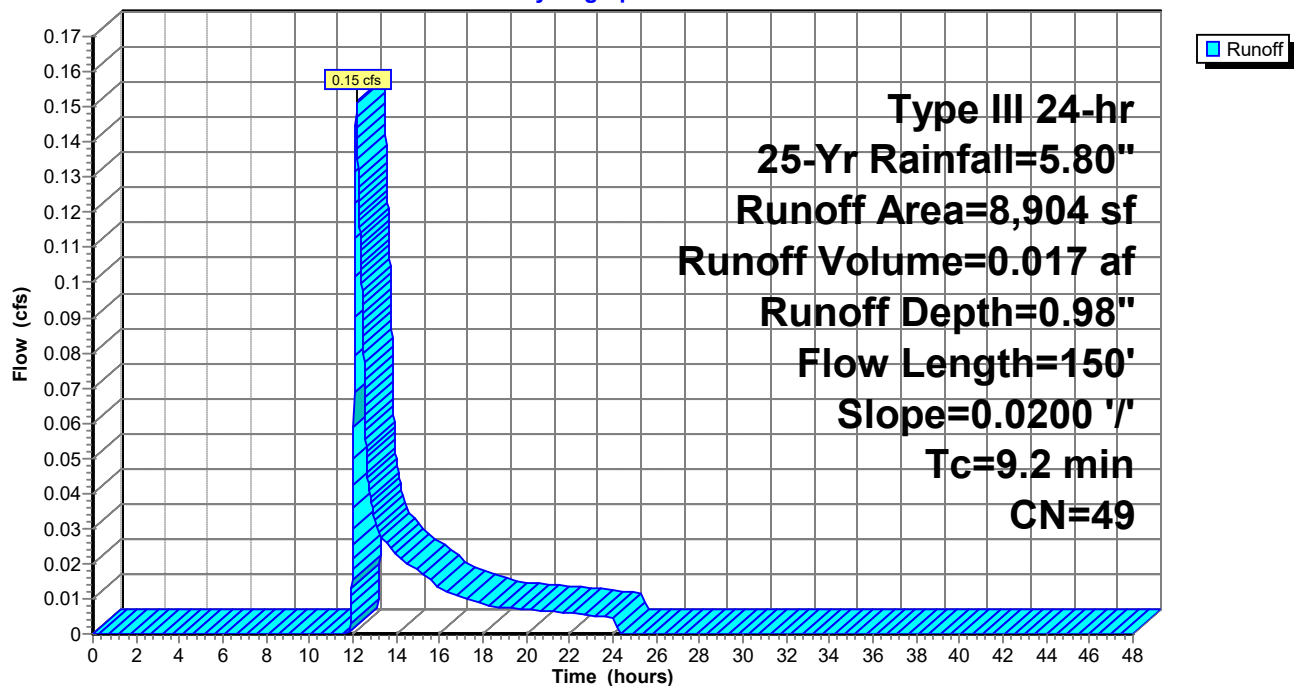
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

	Area (sf)	CN	Description
*	1,555	98	
	7,349	39	>75% Grass cover, Good, HSG A
	8,904	49	Weighted Average
	7,349		82.54% Pervious Area
	1,555		17.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	75	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
1.3	75	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	150	Total			

Subcatchment 5S: Area to Rain Garden East

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 6S: Bldg 1 Roof

Runoff = 1.53 cfs @ 12.08 hrs, Volume= 0.125 af, Depth= 5.56"

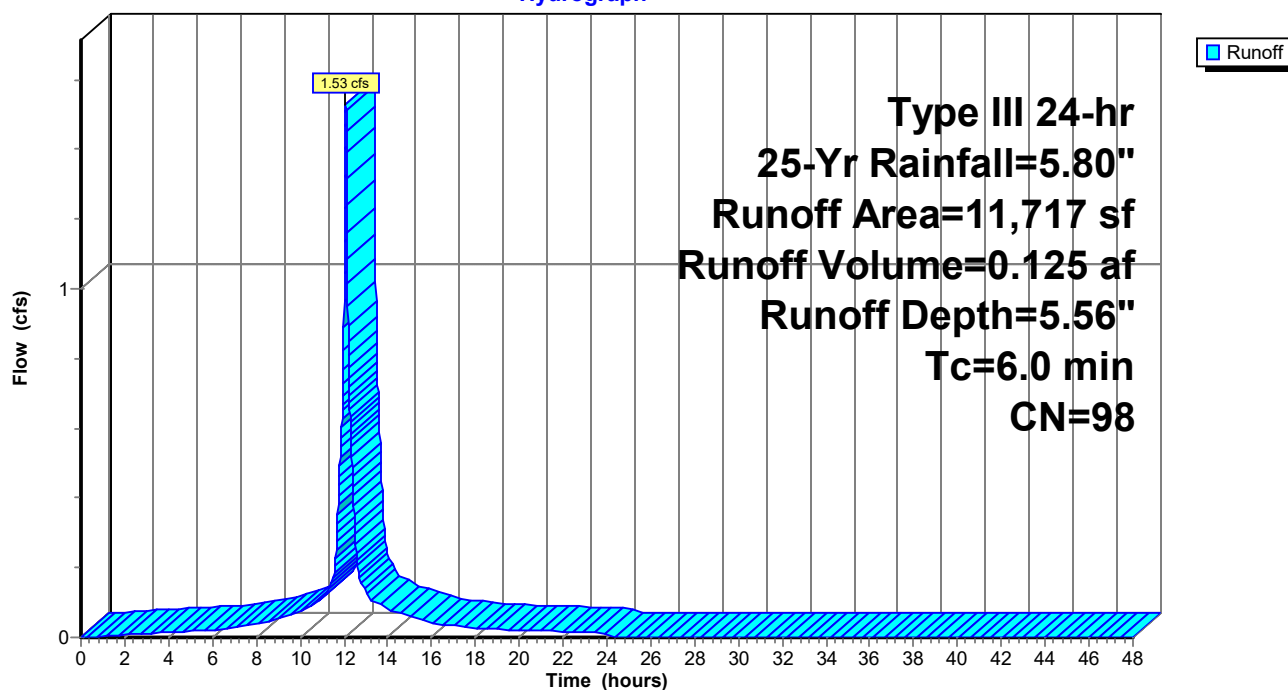
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
11,717	98	Roofs, HSG A
11,717		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 6S: Bldg 1 Roof

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 7S: Area to Rain Garden West

Runoff = 0.16 cfs @ 12.36 hrs, Volume= 0.028 af, Depth= 0.66"

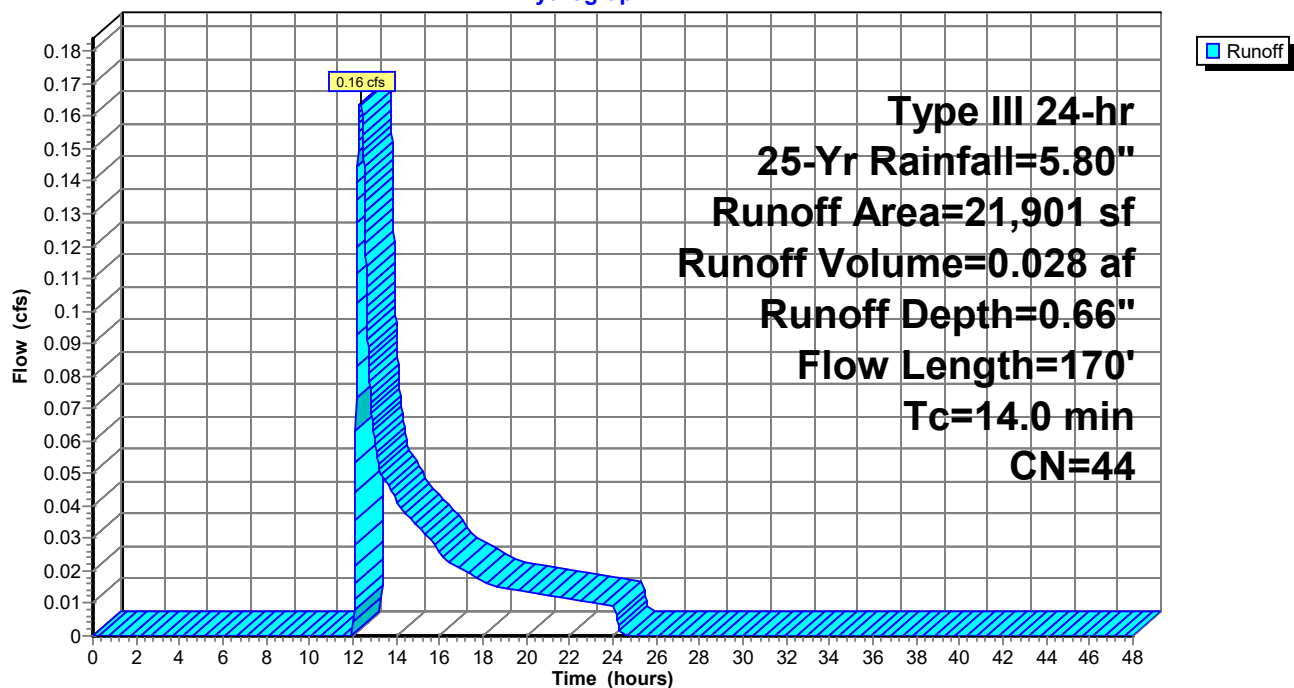
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
1,750	98	Paved parking, HSG A
20,151	39	>75% Grass cover, Good, HSG A
21,901	44	Weighted Average
20,151		92.01% Pervious Area
1,750		7.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	150	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.2	20	0.0600	1.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	170	Total			

Subcatchment 7S: Area to Rain Garden West

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 9S: Area 4

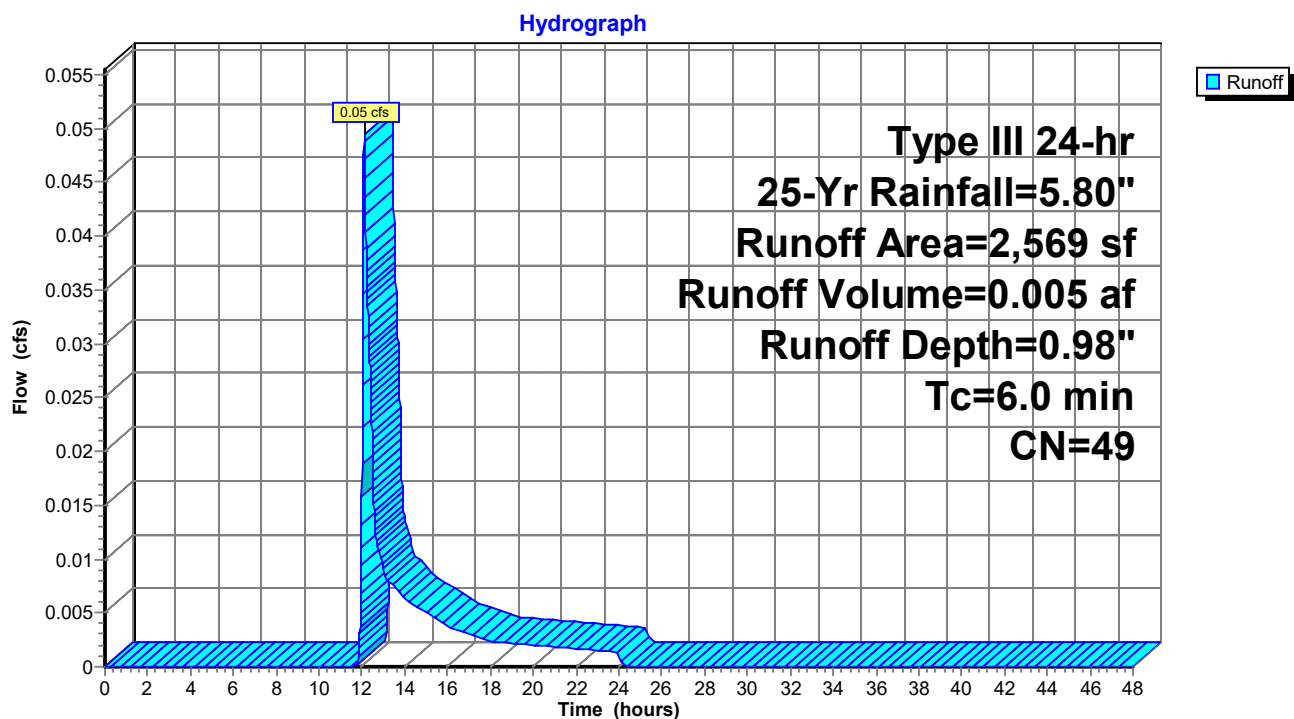
Runoff = 0.05 cfs @ 12.11 hrs, Volume= 0.005 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
445	98	Paved parking, HSG A
2,124	39	>75% Grass cover, Good, HSG A
2,569	49	Weighted Average
2,124		82.68% Pervious Area
445		17.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 9S: Area 4



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 10S:

Runoff = 1.42 cfs @ 12.09 hrs, Volume= 0.104 af, Depth= 4.43"

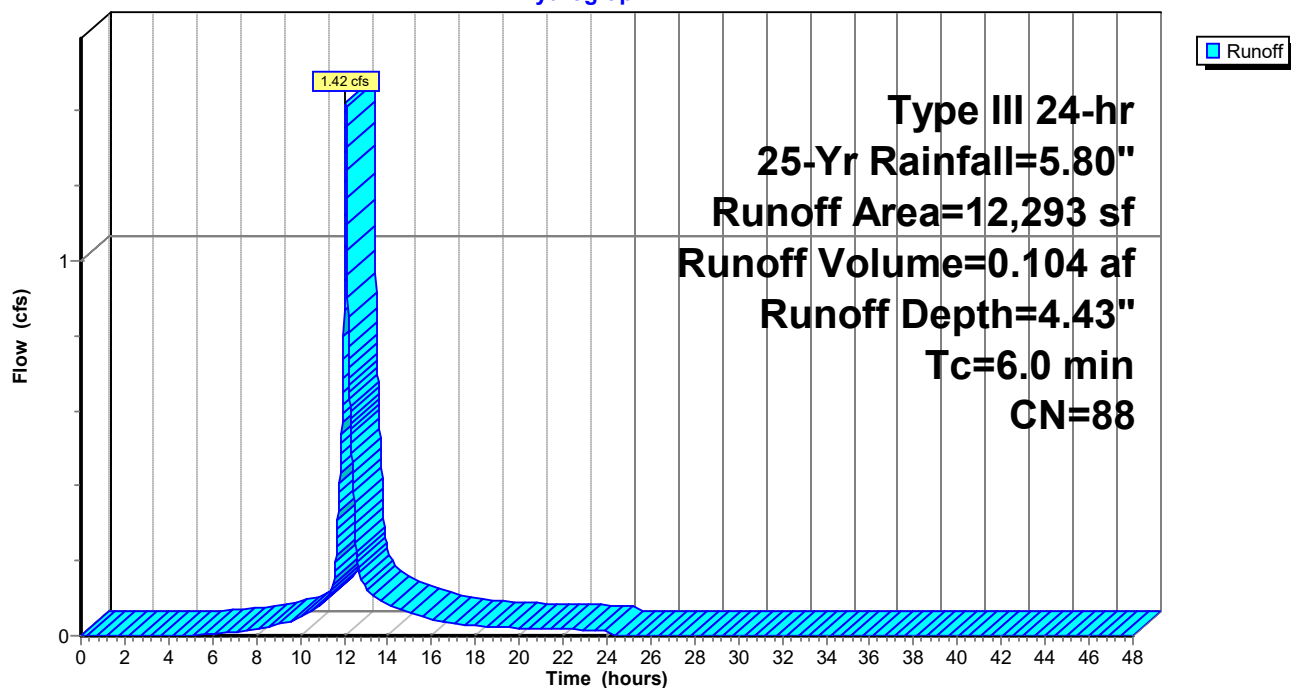
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
10,120	98	Paved parking & roofs
2,173	39	>75% Grass cover, Good, HSG A
12,293	88	Weighted Average
2,173		17.68% Pervious Area
10,120		82.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 10S:

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 11S: Area to Rain Garden 2

Runoff = 0.77 cfs @ 12.09 hrs, Volume= 0.055 af, Depth= 2.56"

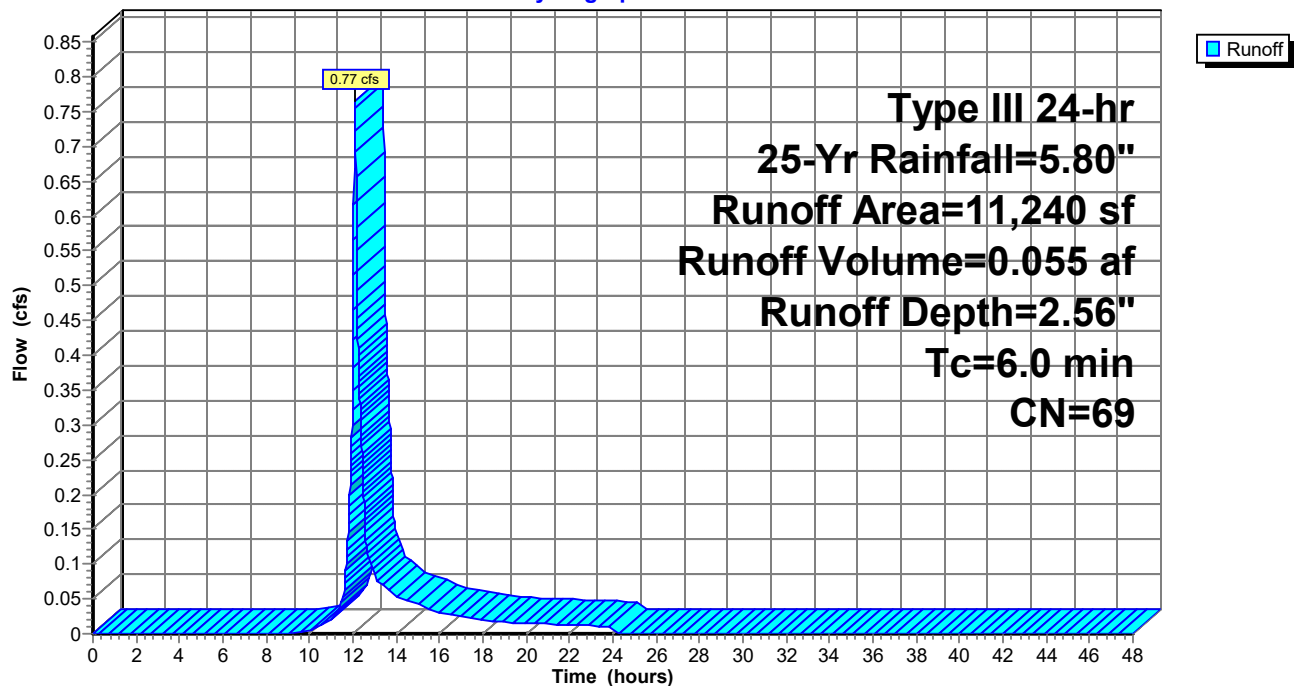
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
5,795	98	Paved parking & roofs
5,445	39	>75% Grass cover, Good, HSG A
11,240	69	Weighted Average
5,445		48.44% Pervious Area
5,795		51.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 11S: Area to Rain Garden 2

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 12S: Area to Rain Garden 1

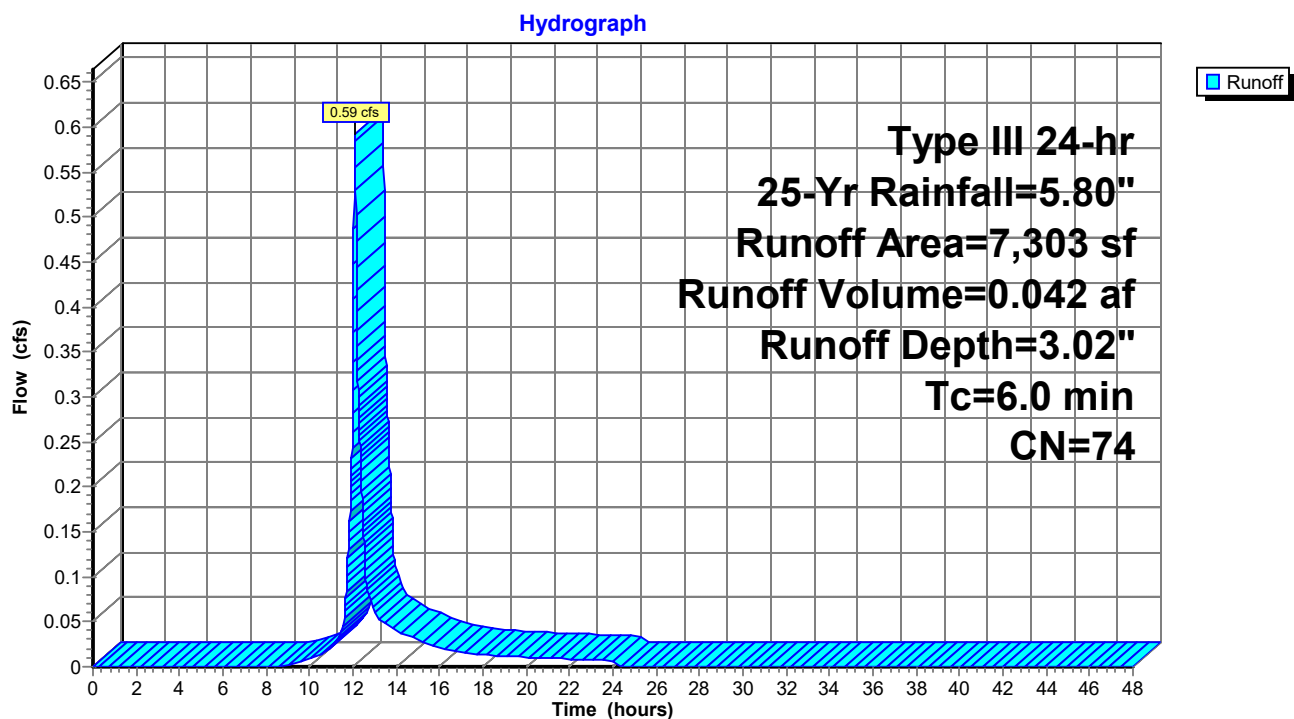
Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.042 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
4,299	98	Paved parking & roofs
3,004	39	>75% Grass cover, Good, HSG A
7,303	74	Weighted Average
3,004		41.13% Pervious Area
4,299		58.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 12S: Area to Rain Garden 1



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 13S: Area to Infiltration Trench

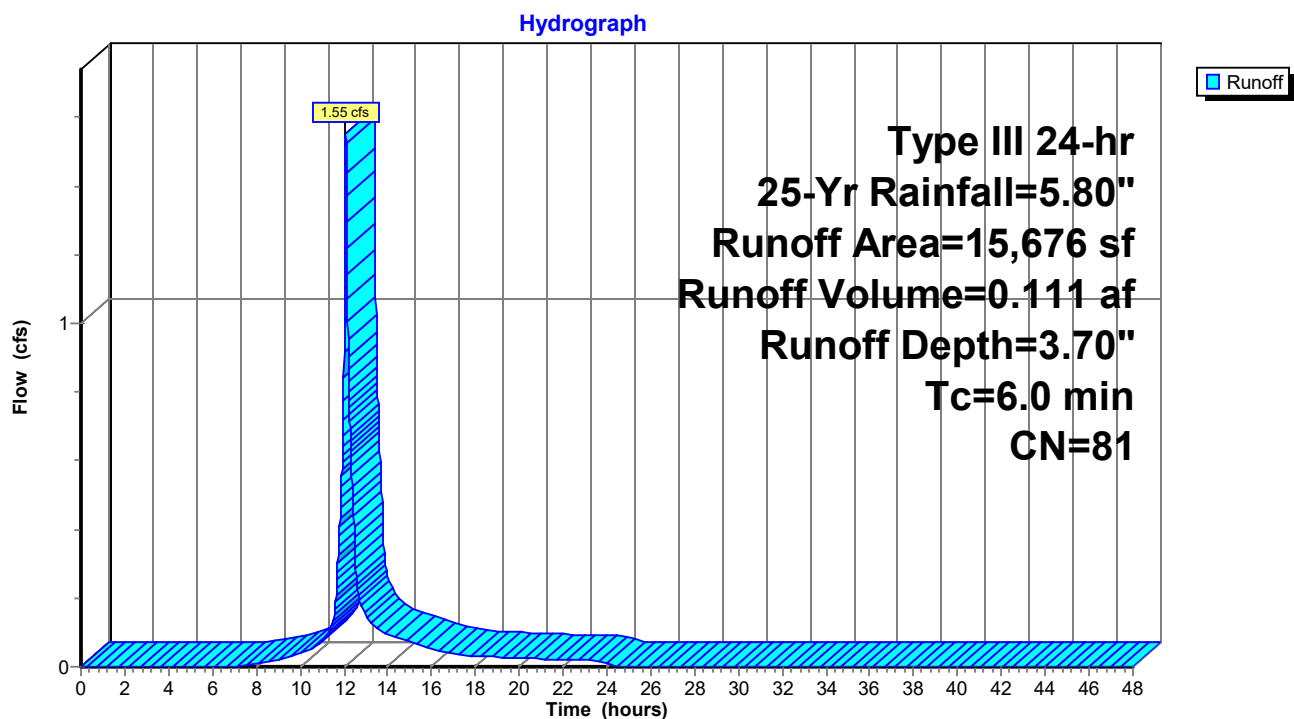
Runoff = 1.55 cfs @ 12.09 hrs, Volume= 0.111 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
11,224	98	Paved parking & roofs
4,452	39	>75% Grass cover, Good, HSG A
15,676	81	Weighted Average
4,452		28.40% Pervious Area
11,224		71.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 13S: Area to Infiltration Trench



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 14S: Roof Area to Drip Strip 4

Runoff = 0.79 cfs @ 12.08 hrs, Volume= 0.065 af, Depth= 5.56"

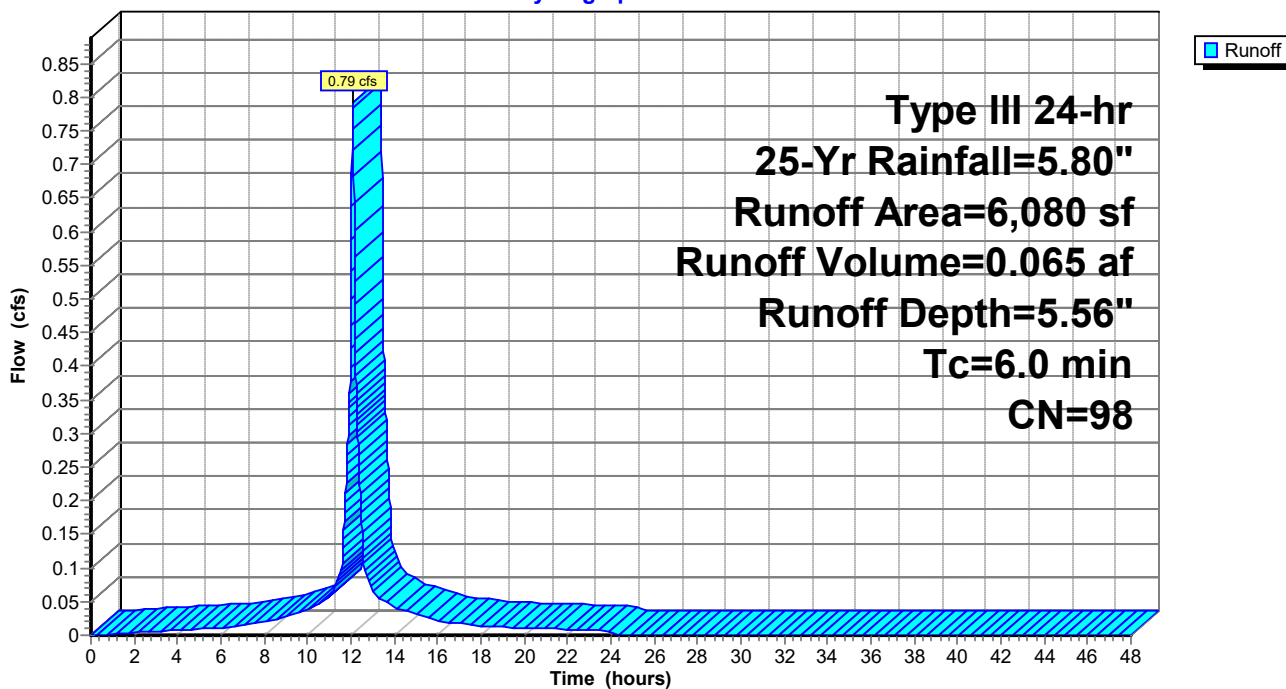
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

	Area (sf)	CN	Description
*	6,080	98	Roofs
*	0	76	Drip stone, HSG A
	6,080	98	Weighted Average
	6,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 14S: Roof Area to Drip Strip 4

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 15S: Roof Area to Drip Strip 1

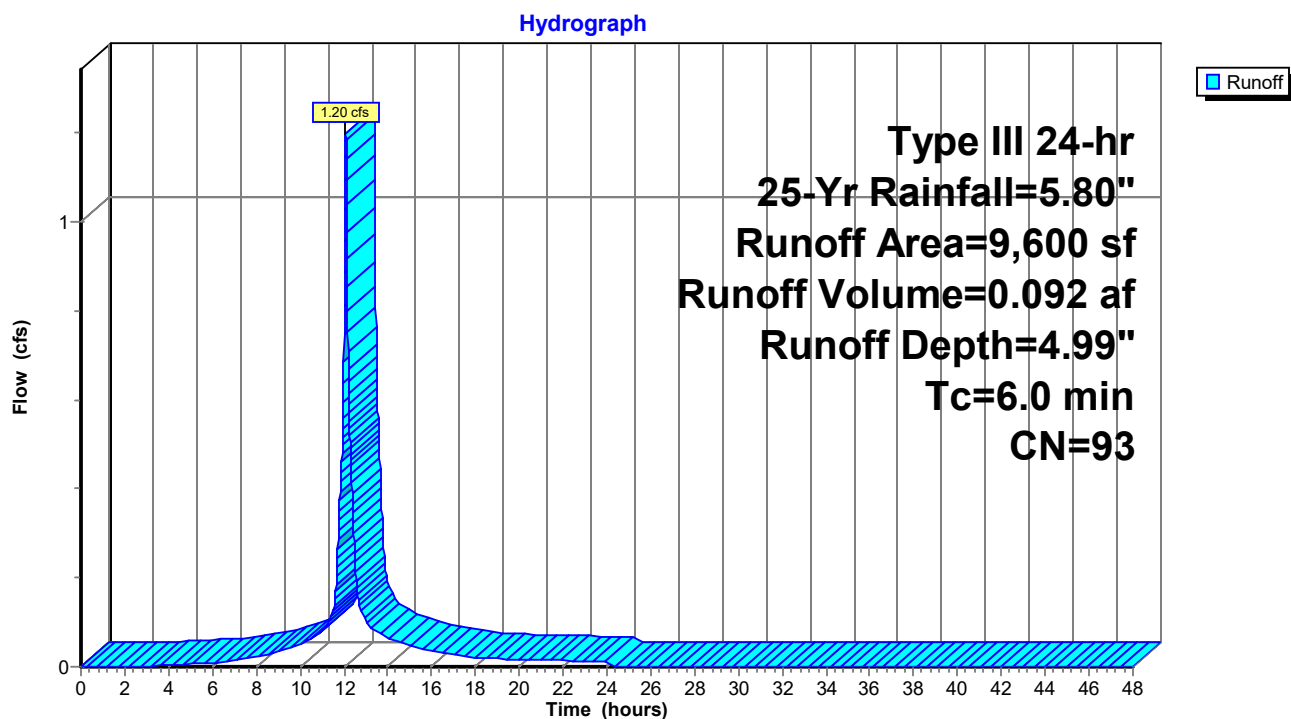
Runoff = 1.20 cfs @ 12.08 hrs, Volume= 0.092 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

	Area (sf)	CN	Description
*	7,600	98	Roofs
*	2,000	76	Drip stone, HSG A
	9,600	93	Weighted Average
	2,000		20.83% Pervious Area
	7,600		79.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 15S: Roof Area to Drip Strip 1



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 16S: Roof Area to Drip Strip 2

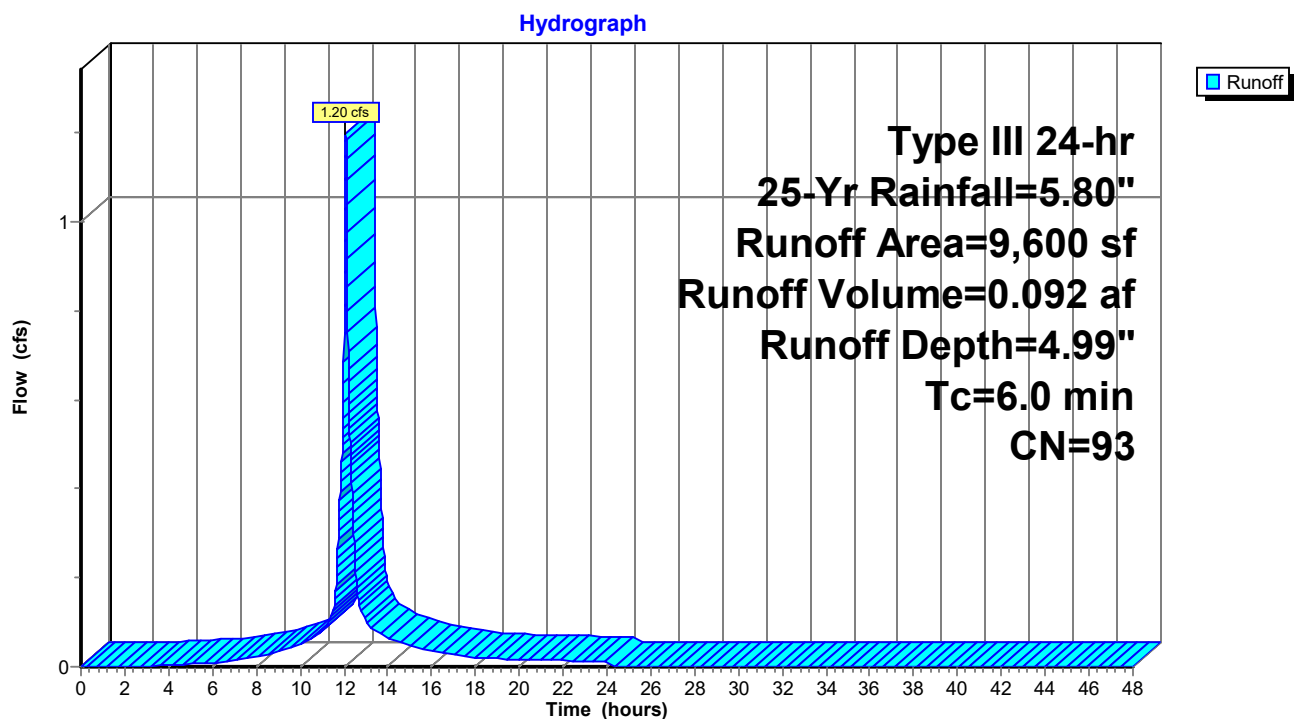
Runoff = 1.20 cfs @ 12.08 hrs, Volume= 0.092 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

	Area (sf)	CN	Description
*	7,600	98	Roofs
*	2,000	76	Drip stone, HSG A
	9,600	93	Weighted Average
	2,000		20.83% Pervious Area
	7,600		79.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 16S: Roof Area to Drip Strip 2



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 17S: Roof Area to Drip Strip 3

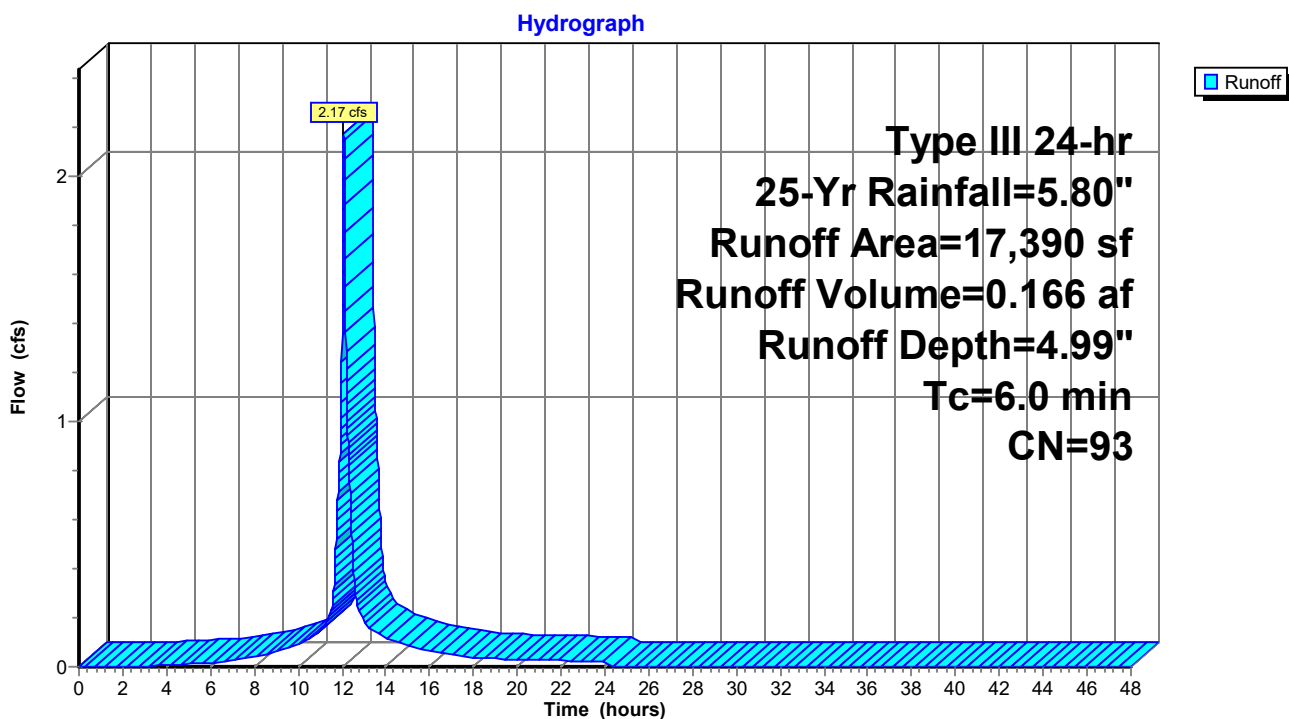
Runoff = 2.17 cfs @ 12.08 hrs, Volume= 0.166 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

	Area (sf)	CN	Description
*	13,270	98	Roofs
*	4,120	76	Drip stone, HSG A
	17,390	93	Weighted Average
	4,120		23.69% Pervious Area
	13,270		76.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 17S: Roof Area to Drip Strip 3



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 18S: North of Mother House

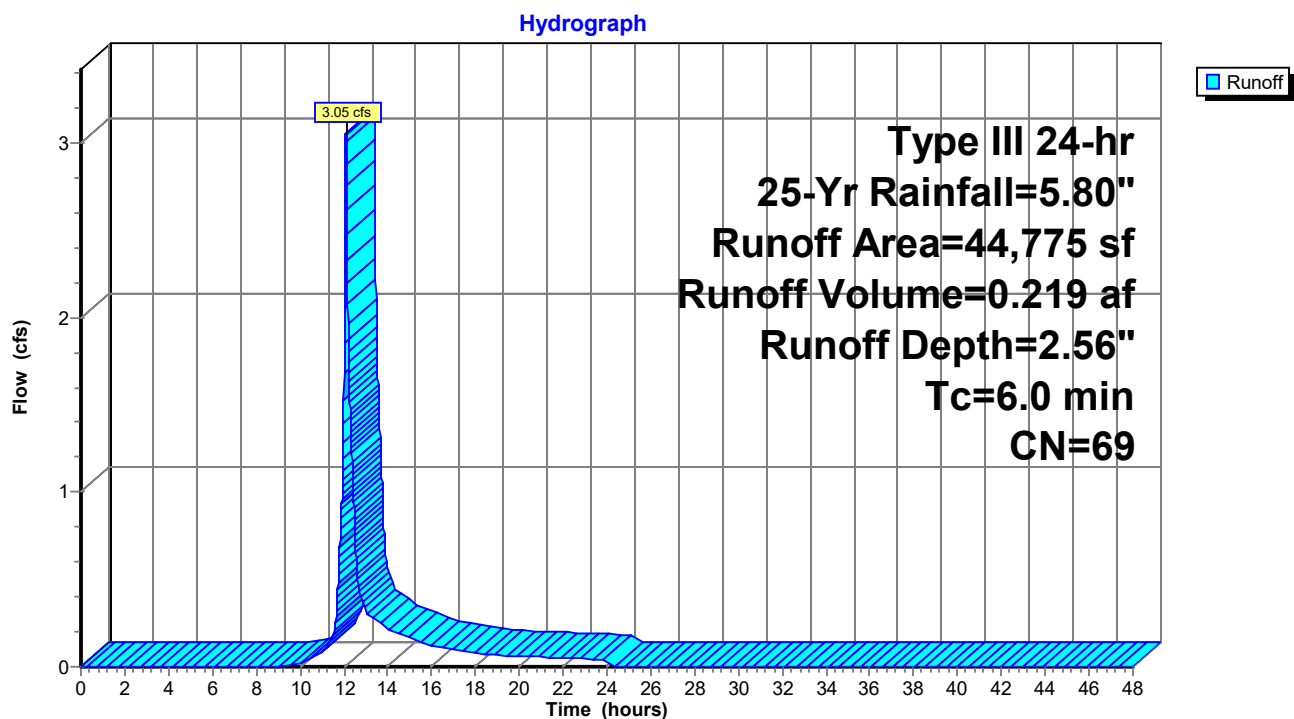
Runoff = 3.05 cfs @ 12.09 hrs, Volume= 0.219 af, Depth= 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
21,975	39	>75% Grass cover, Good, HSG A
22,800	98	Paved parking, HSG A
44,775	69	Weighted Average
21,975		49.08% Pervious Area
22,800		50.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 18S: North of Mother House



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 19A: St. Joseph's

Runoff = 2.63 cfs @ 12.29 hrs, Volume= 0.283 af, Depth= 3.21"

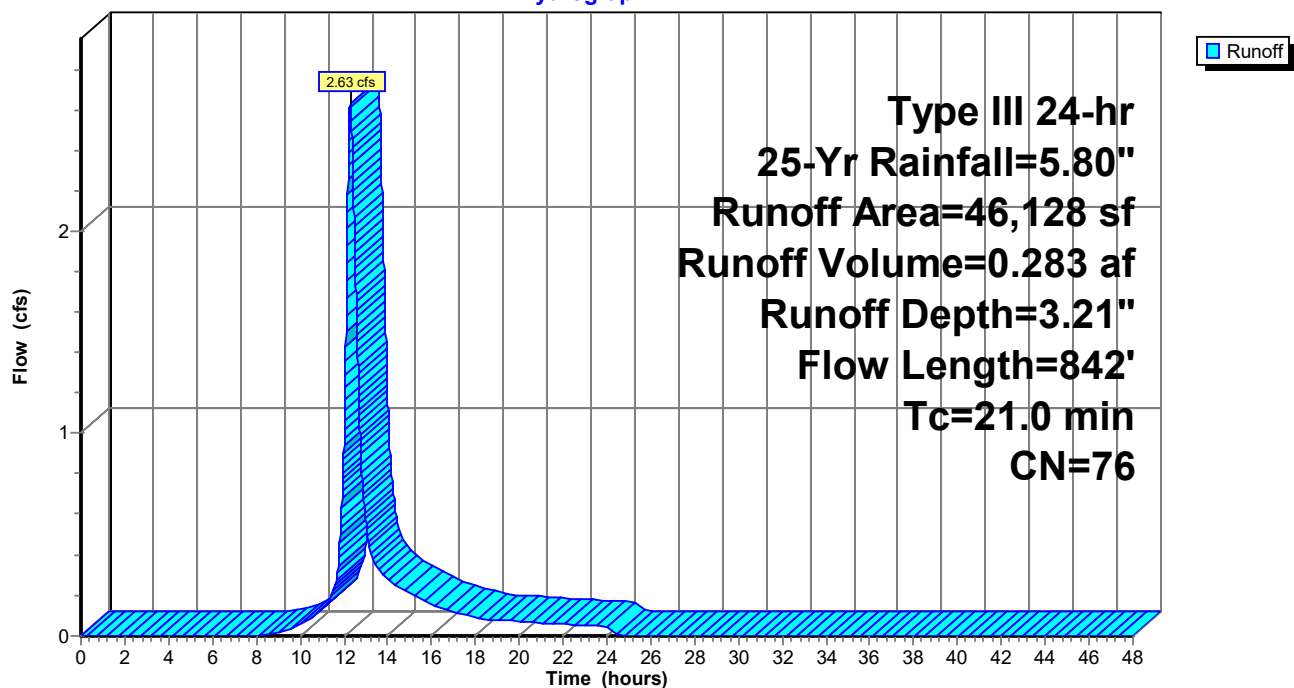
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
18,644	98	Paved parking, HSG A
10,071	39	>75% Grass cover, Good, HSG A
17,413	74	>75% Grass cover, Good, HSG C
46,128	76	Weighted Average
27,484		59.58% Pervious Area
18,644		40.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	122	0.0160	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
2.4	720	0.0100	4.91	3.86	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
21.0	842	Total			

Subcatchment 19A: St. Joseph's

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 19B: Area to North FD

Runoff = 3.19 cfs @ 12.36 hrs, Volume= 0.371 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
63,459	74	>75% Grass cover, Good, HSG C
760	98	Paved parking, HSG A
64,219	74	Weighted Average
63,459		98.82% Pervious Area
760		1.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.5	150	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
1.8	94	0.0150	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	80	0.0650	12.53	9.84	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
0.6	242	0.0200	6.95	5.46	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
25.0	566	Total			

Pre-Development

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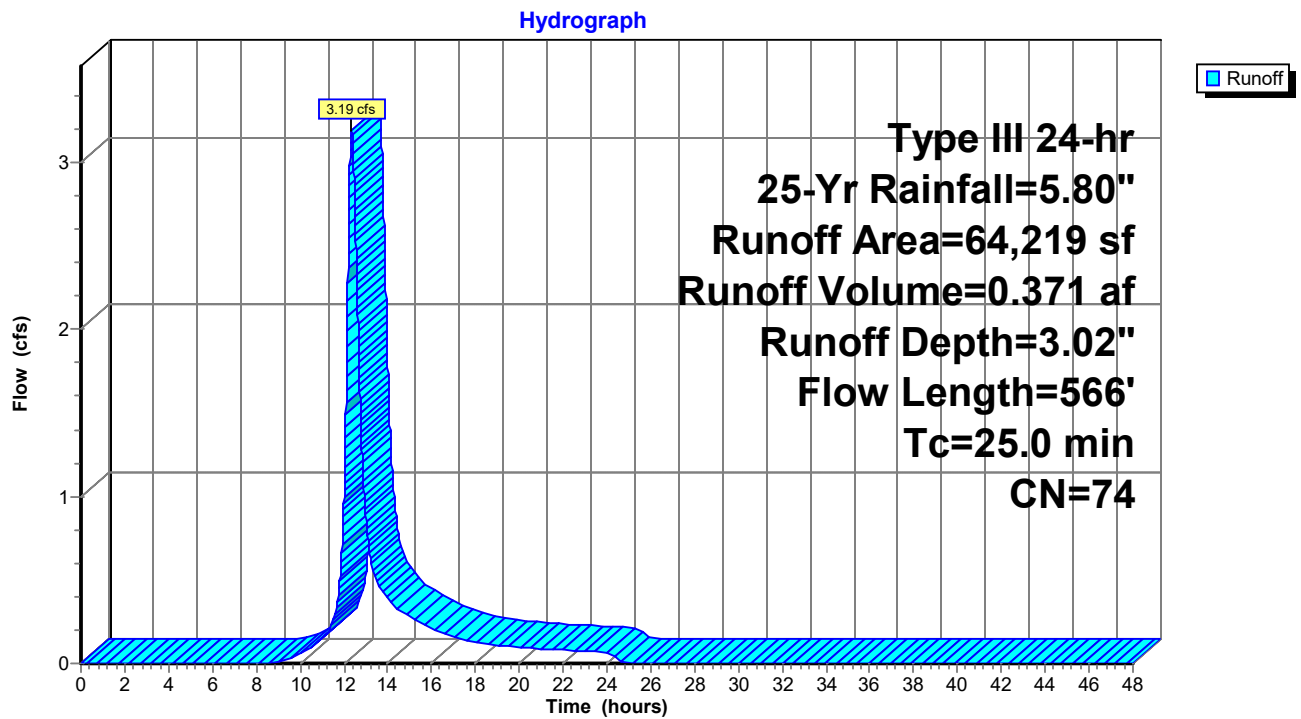
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Type III 24-hr 25-Yr Rainfall=5.80"

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Subcatchment 19B: Area to North FD



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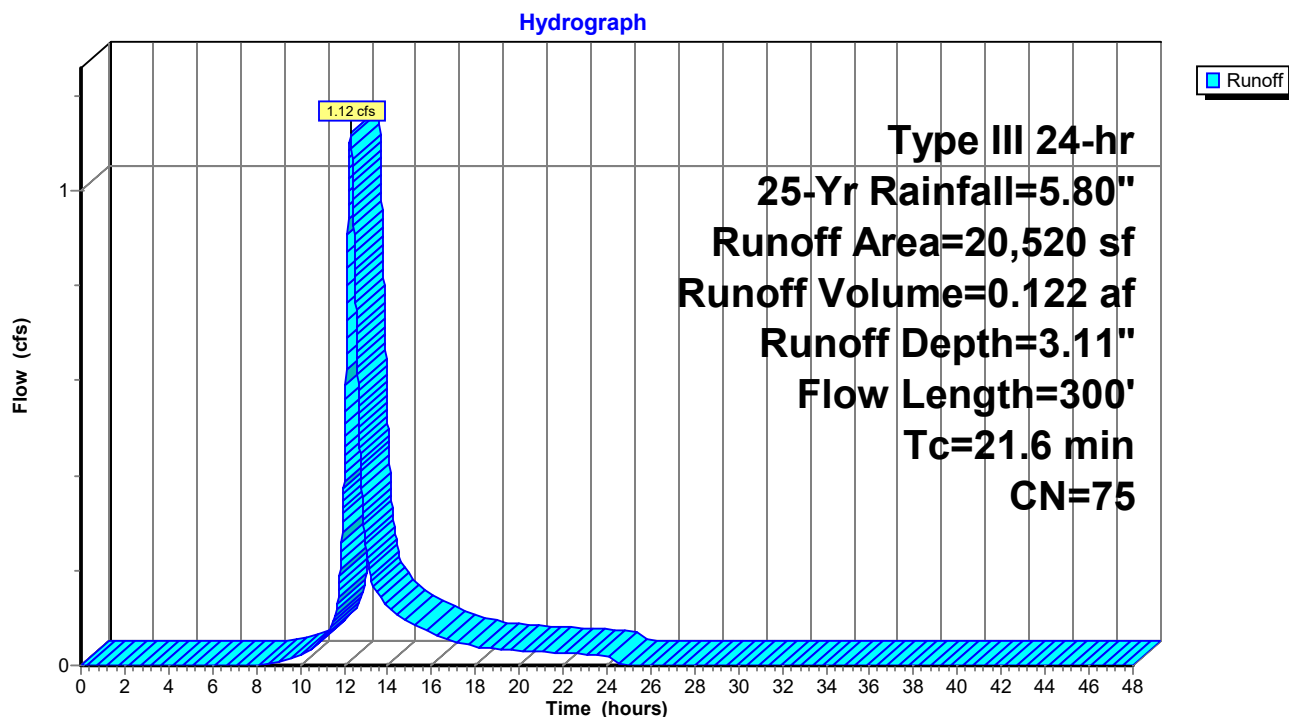
Summary for Subcatchment 19C: Area to North FD

Runoff = 1.12 cfs @ 12.31 hrs, Volume= 0.122 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
15,128	74	>75% Grass cover, Good, HSG C
5,392	77	Woods, Good, HSG D
20,520	75	Weighted Average
20,520		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	125	0.0150	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.2	40	0.3300	2.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.0	135	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.6	300	Total			

Subcatchment 19C: Area to North FD

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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Subcatchment 20S:

Runoff = 5.74 cfs @ 12.44 hrs, Volume= 0.734 af, Depth= 3.02"

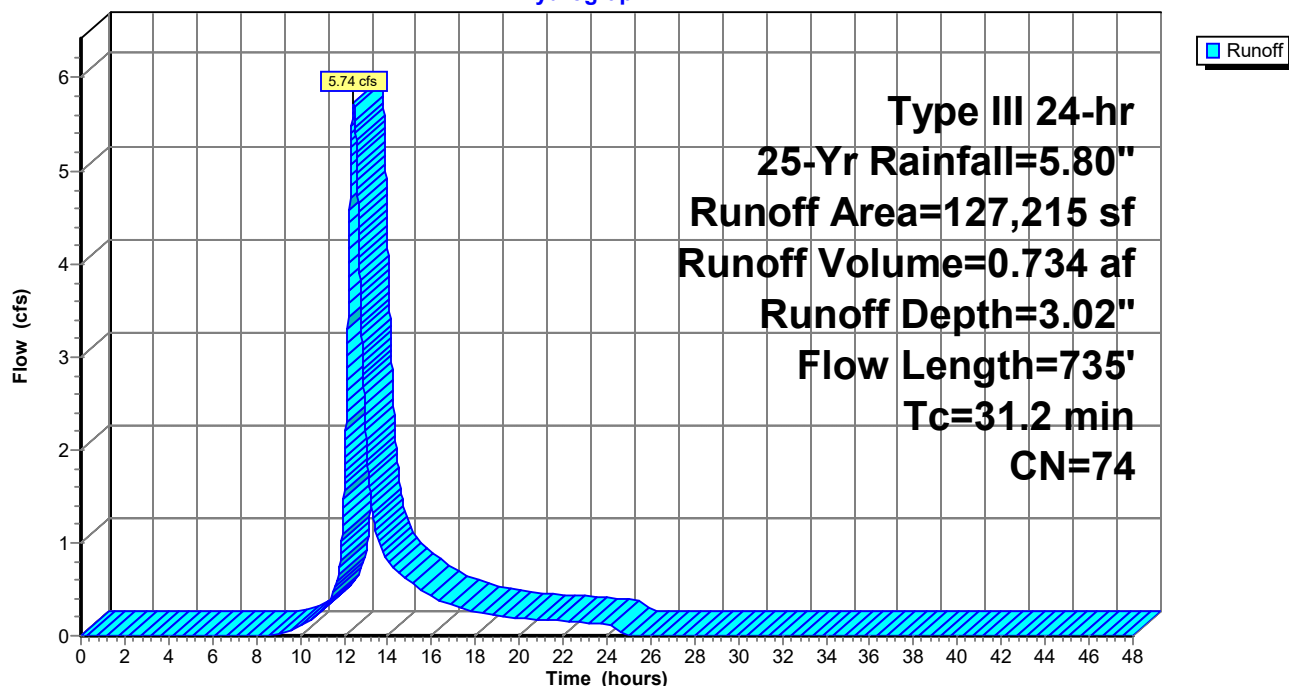
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Yr Rainfall=5.80"

Area (sf)	CN	Description
9,282	77	Woods, Good, HSG D
117,933	74	>75% Grass cover, Good, HSG C
127,215	74	Weighted Average
127,215		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	150	0.0130	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
3.7	110	0.0050	0.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.6	265	0.0200	6.95	5.46	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
3.1	210	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
31.2	735	Total			

Subcatchment 20S:

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Reach 1R: 8" SD

Inflow Area = 0.707 ac, 10.73% Impervious, Inflow Depth = 0.70" for 25-Yr event
Inflow = 0.20 cfs @ 12.52 hrs, Volume= 0.041 af
Outflow = 0.20 cfs @ 12.52 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.57 fps, Min. Travel Time= 0.2 min

Avg. Velocity= 1.40 fps, Avg. Travel Time= 0.3 min

Peak Storage= 2 cf @ 12.52 hrs

Average Depth at Peak Storage= 0.18' , Surface Width= 0.60'

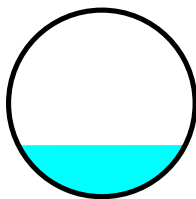
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.21 cfs

8.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

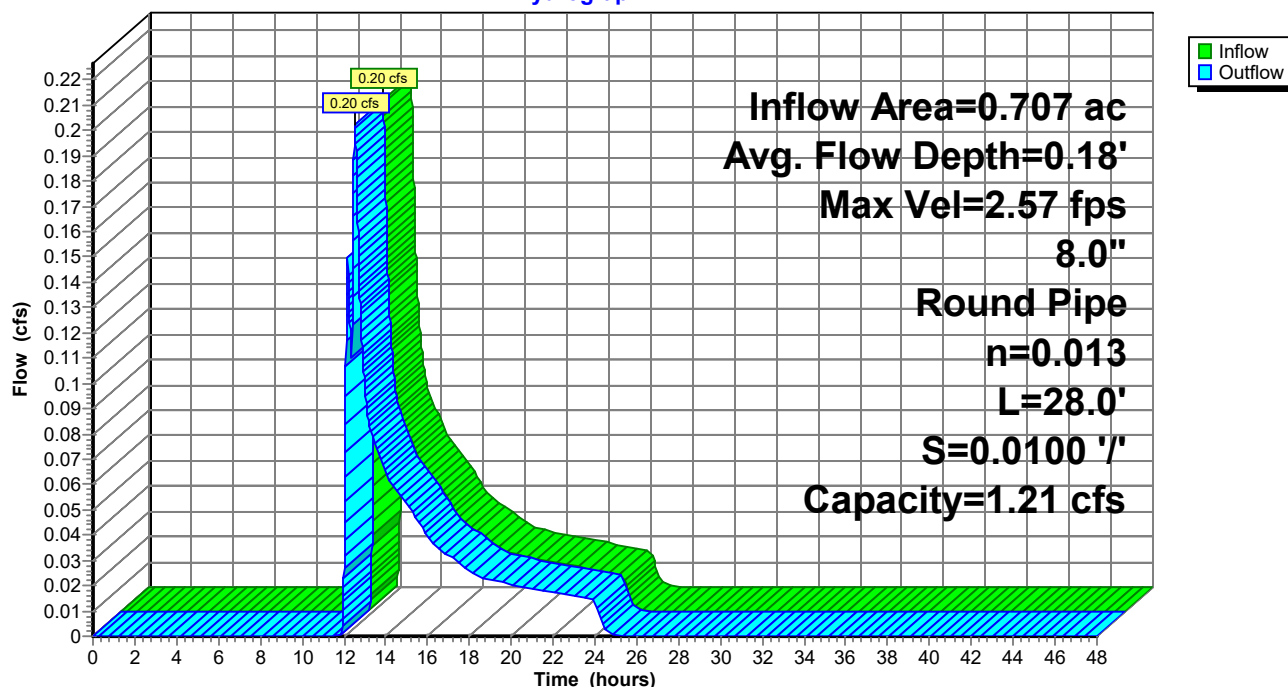
Length= 28.0' Slope= 0.0100 '/'

Inlet Invert= 115.15', Outlet Invert= 114.87'



Reach 1R: 8" SD

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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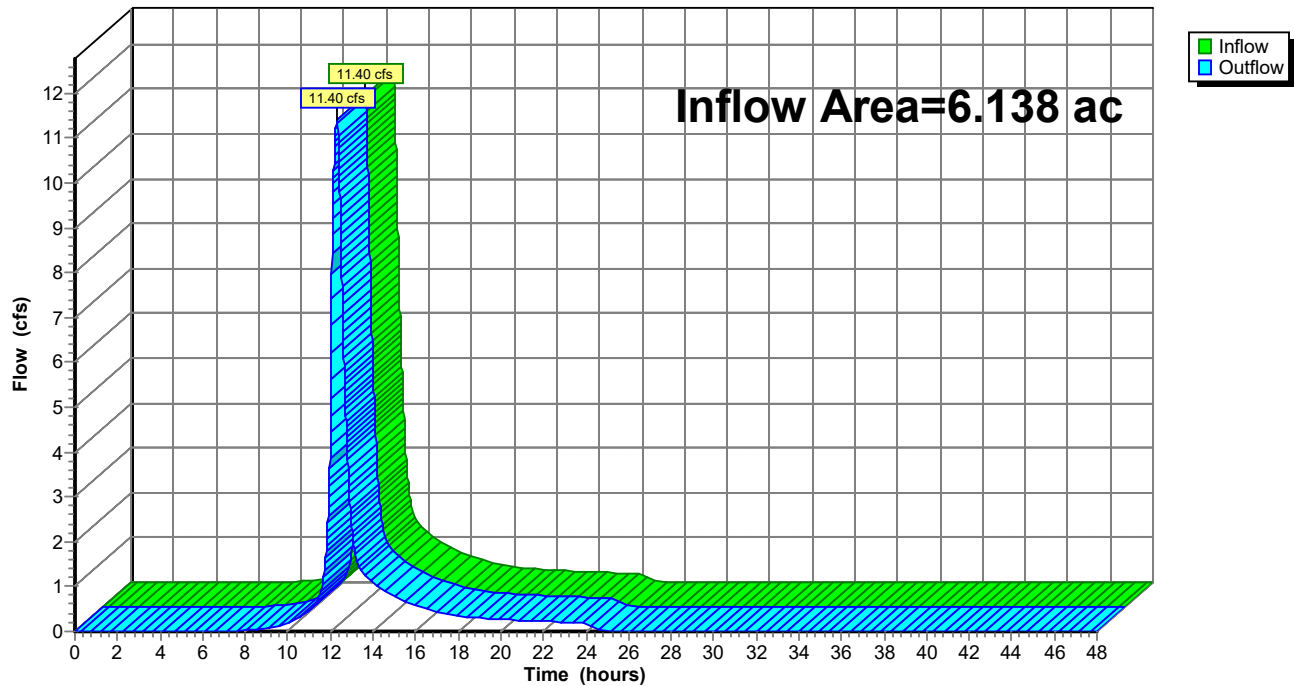
Summary for Reach 2R: POI 2

Inflow Area = 6.138 ac, 40.63% Impervious, Inflow Depth = 2.33" for 25-Yr event
Inflow = 11.40 cfs @ 12.29 hrs, Volume= 1.194 af
Outflow = 11.40 cfs @ 12.29 hrs, Volume= 1.194 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: POI 2

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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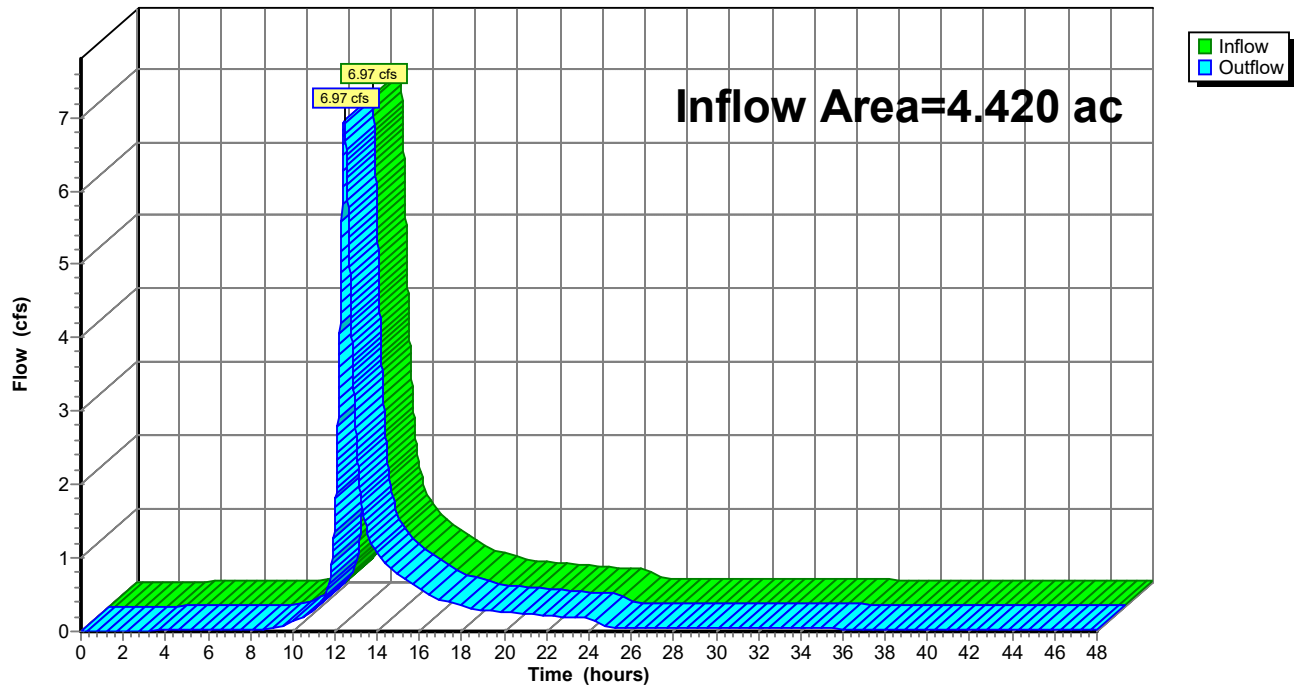
Summary for Reach 3R: POI 1

Inflow Area = 4.420 ac, 12.39% Impervious, Inflow Depth > 2.66" for 25-Yr event
Inflow = 6.97 cfs @ 12.44 hrs, Volume= 0.978 af
Outflow = 6.97 cfs @ 12.44 hrs, Volume= 0.978 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 3R: POI 1

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Reach 4R: Wetland to POI 2

Inflow Area = 5.667 ac, 44.01% Impervious, Inflow Depth = 2.27" for 25-Yr event
Inflow = 10.29 cfs @ 12.27 hrs, Volume= 1.072 af
Outflow = 10.28 cfs @ 12.29 hrs, Volume= 1.072 af, Atten= 0%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.76 fps, Min. Travel Time= 0.6 min

Avg. Velocity= 0.91 fps, Avg. Travel Time= 2.7 min

Peak Storage= 396 cf @ 12.28 hrs

Average Depth at Peak Storage= 0.29' , Surface Width= 10.89'

Bank-Full Depth= 0.75' Flow Area= 8.8 sf, Capacity= 57.05 cfs

8.00' x 0.75' deep channel, n= 0.035 Earth, dense weeds

Side Slope Z-value= 5.0 '/' Top Width= 15.50'

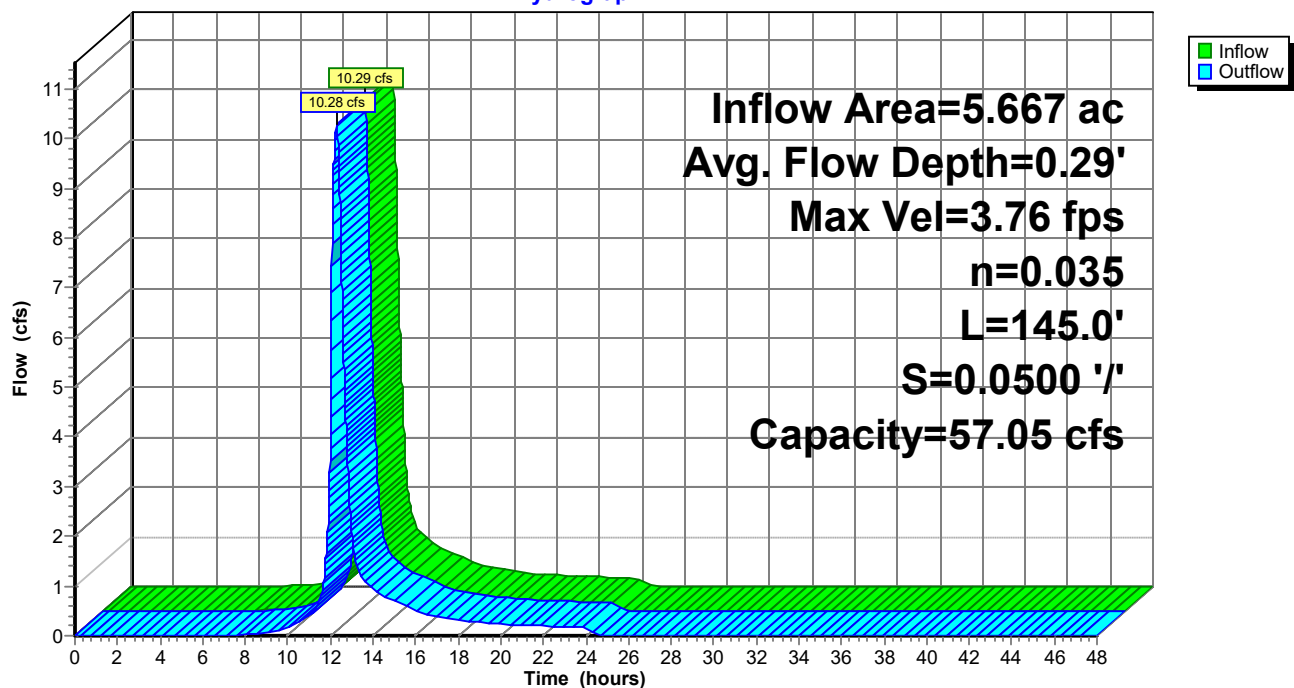
Length= 145.0' Slope= 0.0500 '/'

Inlet Invert= 102.89', Outlet Invert= 95.64'



Reach 4R: Wetland to POI 2

Hydrograph



Pre-Development

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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Reach 6R: Wetland to POI 1

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth > 1.95" for 25-Yr event
Inflow = 1.26 cfs @ 12.37 hrs, Volume= 0.244 af
Outflow = 1.23 cfs @ 12.43 hrs, Volume= 0.244 af, Atten= 2%, Lag= 3.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.76 fps, Min. Travel Time= 2.0 min

Avg. Velocity= 0.51 fps, Avg. Travel Time= 6.9 min

Peak Storage= 148 cf @ 12.40 hrs

Average Depth at Peak Storage= 0.08' , Surface Width= 8.84'

Bank-Full Depth= 0.75' Flow Area= 8.8 sf, Capacity= 57.05 cfs

8.00' x 0.75' deep channel, n= 0.035 Earth, dense weeds

Side Slope Z-value= 5.0 ' ' Top Width= 15.50'

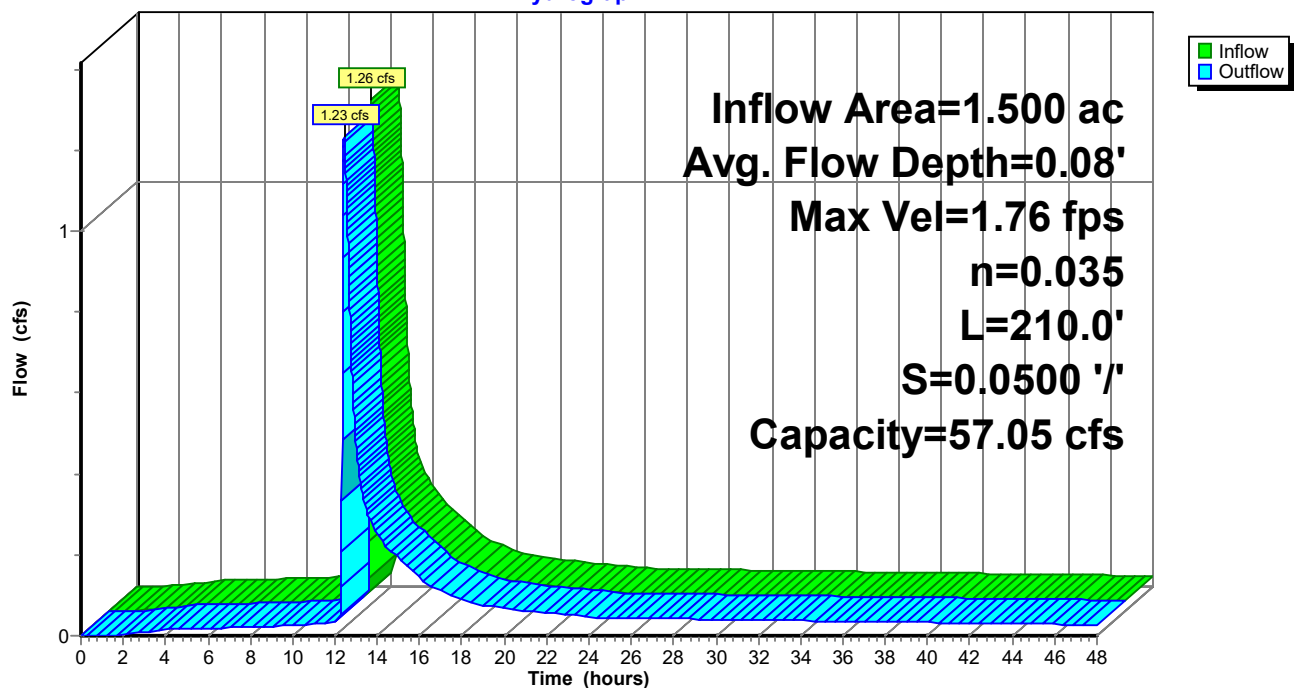
Length= 210.0' Slope= 0.0500 ' '

Inlet Invert= 107.32', Outlet Invert= 96.82'



Reach 6R: Wetland to POI 1

Hydrograph



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Summary for Reach 11R: 8" UD

Inflow Area = 0.364 ac, 17.16% Impervious, Inflow Depth = 0.98" for 25-Yr event
Inflow = 0.21 cfs @ 12.37 hrs, Volume= 0.030 af
Outflow = 0.20 cfs @ 12.40 hrs, Volume= 0.030 af, Atten= 0%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.13 fps, Min. Travel Time= 0.8 min

Avg. Velocity= 1.05 fps, Avg. Travel Time= 1.7 min

Peak Storage= 10 cf @ 12.38 hrs

Average Depth at Peak Storage= 0.21', Surface Width= 0.62'

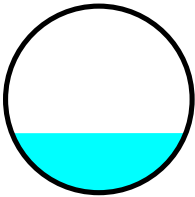
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 0.93 cfs

8.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

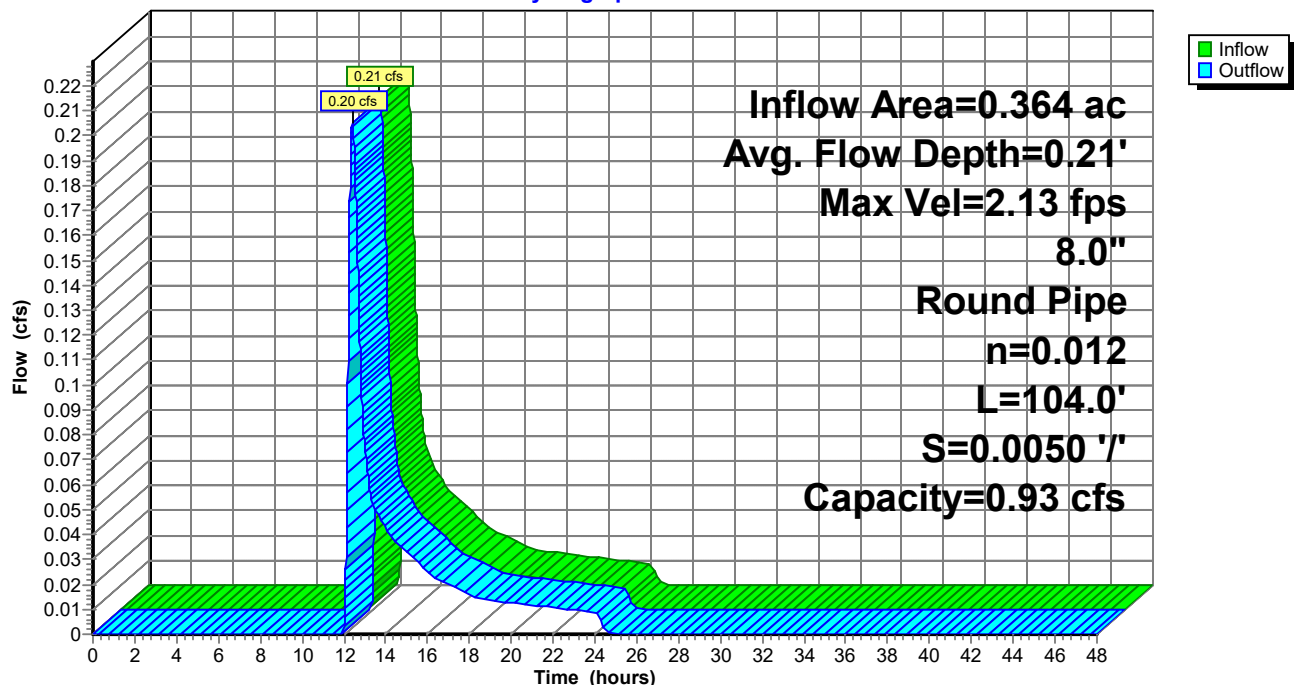
Length= 104.0' Slope= 0.0050 '/'

Inlet Invert= 116.28', Outlet Invert= 115.76'



Reach 11R: 8" UD

Hydrograph



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Summary for Reach 12R: 8" SD

Inflow Area = 0.523 ac, 38.77% Impervious, Inflow Depth = 2.10" for 25-Yr event
Inflow = 0.73 cfs @ 12.14 hrs, Volume= 0.092 af
Outflow = 0.73 cfs @ 12.15 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.63 fps, Min. Travel Time= 0.3 min

Avg. Velocity= 1.19 fps, Avg. Travel Time= 1.1 min

Peak Storage= 15 cf @ 12.15 hrs

Average Depth at Peak Storage= 0.37', Surface Width= 0.66'

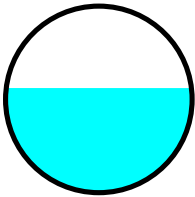
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.21 cfs

8.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

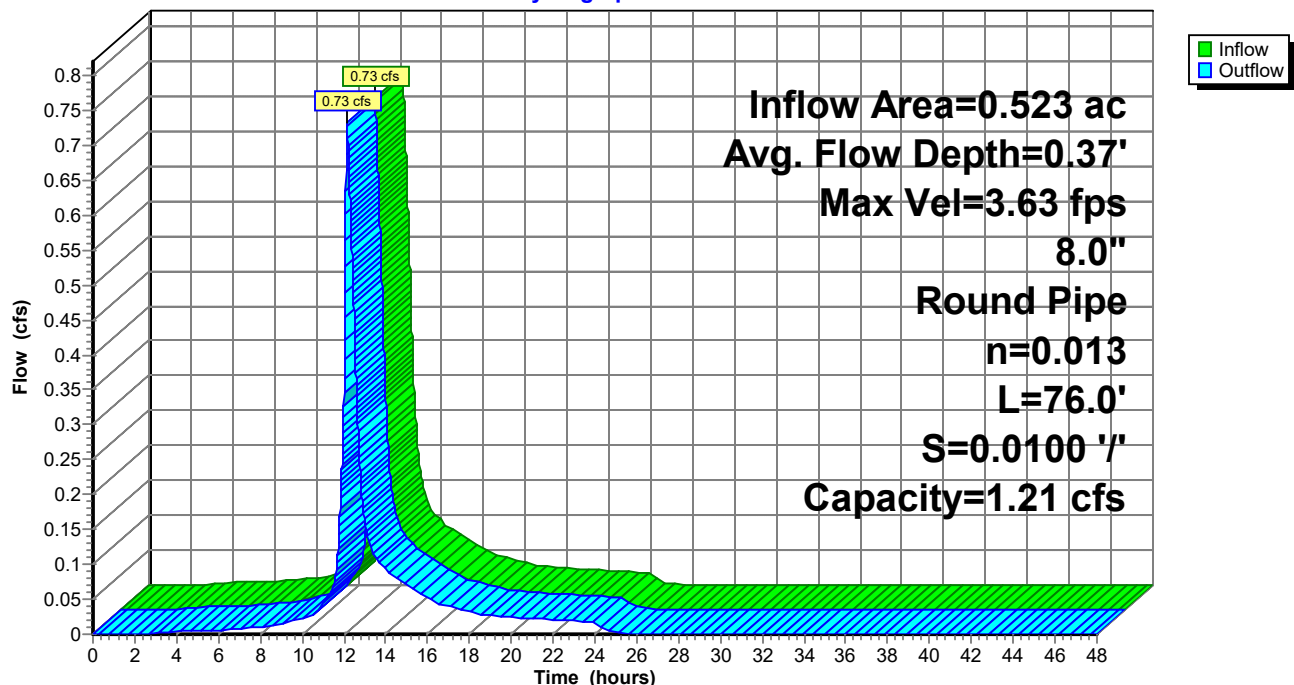
Length= 76.0' Slope= 0.0100 '/'

Inlet Invert= 115.48', Outlet Invert= 114.72'



Reach 12R: 8" SD

Hydrograph



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Summary for Reach 15R: Ex SD

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth > 1.96" for 25-Yr event
Inflow = 1.28 cfs @ 12.33 hrs, Volume= 0.244 af
Outflow = 1.26 cfs @ 12.37 hrs, Volume= 0.244 af, Atten= 1%, Lag= 2.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.61 fps, Min. Travel Time= 1.2 min

Avg. Velocity= 1.36 fps, Avg. Travel Time= 3.3 min

Peak Storage= 94 cf @ 12.35 hrs

Average Depth at Peak Storage= 0.46' , Surface Width= 1.00'

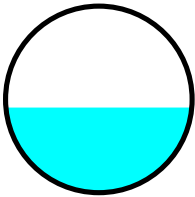
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.95 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

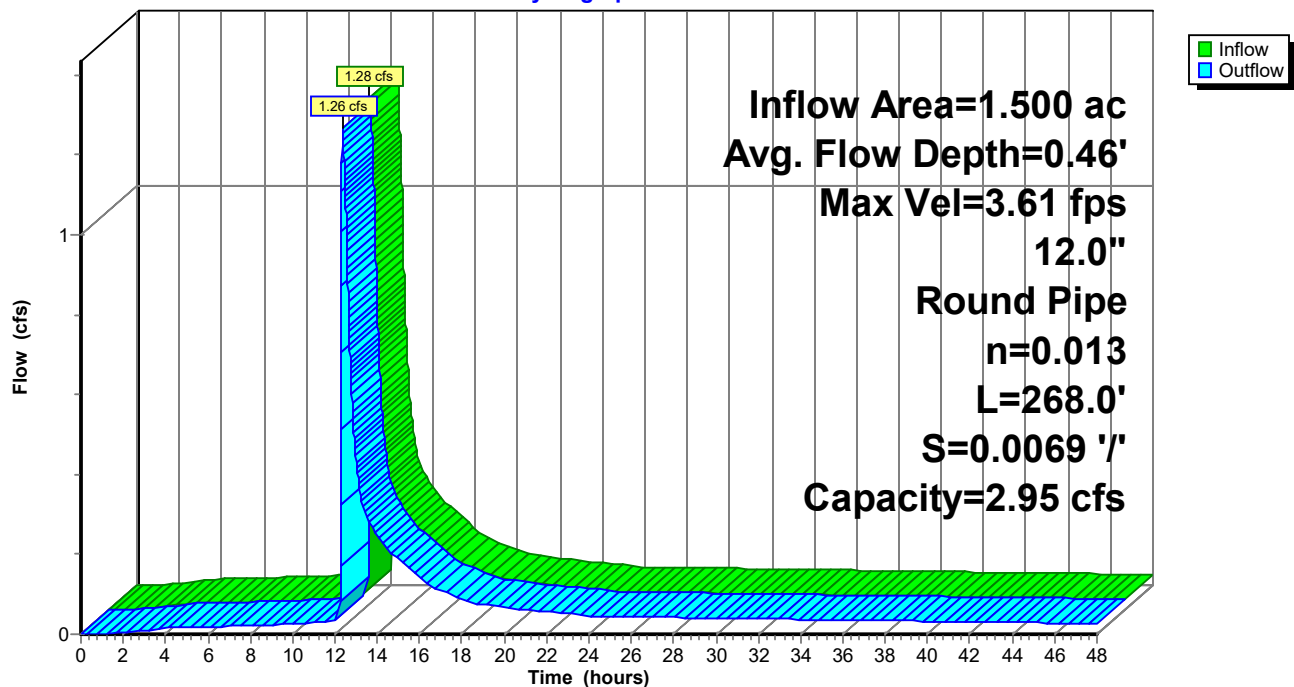
Length= 268.0' Slope= 0.0069 '/'

Inlet Invert= 109.16', Outlet Invert= 107.32'



Reach 15R: Ex SD

Hydrograph



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Summary for Reach 16R: 12" SD

Inflow Area = 0.269 ac, 100.00% Impervious, Inflow Depth = 5.56" for 25-Yr event
Inflow = 1.53 cfs @ 12.08 hrs, Volume= 0.125 af
Outflow = 1.53 cfs @ 12.09 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.80 fps, Min. Travel Time= 0.1 min

Avg. Velocity= 1.29 fps, Avg. Travel Time= 0.2 min

Peak Storage= 7 cf @ 12.08 hrs

Average Depth at Peak Storage= 0.51', Surface Width= 1.00'

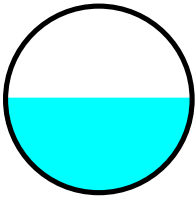
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.96 cfs

12.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

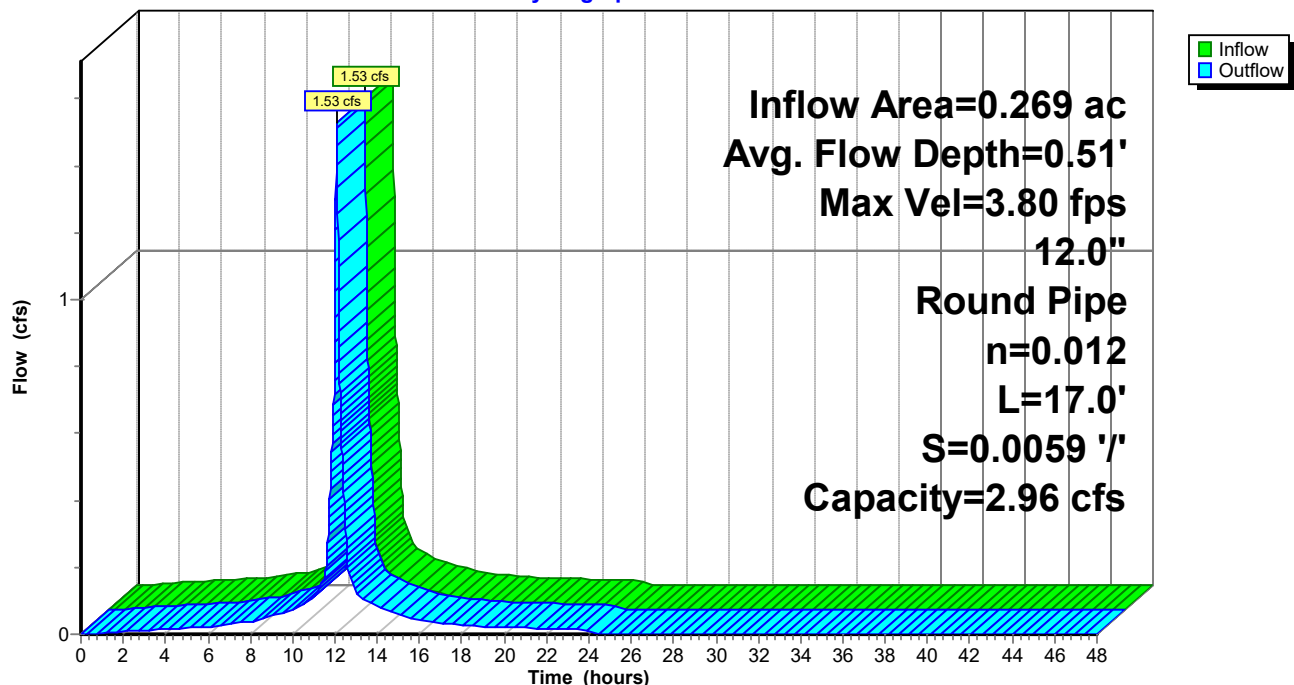
Length= 17.0' Slope= 0.0059 '/'

Inlet Invert= 114.75', Outlet Invert= 114.65'



Reach 16R: 12" SD

Hydrograph



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Summary for Reach 17R: 12" SD

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth = 2.06" for 25-Yr event
Inflow = 2.28 cfs @ 12.10 hrs, Volume= 0.258 af
Outflow = 2.28 cfs @ 12.10 hrs, Volume= 0.258 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 5.62 fps, Min. Travel Time= 0.0 min

Avg. Velocity= 1.82 fps, Avg. Travel Time= 0.1 min

Peak Storage= 5 cf @ 12.10 hrs

Average Depth at Peak Storage= 0.51', Surface Width= 1.00'

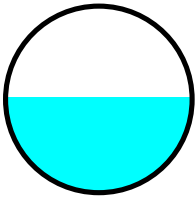
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.36 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

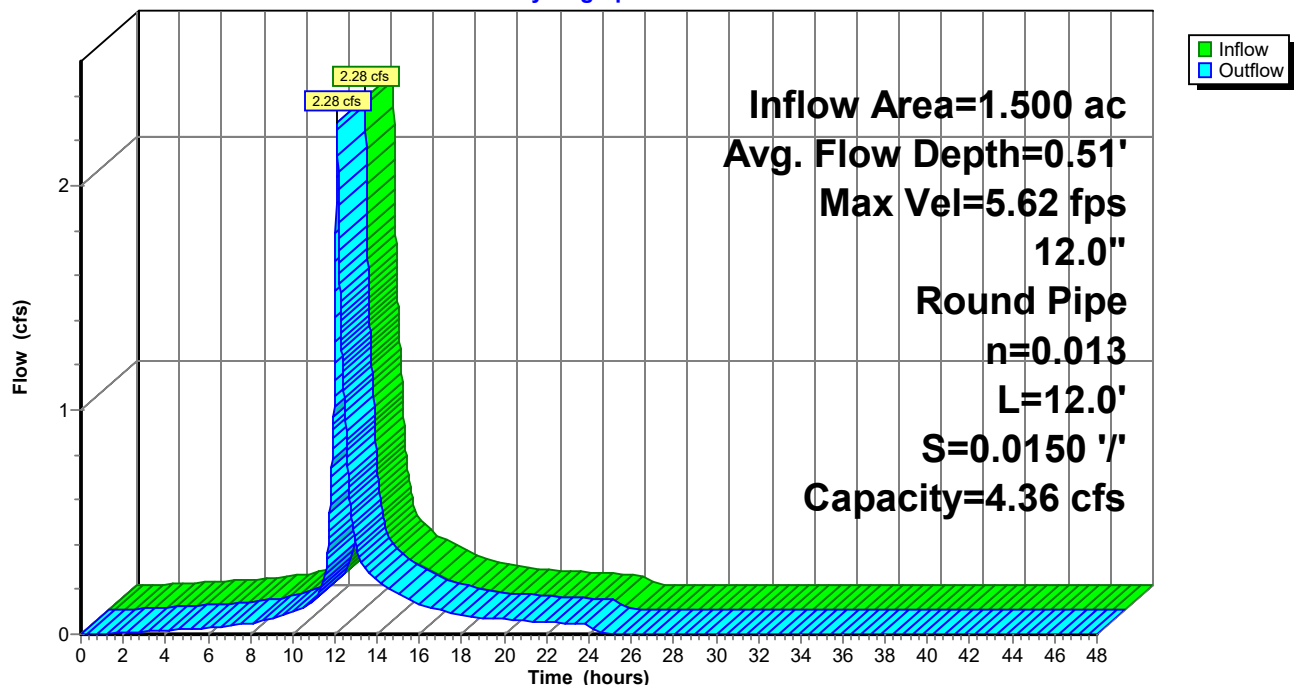
Length= 12.0' Slope= 0.0150 '/'

Inlet Invert= 113.40', Outlet Invert= 113.22'



Reach 17R: 12" SD

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Pond 1P: Raised StormTech SC-740 System

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth = 2.06" for 25-Yr event
 Inflow = 2.28 cfs @ 12.10 hrs, Volume= 0.258 af
 Outflow = 1.28 cfs @ 12.33 hrs, Volume= 0.244 af, Atten= 44%, Lag= 13.4 min
 Primary = 1.28 cfs @ 12.33 hrs, Volume= 0.244 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 113.90' @ 12.33 hrs Surf.Area= 0.053 ac Storage= 0.088 af

Plug-Flow detention time= 447.8 min calculated for 0.244 af (95% of inflow)
 Center-of-Mass det. time= 417.6 min (1,227.3 - 809.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	111.22'	0.007 af	6.25"W x 46.34"L x 3.50'H Field A 0.023 af Overall - 0.006 af Embedded = 0.017 af x 40.0% Voids
#2A	111.72'	0.006 af	ADS_StormTech SC-740 +Cap x 6 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#3B	111.22'	0.010 af	6.25"W x 67.70"L x 3.50'H Field B 0.034 af Overall - 0.009 af Embedded = 0.025 af x 40.0% Voids
#4B	111.72'	0.009 af	ADS_StormTech SC-740 +Cap x 9 Inside #3 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#5C	111.22'	0.018 af	6.25"W x 124.66"L x 3.50'H Field C 0.063 af Overall - 0.018 af Embedded = 0.045 af x 40.0% Voids
#6C	111.72'	0.018 af	ADS_StormTech SC-740 +Cap x 17 Inside #5 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#7D	111.22'	0.019 af	6.25"W x 131.78"L x 3.50'H Field D 0.066 af Overall - 0.019 af Embedded = 0.047 af x 40.0% Voids
#8D	111.72'	0.019 af	ADS_StormTech SC-740 +Cap x 18 Inside #7 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		0.106 af	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard
 Storage Group C created with Chamber Wizard
 Storage Group D created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	110.72'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 3	113.72'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#3	Primary	110.72'	12.0" Round Culvert L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 110.72' / 110.69' S= 0.0100 '/' Cc= 0.900

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$n = 0.013$ Corrugated PE, smooth interior, Flow Area= 0.79 sf

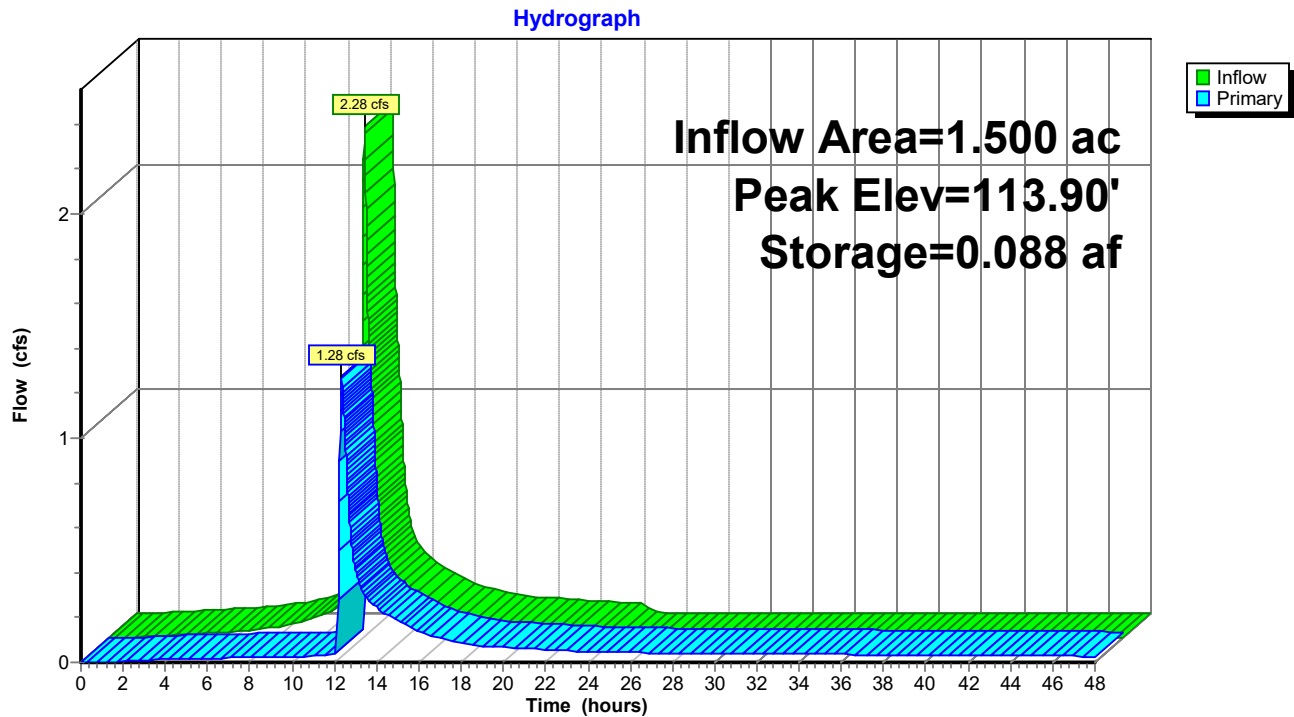
Primary OutFlow Max=1.28 cfs @ 12.33 hrs HW=113.90' (Free Discharge)

3=Culvert (Passes 1.28 cfs of 4.88 cfs potential flow)

1=Orifice/Grate (Orifice Controls 0.05 cfs @ 8.53 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 1.23 cfs @ 1.16 fps)

Pond 1P: Raised StormTech SC-740 System



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Summary for Pond 4P: PP1

Inflow Area = 0.050 ac, 81.59% Impervious, Inflow Depth = 4.33" for 25-Yr event
 Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.018 af
 Outflow = 0.20 cfs @ 12.14 hrs, Volume= 0.017 af, Atten= 17%, Lag= 3.2 min
 Primary = 0.20 cfs @ 12.14 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 116.01' @ 12.14 hrs Surf.Area= 1,110 sf Storage= 152 cf

Plug-Flow detention time= 83.2 min calculated for 0.017 af (92% of inflow)
 Center-of-Mass det. time= 43.0 min (838.8 - 795.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.59'	939 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.59	1,110	0.0	0	0
115.60	1,110	20.0	2	2
116.35	1,110	33.0	275	277
116.68	1,110	40.0	147	423
117.00	1,110	20.0	71	495
119.00	1,110	20.0	444	939

Device	Routing	Invert	Outlet Devices	
#1	Primary	115.76'	7.500 in/hr Exfiltration over Surface area above 115.76' Excluded Surface area = 1,110 sf	
#2	Primary	115.76'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Primary OutFlow Max=0.20 cfs @ 12.14 hrs HW=116.01' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.00 cfs)

— **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 1.70 fps)

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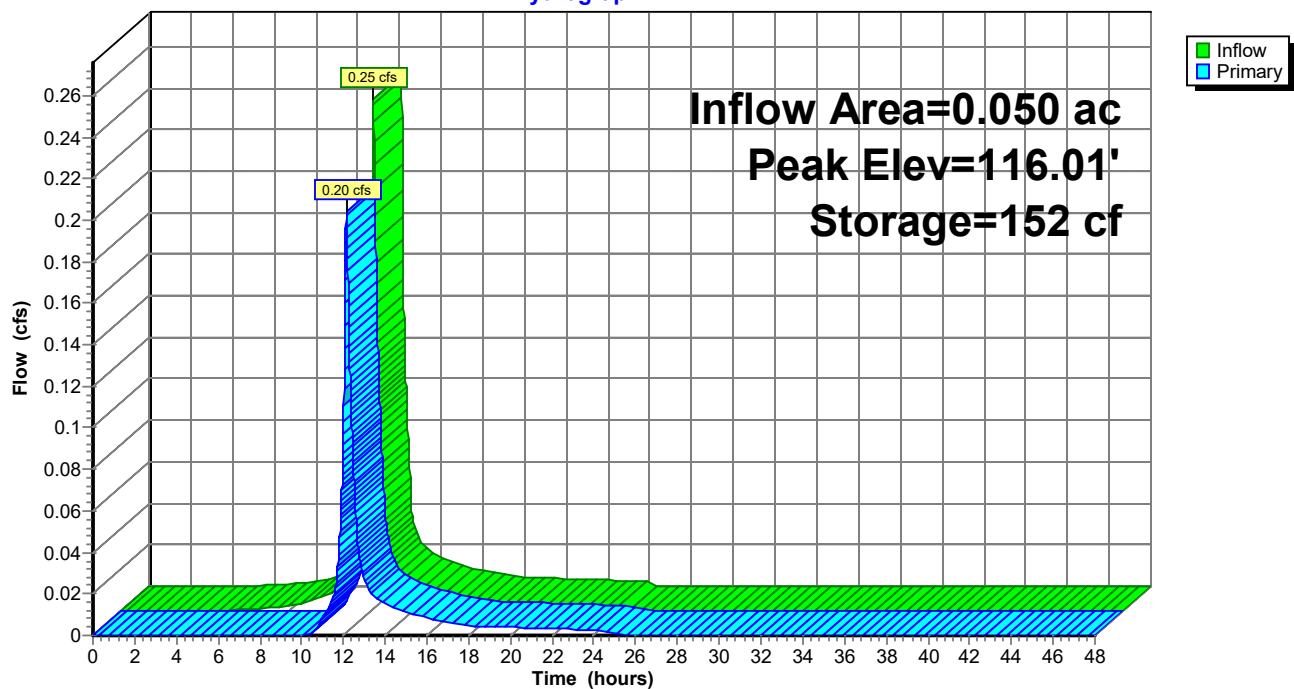
Type III 24-hr 25-Yr Rainfall=5.80"

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Pond 4P: PP1

Hydrograph



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Pond 8P: CB 7

Inflow Area = 3.134 ac, 65.36% Impervious, Inflow Depth = 1.60" for 25-Yr event
Inflow = 6.03 cfs @ 12.11 hrs, Volume= 0.418 af
Outflow = 6.03 cfs @ 12.11 hrs, Volume= 0.418 af, Atten= 0%, Lag= 0.0 min
Primary = 6.03 cfs @ 12.11 hrs, Volume= 0.418 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 116.63' @ 12.11 hrs

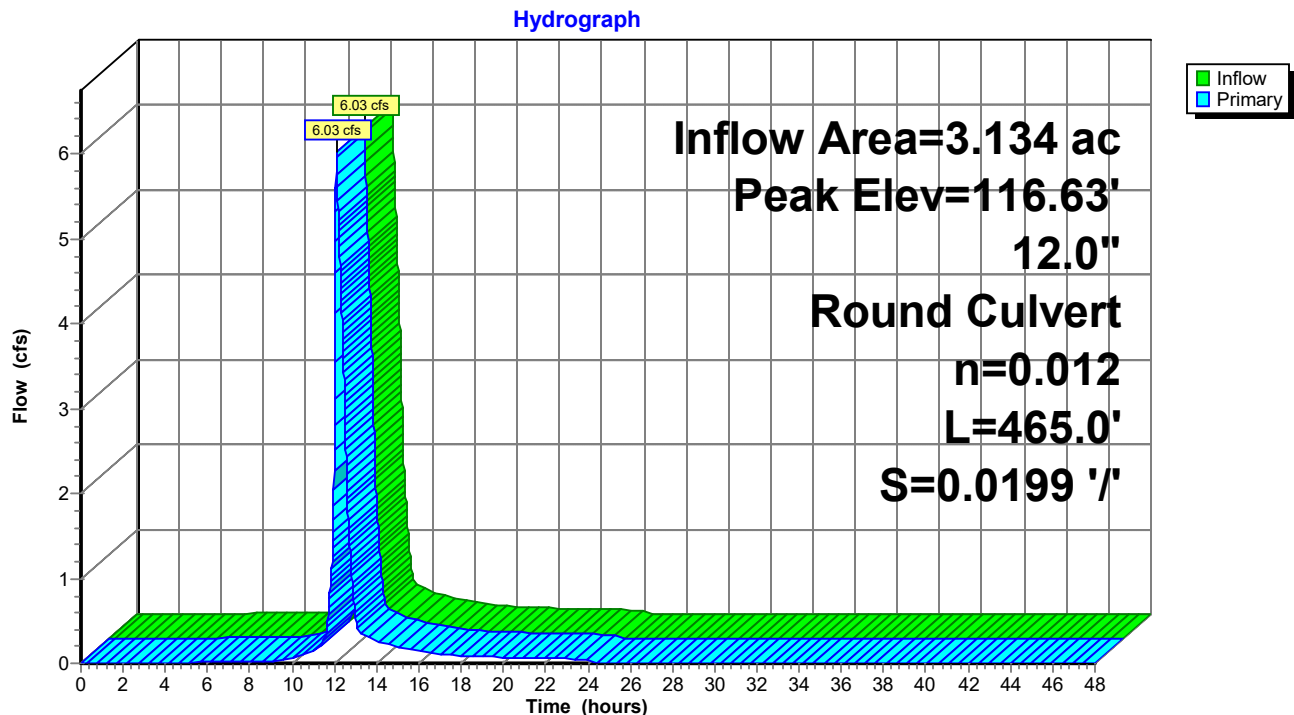
Flood Elev= 117.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	112.15'	12.0" Round Culvert L= 465.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 112.15' / 102.89' S= 0.0199 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=6.02 cfs @ 12.11 hrs HW=116.61' (Free Discharge)

↑1=Culvert (Barrel Controls 6.02 cfs @ 7.66 fps)

Pond 8P: CB 7



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Pond 12P: PP2

Inflow Area = 0.077 ac, 100.00% Impervious, Inflow Depth = 5.56" for 25-Yr event
 Inflow = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af
 Outflow = 0.36 cfs @ 12.14 hrs, Volume= 0.036 af, Atten= 18%, Lag= 3.4 min
 Primary = 0.36 cfs @ 12.14 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.99' @ 12.14 hrs Surf.Area= 1,212 sf Storage= 160 cf

Plug-Flow detention time= 24.6 min calculated for 0.036 af (100% of inflow)
 Center-of-Mass det. time= 23.6 min (769.2 - 745.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.59'	1,025 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.59	1,212	0.0	0	0
115.60	1,212	20.0	2	2
116.35	1,212	33.0	300	302
116.68	1,212	40.0	160	462
117.00	1,212	20.0	78	540
119.00	1,212	20.0	485	1,025

Device	Routing	Invert	Outlet Devices
#1	Primary	115.76'	7.500 in/hr Exfiltration over Surface area above 115.76' Excluded Surface area = 1,212 sf
#2	Primary	115.60'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.36 cfs @ 12.14 hrs HW=115.99' (Free Discharge)

1=Exfiltration (Exfiltration Controls 0.00 cfs)

2=Orifice/Grate (Orifice Controls 0.36 cfs @ 2.14 fps)

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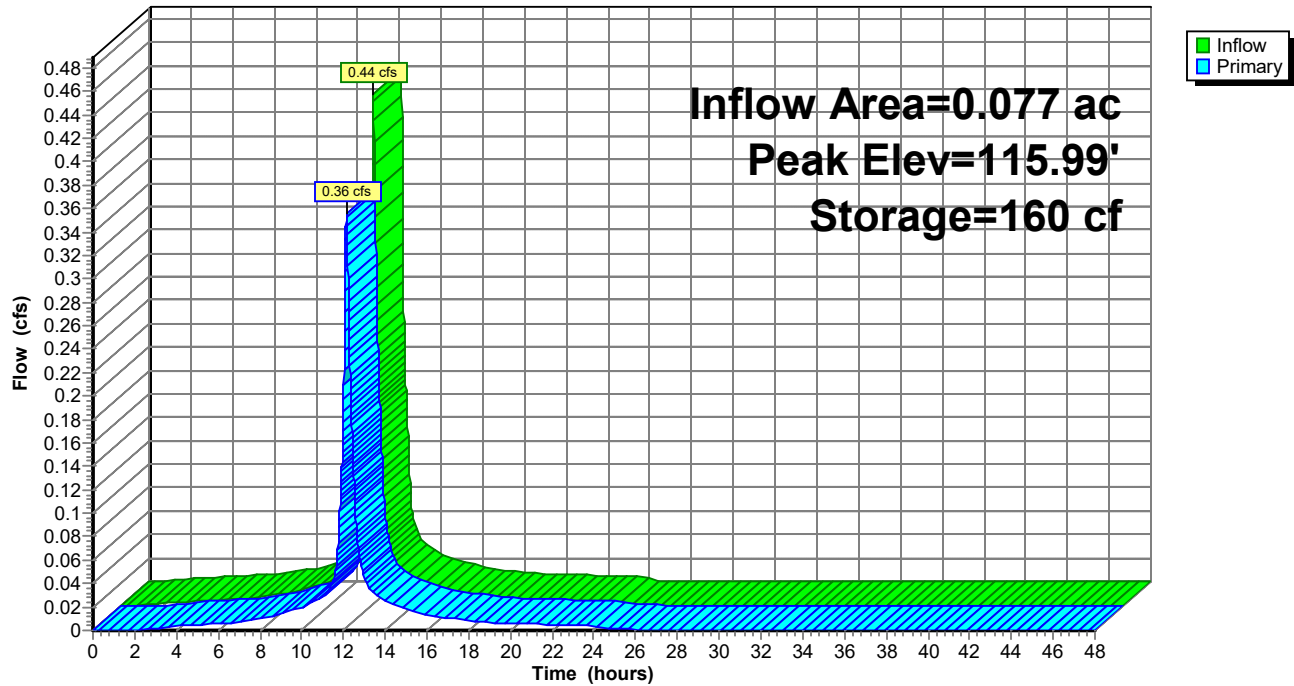
Type III 24-hr 25-Yr Rainfall=5.80"

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Pond 12P: PP2

Hydrograph



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Summary for Pond 14P: Rain Garden West

Inflow Area = 0.503 ac, 7.99% Impervious, Inflow Depth = 0.66" for 25-Yr event
 Inflow = 0.16 cfs @ 12.36 hrs, Volume= 0.028 af
 Outflow = 0.13 cfs @ 12.56 hrs, Volume= 0.025 af, Atten= 20%, Lag= 11.9 min
 Primary = 0.13 cfs @ 12.56 hrs, Volume= 0.025 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 120.32' @ 12.56 hrs Surf.Area= 631 sf Storage= 174 cf

Plug-Flow detention time= 83.0 min calculated for 0.025 af (89% of inflow)
 Center-of-Mass det. time= 33.1 min (968.5 - 935.4)

Volume	Invert	Avail.Storage	Storage Description
#1	120.00'	729 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.00	453	0	0
121.00	1,005	729	729

Device	Routing	Invert	Outlet Devices
#1	Device 2	120.25'	8.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	117.25'	8.0" Round Culvert L= 187.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 117.25' / 115.25' S= 0.0107 ' S= 0.0107 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.13 cfs @ 12.56 hrs HW=120.32' (Free Discharge)

↑ **2=Culvert** (Passes 0.13 cfs of 1.71 cfs potential flow)
 ↑ **1=Orifice/Grate** (Weir Controls 0.13 cfs @ 0.87 fps)

Pre-Development

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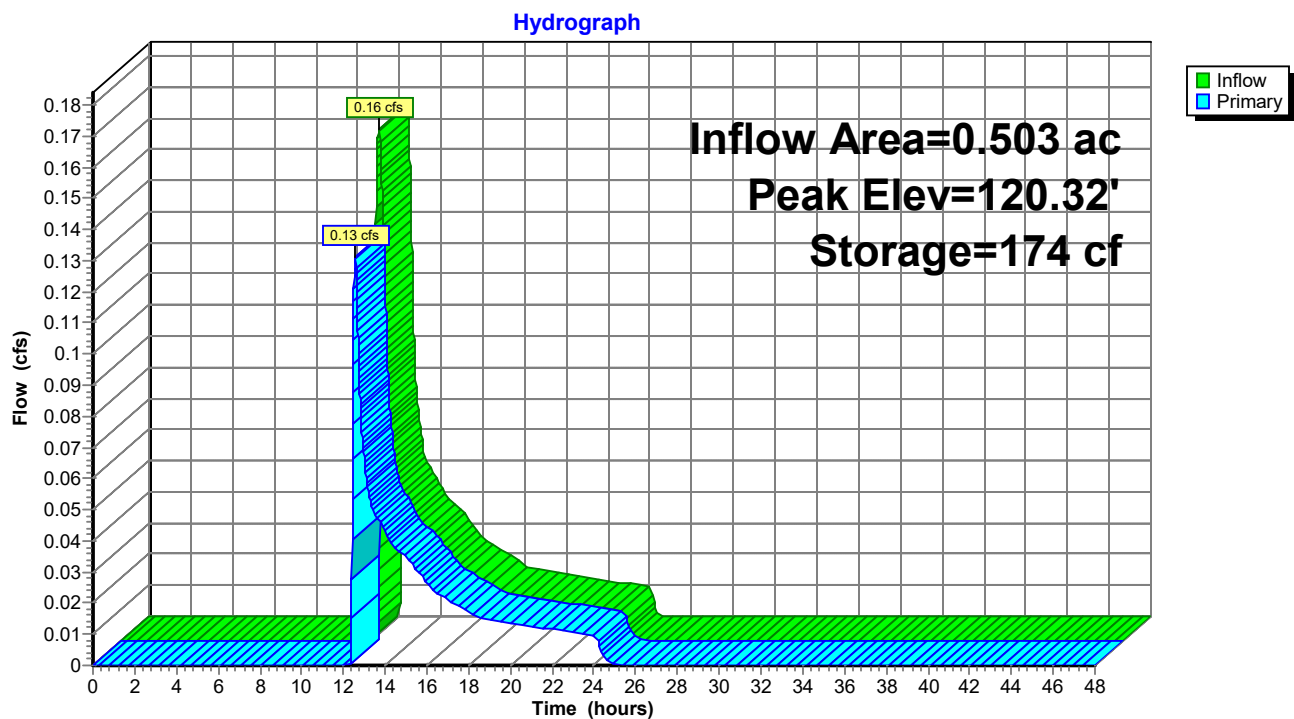
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Pond 14P: Rain Garden West



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Type III 24-hr 25-Yr Rainfall=5.80"

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Summary for Pond DS-2: Drip Strip

Inflow Area = 0.220 ac, 79.17% Impervious, Inflow Depth = 4.99" for 25-Yr event
 Inflow = 1.20 cfs @ 12.08 hrs, Volume= 0.092 af
 Outflow = 0.54 cfs @ 12.26 hrs, Volume= 0.092 af, Atten= 55%, Lag= 10.4 min
 Discarded = 0.28 cfs @ 11.76 hrs, Volume= 0.087 af
 Primary = 0.26 cfs @ 12.26 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 116.14' @ 12.26 hrs Surf.Area= 1,600 sf Storage= 706 cf

Plug-Flow detention time= 11.7 min calculated for 0.092 af (100% of inflow)
 Center-of-Mass det. time= 11.7 min (785.7 - 774.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 11.76 hrs HW=115.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.26 cfs @ 12.26 hrs HW=116.14' (Free Discharge)

↑ **2=Orifice/Grate** (Weir Controls 0.26 cfs @ 1.21 fps)

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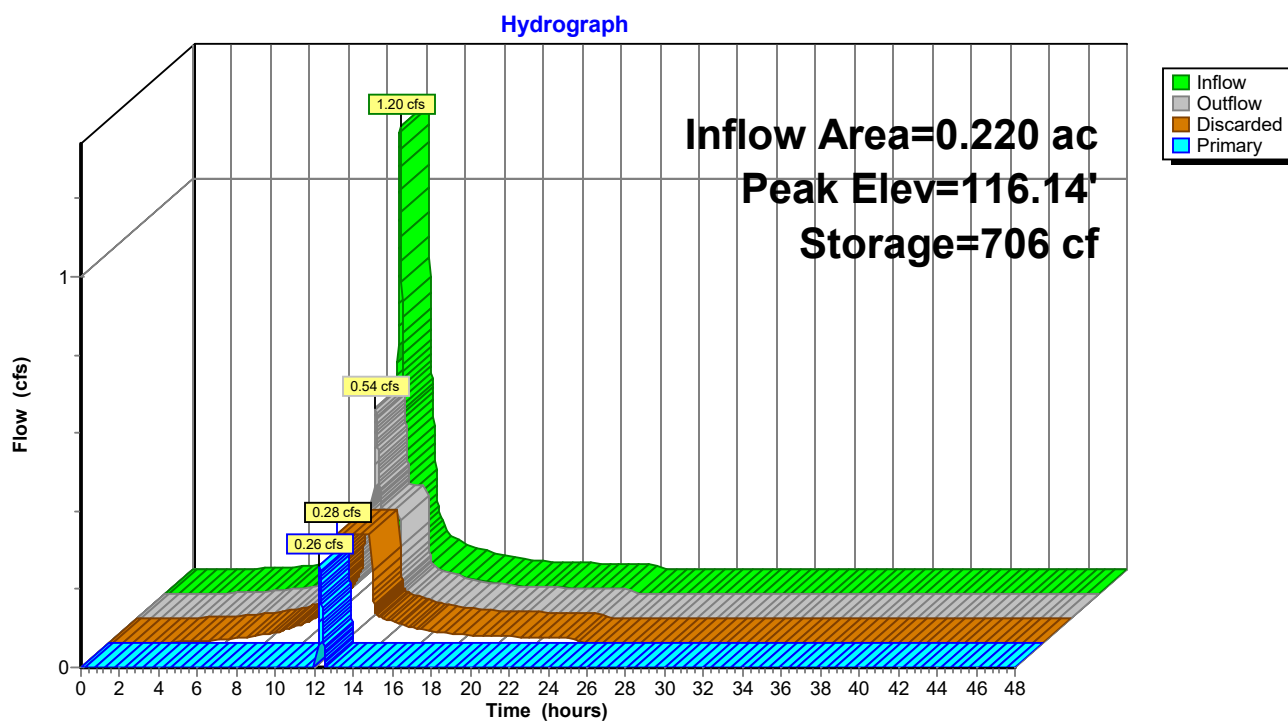
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Type III 24-hr 25-Yr Rainfall=5.80"

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Pond DS-2: Drip Strip



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Summary for Pond DS-3: Drip Strip

Inflow Area = 0.399 ac, 76.31% Impervious, Inflow Depth = 4.99" for 25-Yr event
 Inflow = 2.17 cfs @ 12.08 hrs, Volume= 0.166 af
 Outflow = 1.26 cfs @ 12.19 hrs, Volume= 0.166 af, Atten= 42%, Lag= 6.6 min
 Discarded = 0.28 cfs @ 11.62 hrs, Volume= 0.129 af
 Primary = 0.98 cfs @ 12.19 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 117.08' @ 12.19 hrs Surf.Area= 1,600 sf Storage= 1,168 cf

Plug-Flow detention time= 11.5 min calculated for 0.166 af (100% of inflow)
 Center-of-Mass det. time= 11.5 min (785.4 - 774.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 11.62 hrs HW=115.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.98 cfs @ 12.19 hrs HW=117.07' (Free Discharge)

↑ **2=Orifice/Grate** (Orifice Controls 0.98 cfs @ 4.99 fps)

Pre-Development

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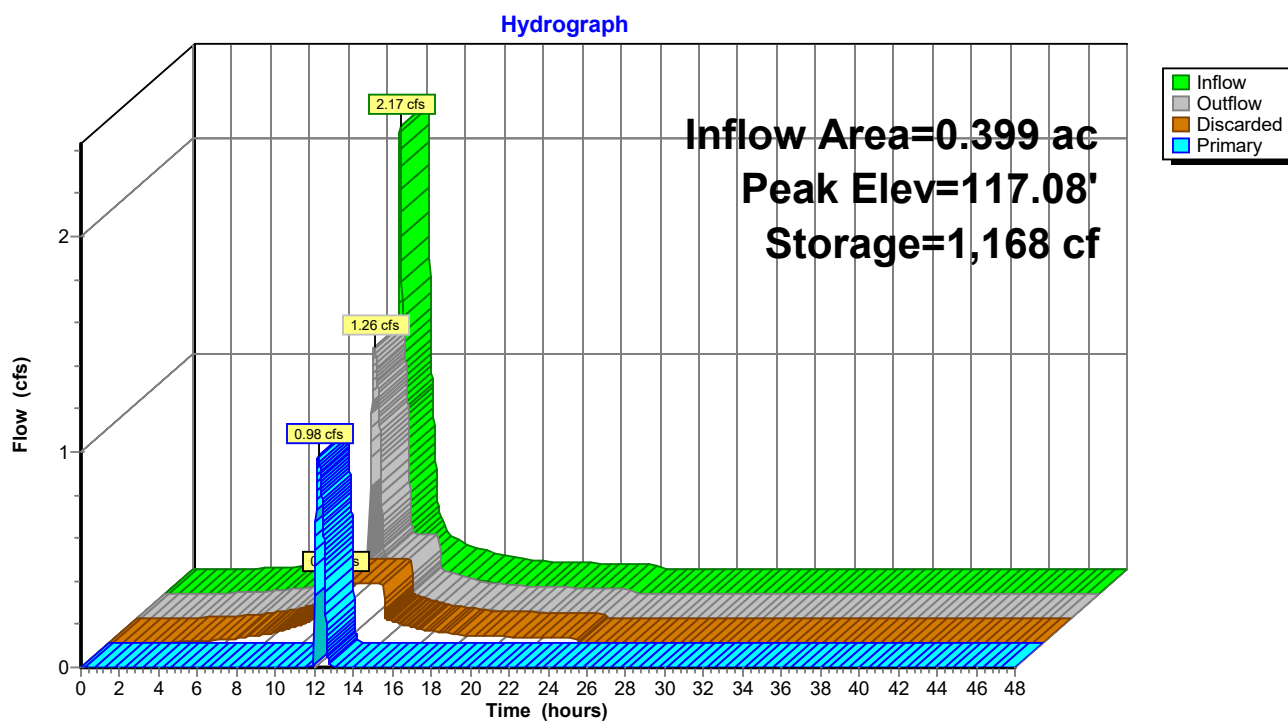
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Pond DS-3: Drip Strip



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Summary for Pond DS1: Drip Strip

Inflow Area = 0.220 ac, 79.17% Impervious, Inflow Depth = 4.99" for 25-Yr event
 Inflow = 1.20 cfs @ 12.08 hrs, Volume= 0.092 af
 Outflow = 0.54 cfs @ 12.26 hrs, Volume= 0.092 af, Atten= 55%, Lag= 10.4 min
 Discarded = 0.28 cfs @ 11.76 hrs, Volume= 0.087 af
 Primary = 0.26 cfs @ 12.26 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 116.14' @ 12.26 hrs Surf.Area= 1,600 sf Storage= 706 cf

Plug-Flow detention time= 11.7 min calculated for 0.092 af (100% of inflow)
 Center-of-Mass det. time= 11.7 min (785.7 - 774.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 11.76 hrs HW=115.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.26 cfs @ 12.26 hrs HW=116.14' (Free Discharge)

↑ **2=Orifice/Grate** (Weir Controls 0.26 cfs @ 1.21 fps)

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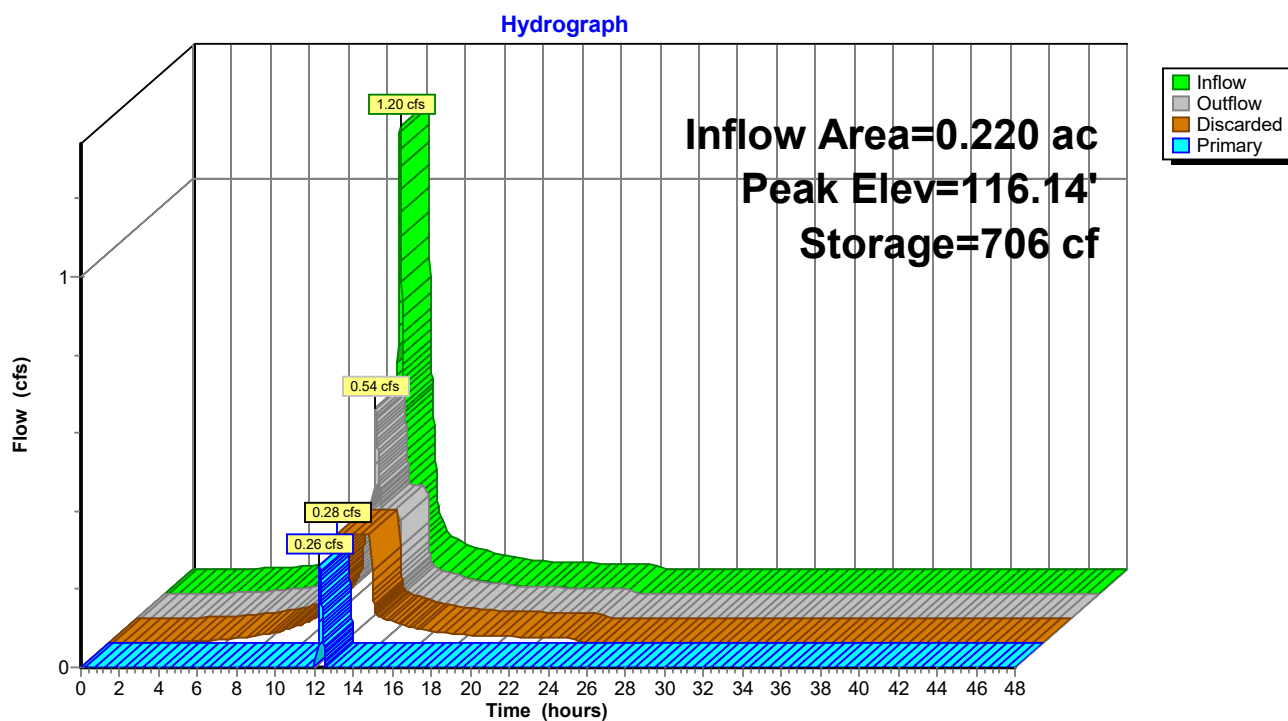
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Pond DS1: Drip Strip



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Summary for Pond IT-1: Infiltration Trench

Inflow Area = 1.179 ac, 68.48% Impervious, Inflow Depth = 2.37" for 25-Yr event
 Inflow = 3.07 cfs @ 12.10 hrs, Volume= 0.233 af
 Outflow = 1.61 cfs @ 12.29 hrs, Volume= 0.233 af, Atten= 48%, Lag= 11.9 min
 Discarded = 0.28 cfs @ 11.56 hrs, Volume= 0.151 af
 Primary = 1.33 cfs @ 12.29 hrs, Volume= 0.082 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.23' @ 12.29 hrs Surf.Area= 1,600 sf Storage= 1,748 cf

Plug-Flow detention time= 12.1 min calculated for 0.233 af (100% of inflow)
 Center-of-Mass det. time= 12.1 min (814.0 - 801.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	112.00'	2,880 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.00	1,600	0.0	0	0
113.00	1,600	30.0	480	480
114.00	1,600	30.0	480	960
115.00	1,600	40.0	640	1,600
116.00	1,600	40.0	640	2,240
117.00	1,600	40.0	640	2,880

Device	Routing	Invert	Outlet Devices	
#1	Discarded	112.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	113.00'	6.0" Vert. Orifice/Grate	C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.28 cfs @ 11.56 hrs HW=112.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=1.33 cfs @ 12.29 hrs HW=115.23' (Free Discharge)

↑ **2=Orifice/Grate** (Orifice Controls 1.33 cfs @ 6.78 fps)

Pre-Development

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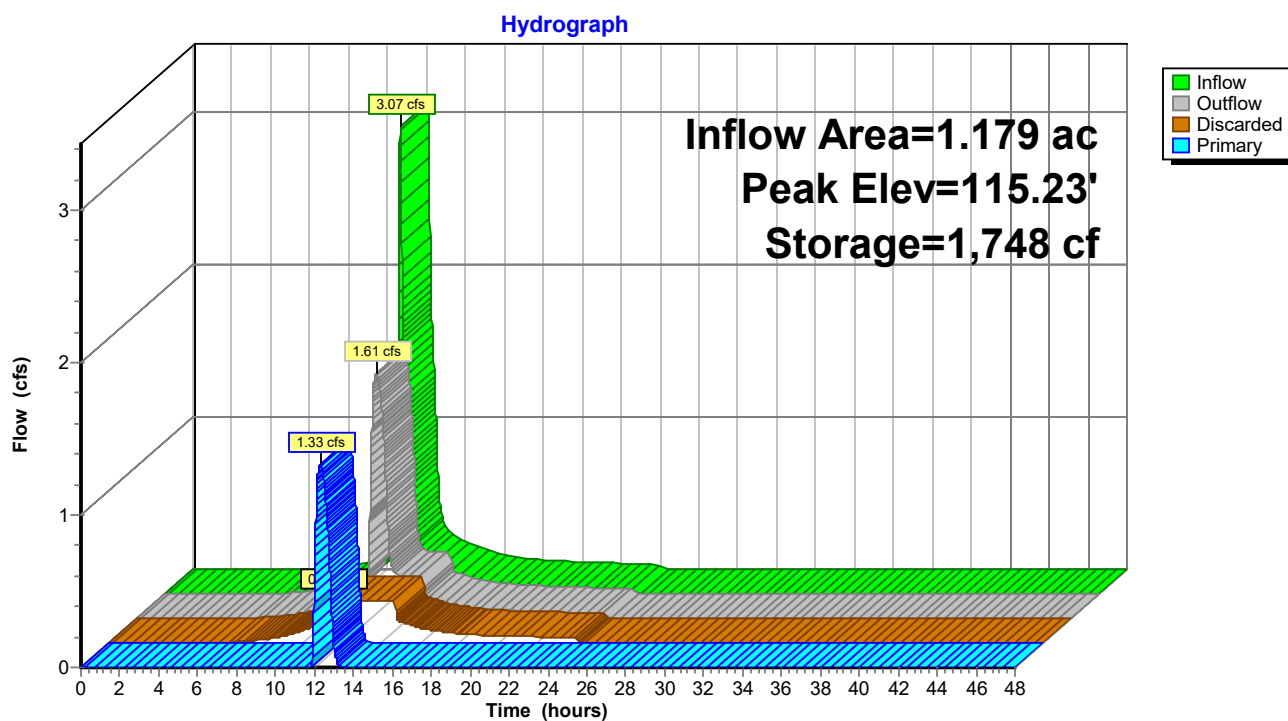
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Pond IT-1: Infiltration Trench



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Summary for Pond RG-1: Rain Garden

Inflow Area = 0.168 ac, 58.87% Impervious, Inflow Depth = 3.02" for 25-Yr event
Inflow = 0.59 cfs @ 12.09 hrs, Volume= 0.042 af
Outflow = 0.43 cfs @ 12.17 hrs, Volume= 0.042 af, Atten= 28%, Lag= 4.6 min
Discarded = 0.08 cfs @ 11.70 hrs, Volume= 0.031 af
Primary = 0.35 cfs @ 12.17 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 115.86' @ 12.17 hrs Surf.Area= 460 sf Storage= 206 cf

Plug-Flow detention time= 5.8 min calculated for 0.042 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (836.2 - 830.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	114.50'	1,185 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
114.50	460	33.0	0	0
115.00	460	33.0	76	76
115.50	460	33.0	76	152
116.00	460	33.0	76	228
116.50	460	100.0	230	458
117.00	460	100.0	230	688
117.50	505	100.0	241	929
118.00	520	100.0	256	1,185

Device	Routing	Invert	Outlet Devices
#1	Discarded	114.50'	7.500 in/hr Exfiltration over Surface area
#2	Device 3	115.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	114.50'	8.0" Round Culvert L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 114.50' / 112.15' S= 0.0157 ' S= 0.0157 ' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#4	Device 3	117.50'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.08 cfs @ 11.70 hrs HW=114.54' (Free Discharge)
↑ **1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.35 cfs @ 12.17 hrs HW=115.86' (Free Discharge)
↑ **3=Culvert** (Passes 0.35 cfs of 1.69 cfs potential flow)
↑ **2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 4.00 fps)
↑ **4=Orifice/Grate** (Controls 0.00 cfs)

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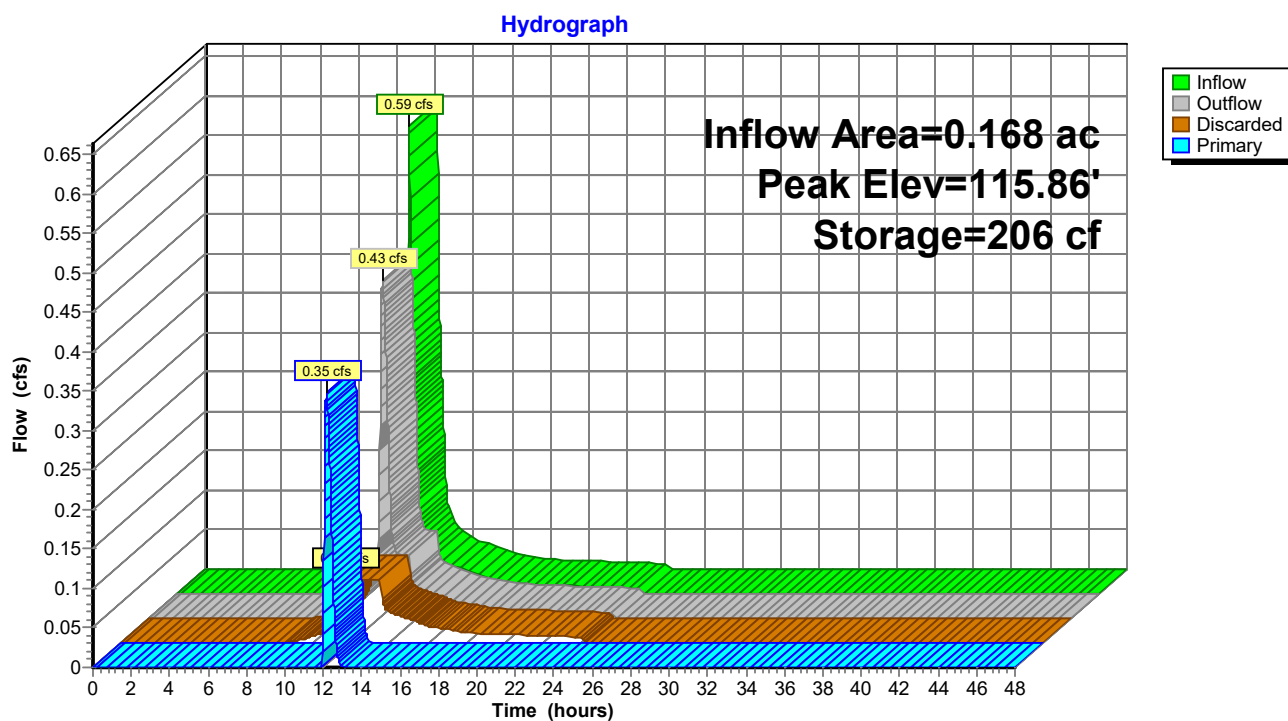
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Pond RG-1: Rain Garden



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Summary for Pond RG-2: Rain Garden

Inflow Area = 0.478 ac, 64.28% Impervious, Inflow Depth = 1.50" for 25-Yr event
Inflow = 0.77 cfs @ 12.09 hrs, Volume= 0.060 af
Outflow = 0.50 cfs @ 12.36 hrs, Volume= 0.060 af, Atten= 35%, Lag= 15.9 min
Discarded = 0.17 cfs @ 11.82 hrs, Volume= 0.047 af
Primary = 0.33 cfs @ 12.36 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 115.78' @ 12.36 hrs Surf.Area= 960 sf Storage= 408 cf

Plug-Flow detention time= 6.8 min calculated for 0.060 af (100% of inflow)
Center-of-Mass det. time= 6.8 min (841.0 - 834.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	114.49'	2,177 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
114.49	960	0.0	0	0
114.50	960	33.0	3	3
115.00	960	33.0	158	162
115.50	960	33.0	158	320
116.00	960	33.0	158	478
116.50	960	33.0	158	637
117.00	960	100.0	480	1,117
117.50	1,040	100.0	500	1,617
118.00	1,200	100.0	560	2,177

Device	Routing	Invert	Outlet Devices
#1	Discarded	114.49'	7.500 in/hr Exfiltration over Surface area
#2	Device 3	115.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	114.50'	8.0" Round Culvert L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 114.50' / 113.00' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#4	Device 3	117.50'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.17 cfs @ 11.82 hrs HW=114.50' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=0.33 cfs @ 12.36 hrs HW=115.78' (Free Discharge)

↑ **3=Culvert** (Passes 0.33 cfs of 1.41 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.33 cfs @ 3.76 fps)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

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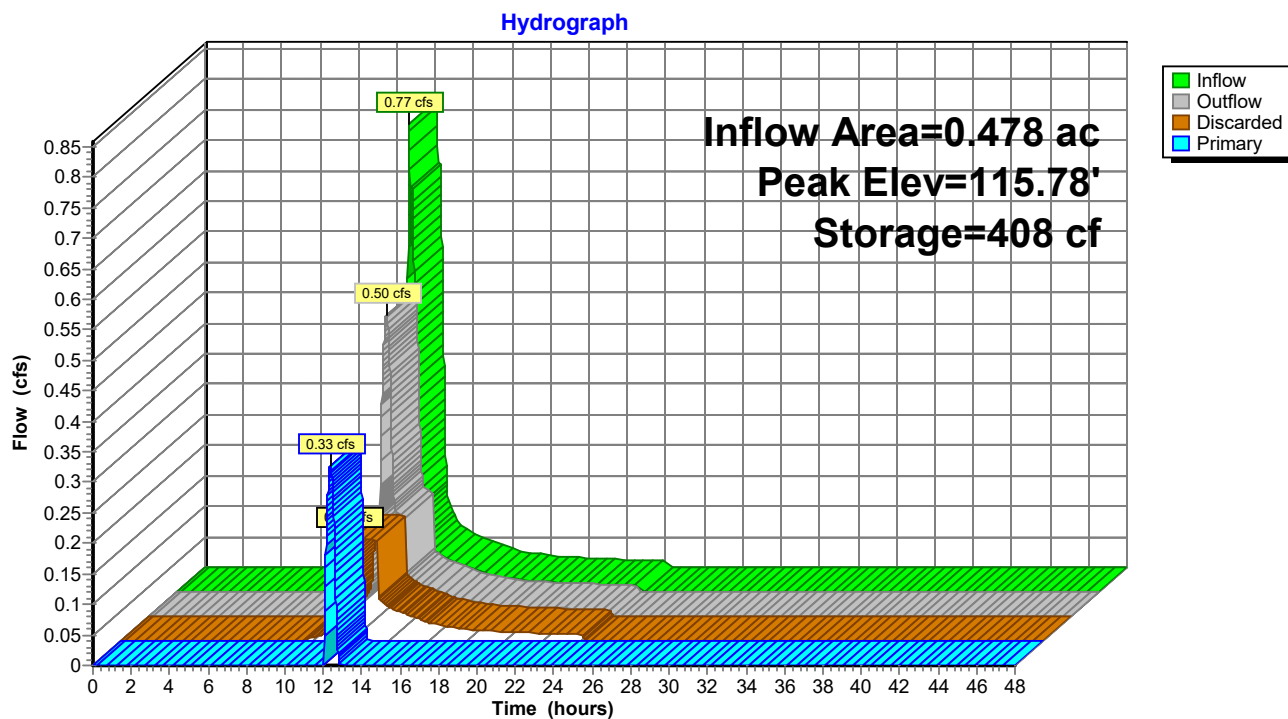
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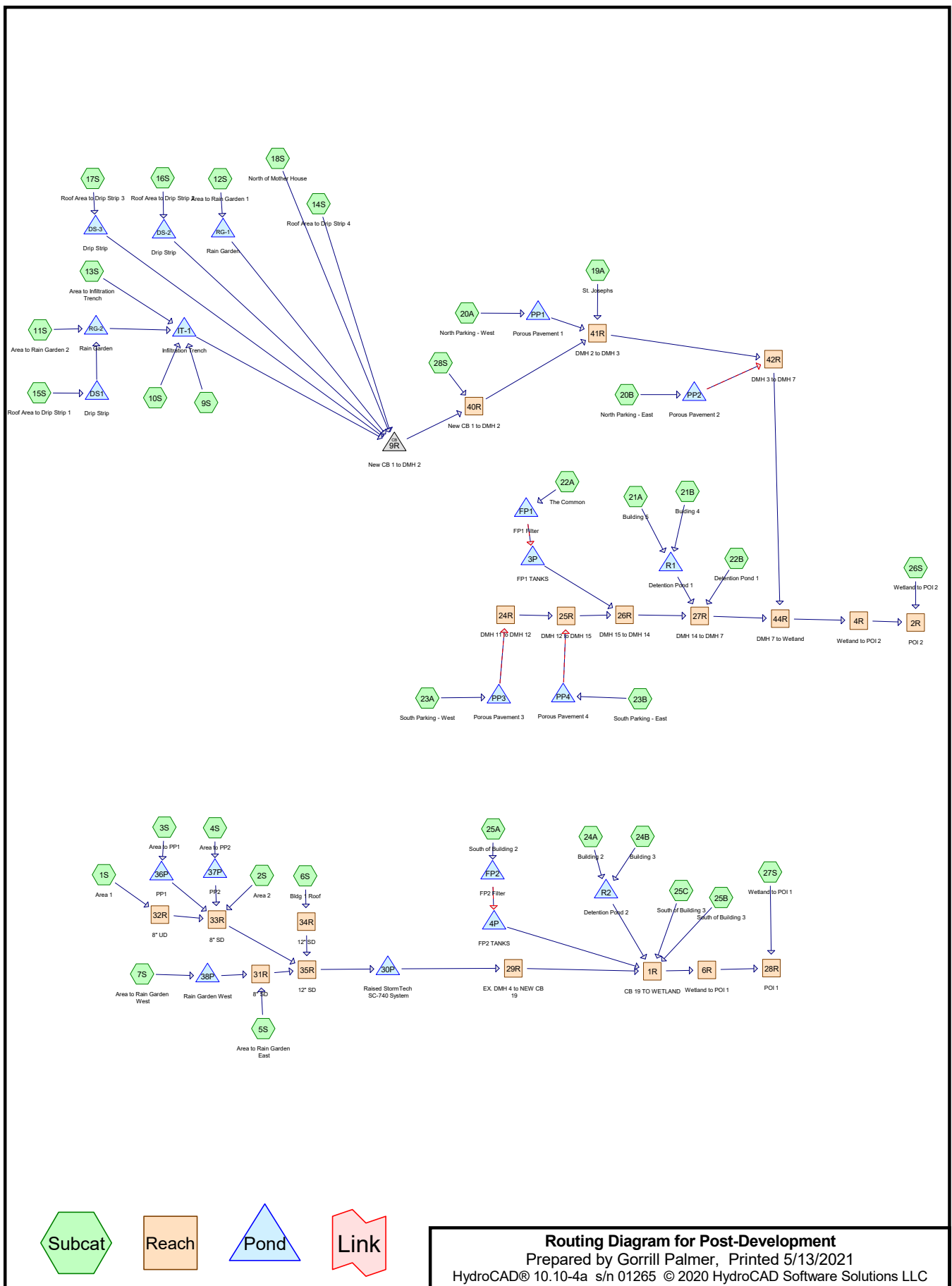
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Pond RG-2: Rain Garden





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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Area 1	Runoff Area=15,851 sf 17.16% Impervious Runoff Depth=0.09" Flow Length=300' Tc=20.7 min CN=49 Runoff=0.00 cfs 0.003 af
Subcatchment 2S: Area 2	Runoff Area=1,429 sf 70.05% Impervious Runoff Depth=1.33" Tc=6.0 min CN=80 Runoff=0.05 cfs 0.004 af
Subcatchment 3S: Area to PP1	Runoff Area=2,173 sf 81.59% Impervious Runoff Depth=1.83" Tc=6.0 min CN=87 Runoff=0.11 cfs 0.008 af
Subcatchment 4S: Area to PP2	Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.23 cfs 0.018 af
Subcatchment 5S: Area to Rain Garden East	Runoff Area=8,904 sf 17.46% Impervious Runoff Depth=0.09" Flow Length=150' Slope=0.0200 '/' Tc=9.2 min CN=49 Runoff=0.00 cfs 0.002 af
Subcatchment 6S: Bldg 1 Roof	Runoff Area=11,717 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.81 cfs 0.064 af
Subcatchment 7S: Area to Rain Garden	Runoff Area=21,901 sf 7.99% Impervious Runoff Depth=0.02" Flow Length=170' Tc=14.0 min CN=44 Runoff=0.00 cfs 0.001 af
Subcatchment 9S:	Runoff Area=1,785 sf 50.98% Impervious Runoff Depth=0.72" Tc=6.0 min CN=69 Runoff=0.03 cfs 0.002 af
Subcatchment 10S:	Runoff Area=12,293 sf 82.32% Impervious Runoff Depth=1.91" Tc=6.0 min CN=88 Runoff=0.63 cfs 0.045 af
Subcatchment 11S: Area to Rain Garden 2	Runoff Area=11,240 sf 51.56% Impervious Runoff Depth=0.72" Tc=6.0 min CN=69 Runoff=0.19 cfs 0.016 af
Subcatchment 12S: Area to Rain Garden 1	Runoff Area=7,303 sf 58.87% Impervious Runoff Depth=0.97" Tc=6.0 min CN=74 Runoff=0.18 cfs 0.014 af
Subcatchment 13S: Area to Infiltration	Runoff Area=15,495 sf 77.47% Impervious Runoff Depth=1.67" Tc=6.0 min CN=85 Runoff=0.70 cfs 0.050 af
Subcatchment 14S: Roof Area to Drip	Runoff Area=6,080 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.42 cfs 0.033 af
Subcatchment 15S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=2.35" Tc=6.0 min CN=93 Runoff=0.59 cfs 0.043 af
Subcatchment 16S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=2.35" Tc=6.0 min CN=93 Runoff=0.59 cfs 0.043 af
Subcatchment 17S: Roof Area to Drip	Runoff Area=17,390 sf 76.31% Impervious Runoff Depth=2.35" Tc=6.0 min CN=93 Runoff=1.07 cfs 0.078 af

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Subcatchment 18S: North of Mother House Runoff Area=44,775 sf 50.92% Impervious Runoff Depth=0.72"
Tc=6.0 min CN=69 Runoff=0.75 cfs 0.062 af

Subcatchment 19A: St. Josephs Runoff Area=57,470 sf 35.07% Impervious Runoff Depth=0.37"
Flow Length=407' Tc=19.8 min CN=60 Runoff=0.23 cfs 0.041 af

Subcatchment 20A: North Parking - West Runoff Area=19,180 sf 72.24% Impervious Runoff Depth=1.46"
Tc=6.0 min CN=82 Runoff=0.75 cfs 0.054 af

Subcatchment 20B: North Parking - East Runoff Area=15,935 sf 73.59% Impervious Runoff Depth=1.46"
Tc=6.0 min CN=82 Runoff=0.62 cfs 0.044 af

Subcatchment 21A: Building 5 Runoff Area=19,410 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.34 cfs 0.106 af

Subcatchment 21B: Buiding 4 Runoff Area=12,580 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=0.87 cfs 0.069 af

Subcatchment 22A: The Common Runoff Area=35,370 sf 23.11% Impervious Runoff Depth=0.05"
Flow Length=209' Slope=0.0100 '/' Tc=23.0 min UI Adjusted CN=46 Runoff=0.00 cfs 0.003 af

Subcatchment 22B: Detention Pond 1 Runoff Area=8,850 sf 13.39% Impervious Runoff Depth=0.06"
Tc=6.0 min CN=47 Runoff=0.00 cfs 0.001 af

Subcatchment 23A: South Parking - West Runoff Area=18,825 sf 64.46% Impervious Runoff Depth=1.14"
Tc=6.0 min CN=77 Runoff=0.56 cfs 0.041 af

Subcatchment 23B: South Parking - East Runoff Area=9,870 sf 63.12% Impervious Runoff Depth=1.08"
Tc=6.0 min CN=76 Runoff=0.28 cfs 0.020 af

Subcatchment 24A: Building 2 Runoff Area=12,580 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=0.87 cfs 0.069 af

Subcatchment 24B: Building 3 Runoff Area=19,410 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.34 cfs 0.106 af

Subcatchment 25A: South of Building 2 Runoff Area=22,380 sf 21.94% Impervious Runoff Depth=0.55"
Flow Length=140' Slope=0.0100 '/' Tc=25.0 min CN=65 Runoff=0.16 cfs 0.024 af

Subcatchment 25B: South of Building 3 Runoff Area=9,075 sf 8.10% Impervious Runoff Depth=1.08"
Tc=6.0 min CN=76 Runoff=0.25 cfs 0.019 af

Subcatchment 25C: South of Building 3 Runoff Area=2,390 sf 19.25% Impervious Runoff Depth=1.26"
Tc=6.0 min CN=79 Runoff=0.08 cfs 0.006 af

Subcatchment 26S: Wetland to POI 2 Runoff Area=10,500 sf 5.52% Impervious Runoff Depth=0.44"
Flow Length=155' Slope=0.0500 '/' Tc=22.1 min CN=62 Runoff=0.05 cfs 0.009 af

Subcatchment 27S: Wetland to POI 1 Runoff Area=13,833 sf 3.43% Impervious Runoff Depth=1.08"
Flow Length=165' Slope=0.0500 '/' Tc=27.3 min CN=76 Runoff=0.23 cfs 0.029 af

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Subcatchment 28S: Runoff Area=4,725 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=105' Slope=0.0100 '/' Tc=13.2 min CN=39 Runoff=0.00 cfs 0.000 af

Reach 1R: CB 19 TO WETLAND Avg. Flow Depth=0.46' Max Vel=3.88 fps Inflow=1.60 cfs 0.307 af
15.0" Round Pipe n=0.012 L=126.0' S=0.0062 '/' Capacity=5.51 cfs Outflow=1.59 cfs 0.307 af

Reach 2R: POI 2 Inflow=2.77 cfs 0.465 af
Outflow=2.77 cfs 0.465 af

Reach 4R: Wetland to POI 2 Avg. Flow Depth=0.21' Max Vel=3.16 fps Inflow=2.75 cfs 0.457 af
n=0.035 L=145.0' S=0.0500 '/' Capacity=24.99 cfs Outflow=2.75 cfs 0.457 af

Reach 6R: Wetland to POI 1 Avg. Flow Depth=0.10' Max Vel=1.93 fps Inflow=1.59 cfs 0.307 af
n=0.035 L=210.0' S=0.0500 '/' Capacity=57.05 cfs Outflow=1.58 cfs 0.307 af

Reach 24R: DMH 11 to DMH 12 Avg. Flow Depth=0.05' Max Vel=1.20 fps Inflow=0.01 cfs 0.031 af
8.0" Round Pipe n=0.012 L=59.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.01 cfs 0.031 af

Reach 25R: DMH 12 to DMH 15 Avg. Flow Depth=0.06' Max Vel=1.37 fps Inflow=0.02 cfs 0.051 af
8.0" Round Pipe n=0.012 L=48.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.02 cfs 0.051 af

Reach 26R: DMH 15 to DMH 14 Avg. Flow Depth=0.05' Max Vel=1.29 fps Inflow=0.02 cfs 0.052 af
12.0" Round Pipe n=0.012 L=105.0' S=0.0100 '/' Capacity=3.86 cfs Outflow=0.02 cfs 0.052 af

Reach 27R: DMH 14 to DMH 7 Avg. Flow Depth=0.38' Max Vel=4.49 fps Inflow=1.44 cfs 0.223 af
15.0" Round Pipe n=0.012 L=42.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=1.44 cfs 0.223 af

Reach 28R: POI 1 Inflow=1.72 cfs 0.335 af
Outflow=1.72 cfs 0.335 af

Reach 29R: EX. DMH 4 to NEW CB 19 Avg. Flow Depth=0.08' Max Vel=1.31 fps Inflow=0.04 cfs 0.097 af
12.0" Round Pipe n=0.012 L=172.0' S=0.0058 '/' Capacity=2.93 cfs Outflow=0.04 cfs 0.097 af

Reach 31R: 8" SD Avg. Flow Depth=0.02' Max Vel=0.69 fps Inflow=0.00 cfs 0.002 af
8.0" Round Pipe n=0.013 L=28.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.00 cfs 0.002 af

Reach 32R: 8" UD Avg. Flow Depth=0.03' Max Vel=0.68 fps Inflow=0.00 cfs 0.003 af
8.0" Round Pipe n=0.012 L=104.0' S=0.0050 '/' Capacity=0.93 cfs Outflow=0.00 cfs 0.003 af

Reach 33R: 8" SD Avg. Flow Depth=0.22' Max Vel=2.81 fps Inflow=0.28 cfs 0.031 af
8.0" Round Pipe n=0.013 L=76.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.28 cfs 0.031 af

Reach 34R: 12" SD Avg. Flow Depth=0.36' Max Vel=3.21 fps Inflow=0.81 cfs 0.064 af
12.0" Round Pipe n=0.012 L=17.0' S=0.0059 '/' Capacity=2.96 cfs Outflow=0.81 cfs 0.064 af

Reach 35R: 12" SD Avg. Flow Depth=0.33' Max Vel=4.56 fps Inflow=1.04 cfs 0.097 af
12.0" Round Pipe n=0.013 L=12.0' S=0.0150 '/' Capacity=4.36 cfs Outflow=1.04 cfs 0.097 af

Reach 40R: New CB 1 to DMH 2 Avg. Flow Depth=0.35' Max Vel=4.29 fps Inflow=1.24 cfs 0.108 af
15.0" Round Pipe n=0.012 L=410.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=1.23 cfs 0.108 af

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Reach 41R: DMH 2 to DMH 3 Avg. Flow Depth=0.35' Max Vel=4.20 fps Inflow=1.32 cfs 0.197 af
18.0" Round Pipe n=0.012 L=80.0' S=0.0094 '/' Capacity=11.02 cfs Outflow=1.32 cfs 0.197 af

Reach 42R: DMH 3 to DMH 7 Avg. Flow Depth=0.35' Max Vel=4.16 fps Inflow=1.33 cfs 0.234 af
18.0" Round Pipe n=0.012 L=382.0' S=0.0091 '/' Capacity=10.86 cfs Outflow=1.32 cfs 0.234 af

Reach 44R: DMH 7 to Wetland Avg. Flow Depth=0.45' Max Vel=5.16 fps Inflow=2.75 cfs 0.457 af
24.0" Round Pipe n=0.012 L=30.0' S=0.0100 '/' Capacity=24.51 cfs Outflow=2.75 cfs 0.457 af

Pond 3P: FP1 TANKS Peak Elev=108.52' Storage=119 cf Inflow=0.00 cfs 0.003 af
Outflow=0.00 cfs 0.001 af

Pond 4P: FP2 TANKS Peak Elev=109.49' Storage=762 cf Inflow=0.16 cfs 0.024 af
Outflow=0.01 cfs 0.017 af

Pond 9R: New CB 1 to DMH 2 Peak Elev=112.76' Inflow=1.24 cfs 0.108 af
15.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=1.24 cfs 0.108 af

Pond 30P: Raised StormTech SC-740 Peak Elev=112.96' Storage=0.058 af Inflow=1.04 cfs 0.097 af
Outflow=0.04 cfs 0.097 af

Pond 36P: PP1 Peak Elev=115.89' Storage=110 cf Inflow=0.11 cfs 0.008 af
Outflow=0.06 cfs 0.006 af

Pond 37P: PP2 Peak Elev=115.86' Storage=106 cf Inflow=0.23 cfs 0.018 af
Outflow=0.18 cfs 0.018 af

Pond 38P: Rain Garden West Peak Elev=120.09' Storage=42 cf Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.000 af

Pond DS-2: Drip Strip Peak Elev=115.29' Storage=187 cf Inflow=0.59 cfs 0.043 af
Discarded=0.28 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.043 af

Pond DS-3: Drip Strip Peak Elev=116.05' Storage=665 cf Inflow=1.07 cfs 0.078 af
Discarded=0.28 cfs 0.077 af Primary=0.06 cfs 0.001 af Outflow=0.34 cfs 0.078 af

Pond DS1: Drip Strip Peak Elev=115.29' Storage=187 cf Inflow=0.59 cfs 0.043 af
Discarded=0.28 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.043 af

Pond FP1: FP1 Filter Peak Elev=111.84' Storage=0 cf Inflow=0.00 cfs 0.003 af
Primary=0.00 cfs 0.003 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.003 af

Pond FP2: FP2 Filter Peak Elev=110.58' Storage=1 cf Inflow=0.16 cfs 0.024 af
Primary=0.16 cfs 0.024 af Secondary=0.00 cfs 0.000 af Outflow=0.16 cfs 0.024 af

Pond IT-1: Infiltration Trench Peak Elev=113.45' Storage=697 cf Inflow=1.36 cfs 0.097 af
Discarded=0.28 cfs 0.085 af Primary=0.43 cfs 0.012 af Outflow=0.70 cfs 0.097 af

Pond PP1: Porous Pavement 1 Peak Elev=113.50' Storage=1,485 cf Inflow=0.75 cfs 0.054 af
Outflow=0.03 cfs 0.049 af

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Pond PP2: Porous Pavement 2	Peak Elev=113.35' Storage=1,233 cf Inflow=0.62 cfs 0.044 af Outflow=0.03 cfs 0.037 af
Pond PP3: Porous Pavement 3	Peak Elev=112.66' Storage=1,287 cf Inflow=0.56 cfs 0.041 af Outflow=0.01 cfs 0.031 af
Pond PP4: Porous Pavement 4	Peak Elev=112.73' Storage=602 cf Inflow=0.28 cfs 0.020 af Outflow=0.01 cfs 0.019 af
Pond R1: Detention Pond 1	Peak Elev=111.97' Storage=2,151 cf Inflow=2.21 cfs 0.176 af Outflow=1.42 cfs 0.170 af
Pond R2: Detention Pond 2	Peak Elev=112.05' Storage=2,358 cf Inflow=2.21 cfs 0.176 af Outflow=1.31 cfs 0.169 af
Pond RG-1: Rain Garden	Peak Elev=114.92' Storage=63 cf Inflow=0.18 cfs 0.014 af Discarded=0.08 cfs 0.014 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.014 af
Pond RG-2: Rain Garden	Peak Elev=114.51' Storage=8 cf Inflow=0.19 cfs 0.016 af Discarded=0.17 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.016 af

Total Runoff Area = 11.324 ac Runoff Volume = 1.126 af Average Runoff Depth = 1.19"
47.50% Pervious = 5.379 ac 52.50% Impervious = 5.944 ac

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Area 1	Runoff Area=15,851 sf 17.16% Impervious Runoff Depth=0.49" Flow Length=300' Tc=20.7 min CN=49 Runoff=0.08 cfs 0.015 af
Subcatchment 2S: Area 2	Runoff Area=1,429 sf 70.05% Impervious Runoff Depth=2.55" Tc=6.0 min CN=80 Runoff=0.10 cfs 0.007 af
Subcatchment 3S: Area to PP1	Runoff Area=2,173 sf 81.59% Impervious Runoff Depth=3.19" Tc=6.0 min CN=87 Runoff=0.18 cfs 0.013 af
Subcatchment 4S: Area to PP2	Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=0.35 cfs 0.028 af
Subcatchment 5S: Area to Rain Garden East	Runoff Area=8,904 sf 17.46% Impervious Runoff Depth=0.49" Flow Length=150' Slope=0.0200 '/' Tc=9.2 min CN=49 Runoff=0.05 cfs 0.008 af
Subcatchment 6S: Bldg 1 Roof	Runoff Area=11,717 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=1.21 cfs 0.098 af
Subcatchment 7S: Area to Rain Garden	Runoff Area=21,901 sf 7.99% Impervious Runoff Depth=0.29" Flow Length=170' Tc=14.0 min CN=44 Runoff=0.04 cfs 0.012 af
Subcatchment 9S:	Runoff Area=1,785 sf 50.98% Impervious Runoff Depth=1.67" Tc=6.0 min CN=69 Runoff=0.08 cfs 0.006 af
Subcatchment 10S:	Runoff Area=12,293 sf 82.32% Impervious Runoff Depth=3.29" Tc=6.0 min CN=88 Runoff=1.07 cfs 0.077 af
Subcatchment 11S: Area to Rain Garden 2	Runoff Area=11,240 sf 51.56% Impervious Runoff Depth=1.67" Tc=6.0 min CN=69 Runoff=0.49 cfs 0.036 af
Subcatchment 12S: Area to Rain Garden 1	Runoff Area=7,303 sf 58.87% Impervious Runoff Depth=2.05" Tc=6.0 min CN=74 Runoff=0.40 cfs 0.029 af
Subcatchment 13S: Area to Infiltration	Runoff Area=15,495 sf 77.47% Impervious Runoff Depth=3.00" Tc=6.0 min CN=85 Runoff=1.24 cfs 0.089 af
Subcatchment 14S: Roof Area to Drip	Runoff Area=6,080 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=0.63 cfs 0.051 af
Subcatchment 15S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=3.81" Tc=6.0 min CN=93 Runoff=0.93 cfs 0.070 af
Subcatchment 16S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=3.81" Tc=6.0 min CN=93 Runoff=0.93 cfs 0.070 af
Subcatchment 17S: Roof Area to Drip	Runoff Area=17,390 sf 76.31% Impervious Runoff Depth=3.81" Tc=6.0 min CN=93 Runoff=1.68 cfs 0.127 af

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Subcatchment 18S: North of Mother House	Runoff Area=44,775 sf 50.92% Impervious Runoff Depth=1.67" Tc=6.0 min CN=69 Runoff=1.95 cfs 0.143 af
Subcatchment 19A: St. Josephs	Runoff Area=57,470 sf 35.07% Impervious Runoff Depth=1.07" Flow Length=407' Tc=19.8 min CN=60 Runoff=0.96 cfs 0.118 af
Subcatchment 20A: North Parking - West	Runoff Area=19,180 sf 72.24% Impervious Runoff Depth=2.72" Tc=6.0 min CN=82 Runoff=1.41 cfs 0.100 af
Subcatchment 20B: North Parking - East	Runoff Area=15,935 sf 73.59% Impervious Runoff Depth=2.72" Tc=6.0 min CN=82 Runoff=1.17 cfs 0.083 af
Subcatchment 21A: Building 5	Runoff Area=19,410 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=2.00 cfs 0.162 af
Subcatchment 21B: Buiding 4	Runoff Area=12,580 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=1.30 cfs 0.105 af
Subcatchment 22A: The Common	Runoff Area=35,370 sf 23.11% Impervious Runoff Depth=0.36" Flow Length=209' Slope=0.0100 '/' Tc=23.0 min UI Adjusted CN=46 Runoff=0.10 cfs 0.025 af
Subcatchment 22B: Detention Pond 1	Runoff Area=8,850 sf 13.39% Impervious Runoff Depth=0.40" Tc=6.0 min CN=47 Runoff=0.04 cfs 0.007 af
Subcatchment 23A: South Parking - West	Runoff Area=18,825 sf 64.46% Impervious Runoff Depth=2.29" Tc=6.0 min CN=77 Runoff=1.16 cfs 0.083 af
Subcatchment 23B: South Parking - East	Runoff Area=9,870 sf 63.12% Impervious Runoff Depth=2.21" Tc=6.0 min CN=76 Runoff=0.59 cfs 0.042 af
Subcatchment 24A: Building 2	Runoff Area=12,580 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=1.30 cfs 0.105 af
Subcatchment 24B: Building 3	Runoff Area=19,410 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=2.00 cfs 0.162 af
Subcatchment 25A: South of Building 2	Runoff Area=22,380 sf 21.94% Impervious Runoff Depth=1.39" Flow Length=140' Slope=0.0100 '/' Tc=25.0 min CN=65 Runoff=0.48 cfs 0.060 af
Subcatchment 25B: South of Building 3	Runoff Area=9,075 sf 8.10% Impervious Runoff Depth=2.21" Tc=6.0 min CN=76 Runoff=0.54 cfs 0.038 af
Subcatchment 25C: South of Building 3	Runoff Area=2,390 sf 19.25% Impervious Runoff Depth=2.46" Tc=6.0 min CN=79 Runoff=0.16 cfs 0.011 af
Subcatchment 26S: Wetland to POI 2	Runoff Area=10,500 sf 5.52% Impervious Runoff Depth=1.20" Flow Length=155' Slope=0.0500 '/' Tc=22.1 min CN=62 Runoff=0.20 cfs 0.024 af
Subcatchment 27S: Wetland to POI 1	Runoff Area=13,833 sf 3.43% Impervious Runoff Depth=2.21" Flow Length=165' Slope=0.0500 '/' Tc=27.3 min CN=76 Runoff=0.48 cfs 0.058 af

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Subcatchment 28S: Runoff Area=4,725 sf 0.00% Impervious Runoff Depth=0.13"
Flow Length=105' Slope=0.0100 '/' Tc=13.2 min CN=39 Runoff=0.00 cfs 0.001 af

Reach 1R: CB 19 TO WETLAND Avg. Flow Depth=0.57' Max Vel=4.30 fps Inflow=2.33 cfs 0.526 af
15.0" Round Pipe n=0.012 L=126.0' S=0.0062 '/' Capacity=5.51 cfs Outflow=2.33 cfs 0.526 af

Reach 2R: POI 2 Inflow=6.75 cfs 0.974 af
Outflow=6.75 cfs 0.974 af

Reach 4R: Wetland to POI 2 Avg. Flow Depth=0.36' Max Vel=4.36 fps Inflow=6.62 cfs 0.951 af
n=0.035 L=145.0' S=0.0500 '/' Capacity=24.99 cfs Outflow=6.62 cfs 0.950 af

Reach 6R: Wetland to POI 1 Avg. Flow Depth=0.12' Max Vel=2.22 fps Inflow=2.33 cfs 0.526 af
n=0.035 L=210.0' S=0.0500 '/' Capacity=57.05 cfs Outflow=2.31 cfs 0.526 af

Reach 24R: DMH 11 to DMH 12 Avg. Flow Depth=0.17' Max Vel=2.69 fps Inflow=0.19 cfs 0.072 af
8.0" Round Pipe n=0.012 L=59.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.19 cfs 0.072 af

Reach 25R: DMH 12 to DMH 15 Avg. Flow Depth=0.23' Max Vel=3.12 fps Inflow=0.33 cfs 0.111 af
8.0" Round Pipe n=0.012 L=48.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.33 cfs 0.111 af

Reach 26R: DMH 15 to DMH 14 Avg. Flow Depth=0.20' Max Vel=3.00 fps Inflow=0.33 cfs 0.128 af
12.0" Round Pipe n=0.012 L=105.0' S=0.0100 '/' Capacity=3.86 cfs Outflow=0.33 cfs 0.128 af

Reach 27R: DMH 14 to DMH 7 Avg. Flow Depth=0.45' Max Vel=4.90 fps Inflow=1.98 cfs 0.396 af
15.0" Round Pipe n=0.012 L=42.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=1.98 cfs 0.396 af

Reach 28R: POI 1 Inflow=2.60 cfs 0.584 af
Outflow=2.60 cfs 0.584 af

Reach 29R: EX. DMH 4 to NEW CB 19 Avg. Flow Depth=0.21' Max Vel=2.33 fps Inflow=0.27 cfs 0.165 af
12.0" Round Pipe n=0.012 L=172.0' S=0.0058 '/' Capacity=2.93 cfs Outflow=0.27 cfs 0.165 af

Reach 31R: 8" SD Avg. Flow Depth=0.09' Max Vel=1.70 fps Inflow=0.05 cfs 0.017 af
8.0" Round Pipe n=0.013 L=28.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.05 cfs 0.017 af

Reach 32R: 8" UD Avg. Flow Depth=0.13' Max Vel=1.61 fps Inflow=0.08 cfs 0.015 af
8.0" Round Pipe n=0.012 L=104.0' S=0.0050 '/' Capacity=0.93 cfs Outflow=0.08 cfs 0.015 af

Reach 33R: 8" SD Avg. Flow Depth=0.30' Max Vel=3.32 fps Inflow=0.51 cfs 0.062 af
8.0" Round Pipe n=0.013 L=76.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.51 cfs 0.062 af

Reach 34R: 12" SD Avg. Flow Depth=0.45' Max Vel=3.58 fps Inflow=1.21 cfs 0.098 af
12.0" Round Pipe n=0.012 L=17.0' S=0.0059 '/' Capacity=2.96 cfs Outflow=1.21 cfs 0.098 af

Reach 35R: 12" SD Avg. Flow Depth=0.43' Max Vel=5.20 fps Inflow=1.69 cfs 0.177 af
12.0" Round Pipe n=0.013 L=12.0' S=0.0150 '/' Capacity=4.36 cfs Outflow=1.69 cfs 0.177 af

Reach 40R: New CB 1 to DMH 2 Avg. Flow Depth=0.68' Max Vel=5.92 fps Inflow=4.13 cfs 0.267 af
15.0" Round Pipe n=0.012 L=410.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=4.07 cfs 0.267 af

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Reach 41R: DMH 2 to DMH 3	Avg. Flow Depth=0.68' Max Vel=5.97 fps Inflow=4.64 cfs 0.479 af 18.0" Round Pipe n=0.012 L=80.0' S=0.0094 '/' Capacity=11.02 cfs Outflow=4.64 cfs 0.479 af
Reach 42R: DMH 3 to DMH 7	Avg. Flow Depth=0.69' Max Vel=5.91 fps Inflow=4.68 cfs 0.554 af 18.0" Round Pipe n=0.012 L=382.0' S=0.0091 '/' Capacity=10.86 cfs Outflow=4.65 cfs 0.554 af
Reach 44R: DMH 7 to Wetland	Avg. Flow Depth=0.71' Max Vel=6.63 fps Inflow=6.62 cfs 0.951 af 24.0" Round Pipe n=0.012 L=30.0' S=0.0100 '/' Capacity=24.51 cfs Outflow=6.62 cfs 0.951 af
Pond 3P: FP1 TANKS	Peak Elev=109.63' Storage=816 cf Inflow=0.10 cfs 0.025 af Outflow=0.01 cfs 0.017 af
Pond 4P: FP2 TANKS	Peak Elev=109.71' Storage=893 cf Inflow=0.48 cfs 0.060 af Outflow=0.24 cfs 0.051 af
Pond 9R: New CB 1 to DMH 2	Peak Elev=113.44' Inflow=4.13 cfs 0.266 af 15.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=4.13 cfs 0.266 af
Pond 30P: Raised StormTech SC-740	Peak Elev=113.78' Storage=0.084 af Inflow=1.69 cfs 0.177 af Outflow=0.27 cfs 0.165 af
Pond 36P: PP1	Peak Elev=115.97' Storage=138 cf Inflow=0.18 cfs 0.013 af Outflow=0.15 cfs 0.012 af
Pond 37P: PP2	Peak Elev=115.94' Storage=137 cf Inflow=0.35 cfs 0.028 af Outflow=0.28 cfs 0.028 af
Pond 38P: Rain Garden West	Peak Elev=120.27' Storage=143 cf Inflow=0.04 cfs 0.012 af Outflow=0.02 cfs 0.009 af
Pond DS-2: Drip Strip	Peak Elev=115.82' Storage=522 cf Inflow=0.93 cfs 0.070 af Discarded=0.28 cfs 0.070 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.070 af
Pond DS-3: Drip Strip	Peak Elev=116.55' Storage=903 cf Inflow=1.68 cfs 0.127 af Discarded=0.28 cfs 0.107 af Primary=0.70 cfs 0.020 af Outflow=0.98 cfs 0.127 af
Pond DS1: Drip Strip	Peak Elev=115.82' Storage=522 cf Inflow=0.93 cfs 0.070 af Discarded=0.28 cfs 0.070 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.070 af
Pond FP1: FP1 Filter	Peak Elev=111.86' Storage=1 cf Inflow=0.10 cfs 0.025 af Primary=0.10 cfs 0.025 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.025 af
Pond FP2: FP2 Filter	Peak Elev=112.64' Storage=93 cf Inflow=0.48 cfs 0.060 af Primary=0.21 cfs 0.052 af Secondary=0.27 cfs 0.008 af Outflow=0.48 cfs 0.060 af
Pond IT-1: Infiltration Trench	Peak Elev=114.44' Storage=1,242 cf Inflow=2.39 cfs 0.173 af Discarded=0.28 cfs 0.126 af Primary=1.03 cfs 0.047 af Outflow=1.31 cfs 0.173 af
Pond PP1: Porous Pavement 1	Peak Elev=113.74' Storage=2,062 cf Inflow=1.41 cfs 0.100 af Outflow=0.23 cfs 0.094 af

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Pond PP2: Porous Pavement 2	Peak Elev=113.57' Storage=1,702 cf Inflow=1.17 cfs 0.083 af Outflow=0.21 cfs 0.075 af
Pond PP3: Porous Pavement 3	Peak Elev=112.91' Storage=1,661 cf Inflow=1.16 cfs 0.083 af Outflow=0.19 cfs 0.072 af
Pond PP4: Porous Pavement 4	Peak Elev=113.01' Storage=783 cf Inflow=0.59 cfs 0.042 af Outflow=0.14 cfs 0.039 af
Pond R1: Detention Pond 1	Peak Elev=112.53' Storage=2,708 cf Inflow=3.30 cfs 0.267 af Outflow=1.93 cfs 0.262 af
Pond R2: Detention Pond 2	Peak Elev=112.66' Storage=2,994 cf Inflow=3.30 cfs 0.267 af Outflow=1.76 cfs 0.260 af
Pond RG-1: Rain Garden	Peak Elev=115.42' Storage=139 cf Inflow=0.40 cfs 0.029 af Discarded=0.08 cfs 0.023 af Primary=0.21 cfs 0.005 af Outflow=0.29 cfs 0.029 af
Pond RG-2: Rain Garden	Peak Elev=115.15' Storage=208 cf Inflow=0.49 cfs 0.036 af Discarded=0.17 cfs 0.035 af Primary=0.05 cfs 0.001 af Outflow=0.21 cfs 0.036 af
Total Runoff Area = 11.324 ac Runoff Volume = 2.062 af Average Runoff Depth = 2.19" 47.50% Pervious = 5.379 ac 52.50% Impervious = 5.944 ac	

Post-Development

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Type III 24-hr Focal Point Rainfall=0.95"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Area 1	Runoff Area=15,851 sf 17.16% Impervious Runoff Depth=0.00" Flow Length=300' Tc=20.7 min CN=49 Runoff=0.00 cfs 0.000 af
Subcatchment 2S: Area 2	Runoff Area=1,429 sf 70.05% Impervious Runoff Depth=0.07" Tc=6.0 min CN=80 Runoff=0.00 cfs 0.000 af
Subcatchment 3S: Area to PP1	Runoff Area=2,173 sf 81.59% Impervious Runoff Depth=0.20" Tc=6.0 min CN=87 Runoff=0.01 cfs 0.001 af
Subcatchment 4S: Area to PP2	Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af
Subcatchment 5S: Area to Rain Garden East	Runoff Area=8,904 sf 17.46% Impervious Runoff Depth=0.00" Flow Length=150' Slope=0.0200 ' Tc=9.2 min CN=49 Runoff=0.00 cfs 0.000 af
Subcatchment 6S: Bldg 1 Roof	Runoff Area=11,717 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.23 cfs 0.017 af
Subcatchment 7S: Area to Rain Garden	Runoff Area=21,901 sf 7.99% Impervious Runoff Depth=0.00" Flow Length=170' Tc=14.0 min CN=44 Runoff=0.00 cfs 0.000 af
Subcatchment 9S:	Runoff Area=1,785 sf 50.98% Impervious Runoff Depth=0.00" Tc=6.0 min CN=69 Runoff=0.00 cfs 0.000 af
Subcatchment 10S:	Runoff Area=12,293 sf 82.32% Impervious Runoff Depth=0.22" Tc=6.0 min CN=88 Runoff=0.06 cfs 0.005 af
Subcatchment 11S: Area to Rain Garden 2	Runoff Area=11,240 sf 51.56% Impervious Runoff Depth=0.00" Tc=6.0 min CN=69 Runoff=0.00 cfs 0.000 af
Subcatchment 12S: Area to Rain Garden 1	Runoff Area=7,303 sf 58.87% Impervious Runoff Depth=0.02" Tc=6.0 min CN=74 Runoff=0.00 cfs 0.000 af
Subcatchment 13S: Area to Infiltration	Runoff Area=15,495 sf 77.47% Impervious Runoff Depth=0.15" Tc=6.0 min CN=85 Runoff=0.04 cfs 0.004 af
Subcatchment 14S: Roof Area to Drip	Runoff Area=6,080 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.12 cfs 0.009 af
Subcatchment 15S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=0.41" Tc=6.0 min CN=93 Runoff=0.11 cfs 0.008 af
Subcatchment 16S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=0.41" Tc=6.0 min CN=93 Runoff=0.11 cfs 0.008 af
Subcatchment 17S: Roof Area to Drip	Runoff Area=17,390 sf 76.31% Impervious Runoff Depth=0.41" Tc=6.0 min CN=93 Runoff=0.19 cfs 0.014 af

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Type III 24-hr Focal Point Rainfall=0.95"

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Subcatchment 18S: North of Mother House	Runoff Area=44,775 sf 50.92% Impervious Runoff Depth=0.00" Tc=6.0 min CN=69 Runoff=0.00 cfs 0.000 af
Subcatchment 19A: St. Josephs	Runoff Area=57,470 sf 35.07% Impervious Runoff Depth=0.00" Flow Length=407' Tc=19.8 min CN=60 Runoff=0.00 cfs 0.000 af
Subcatchment 20A: North Parking - West	Runoff Area=19,180 sf 72.24% Impervious Runoff Depth=0.10" Tc=6.0 min CN=82 Runoff=0.02 cfs 0.004 af
Subcatchment 20B: North Parking - East	Runoff Area=15,935 sf 73.59% Impervious Runoff Depth=0.10" Tc=6.0 min CN=82 Runoff=0.02 cfs 0.003 af
Subcatchment 21A: Building 5	Runoff Area=19,410 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.37 cfs 0.028 af
Subcatchment 21B: Buiding 4	Runoff Area=12,580 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.24 cfs 0.018 af
Subcatchment 22A: The Common	Runoff Area=35,370 sf 23.11% Impervious Runoff Depth=0.00" Flow Length=209' Slope=0.0100 ' ' Tc=23.0 min UI Adjusted CN=46 Runoff=0.00 cfs 0.000 af
Subcatchment 22B: Detention Pond 1	Runoff Area=8,850 sf 13.39% Impervious Runoff Depth=0.00" Tc=6.0 min CN=47 Runoff=0.00 cfs 0.000 af
Subcatchment 23A: South Parking - West	Runoff Area=18,825 sf 64.46% Impervious Runoff Depth=0.04" Tc=6.0 min CN=77 Runoff=0.00 cfs 0.001 af
Subcatchment 23B: South Parking - East	Runoff Area=9,870 sf 63.12% Impervious Runoff Depth=0.03" Tc=6.0 min CN=76 Runoff=0.00 cfs 0.001 af
Subcatchment 24A: Building 2	Runoff Area=12,580 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.24 cfs 0.018 af
Subcatchment 24B: Building 3	Runoff Area=19,410 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.37 cfs 0.028 af
Subcatchment 25A: South of Building 2	Runoff Area=22,380 sf 21.94% Impervious Runoff Depth=0.00" Flow Length=140' Slope=0.0100 ' ' Tc=25.0 min CN=65 Runoff=0.00 cfs 0.000 af
Subcatchment 25B: South of Building 3	Runoff Area=9,075 sf 8.10% Impervious Runoff Depth=0.03" Tc=6.0 min CN=76 Runoff=0.00 cfs 0.001 af
Subcatchment 25C: South of Building 3	Runoff Area=2,390 sf 19.25% Impervious Runoff Depth=0.06" Tc=6.0 min CN=79 Runoff=0.00 cfs 0.000 af
Subcatchment 26S: Wetland to POI 2	Runoff Area=10,500 sf 5.52% Impervious Runoff Depth=0.00" Flow Length=155' Slope=0.0500 ' ' Tc=22.1 min CN=62 Runoff=0.00 cfs 0.000 af
Subcatchment 27S: Wetland to POI 1	Runoff Area=13,833 sf 3.43% Impervious Runoff Depth=0.03" Flow Length=165' Slope=0.0500 ' ' Tc=27.3 min CN=76 Runoff=0.00 cfs 0.001 af

Post-Development*Type III 24-hr Focal Point Rainfall=0.95"*

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Subcatchment 28S: Runoff Area=4,725 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=105' Slope=0.0100 '/' Tc=13.2 min CN=39 Runoff=0.00 cfs 0.000 af

Reach 1R: CB 19 TO WETLAND Avg. Flow Depth=0.09' Max Vel=1.48 fps Inflow=0.06 cfs 0.061 af
15.0" Round Pipe n=0.012 L=126.0' S=0.0062 '/' Capacity=5.51 cfs Outflow=0.06 cfs 0.061 af

Reach 2R: POI 2 Inflow=0.16 cfs 0.057 af
Outflow=0.16 cfs 0.057 af

Reach 4R: Wetland to POI 2 Avg. Flow Depth=0.04' Max Vel=1.06 fps Inflow=0.16 cfs 0.057 af
n=0.035 L=145.0' S=0.0500 '/' Capacity=24.99 cfs Outflow=0.16 cfs 0.057 af

Reach 6R: Wetland to POI 1 Avg. Flow Depth=0.01' Max Vel=0.55 fps Inflow=0.06 cfs 0.061 af
n=0.035 L=210.0' S=0.0500 '/' Capacity=57.05 cfs Outflow=0.06 cfs 0.061 af

Reach 24R: DMH 11 to DMH 12 Avg. Flow Depth=0.02' Max Vel=0.77 fps Inflow=0.00 cfs 0.001 af
8.0" Round Pipe n=0.012 L=59.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.00 cfs 0.001 af

Reach 25R: DMH 12 to DMH 15 Avg. Flow Depth=0.02' Max Vel=0.80 fps Inflow=0.00 cfs 0.002 af
8.0" Round Pipe n=0.012 L=48.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.00 cfs 0.002 af

Reach 26R: DMH 15 to DMH 14 Avg. Flow Depth=0.02' Max Vel=0.76 fps Inflow=0.00 cfs 0.002 af
12.0" Round Pipe n=0.012 L=105.0' S=0.0100 '/' Capacity=3.86 cfs Outflow=0.00 cfs 0.002 af

Reach 27R: DMH 14 to DMH 7 Avg. Flow Depth=0.08' Max Vel=1.73 fps Inflow=0.06 cfs 0.042 af
15.0" Round Pipe n=0.012 L=42.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=0.06 cfs 0.042 af

Reach 28R: POI 1 Inflow=0.06 cfs 0.062 af
Outflow=0.06 cfs 0.062 af

Reach 29R: EX. DMH 4 to NEW CB 19 Avg. Flow Depth=0.06' Max Vel=1.14 fps Inflow=0.02 cfs 0.022 af
12.0" Round Pipe n=0.012 L=172.0' S=0.0058 '/' Capacity=2.93 cfs Outflow=0.02 cfs 0.022 af

Reach 31R: 8" SD Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
8.0" Round Pipe n=0.013 L=28.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.00 cfs 0.000 af

Reach 32R: 8" UD Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
8.0" Round Pipe n=0.012 L=104.0' S=0.0050 '/' Capacity=0.93 cfs Outflow=0.00 cfs 0.000 af

Reach 33R: 8" SD Avg. Flow Depth=0.08' Max Vel=1.59 fps Inflow=0.04 cfs 0.005 af
8.0" Round Pipe n=0.013 L=76.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.04 cfs 0.005 af

Reach 34R: 12" SD Avg. Flow Depth=0.19' Max Vel=2.22 fps Inflow=0.23 cfs 0.017 af
12.0" Round Pipe n=0.012 L=17.0' S=0.0059 '/' Capacity=2.96 cfs Outflow=0.23 cfs 0.017 af

Reach 35R: 12" SD Avg. Flow Depth=0.16' Max Vel=3.03 fps Inflow=0.25 cfs 0.022 af
12.0" Round Pipe n=0.013 L=12.0' S=0.0150 '/' Capacity=4.36 cfs Outflow=0.25 cfs 0.022 af

Reach 40R: New CB 1 to DMH 2 Avg. Flow Depth=0.11' Max Vel=2.09 fps Inflow=0.12 cfs 0.009 af
15.0" Round Pipe n=0.012 L=410.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=0.11 cfs 0.009 af

Post-Development*Type III 24-hr Focal Point Rainfall=0.95"*

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Reach 41R: DMH 2 to DMH 3	Avg. Flow Depth=0.11' Max Vel=2.06 fps Inflow=0.12 cfs 0.012 af 18.0" Round Pipe n=0.012 L=80.0' S=0.0094 '/' Capacity=11.02 cfs Outflow=0.12 cfs 0.012 af
Reach 42R: DMH 3 to DMH 7	Avg. Flow Depth=0.11' Max Vel=2.04 fps Inflow=0.13 cfs 0.015 af 18.0" Round Pipe n=0.012 L=382.0' S=0.0091 '/' Capacity=10.86 cfs Outflow=0.12 cfs 0.015 af
Reach 44R: DMH 7 to Wetland	Avg. Flow Depth=0.12' Max Vel=2.22 fps Inflow=0.16 cfs 0.057 af 24.0" Round Pipe n=0.012 L=30.0' S=0.0100 '/' Capacity=24.51 cfs Outflow=0.16 cfs 0.057 af
Pond 3P: FP1 TANKS	Peak Elev=108.21' Storage=0 cf Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond 4P: FP2 TANKS	Peak Elev=108.13' Storage=0 cf Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond 9R: New CB 1 to DMH 2	Peak Elev=112.32' Inflow=0.12 cfs 0.009 af 15.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.12 cfs 0.009 af
Pond 30P: Raised StormTech SC-740	Peak Elev=111.64' Storage=0.009 af Inflow=0.25 cfs 0.022 af Outflow=0.02 cfs 0.022 af
Pond 36P: PP1	Peak Elev=115.69' Storage=36 cf Inflow=0.01 cfs 0.001 af Outflow=0.00 cfs 0.000 af
Pond 37P: PP2	Peak Elev=115.71' Storage=48 cf Inflow=0.06 cfs 0.005 af Outflow=0.04 cfs 0.005 af
Pond 38P: Rain Garden West	Peak Elev=120.00' Storage=0 cf Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond DS-2: Drip Strip	Peak Elev=115.02' Storage=11 cf Inflow=0.11 cfs 0.008 af Discarded=0.10 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.008 af
Pond DS-3: Drip Strip	Peak Elev=115.03' Storage=21 cf Inflow=0.19 cfs 0.014 af Discarded=0.18 cfs 0.014 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.014 af
Pond DS1: Drip Strip	Peak Elev=115.02' Storage=11 cf Inflow=0.11 cfs 0.008 af Discarded=0.10 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.008 af
Pond FP1: FP1 Filter	Peak Elev=111.84' Storage=0 cf Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond FP2: FP2 Filter	Peak Elev=110.56' Storage=0 cf Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond IT-1: Infiltration Trench	Peak Elev=112.02' Storage=9 cf Inflow=0.11 cfs 0.010 af Discarded=0.10 cfs 0.010 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.010 af
Pond PP1: Porous Pavement 1	Peak Elev=112.90' Storage=11 cf Inflow=0.02 cfs 0.004 af Outflow=0.01 cfs 0.004 af

Post-Development*Type III 24-hr Focal Point Rainfall=0.95"*

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Pond PP2: Porous Pavement 2	Peak Elev=112.78' Storage=12 cf Inflow=0.02 cfs 0.003 af Outflow=0.01 cfs 0.003 af
Pond PP3: Porous Pavement 3	Peak Elev=110.34' Storage=0 cf Inflow=0.00 cfs 0.001 af Outflow=0.00 cfs 0.001 af
Pond PP4: Porous Pavement 4	Peak Elev=110.19' Storage=0 cf Inflow=0.00 cfs 0.001 af Outflow=0.00 cfs 0.001 af
Pond R1: Detention Pond 1	Peak Elev=110.96' Storage=1,135 cf Inflow=0.62 cfs 0.045 af Outflow=0.05 cfs 0.040 af
Pond R2: Detention Pond 2	Peak Elev=111.05' Storage=1,302 cf Inflow=0.62 cfs 0.045 af Outflow=0.03 cfs 0.039 af
Pond RG-1: Rain Garden	Peak Elev=114.50' Storage=0 cf Inflow=0.00 cfs 0.000 af Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond RG-2: Rain Garden	Peak Elev=114.49' Storage=0 cf Inflow=0.00 cfs 0.000 af Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Total Runoff Area = 11.324 ac Runoff Volume = 0.171 af Average Runoff Depth = 0.18" 47.50% Pervious = 5.379 ac 52.50% Impervious = 5.944 ac	

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Type III 24-hr 25 Year Rainfall=5.80"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Area 1	Runoff Area=15,851 sf 17.16% Impervious Runoff Depth=0.98" Flow Length=300' Tc=20.7 min CN=49 Runoff=0.21 cfs 0.030 af
Subcatchment 2S: Area 2	Runoff Area=1,429 sf 70.05% Impervious Runoff Depth=3.60" Tc=6.0 min CN=80 Runoff=0.14 cfs 0.010 af
Subcatchment 3S: Area to PP1	Runoff Area=2,173 sf 81.59% Impervious Runoff Depth=4.33" Tc=6.0 min CN=87 Runoff=0.25 cfs 0.018 af
Subcatchment 4S: Area to PP2	Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=0.44 cfs 0.036 af
Subcatchment 5S: Area to Rain Garden East	Runoff Area=8,904 sf 17.46% Impervious Runoff Depth=0.98" Flow Length=150' Slope=0.0200 ' Tc=9.2 min CN=49 Runoff=0.15 cfs 0.017 af
Subcatchment 6S: Bldg 1 Roof	Runoff Area=11,717 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=1.53 cfs 0.125 af
Subcatchment 7S: Area to Rain Garden	Runoff Area=21,901 sf 7.99% Impervious Runoff Depth=0.66" Flow Length=170' Tc=14.0 min CN=44 Runoff=0.16 cfs 0.028 af
Subcatchment 9S:	Runoff Area=1,785 sf 50.98% Impervious Runoff Depth=2.56" Tc=6.0 min CN=69 Runoff=0.12 cfs 0.009 af
Subcatchment 10S:	Runoff Area=12,293 sf 82.32% Impervious Runoff Depth=4.43" Tc=6.0 min CN=88 Runoff=1.42 cfs 0.104 af
Subcatchment 11S: Area to Rain Garden 2	Runoff Area=11,240 sf 51.56% Impervious Runoff Depth=2.56" Tc=6.0 min CN=69 Runoff=0.77 cfs 0.055 af
Subcatchment 12S: Area to Rain Garden 1	Runoff Area=7,303 sf 58.87% Impervious Runoff Depth=3.02" Tc=6.0 min CN=74 Runoff=0.59 cfs 0.042 af
Subcatchment 13S: Area to Infiltration	Runoff Area=15,495 sf 77.47% Impervious Runoff Depth=4.11" Tc=6.0 min CN=85 Runoff=1.69 cfs 0.122 af
Subcatchment 14S: Roof Area to Drip	Runoff Area=6,080 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=0.79 cfs 0.065 af
Subcatchment 15S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=4.99" Tc=6.0 min CN=93 Runoff=1.20 cfs 0.092 af
Subcatchment 16S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=4.99" Tc=6.0 min CN=93 Runoff=1.20 cfs 0.092 af
Subcatchment 17S: Roof Area to Drip	Runoff Area=17,390 sf 76.31% Impervious Runoff Depth=4.99" Tc=6.0 min CN=93 Runoff=2.17 cfs 0.166 af

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Type III 24-hr 25 Year Rainfall=5.80"

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Subcatchment 18S: North of Mother House	Runoff Area=44,775 sf 50.92% Impervious Tc=6.0 min CN=69	Runoff Depth=2.56" Runoff=3.05 cfs 0.219 af
Subcatchment 19A: St. Josephs	Runoff Area=57,470 sf 35.07% Impervious Flow Length=407' Tc=19.8 min CN=60	Runoff Depth=1.79" Runoff=1.75 cfs 0.197 af
Subcatchment 20A: North Parking - West	Runoff Area=19,180 sf 72.24% Impervious Tc=6.0 min CN=82	Runoff Depth=3.80" Runoff=1.95 cfs 0.140 af
Subcatchment 20B: North Parking - East	Runoff Area=15,935 sf 73.59% Impervious Tc=6.0 min CN=82	Runoff Depth=3.80" Runoff=1.62 cfs 0.116 af
Subcatchment 21A: Building 5	Runoff Area=19,410 sf 100.00% Impervious Tc=6.0 min CN=98	Runoff Depth=5.56" Runoff=2.53 cfs 0.207 af
Subcatchment 21B: Buiding 4	Runoff Area=12,580 sf 100.00% Impervious Tc=6.0 min CN=98	Runoff Depth=5.56" Runoff=1.64 cfs 0.134 af
Subcatchment 22A: The Common	Runoff Area=35,370 sf 23.11% Impervious Flow Length=209' Slope=0.0100 '/' Tc=23.0 min UI Adjusted CN=46	Runoff Depth=0.78" Runoff=0.31 cfs 0.053 af
Subcatchment 22B: Detention Pond 1	Runoff Area=8,850 sf 13.39% Impervious Tc=6.0 min CN=47	Runoff Depth=0.85" Runoff=0.13 cfs 0.014 af
Subcatchment 23A: South Parking - West	Runoff Area=18,825 sf 64.46% Impervious Tc=6.0 min CN=77	Runoff Depth=3.31" Runoff=1.68 cfs 0.119 af
Subcatchment 23B: South Parking - East	Runoff Area=9,870 sf 63.12% Impervious Tc=6.0 min CN=76	Runoff Depth=3.21" Runoff=0.85 cfs 0.061 af
Subcatchment 24A: Building 2	Runoff Area=12,580 sf 100.00% Impervious Tc=6.0 min CN=98	Runoff Depth=5.56" Runoff=1.64 cfs 0.134 af
Subcatchment 24B: Building 3	Runoff Area=19,410 sf 100.00% Impervious Tc=6.0 min CN=98	Runoff Depth=5.56" Runoff=2.53 cfs 0.207 af
Subcatchment 25A: South of Building 2	Runoff Area=22,380 sf 21.94% Impervious Flow Length=140' Slope=0.0100 '/' Tc=25.0 min CN=65	Runoff Depth=2.21" Runoff=0.79 cfs 0.094 af
Subcatchment 25B: South of Building 3	Runoff Area=9,075 sf 8.10% Impervious Tc=6.0 min CN=76	Runoff Depth=3.21" Runoff=0.78 cfs 0.056 af
Subcatchment 25C: South of Building 3	Runoff Area=2,390 sf 19.25% Impervious Tc=6.0 min CN=79	Runoff Depth=3.50" Runoff=0.22 cfs 0.016 af
Subcatchment 26S: Wetland to POI 2	Runoff Area=10,500 sf 5.52% Impervious Flow Length=155' Slope=0.0500 '/' Tc=22.1 min CN=62	Runoff Depth=1.95" Runoff=0.34 cfs 0.039 af
Subcatchment 27S: Wetland to POI 1	Runoff Area=13,833 sf 3.43% Impervious Flow Length=165' Slope=0.0500 '/' Tc=27.3 min CN=76	Runoff Depth=3.21" Runoff=0.70 cfs 0.085 af

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Type III 24-hr 25 Year Rainfall=5.80"

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Subcatchment 28S: Runoff Area=4,725 sf 0.00% Impervious Runoff Depth=0.39"
Flow Length=105' Slope=0.0100 '/' Tc=13.2 min CN=39 Runoff=0.01 cfs 0.004 af

Reach 1R: CB 19 TO WETLAND Avg. Flow Depth=0.82' Max Vel=4.95 fps Inflow=4.29 cfs 0.736 af
15.0" Round Pipe n=0.012 L=126.0' S=0.0062 '/' Capacity=5.51 cfs Outflow=4.25 cfs 0.736 af

Reach 2R: POI 2 Inflow=11.37 cfs 1.451 af
Outflow=11.37 cfs 1.451 af

Reach 4R: Wetland to POI 2 Avg. Flow Depth=0.49' Max Vel=5.23 fps Inflow=11.15 cfs 1.412 af
n=0.035 L=145.0' S=0.0500 '/' Capacity=24.99 cfs Outflow=11.13 cfs 1.411 af

Reach 6R: Wetland to POI 1 Avg. Flow Depth=0.17' Max Vel=2.74 fps Inflow=4.25 cfs 0.736 af
n=0.035 L=210.0' S=0.0500 '/' Capacity=57.05 cfs Outflow=4.12 cfs 0.735 af

Reach 24R: DMH 11 to DMH 12 Avg. Flow Depth=0.32' Max Vel=3.68 fps Inflow=0.61 cfs 0.108 af
8.0" Round Pipe n=0.012 L=59.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.61 cfs 0.108 af

Reach 25R: DMH 12 to DMH 15 Avg. Flow Depth=0.43' Max Vel=4.11 fps Inflow=0.97 cfs 0.166 af
8.0" Round Pipe n=0.012 L=48.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.97 cfs 0.166 af

Reach 26R: DMH 15 to DMH 14 Avg. Flow Depth=0.34' Max Vel=4.10 fps Inflow=0.97 cfs 0.195 af
12.0" Round Pipe n=0.012 L=105.0' S=0.0100 '/' Capacity=3.86 cfs Outflow=0.97 cfs 0.195 af

Reach 27R: DMH 14 to DMH 7 Avg. Flow Depth=0.63' Max Vel=5.72 fps Inflow=3.55 cfs 0.544 af
15.0" Round Pipe n=0.012 L=42.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=3.55 cfs 0.544 af

Reach 28R: POI 1 Inflow=4.55 cfs 0.820 af
Outflow=4.55 cfs 0.820 af

Reach 29R: EX. DMH 4 to NEW CB 19 Avg. Flow Depth=0.46' Max Vel=3.61 fps Inflow=1.29 cfs 0.244 af
12.0" Round Pipe n=0.012 L=172.0' S=0.0058 '/' Capacity=2.93 cfs Outflow=1.29 cfs 0.244 af

Reach 31R: 8" SD Avg. Flow Depth=0.18' Max Vel=2.57 fps Inflow=0.20 cfs 0.041 af
8.0" Round Pipe n=0.013 L=28.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.20 cfs 0.041 af

Reach 32R: 8" UD Avg. Flow Depth=0.21' Max Vel=2.13 fps Inflow=0.21 cfs 0.030 af
8.0" Round Pipe n=0.012 L=104.0' S=0.0050 '/' Capacity=0.93 cfs Outflow=0.21 cfs 0.030 af

Reach 33R: 8" SD Avg. Flow Depth=0.38' Max Vel=3.64 fps Inflow=0.74 cfs 0.092 af
8.0" Round Pipe n=0.013 L=76.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.74 cfs 0.092 af

Reach 34R: 12" SD Avg. Flow Depth=0.51' Max Vel=3.80 fps Inflow=1.53 cfs 0.125 af
12.0" Round Pipe n=0.012 L=17.0' S=0.0059 '/' Capacity=2.96 cfs Outflow=1.53 cfs 0.125 af

Reach 35R: 12" SD Avg. Flow Depth=0.52' Max Vel=5.63 fps Inflow=2.31 cfs 0.258 af
12.0" Round Pipe n=0.013 L=12.0' S=0.0150 '/' Capacity=4.36 cfs Outflow=2.31 cfs 0.258 af

Reach 40R: New CB 1 to DMH 2 Avg. Flow Depth=0.89' Max Vel=6.41 fps Inflow=6.10 cfs 0.430 af
15.0" Round Pipe n=0.012 L=410.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=6.03 cfs 0.430 af

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Reach 41R: DMH 2 to DMH 3	Avg. Flow Depth=0.89' Max Vel=6.67 fps Inflow=7.34 cfs 0.760 af 18.0" Round Pipe n=0.012 L=80.0' S=0.0094 '/' Capacity=11.02 cfs Outflow=7.34 cfs 0.760 af
Reach 42R: DMH 3 to DMH 7	Avg. Flow Depth=0.92' Max Vel=6.65 fps Inflow=7.62 cfs 0.868 af 18.0" Round Pipe n=0.012 L=382.0' S=0.0091 '/' Capacity=10.86 cfs Outflow=7.59 cfs 0.867 af
Reach 44R: DMH 7 to Wetland	Avg. Flow Depth=0.95' Max Vel=7.62 fps Inflow=11.14 cfs 1.412 af 24.0" Round Pipe n=0.012 L=30.0' S=0.0100 '/' Capacity=24.51 cfs Outflow=11.15 cfs 1.412 af
Pond 3P: FP1 TANKS	Peak Elev=111.34' Storage=1,875 cf Inflow=0.29 cfs 0.053 af Outflow=0.02 cfs 0.029 af
Pond 4P: FP2 TANKS	Peak Elev=109.77' Storage=934 cf Inflow=0.79 cfs 0.094 af Outflow=0.73 cfs 0.086 af
Pond 9R: New CB 1 to DMH 2	Peak Elev=113.95' Inflow=6.10 cfs 0.426 af 15.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=6.10 cfs 0.426 af
Pond 30P: Raised StormTech SC-740	Peak Elev=113.90' Storage=0.088 af Inflow=2.31 cfs 0.258 af Outflow=1.29 cfs 0.244 af
Pond 36P: PP1	Peak Elev=116.01' Storage=152 cf Inflow=0.25 cfs 0.018 af Outflow=0.20 cfs 0.017 af
Pond 37P: PP2	Peak Elev=115.99' Storage=160 cf Inflow=0.44 cfs 0.036 af Outflow=0.36 cfs 0.036 af
Pond 38P: Rain Garden West	Peak Elev=120.32' Storage=174 cf Inflow=0.16 cfs 0.028 af Outflow=0.13 cfs 0.025 af
Pond DS-2: Drip Strip	Peak Elev=116.14' Storage=706 cf Inflow=1.20 cfs 0.092 af Discarded=0.28 cfs 0.087 af Primary=0.26 cfs 0.005 af Outflow=0.54 cfs 0.092 af
Pond DS-3: Drip Strip	Peak Elev=117.08' Storage=1,168 cf Inflow=2.17 cfs 0.166 af Discarded=0.28 cfs 0.129 af Primary=0.98 cfs 0.036 af Outflow=1.26 cfs 0.166 af
Pond DS1: Drip Strip	Peak Elev=116.14' Storage=706 cf Inflow=1.20 cfs 0.092 af Discarded=0.28 cfs 0.087 af Primary=0.26 cfs 0.005 af Outflow=0.54 cfs 0.092 af
Pond FP1: FP1 Filter	Peak Elev=113.98' Storage=98 cf Inflow=0.31 cfs 0.053 af Primary=0.21 cfs 0.052 af Secondary=0.08 cfs 0.001 af Outflow=0.29 cfs 0.053 af
Pond FP2: FP2 Filter	Peak Elev=112.70' Storage=98 cf Inflow=0.79 cfs 0.094 af Primary=0.21 cfs 0.071 af Secondary=0.58 cfs 0.023 af Outflow=0.79 cfs 0.094 af
Pond IT-1: Infiltration Trench	Peak Elev=115.45' Storage=1,890 cf Inflow=3.28 cfs 0.247 af Discarded=0.28 cfs 0.157 af Primary=1.40 cfs 0.090 af Outflow=1.68 cfs 0.247 af
Pond PP1: Porous Pavement 1	Peak Elev=113.96' Storage=2,617 cf Inflow=1.95 cfs 0.140 af Outflow=0.57 cfs 0.133 af

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Pond PP2: Porous Pavement 2	Peak Elev=113.81' Storage=2,138 cf Inflow=1.62 cfs 0.116 af Outflow=0.59 cfs 0.108 af
Pond PP3: Porous Pavement 3	Peak Elev=113.17' Storage=2,051 cf Inflow=1.68 cfs 0.119 af Outflow=0.61 cfs 0.108 af
Pond PP4: Porous Pavement 4	Peak Elev=113.22' Storage=917 cf Inflow=0.85 cfs 0.061 af Outflow=0.39 cfs 0.058 af
Pond R1: Detention Pond 1	Peak Elev=113.01' Storage=3,125 cf Inflow=4.17 cfs 0.340 af Outflow=2.92 cfs 0.335 af
Pond R2: Detention Pond 2	Peak Elev=112.90' Storage=3,236 cf Inflow=4.17 cfs 0.340 af Outflow=3.39 cfs 0.334 af
Pond RG-1: Rain Garden	Peak Elev=115.86' Storage=206 cf Inflow=0.59 cfs 0.042 af Discarded=0.08 cfs 0.031 af Primary=0.35 cfs 0.012 af Outflow=0.43 cfs 0.042 af
Pond RG-2: Rain Garden	Peak Elev=115.78' Storage=408 cf Inflow=0.77 cfs 0.060 af Discarded=0.17 cfs 0.047 af Primary=0.33 cfs 0.012 af Outflow=0.50 cfs 0.060 af
Total Runoff Area = 11.324 ac Runoff Volume = 2.901 af Average Runoff Depth = 3.07" 47.50% Pervious = 5.379 ac 52.50% Impervious = 5.944 ac	

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 1S: Area 1

Runoff = 0.21 cfs @ 12.37 hrs, Volume= 0.030 af, Depth= 0.98"

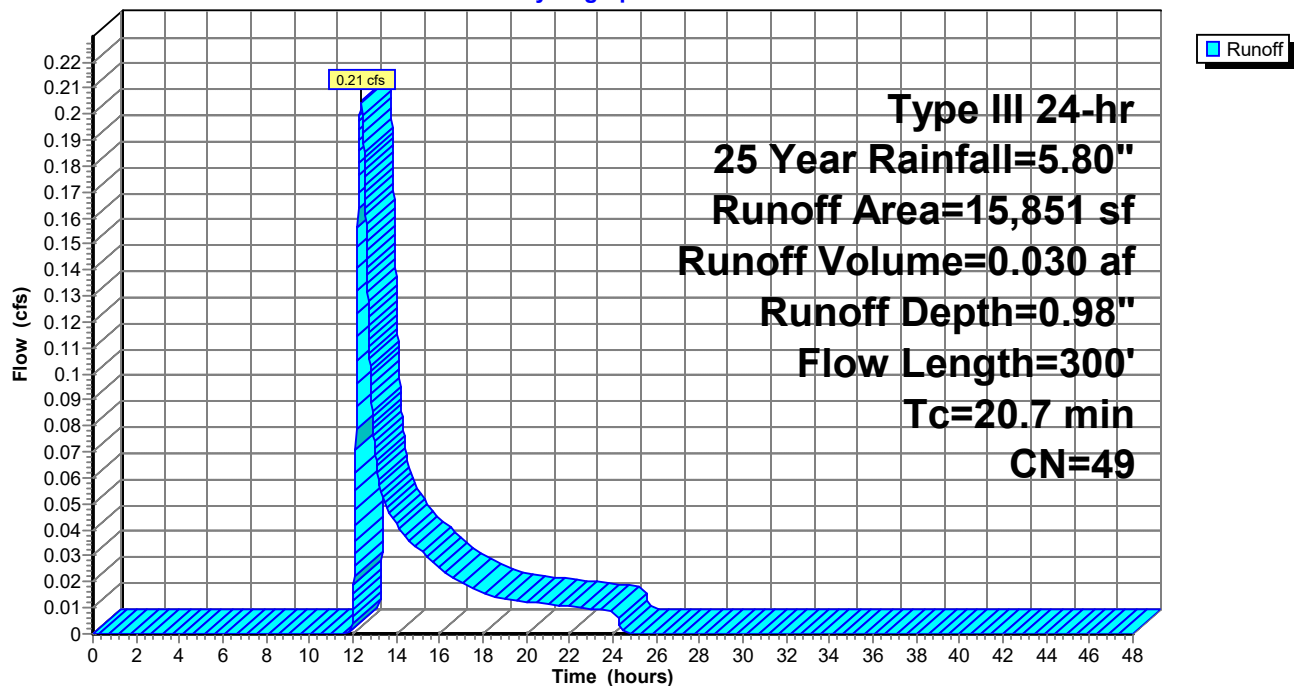
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
2,720	98	Paved parking, HSG A
13,131	39	>75% Grass cover, Good, HSG A
15,851	49	Weighted Average
13,131		82.84% Pervious Area
2,720		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	150	0.0100	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
2.5	150	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.7	300	Total			

Subcatchment 1S: Area 1

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 2S: Area 2

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 0.010 af, Depth= 3.60"

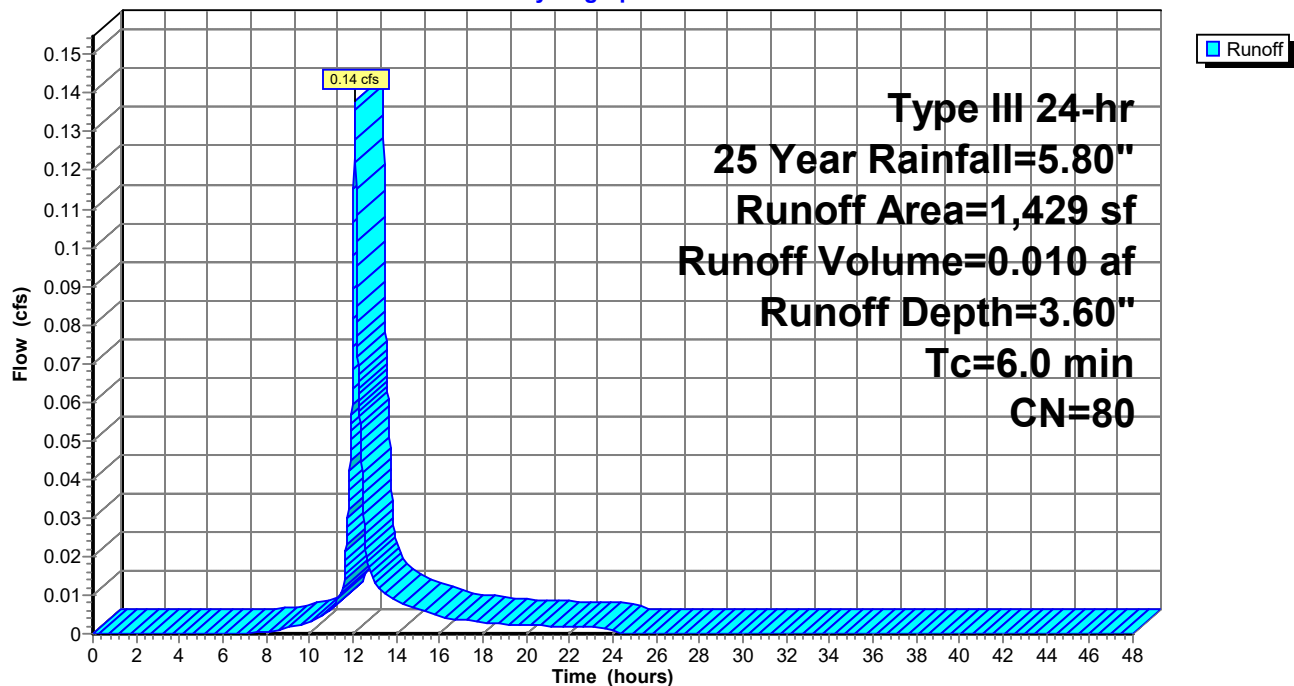
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
428	39	>75% Grass cover, Good, HSG A
1,001	98	Paved parking, HSG A
1,429	80	Weighted Average
428		29.95% Pervious Area
1,001		70.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: Area 2

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 3S: Area to PP1

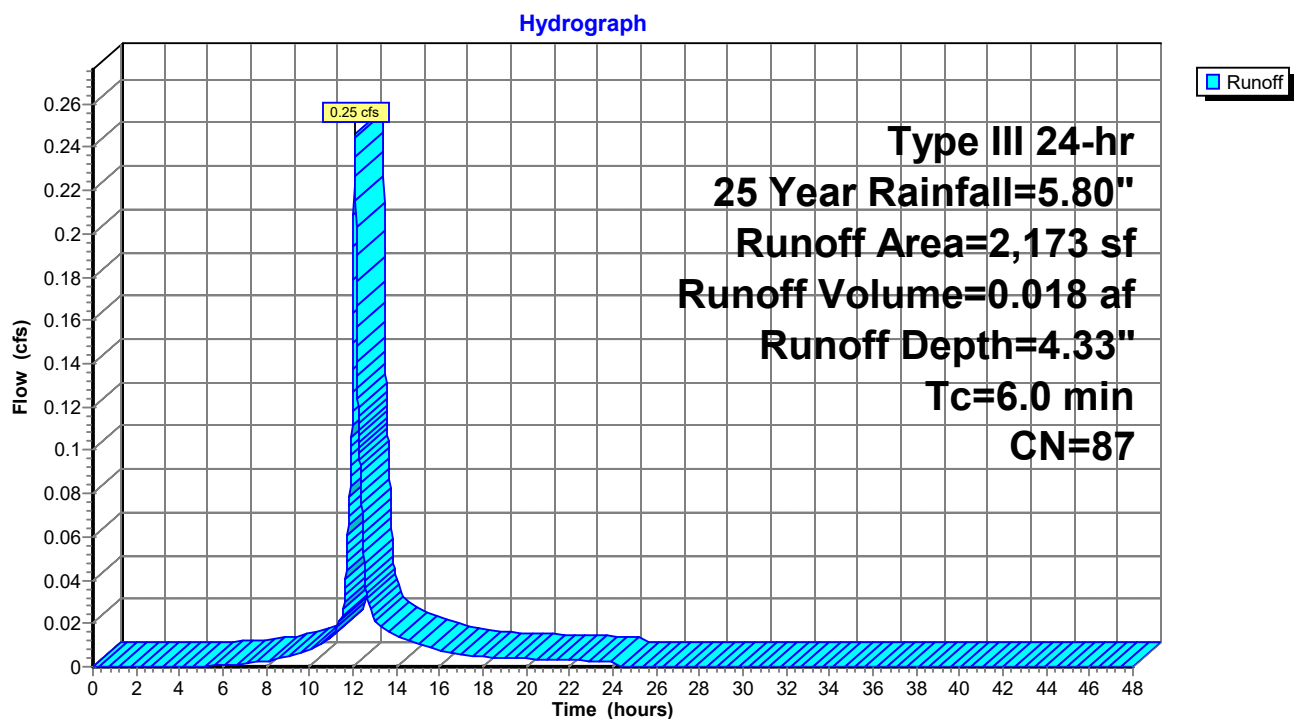
Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.018 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
400	39	>75% Grass cover, Good, HSG A
1,773	98	Paved parking, HSG A
2,173	87	Weighted Average
400		18.41% Pervious Area
1,773		81.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 3S: Area to PP1



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 4S: Area to PP2

Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 5.56"

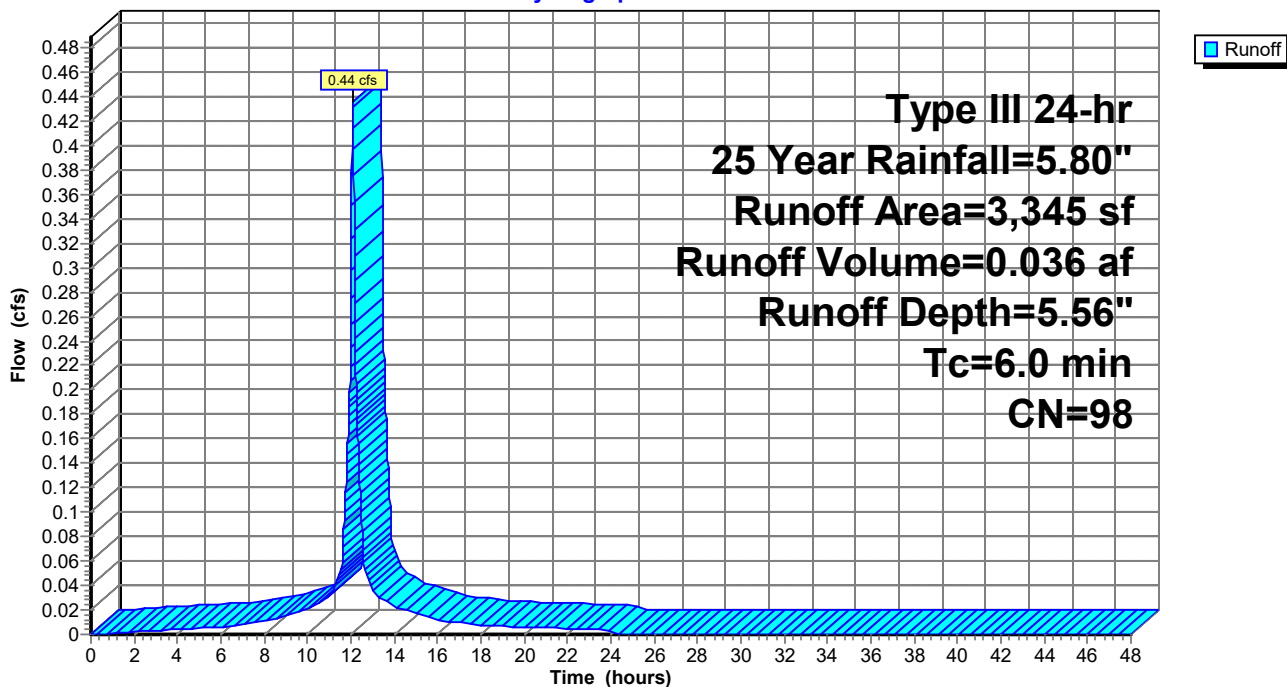
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
3,345	98	Paved parking, HSG A
3,345		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 4S: Area to PP2

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 5S: Area to Rain Garden East

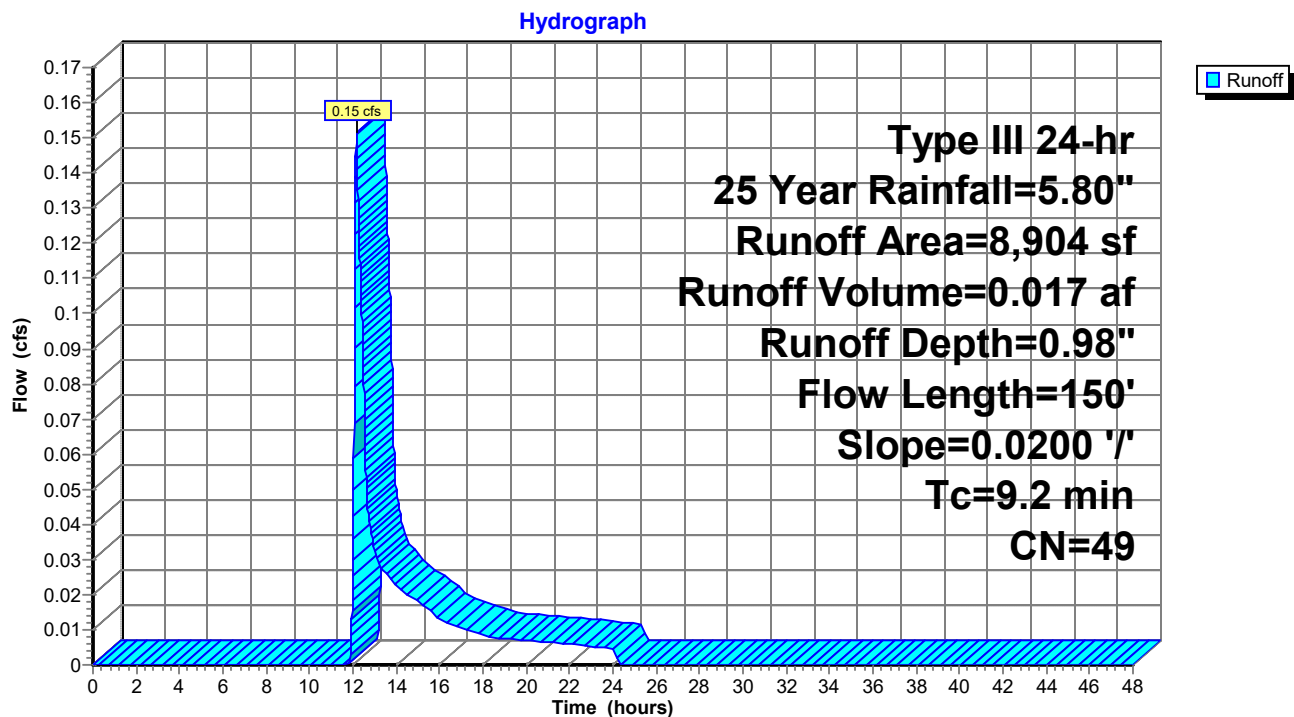
Runoff = 0.15 cfs @ 12.16 hrs, Volume= 0.017 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,555	98	
	7,349	39	>75% Grass cover, Good, HSG A
	8,904	49	Weighted Average
	7,349		82.54% Pervious Area
	1,555		17.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	75	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
1.3	75	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	150	Total			

Subcatchment 5S: Area to Rain Garden East



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 6S: Bldg 1 Roof

Runoff = 1.53 cfs @ 12.08 hrs, Volume= 0.125 af, Depth= 5.56"

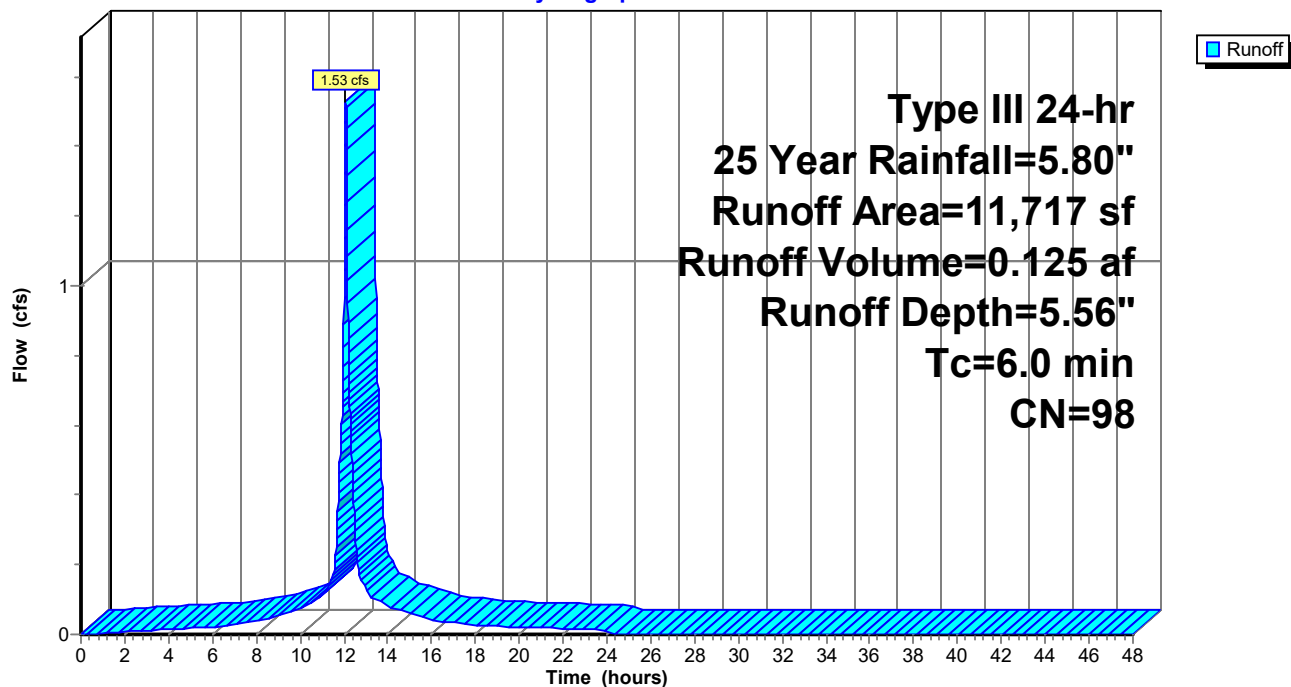
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
11,717	98	Roofs, HSG A
11,717		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 6S: Bldg 1 Roof

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 7S: Area to Rain Garden West

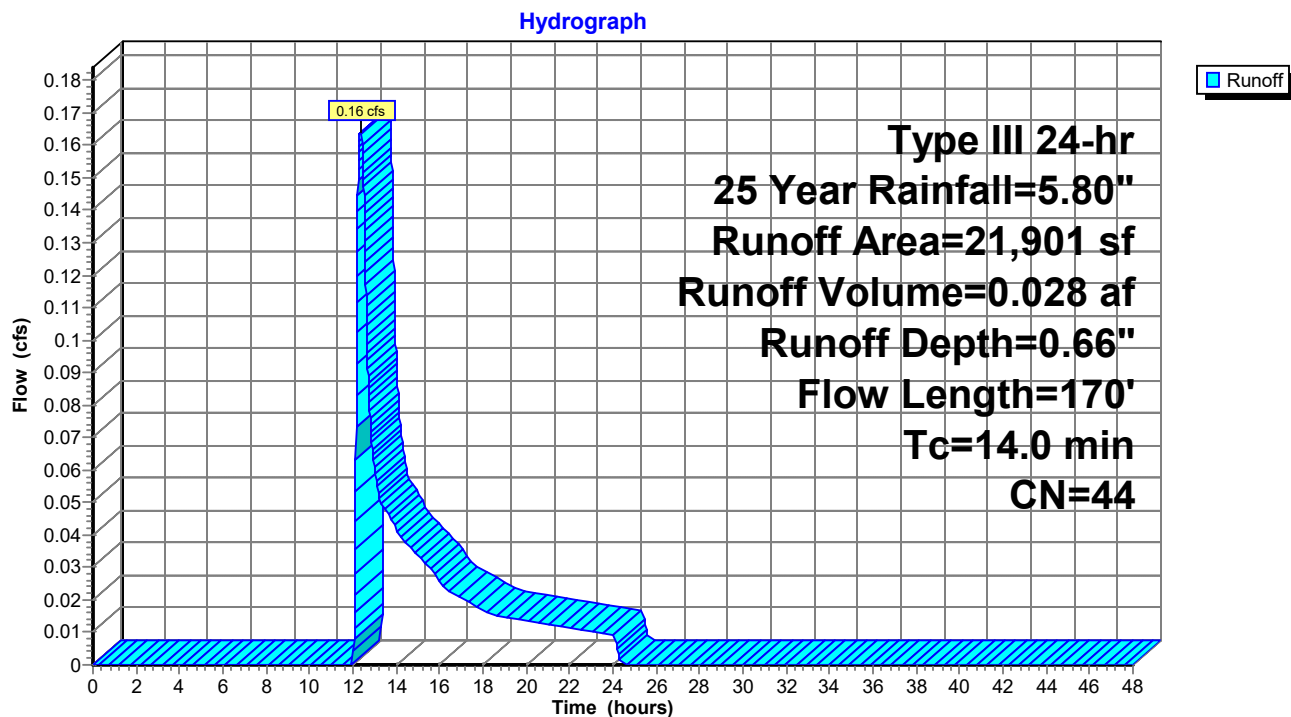
Runoff = 0.16 cfs @ 12.36 hrs, Volume= 0.028 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
1,750	98	Paved parking, HSG A
20,151	39	>75% Grass cover, Good, HSG A
21,901	44	Weighted Average
20,151		92.01% Pervious Area
1,750		7.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	150	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.2	20	0.0600	1.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	170	Total			

Subcatchment 7S: Area to Rain Garden West



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 9S:

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.009 af, Depth= 2.56"

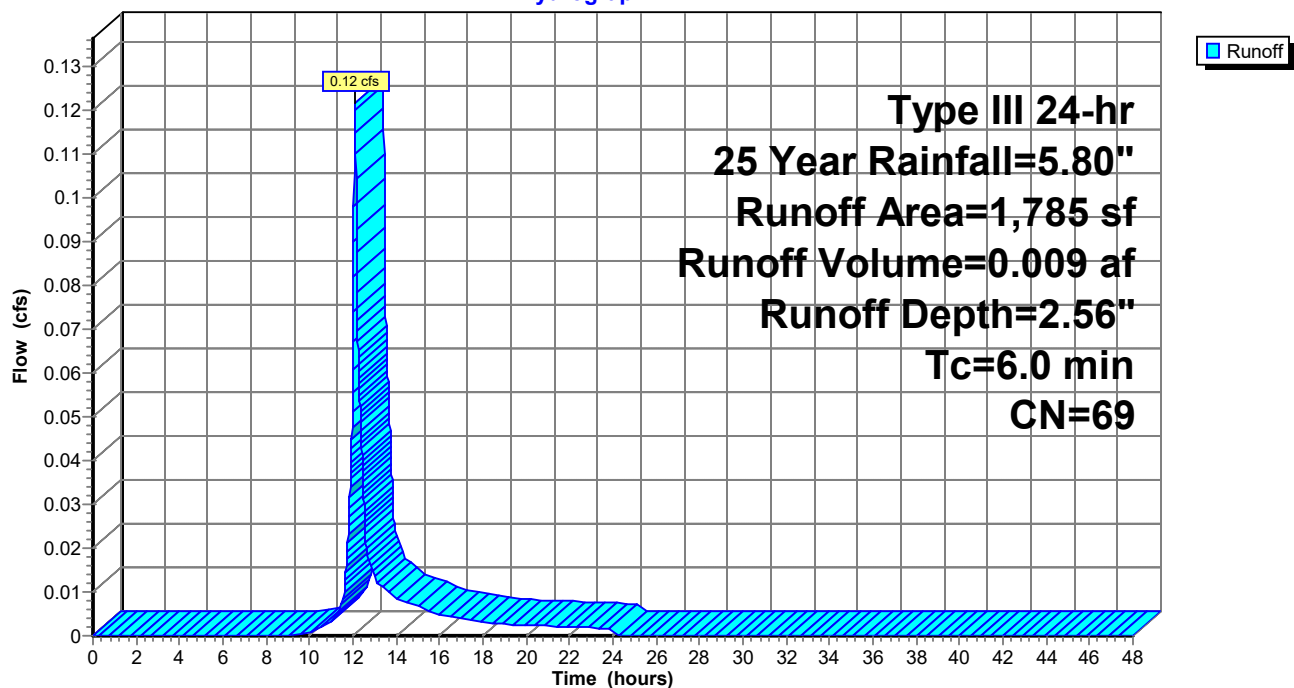
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
875	39	>75% Grass cover, Good, HSG A
910	98	Paved parking, HSG A
1,785	69	Weighted Average
875		49.02% Pervious Area
910		50.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 9S:

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 10S:

Runoff = 1.42 cfs @ 12.09 hrs, Volume= 0.104 af, Depth= 4.43"

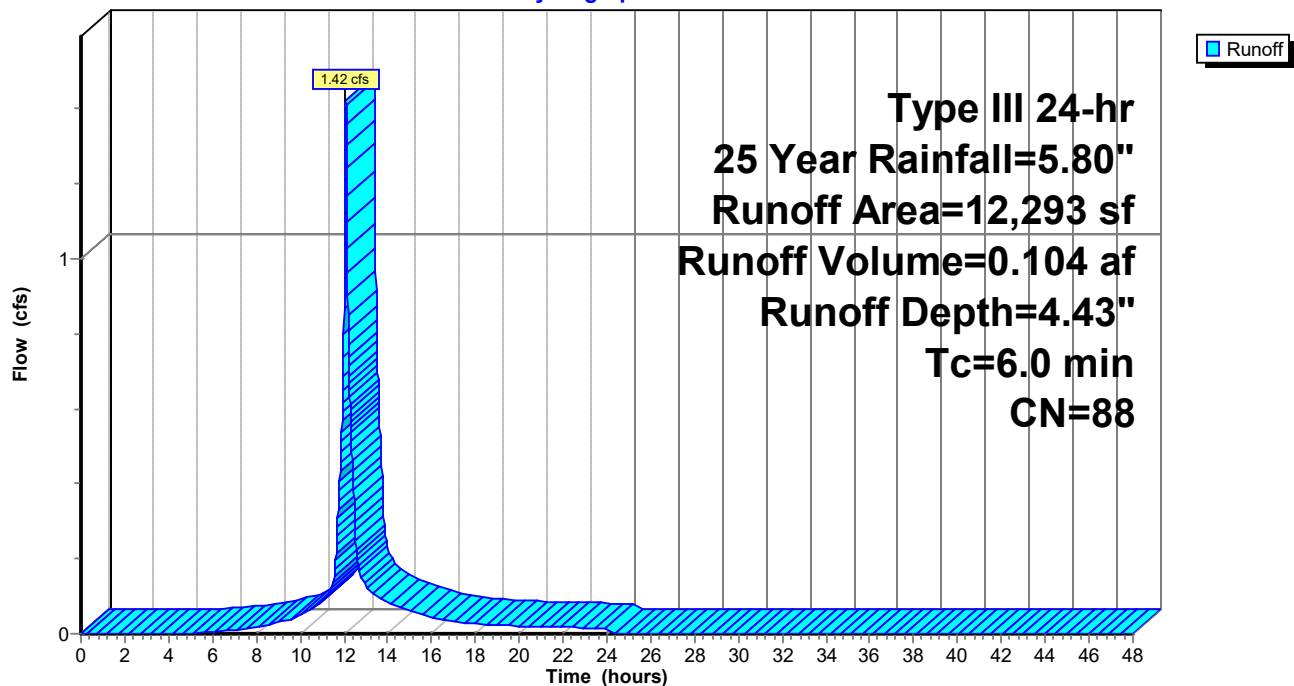
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
10,120	98	Paved parking & roofs
2,173	39	>75% Grass cover, Good, HSG A
12,293	88	Weighted Average
2,173		17.68% Pervious Area
10,120		82.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 10S:

Hydrograph



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Summary for Subcatchment 11S: Area to Rain Garden 2

Runoff = 0.77 cfs @ 12.09 hrs, Volume= 0.055 af, Depth= 2.56"

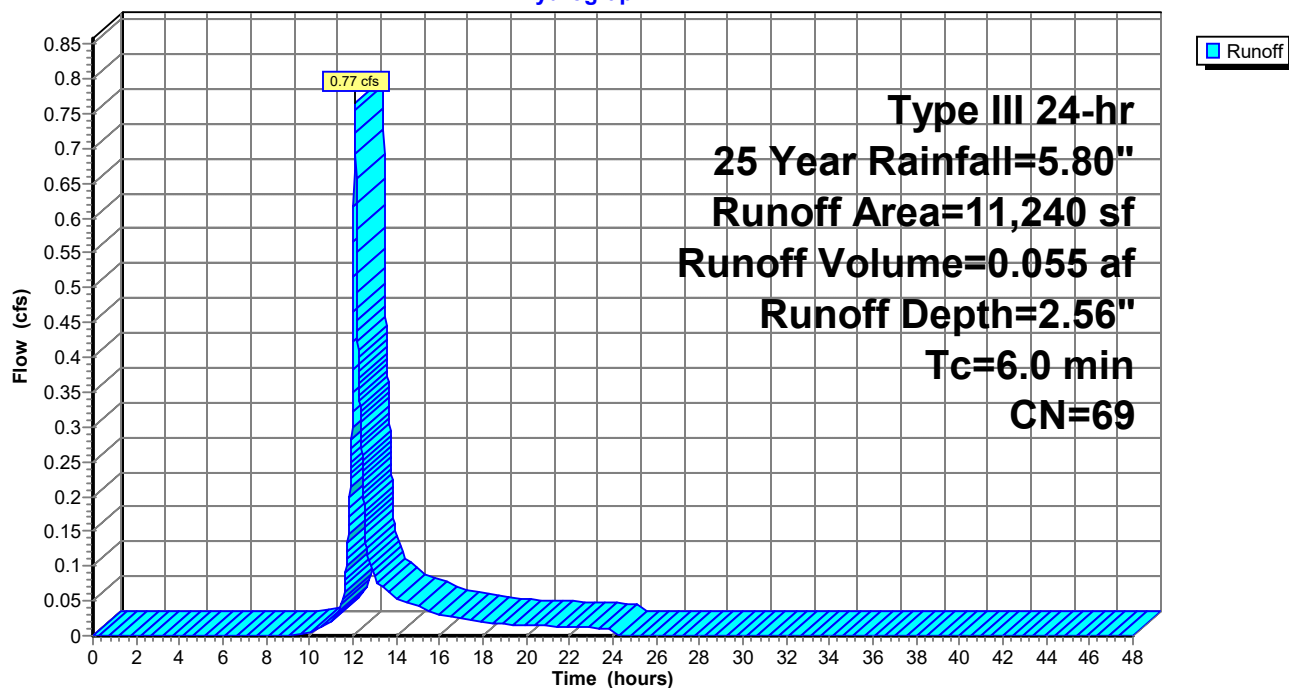
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
5,795	98	Paved parking & roofs
5,445	39	>75% Grass cover, Good, HSG A
11,240	69	Weighted Average
5,445		48.44% Pervious Area
5,795		51.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 11S: Area to Rain Garden 2

Hydrograph



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Summary for Subcatchment 12S: Area to Rain Garden 1

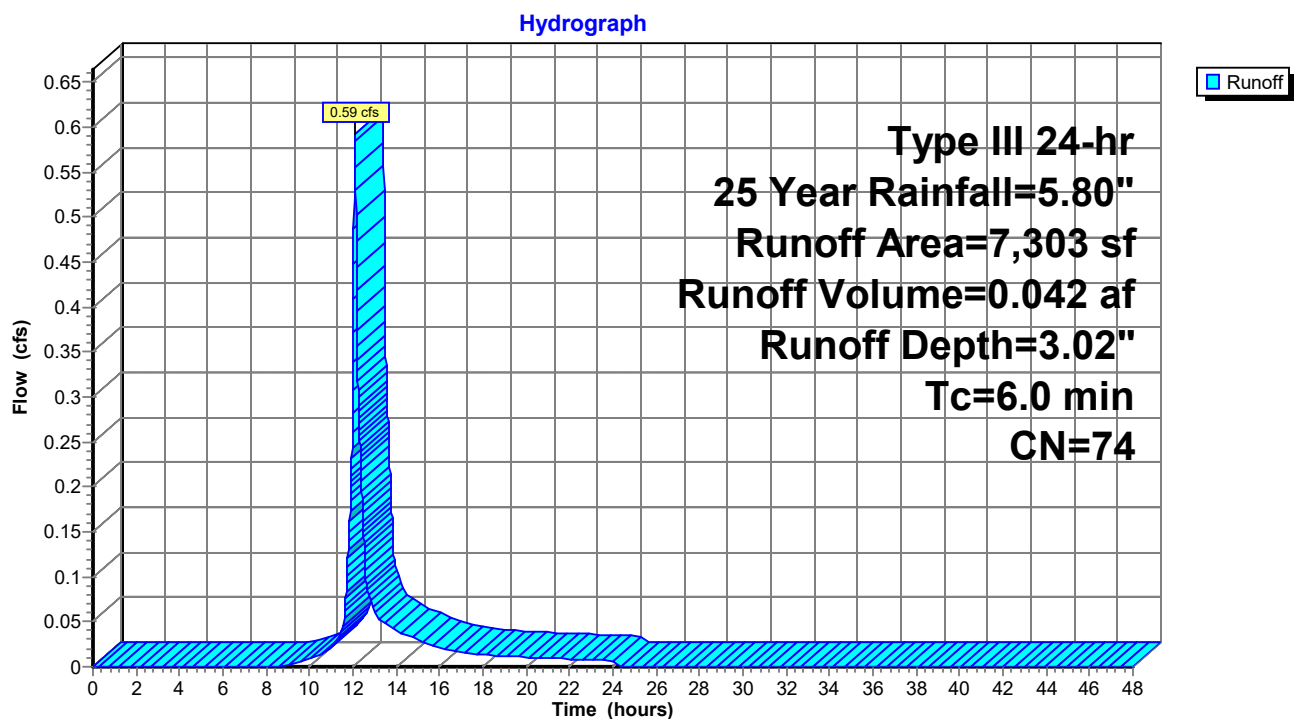
Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.042 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
4,299	98	Paved parking & roofs
3,004	39	>75% Grass cover, Good, HSG A
7,303	74	Weighted Average
3,004		41.13% Pervious Area
4,299		58.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 12S: Area to Rain Garden 1



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 13S: Area to Infiltration Trench

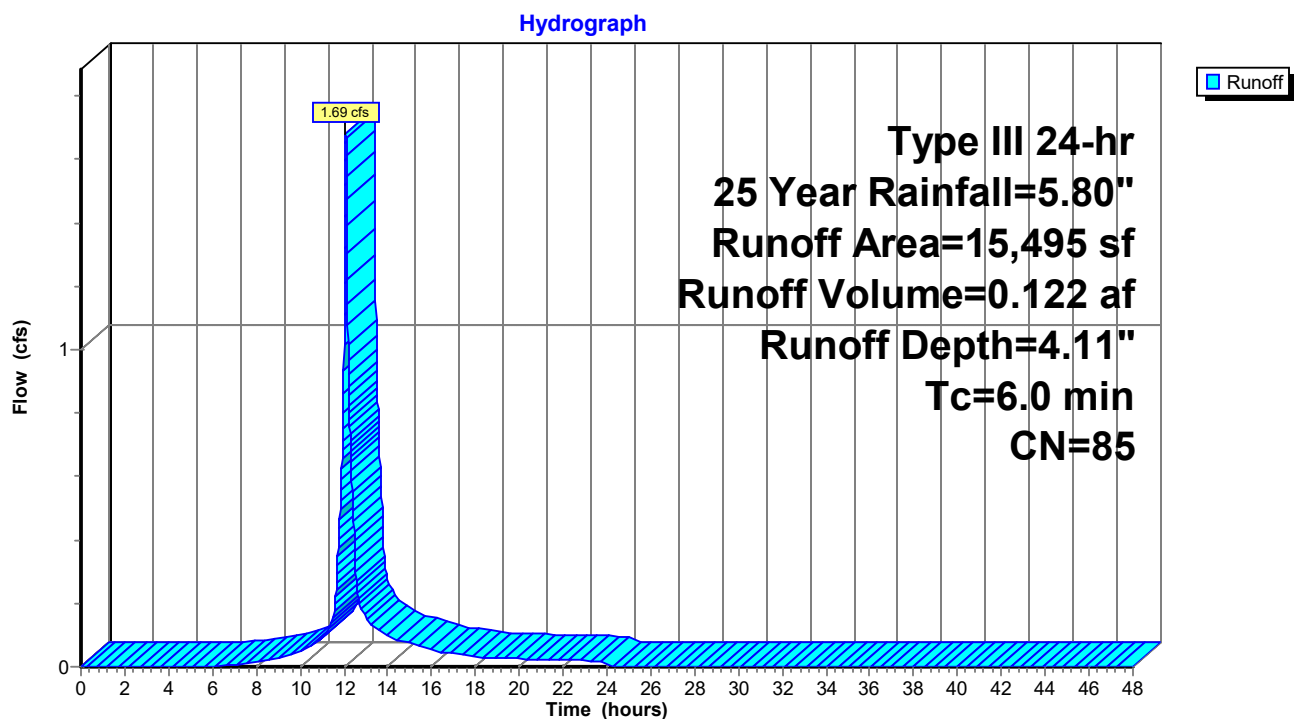
Runoff = 1.69 cfs @ 12.09 hrs, Volume= 0.122 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
12,004	98	Paved parking & roofs
3,491	39	>75% Grass cover, Good, HSG A
15,495	85	Weighted Average
3,491		22.53% Pervious Area
12,004		77.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 13S: Area to Infiltration Trench



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 14S: Roof Area to Drip Strip 4

Runoff = 0.79 cfs @ 12.08 hrs, Volume= 0.065 af, Depth= 5.56"

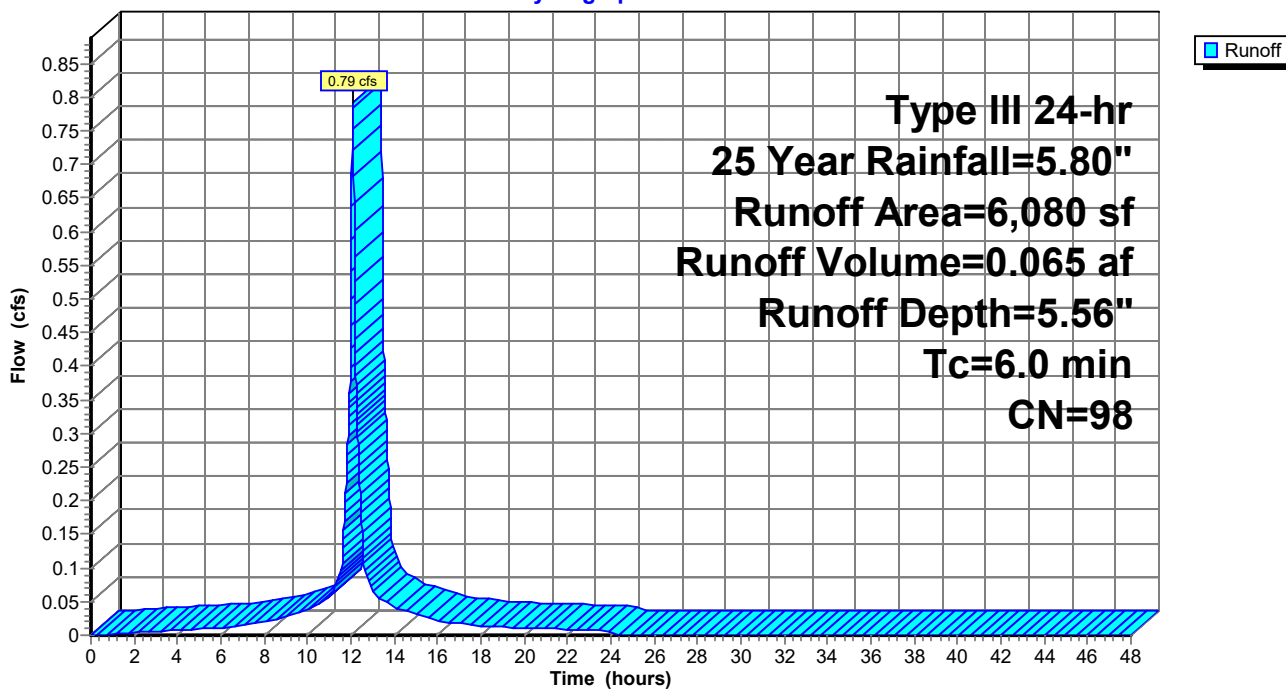
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	6,080	98	Roofs
*	0	76	Drip stone, HSG A
	6,080	98	Weighted Average
	6,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 14S: Roof Area to Drip Strip 4

Hydrograph



Post-Development

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 15S: Roof Area to Drip Strip 1

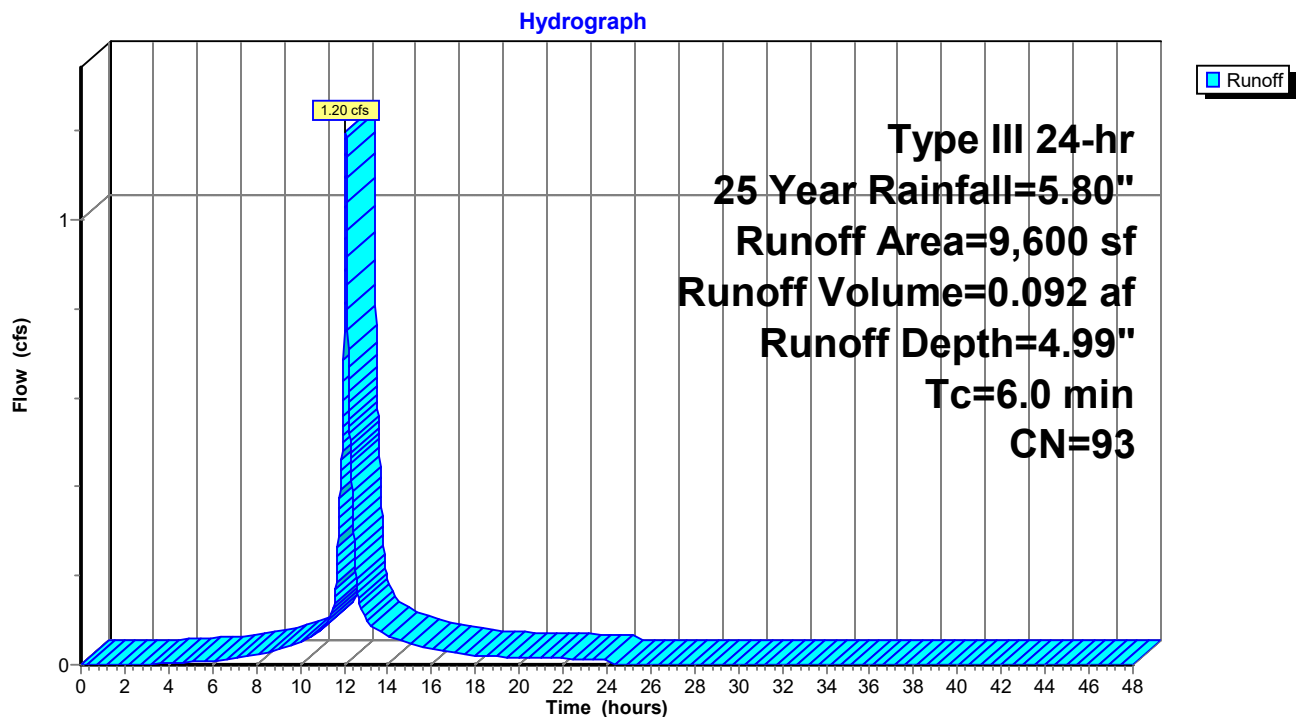
Runoff = 1.20 cfs @ 12.08 hrs, Volume= 0.092 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	7,600	98	Roofs
*	2,000	76	Drip stone, HSG A
	9,600	93	Weighted Average
	2,000		20.83% Pervious Area
	7,600		79.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 15S: Roof Area to Drip Strip 1



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 16S: Roof Area to Drip Strip 2

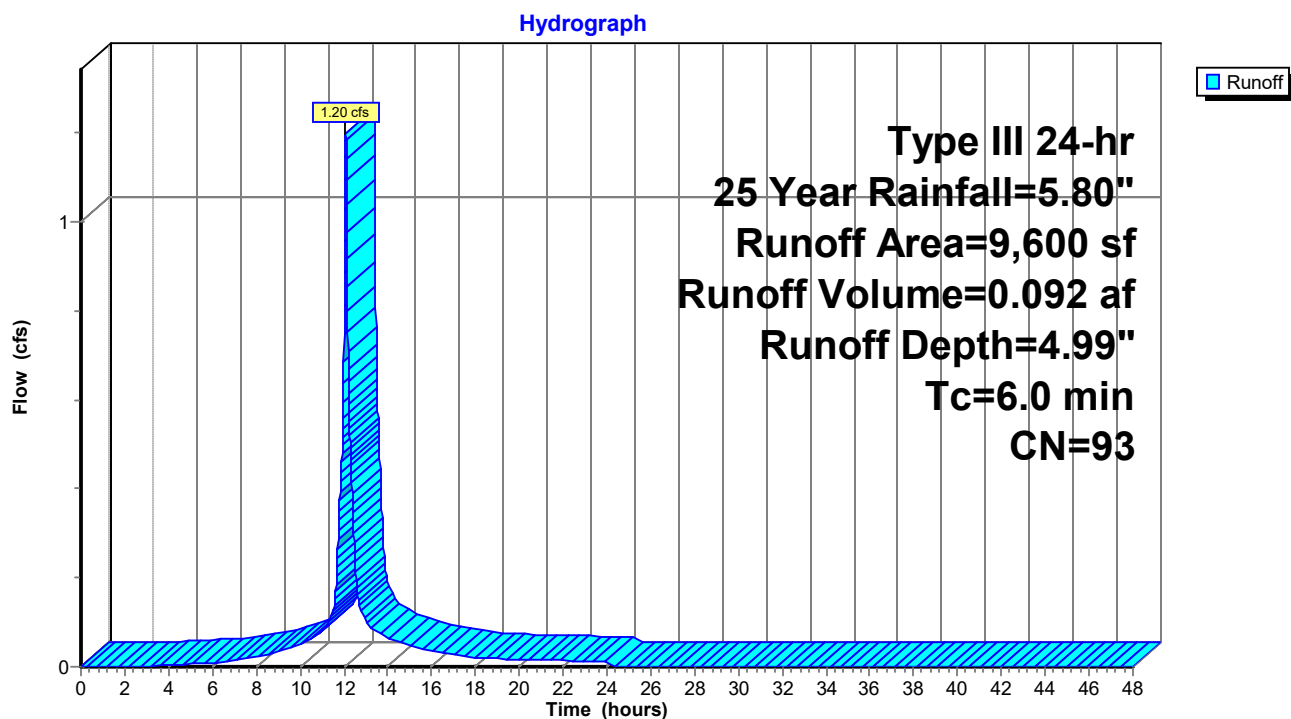
Runoff = 1.20 cfs @ 12.08 hrs, Volume= 0.092 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	7,600	98	Roofs
*	2,000	76	Drip stone, HSG A
	9,600	93	Weighted Average
	2,000		20.83% Pervious Area
	7,600		79.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 16S: Roof Area to Drip Strip 2



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 17S: Roof Area to Drip Strip 3

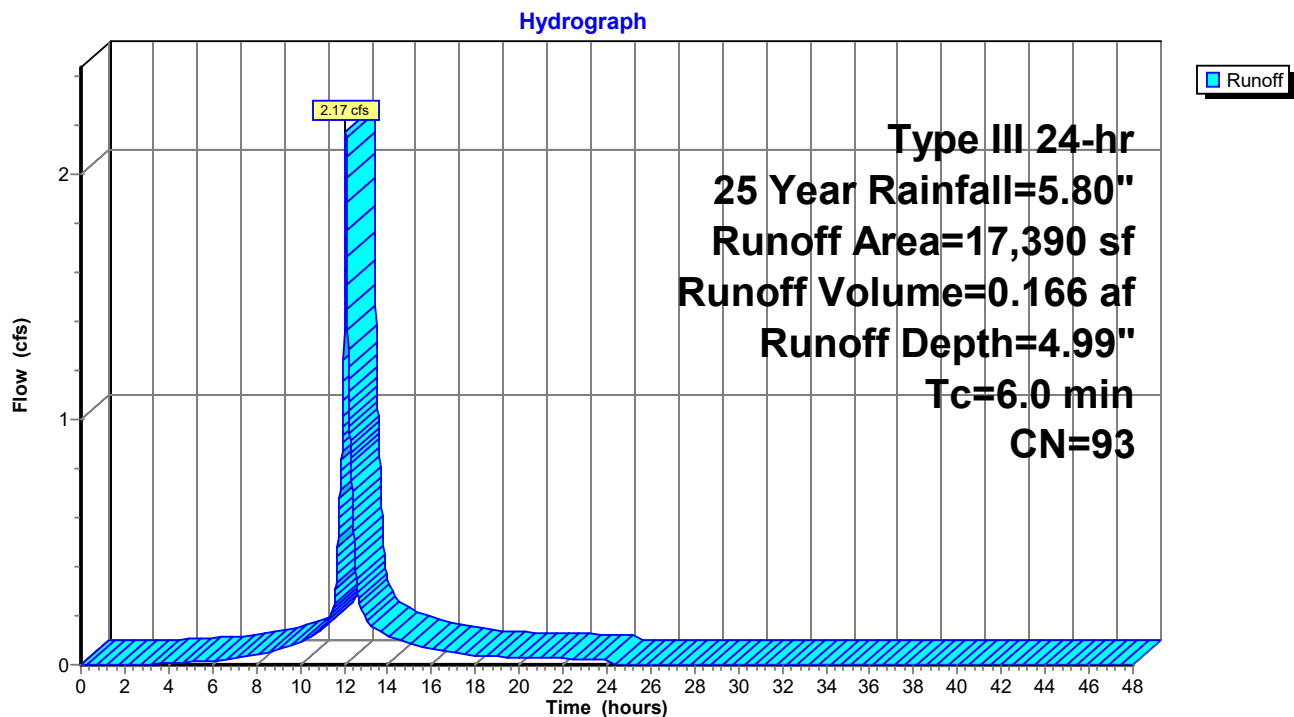
Runoff = 2.17 cfs @ 12.08 hrs, Volume= 0.166 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,270	98	Roofs
*	4,120	76	Drip stone, HSG A
	17,390	93	Weighted Average
	4,120		23.69% Pervious Area
	13,270		76.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 17S: Roof Area to Drip Strip 3



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 18S: North of Mother House

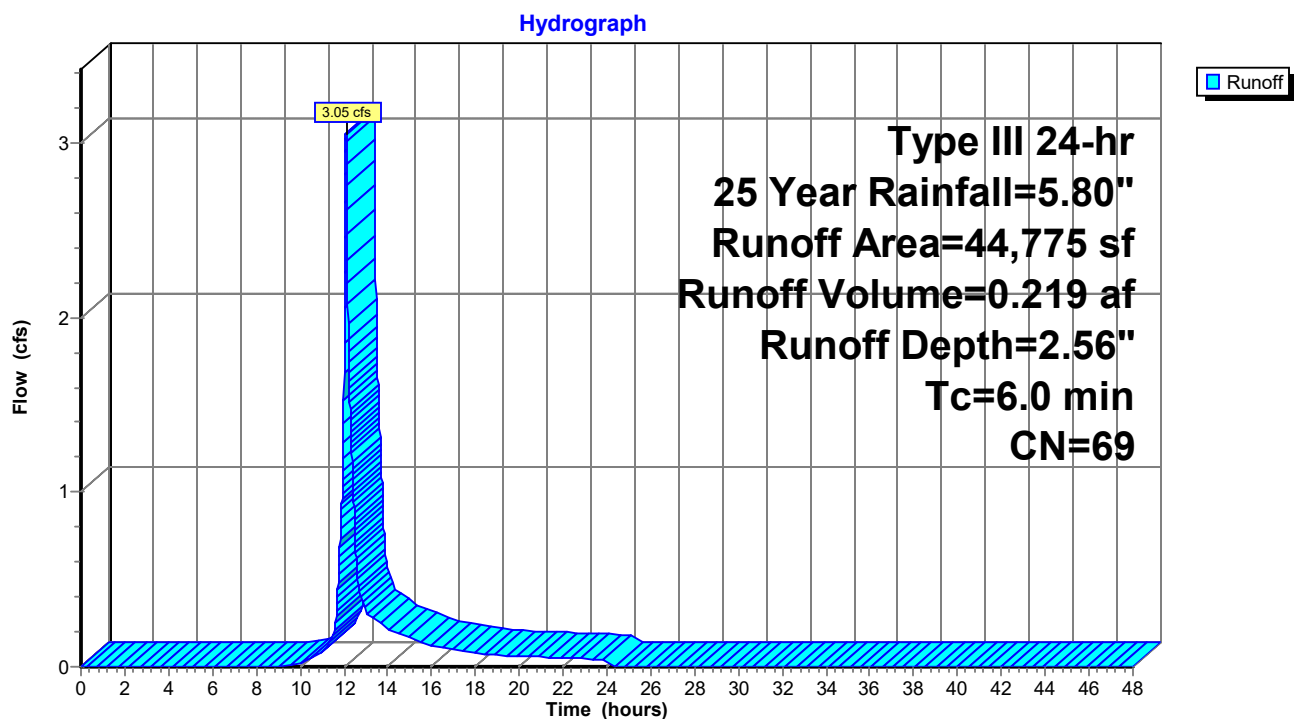
Runoff = 3.05 cfs @ 12.09 hrs, Volume= 0.219 af, Depth= 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
21,975	39	>75% Grass cover, Good, HSG A
22,800	98	Paved parking, HSG A
44,775	69	Weighted Average
21,975		49.08% Pervious Area
22,800		50.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 18S: North of Mother House



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 19A: St. Josephs

Runoff = 1.75 cfs @ 12.30 hrs, Volume= 0.197 af, Depth= 1.79"

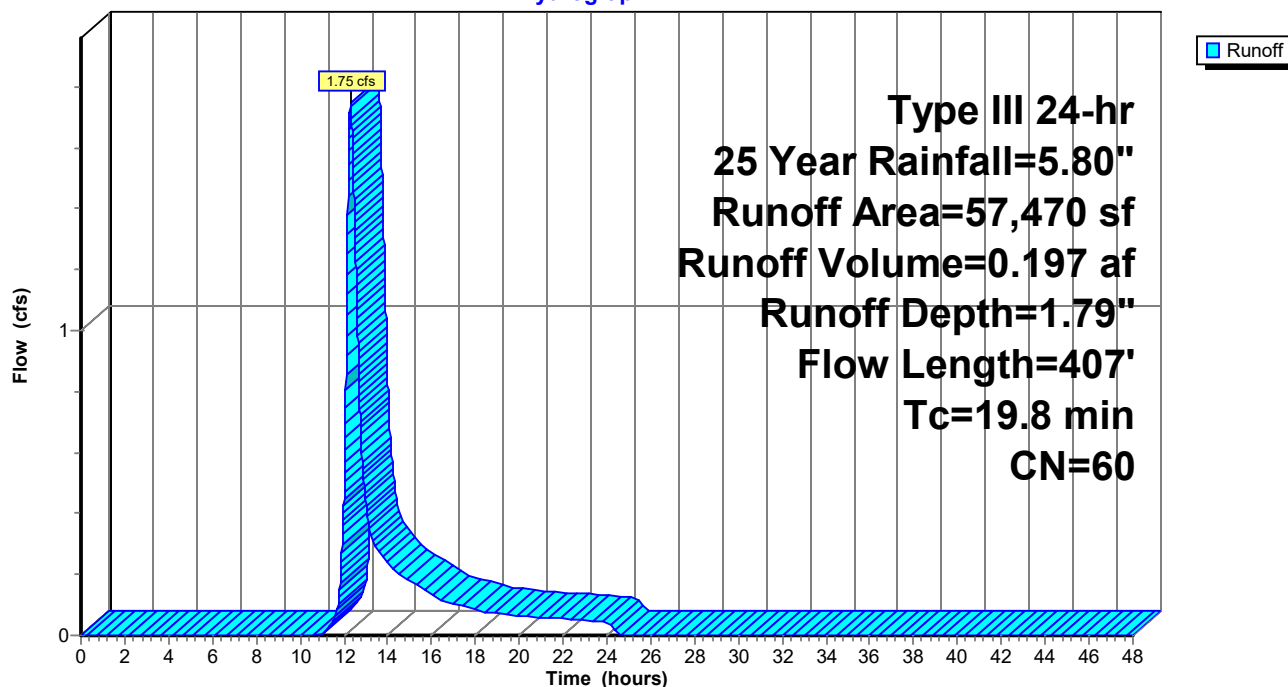
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	20,155	98	Impervious
	37,315	39	>75% Grass cover, Good, HSG A
	57,470	60	Weighted Average
	37,315		64.93% Pervious Area
	20,155		35.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	122	0.0160	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
1.2	285	0.0064	3.93	3.09	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
19.8	407	Total			

Subcatchment 19A: St. Josephs

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 20A: North Parking - West

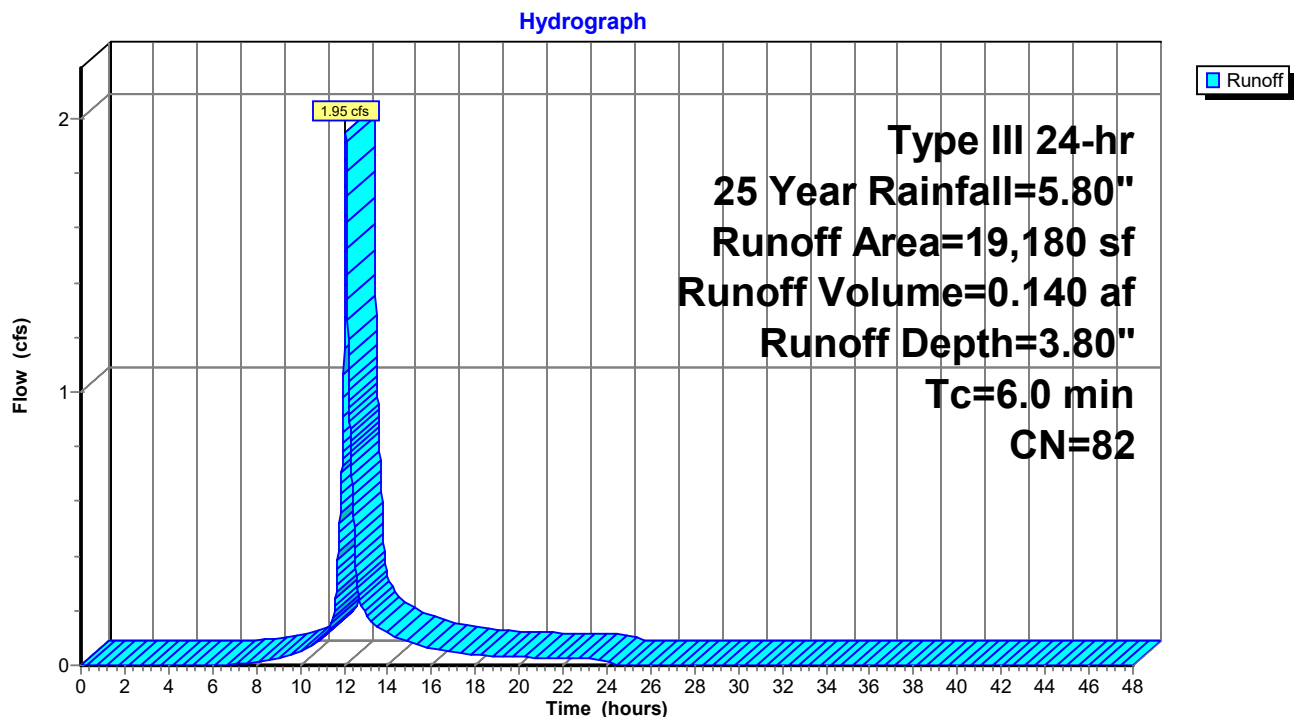
Runoff = 1.95 cfs @ 12.09 hrs, Volume= 0.140 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	7,700	98	Paved parking, HSG A
*	6,156	98	Porous pavement
	5,324	39	>75% Grass cover, Good, HSG A
	19,180	82	Weighted Average
	5,324		27.76% Pervious Area
	13,856		72.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 20A: North Parking - West



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 20B: North Parking - East

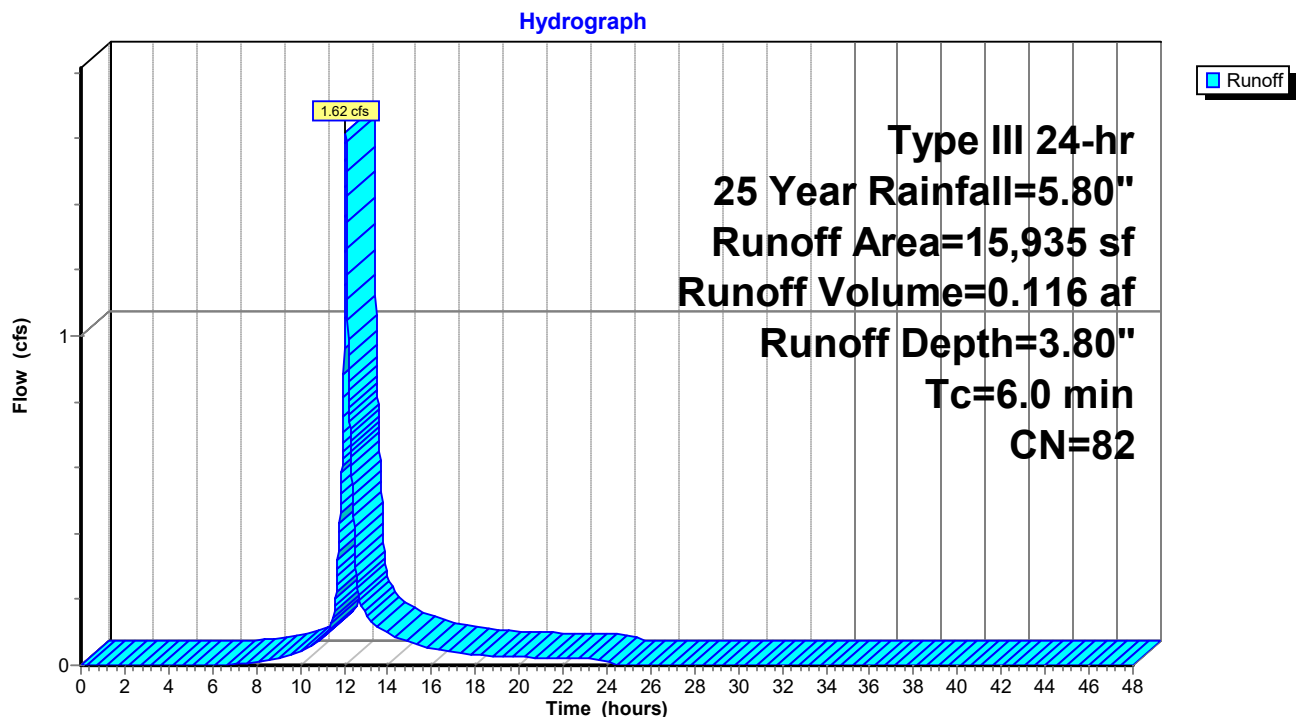
Runoff = 1.62 cfs @ 12.09 hrs, Volume= 0.116 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	6,380	98	Paved parking, HSG A
*	5,346	98	Porous pavement
	4,209	39	>75% Grass cover, Good, HSG A
	15,935	82	Weighted Average
	4,209		26.41% Pervious Area
	11,726		73.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 20B: North Parking - East



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 21A: Building 5

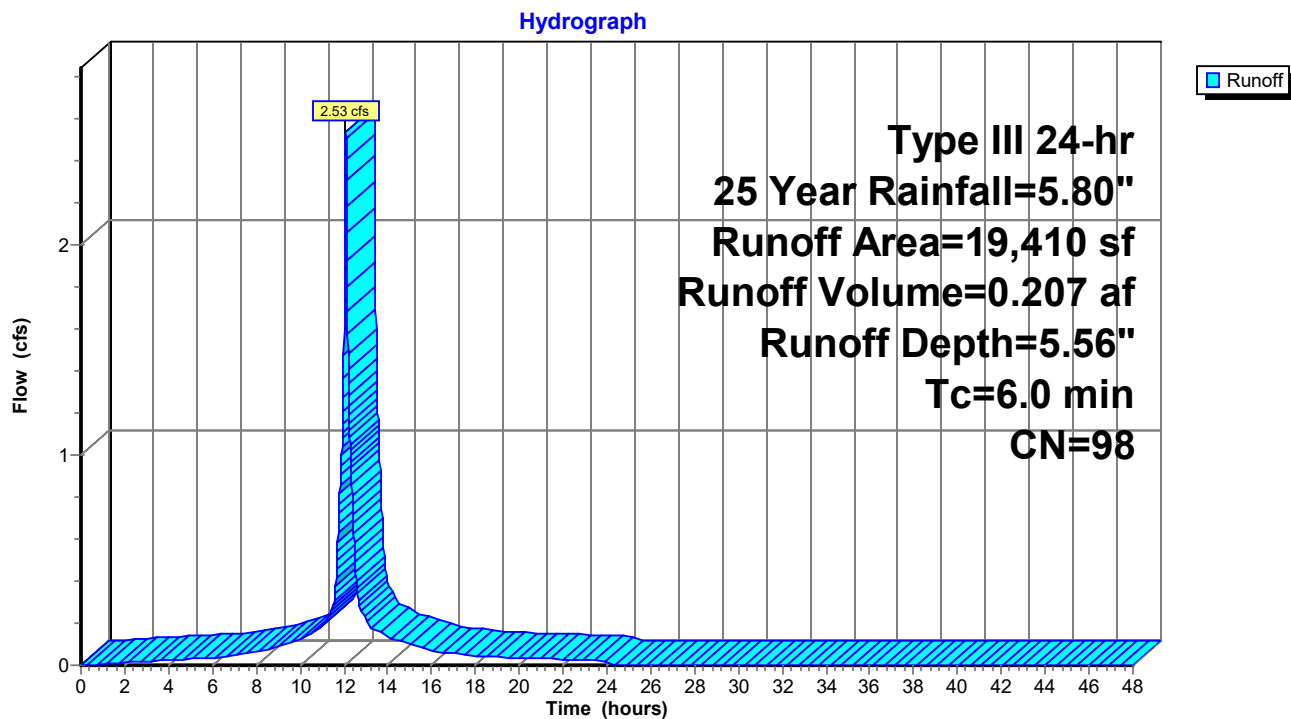
Runoff = 2.53 cfs @ 12.08 hrs, Volume= 0.207 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	19,410	98	Roof & Sidewalk
	0	39	>75% Grass cover, Good, HSG A
	19,410	98	Weighted Average
	19,410		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 21A: Building 5



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 21B: Buiding 4

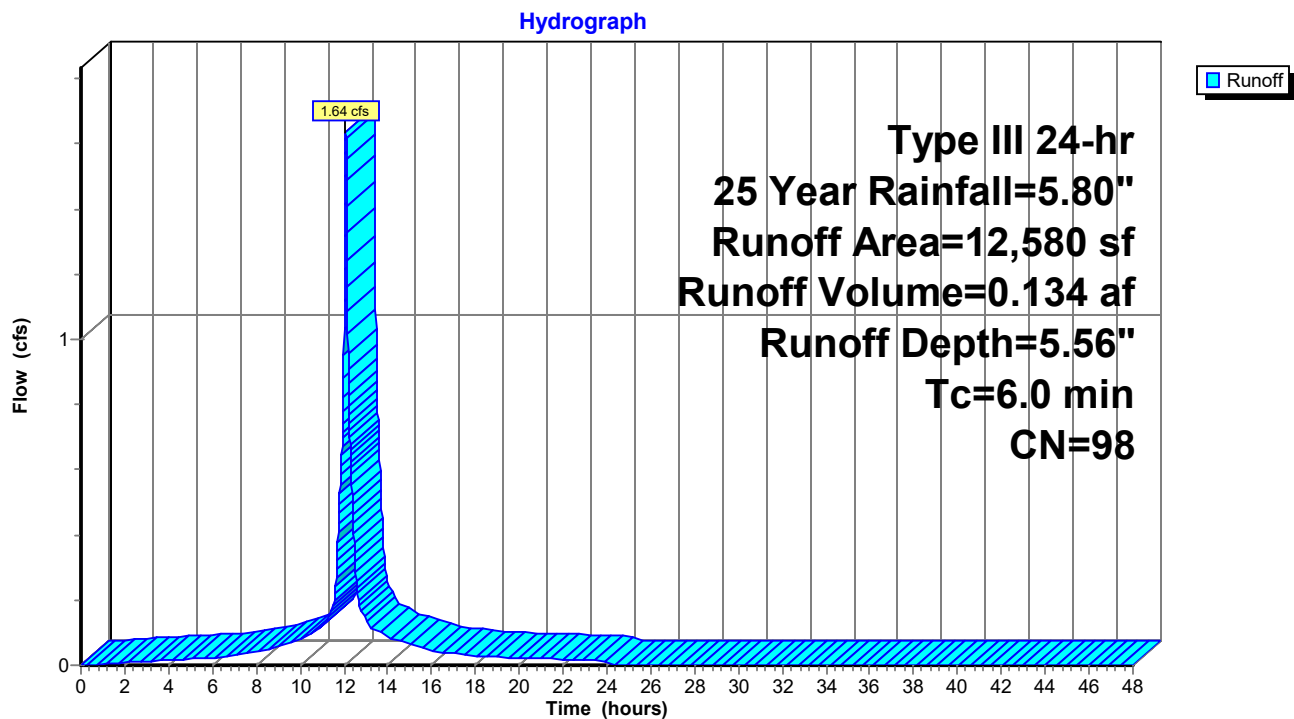
Runoff = 1.64 cfs @ 12.08 hrs, Volume= 0.134 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	12,580	98	Roof & Sidewalk
	0	39	>75% Grass cover, Good, HSG A
	12,580	98	Weighted Average
	12,580		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 21B: Buiding 4



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 22A: The Common

Runoff = 0.31 cfs @ 12.45 hrs, Volume= 0.053 af, Depth= 0.78"

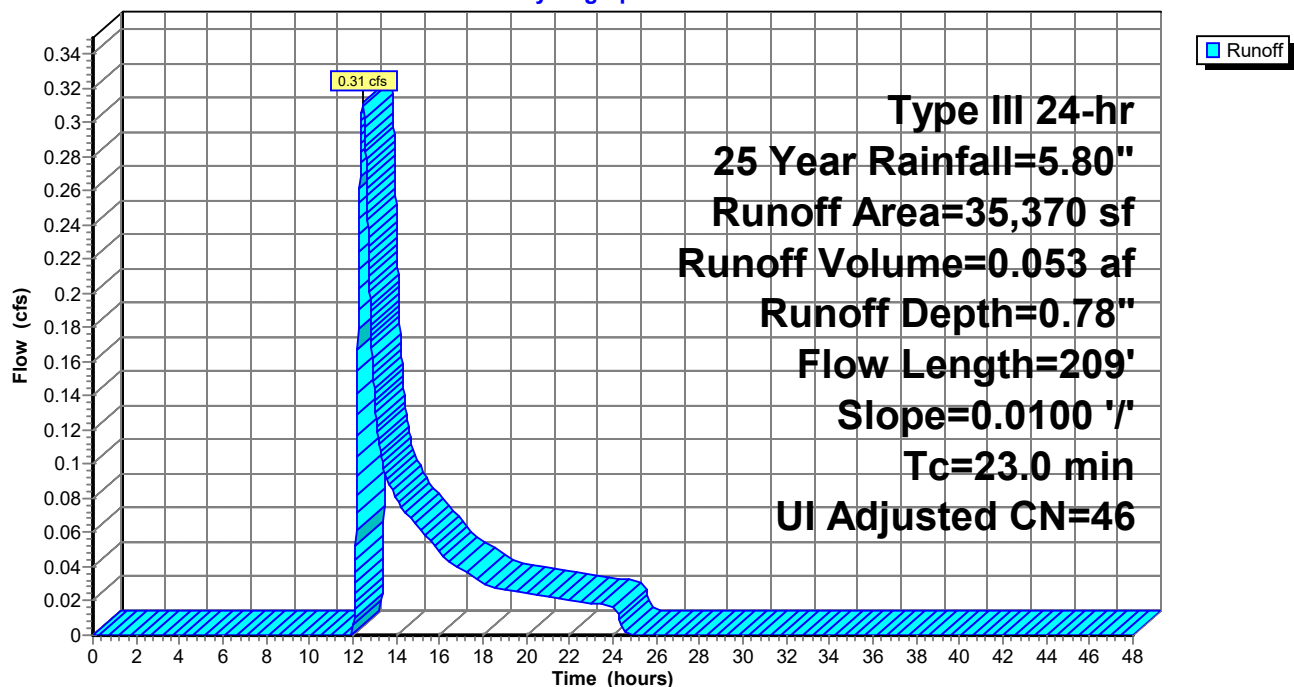
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Adj	Description
8,175	98		Unconnected pavement, HSG A
27,195	39		>75% Grass cover, Good, HSG A
35,370	53	46	Weighted Average, UI Adjusted
27,195			76.89% Pervious Area
8,175			23.11% Impervious Area
8,175			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	120	0.0100	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.1	15	0.0100	2.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	74	0.0100	1.50		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
23.0	209	Total			

Subcatchment 22A: The Common

Hydrograph



Post-Development

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 22B: Detention Pond 1

Runoff = 0.13 cfs @ 12.12 hrs, Volume= 0.014 af, Depth= 0.85"

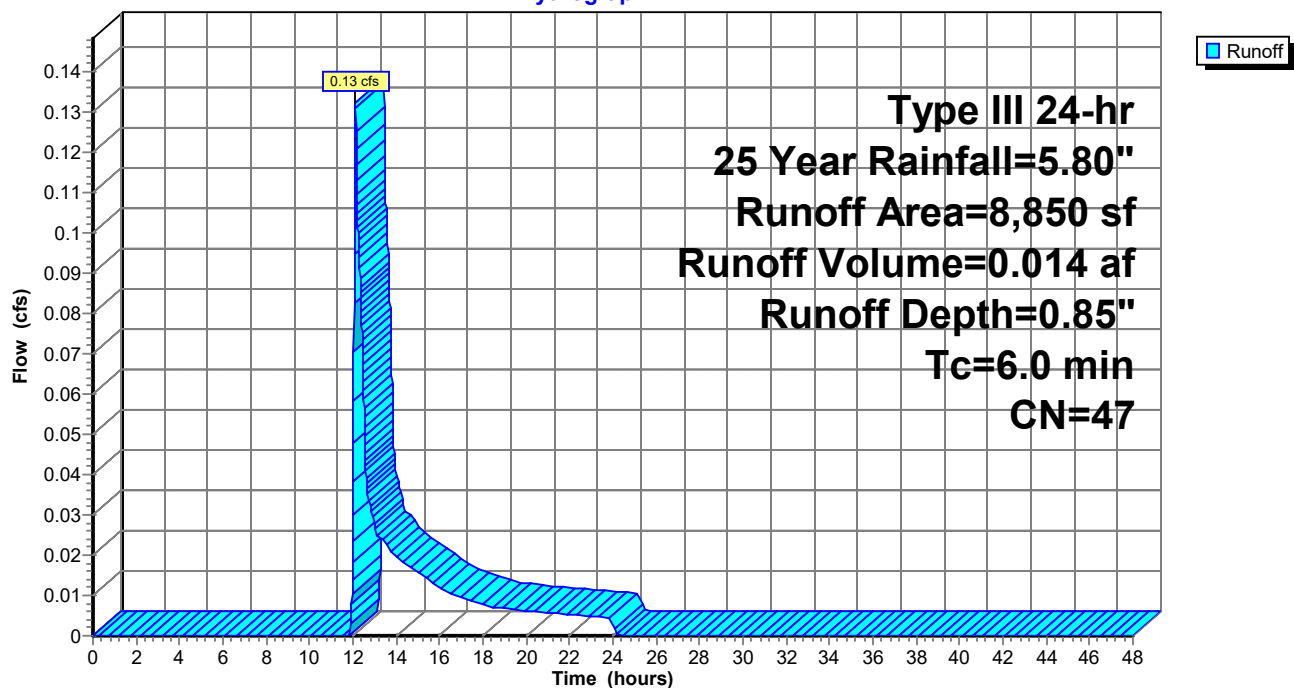
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,185	98	Walkways
	7,665	39	>75% Grass cover, Good, HSG A
	8,850	47	Weighted Average
	7,665		86.61% Pervious Area
	1,185		13.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 22B: Detention Pond 1

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 23A: South Parking - West

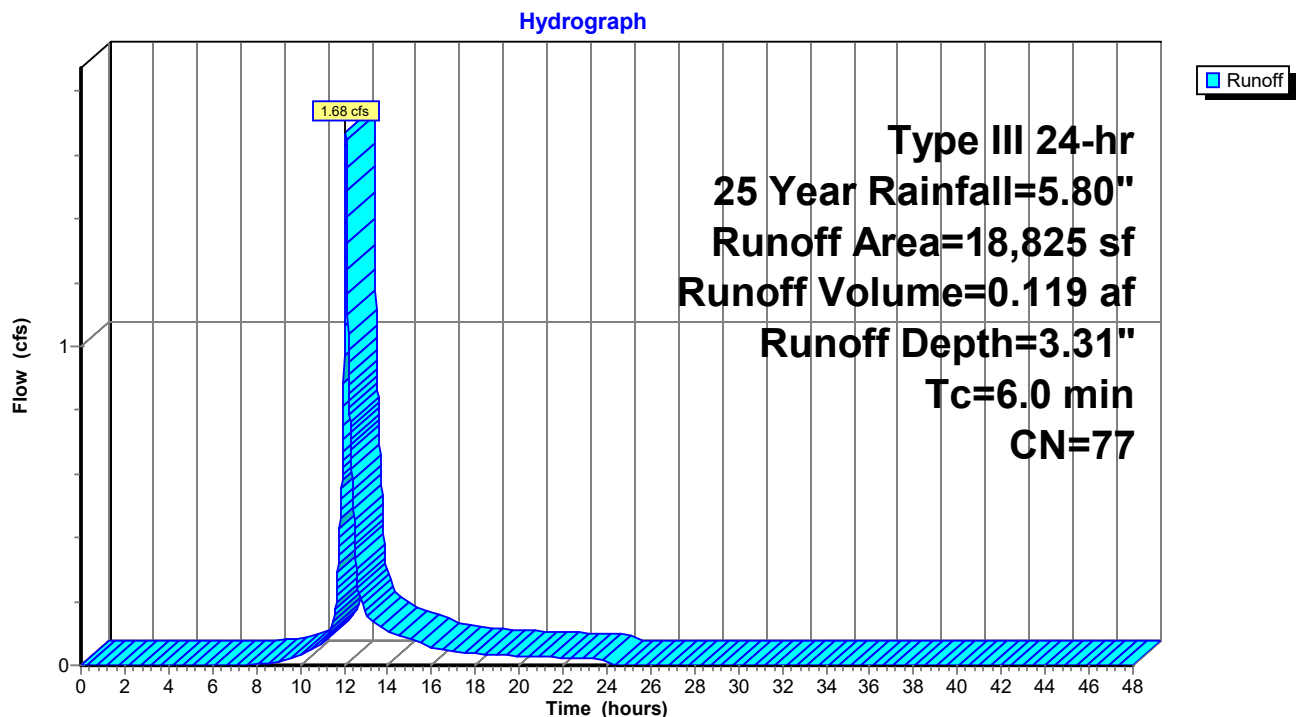
Runoff = 1.68 cfs @ 12.09 hrs, Volume= 0.119 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	8,390	98	Paved parking, HSG A
*	3,744	98	Porous pavement
	6,691	39	>75% Grass cover, Good, HSG A
	18,825	77	Weighted Average
	6,691		35.54% Pervious Area
	12,134		64.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 23A: South Parking - West



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 23B: South Parking - East

Runoff = 0.85 cfs @ 12.09 hrs, Volume= 0.061 af, Depth= 3.21"

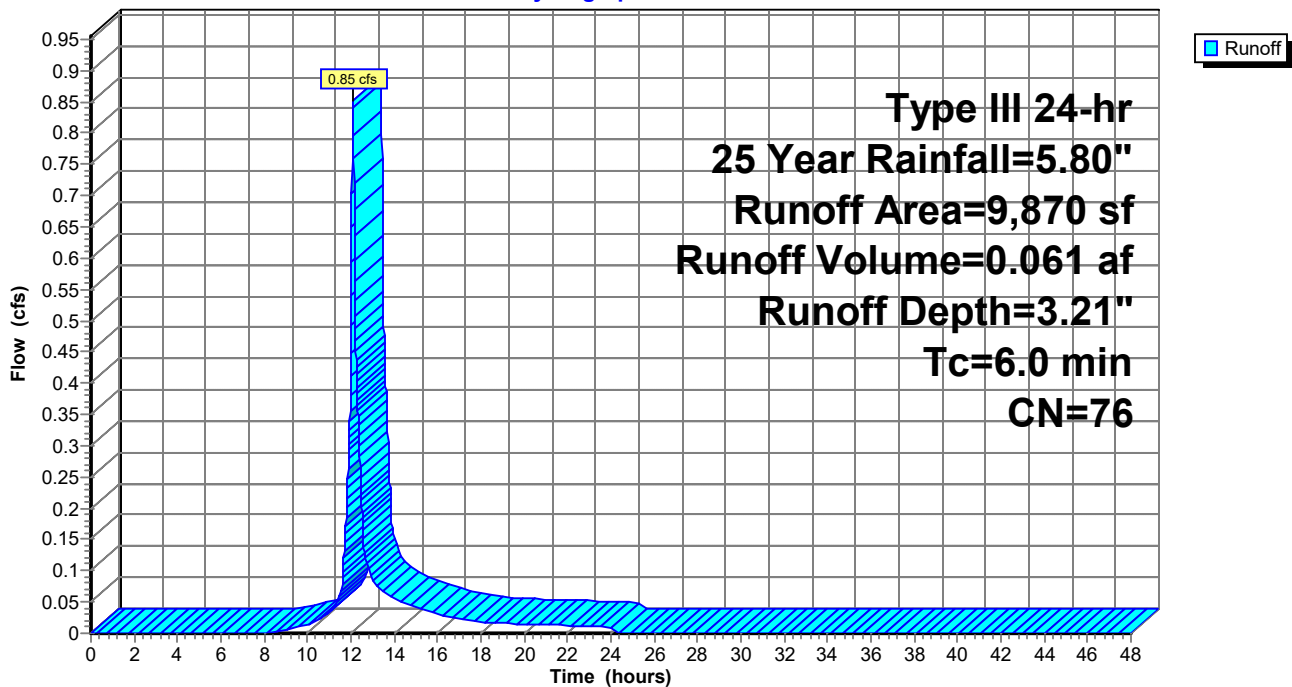
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	4,610	98	Paved parking, HSG A
*	1,620	98	Porous pavement
	3,640	39	>75% Grass cover, Good, HSG A
	9,870	76	Weighted Average
	3,640		36.88% Pervious Area
	6,230		63.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 23B: South Parking - East

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 24A: Building 2

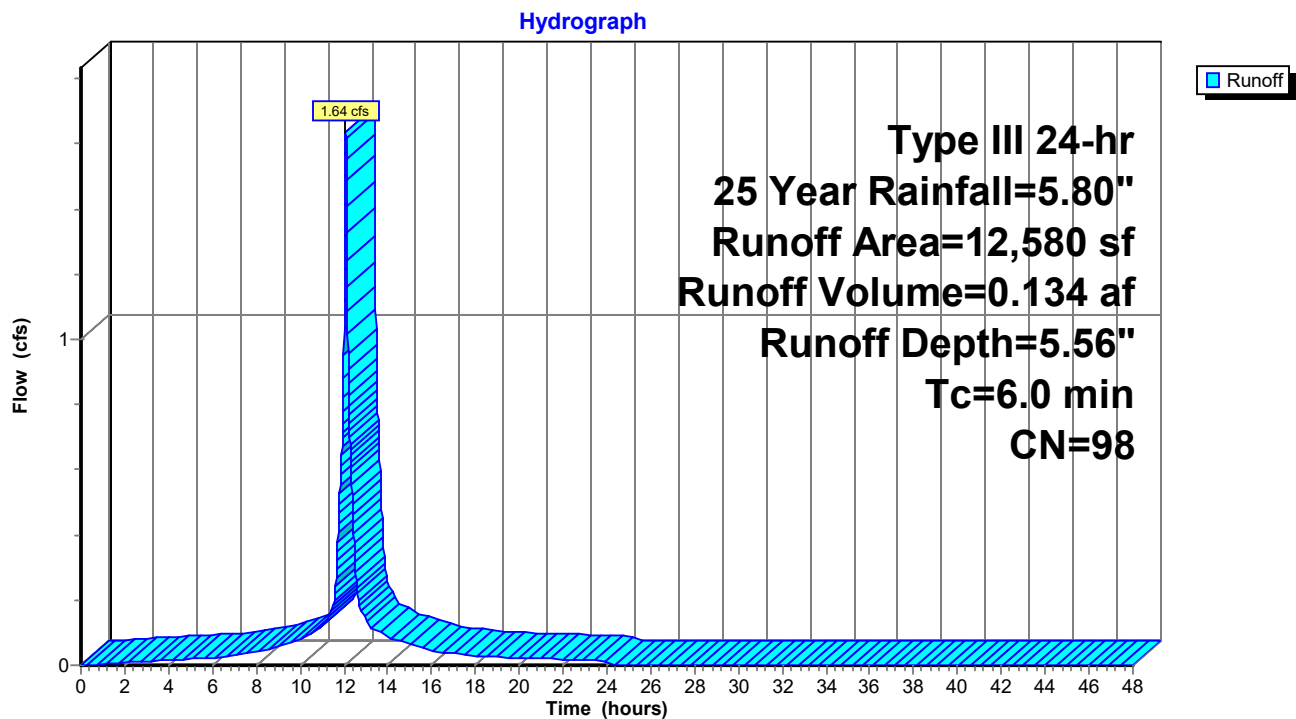
Runoff = 1.64 cfs @ 12.08 hrs, Volume= 0.134 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	12,580	98	Roof & Pavement
	0	39	>75% Grass cover, Good, HSG A
	12,580	98	Weighted Average
	12,580		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 24A: Building 2



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 24B: Building 3

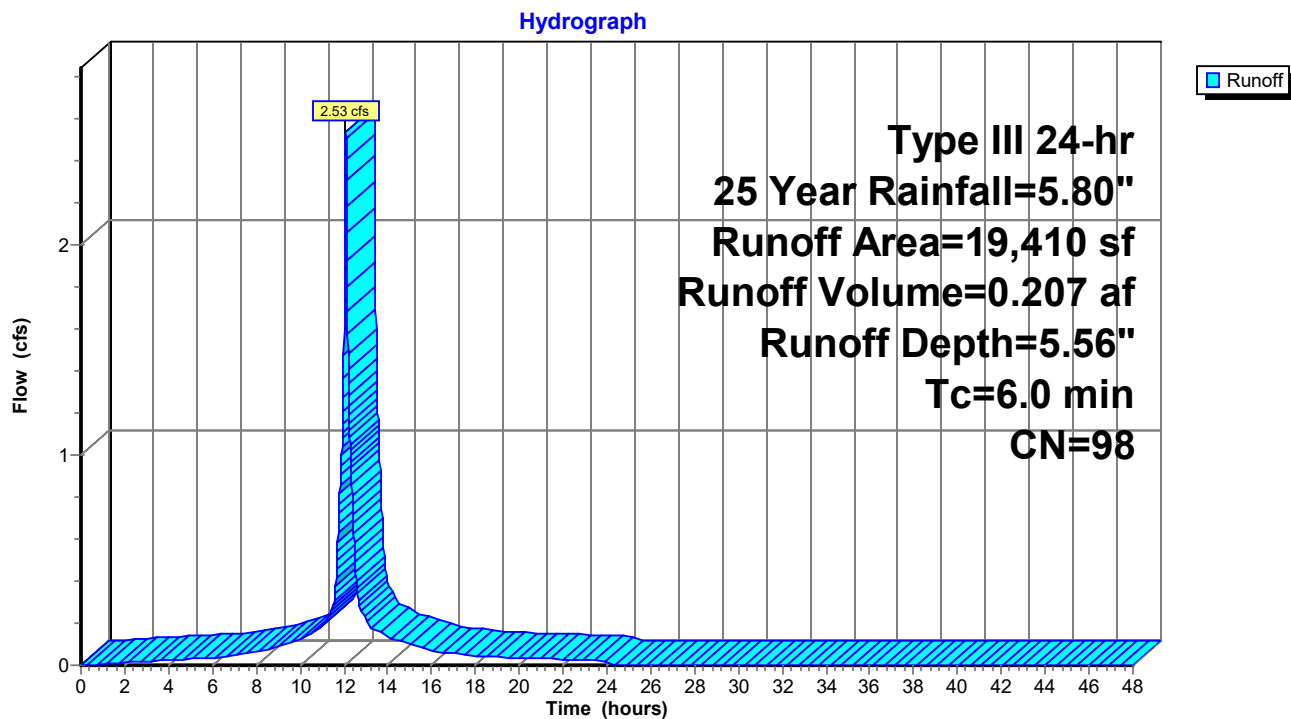
Runoff = 2.53 cfs @ 12.08 hrs, Volume= 0.207 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	19,410	98	Roof & Sidewalk
	0	74	>75% Grass cover, Good, HSG C
	19,410	98	Weighted Average
	19,410		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 24B: Building 3



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 25A: South of Building 2

Runoff = 0.79 cfs @ 12.36 hrs, Volume= 0.094 af, Depth= 2.21"

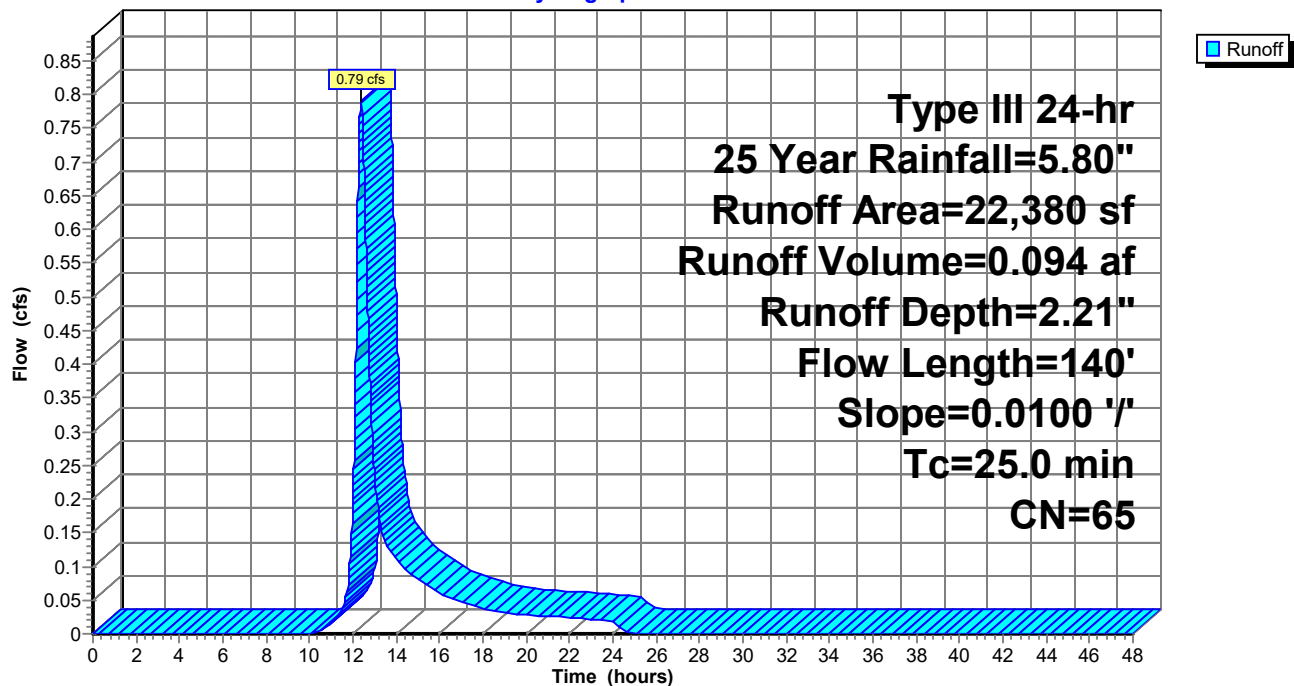
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
8,900	39	>75% Grass cover, Good, HSG A
4,910	98	Paved parking, HSG A
8,570	74	>75% Grass cover, Good, HSG C
22,380	65	Weighted Average
17,470		78.06% Pervious Area
4,910		21.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0	140	0.0100	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"

Subcatchment 25A: South of Building 2

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 25B: South of Building 3

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 3.21"

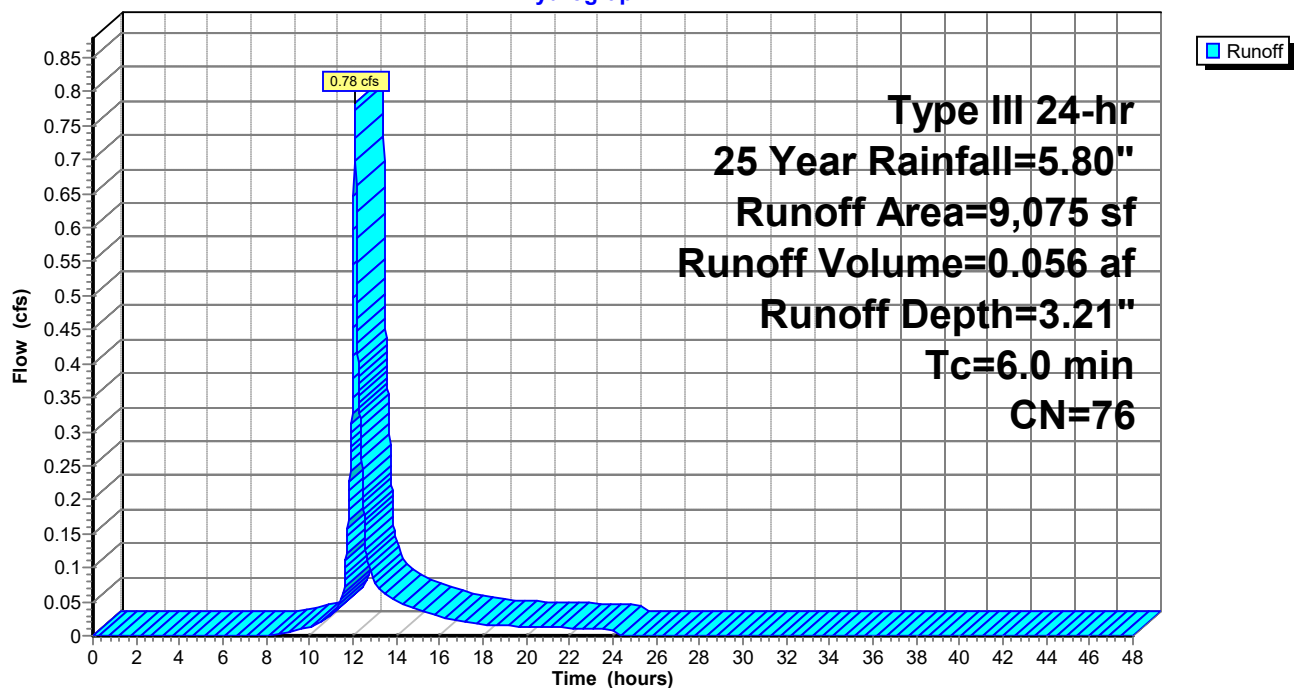
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
	8,340	74	>75% Grass cover, Good, HSG C
*	735	98	Walkways
	9,075	76	Weighted Average
	8,340		91.90% Pervious Area
	735		8.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 25B: South of Building 3

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 25C: South of Building 3

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.016 af, Depth= 3.50"

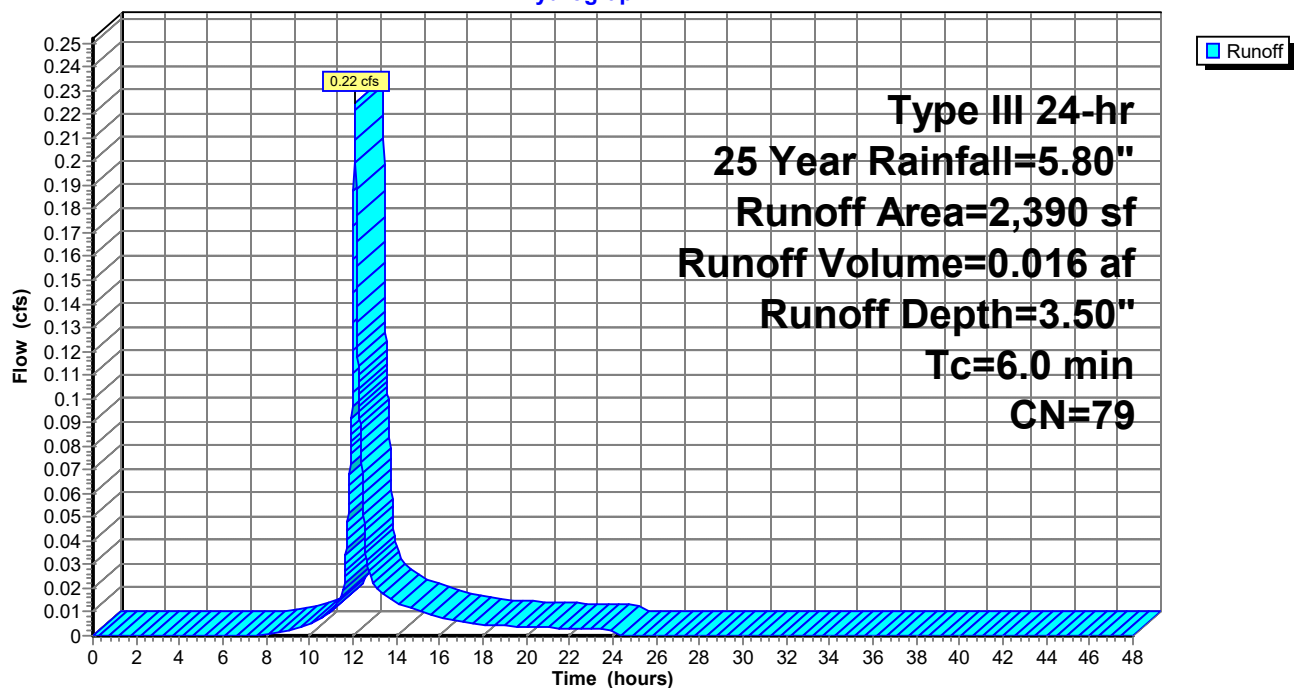
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
1,930	74	>75% Grass cover, Good, HSG C
* 460	98	Walkways
2,390	79	Weighted Average
1,930		80.75% Pervious Area
460		19.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 25C: South of Building 3

Hydrograph



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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 26S: Wetland to POI 2

Runoff = 0.34 cfs @ 12.33 hrs, Volume= 0.039 af, Depth= 1.95"

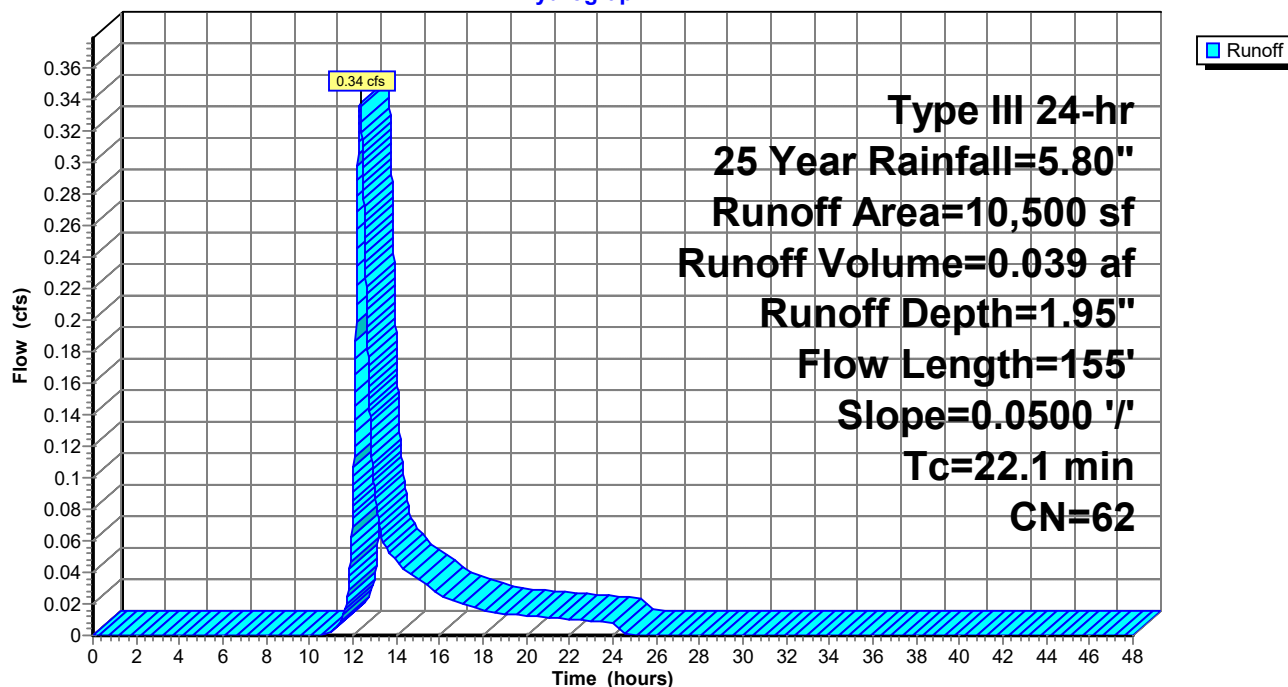
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
4,528	39	>75% Grass cover, Good, HSG A
5,392	77	Woods, Good, HSG D
* 580	98	Walking Path
10,500	62	Weighted Average
9,920		94.48% Pervious Area
580		5.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	75	0.0500	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
1.2	80	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
22.1	155	Total			

Subcatchment 26S: Wetland to POI 2

Hydrograph



Post-Development

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 27S: Wetland to POI 1

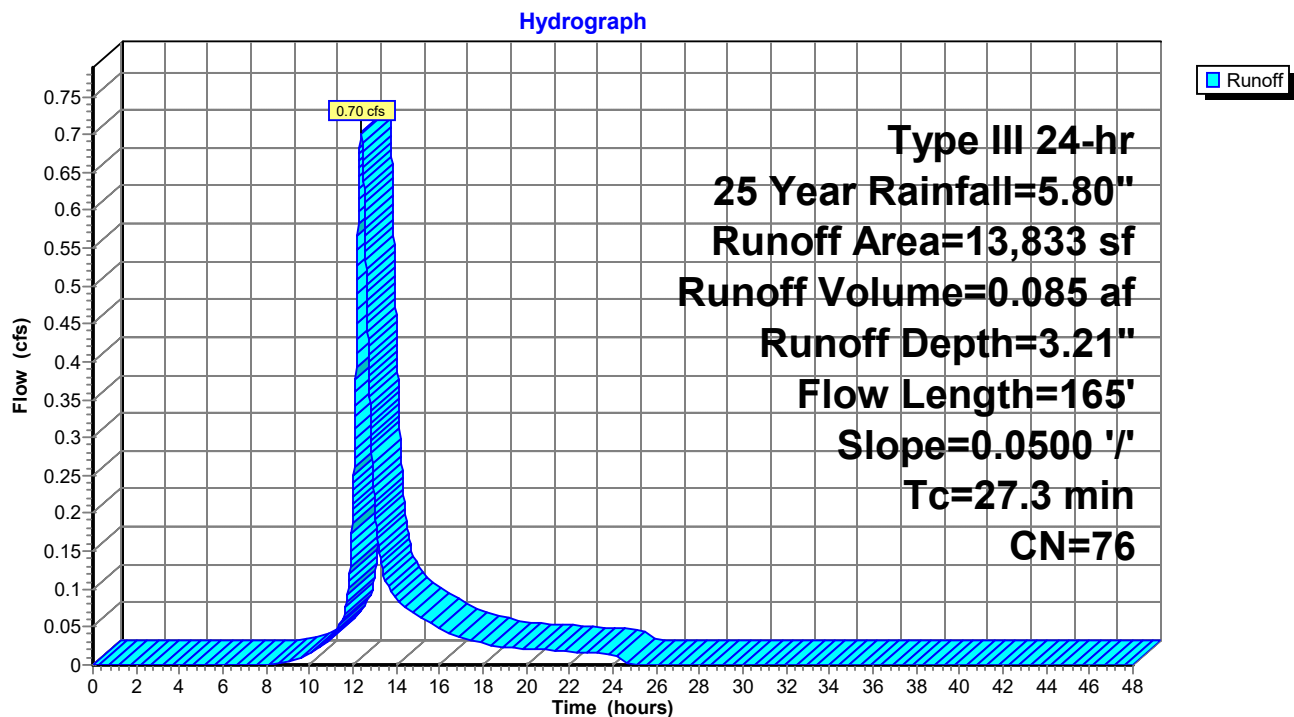
Runoff = 0.70 cfs @ 12.38 hrs, Volume= 0.085 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
3,935	74	>75% Grass cover, Good, HSG C
9,282	77	Woods, Good, HSG D
141	39	>75% Grass cover, Good, HSG A
* 475	98	Walking Path
13,833	76	Weighted Average
13,358		96.57% Pervious Area
475		3.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.3	100	0.0500	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
1.0	65	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
27.3	165	Total			

Subcatchment 27S: Wetland to POI 1



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Summary for Subcatchment 28S:

Runoff = 0.01 cfs @ 12.48 hrs, Volume= 0.004 af, Depth= 0.39"

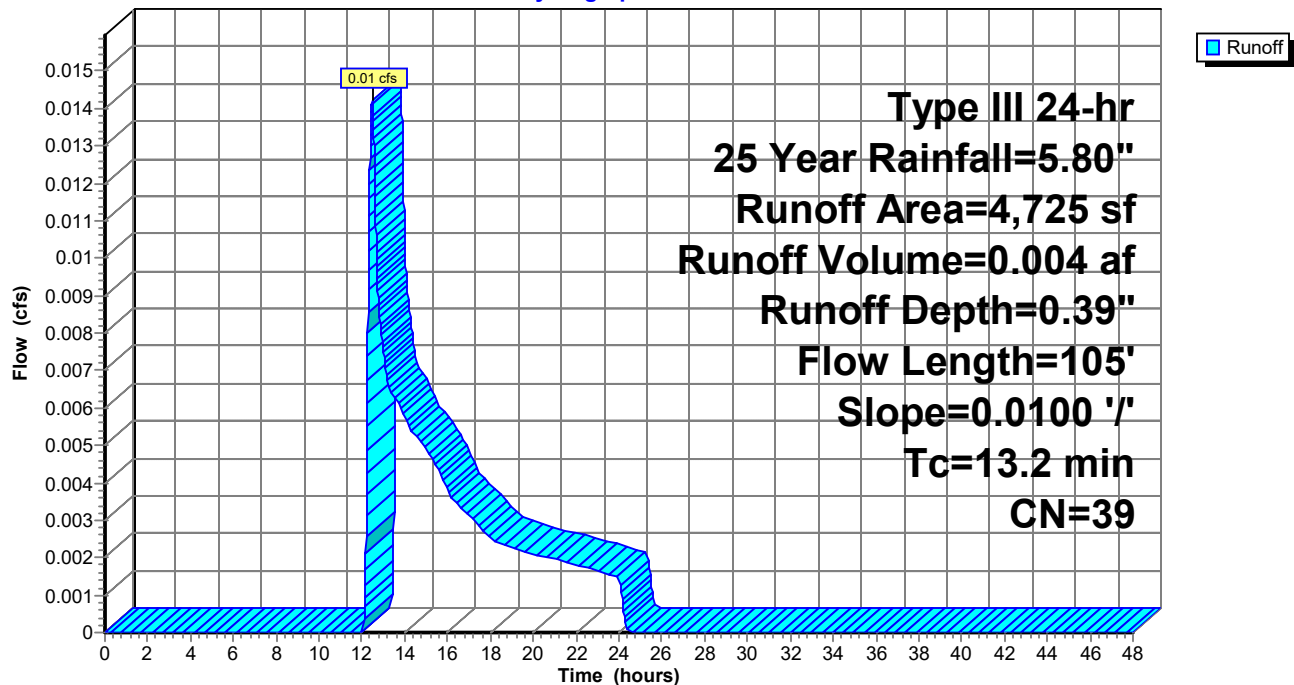
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
4,725	39	>75% Grass cover, Good, HSG A
4,725		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	60	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.5	45	0.0100	1.50		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
13.2	105	Total			

Subcatchment 28S:

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Summary for Reach 1R: CB 19 TO WETLAND

Inflow Area = 3.011 ac, 47.24% Impervious, Inflow Depth > 2.93" for 25 Year event
Inflow = 4.29 cfs @ 12.14 hrs, Volume= 0.736 af
Outflow = 4.25 cfs @ 12.14 hrs, Volume= 0.736 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 4.95 fps, Min. Travel Time= 0.4 min

Avg. Velocity= 1.70 fps, Avg. Travel Time= 1.2 min

Peak Storage= 108 cf @ 12.14 hrs

Average Depth at Peak Storage= 0.82', Surface Width= 1.18'

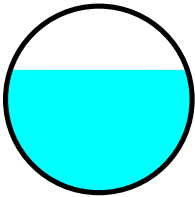
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 5.51 cfs

15.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

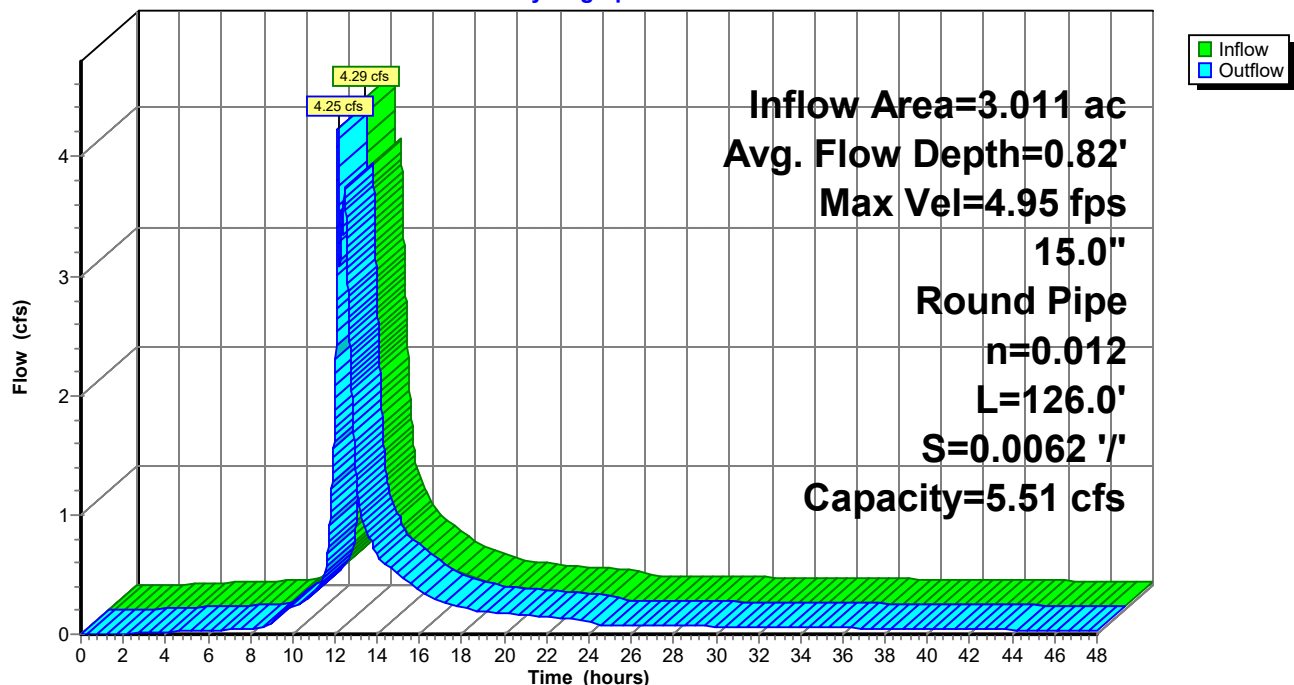
Length= 126.0' Slope= 0.0062 '/'

Inlet Invert= 108.10', Outlet Invert= 107.32'



Reach 1R: CB 19 TO WETLAND

Hydrograph



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Summary for Reach 2R: POI 2

Inflow Area = 7.995 ac, 56.42% Impervious, Inflow Depth > 2.18" for 25 Year event

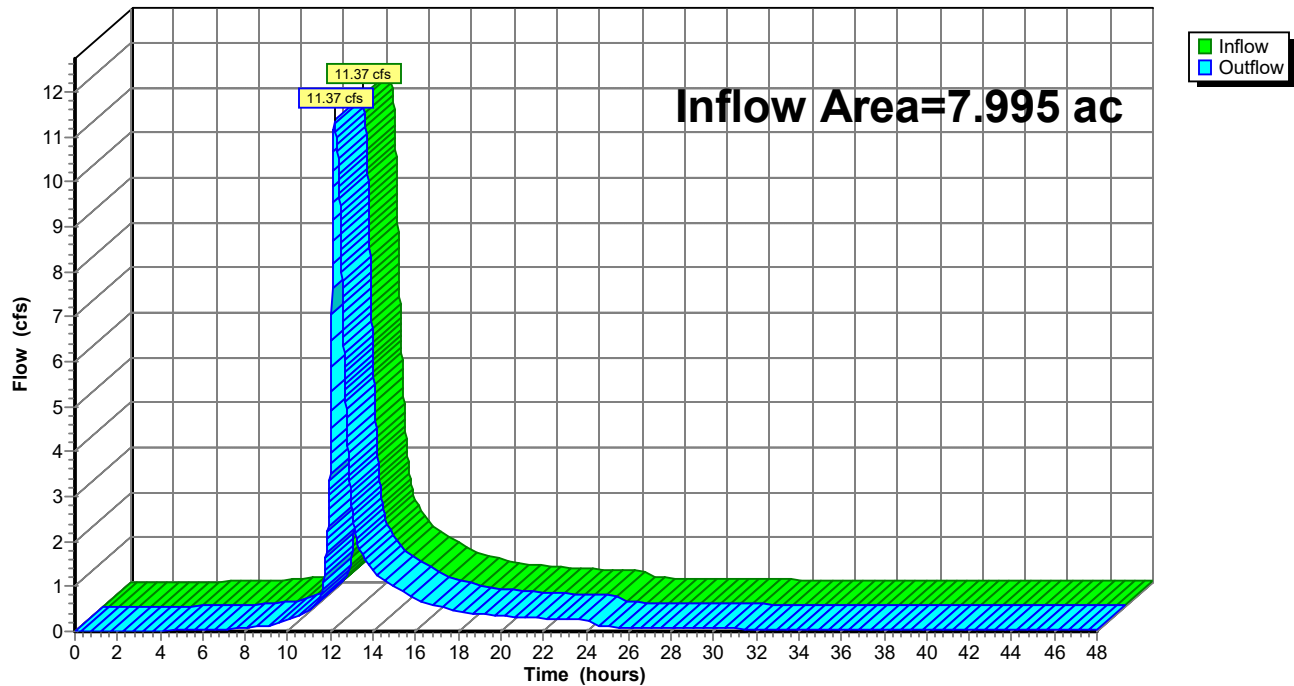
Inflow = 11.37 cfs @ 12.18 hrs, Volume= 1.451 af

Outflow = 11.37 cfs @ 12.18 hrs, Volume= 1.451 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: POI 2

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Summary for Reach 4R: Wetland to POI 2

Inflow Area = 7.754 ac, 58.01% Impervious, Inflow Depth > 2.18" for 25 Year event
Inflow = 11.15 cfs @ 12.17 hrs, Volume= 1.412 af
Outflow = 11.13 cfs @ 12.18 hrs, Volume= 1.411 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 5.23 fps, Min. Travel Time= 0.5 min

Avg. Velocity= 1.05 fps, Avg. Travel Time= 2.3 min

Peak Storage= 308 cf @ 12.18 hrs

Average Depth at Peak Storage= 0.49' , Surface Width= 4.69'

Bank-Full Depth= 0.80' Flow Area= 3.6 sf, Capacity= 24.99 cfs

4.00' x 0.80' deep channel, n= 0.035 Earth, dense weeds

Side Slope Z-value= 0.7 '/' Top Width= 5.12'

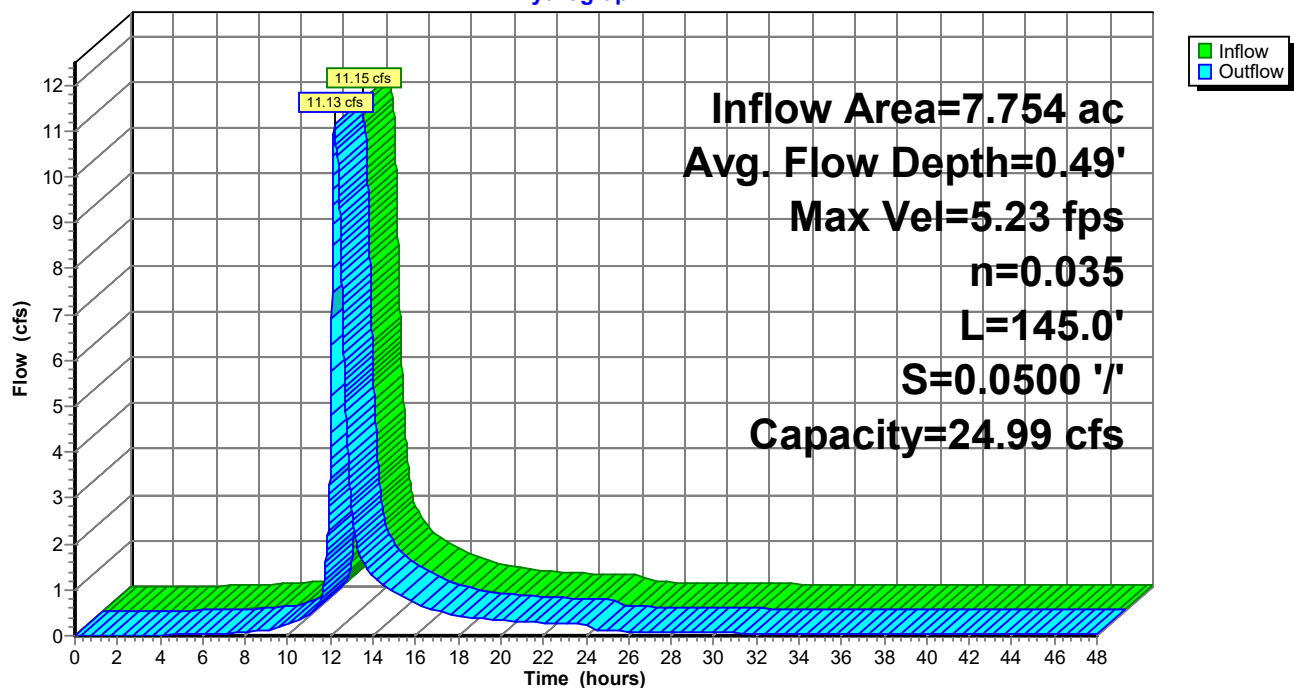
Length= 145.0' Slope= 0.0500 '/'

Inlet Invert= 102.89', Outlet Invert= 95.64'



Reach 4R: Wetland to POI 2

Hydrograph



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Summary for Reach 6R: Wetland to POI 1

Inflow Area = 3.011 ac, 47.24% Impervious, Inflow Depth > 2.93" for 25 Year event
Inflow = 4.25 cfs @ 12.14 hrs, Volume= 0.736 af
Outflow = 4.12 cfs @ 12.16 hrs, Volume= 0.735 af, Atten= 3%, Lag= 0.9 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.74 fps, Min. Travel Time= 1.3 min

Avg. Velocity= 0.69 fps, Avg. Travel Time= 5.1 min

Peak Storage= 316 cf @ 12.16 hrs

Average Depth at Peak Storage= 0.17' , Surface Width= 9.70'

Bank-Full Depth= 0.75' Flow Area= 8.8 sf, Capacity= 57.05 cfs

8.00' x 0.75' deep channel, n= 0.035 Earth, dense weeds

Side Slope Z-value= 5.0 ' ' Top Width= 15.50'

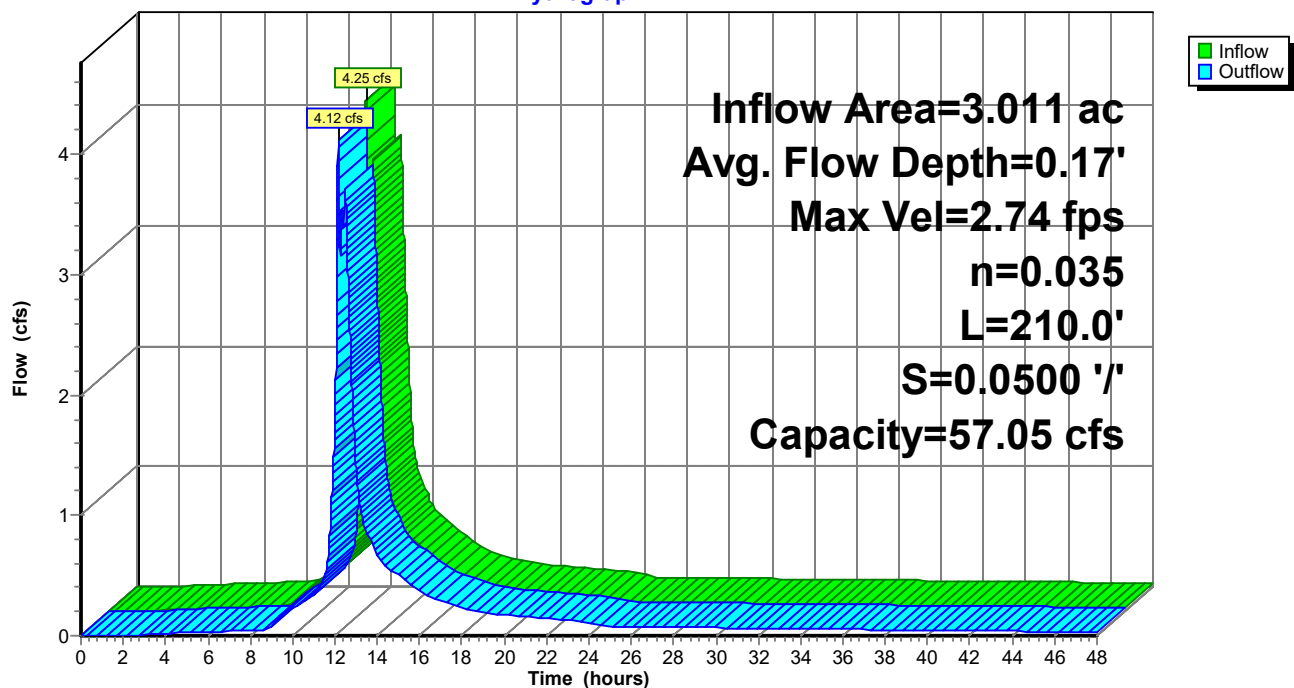
Length= 210.0' Slope= 0.0500 ' '

Inlet Invert= 107.32', Outlet Invert= 96.82'



Reach 6R: Wetland to POI 1

Hydrograph



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Summary for Reach 24R: DMH 11 to DMH 12

Inflow Area = 0.432 ac, 64.46% Impervious, Inflow Depth > 3.01" for 25 Year event
Inflow = 0.61 cfs @ 12.37 hrs, Volume= 0.108 af
Outflow = 0.61 cfs @ 12.38 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.68 fps, Min. Travel Time= 0.3 min

Avg. Velocity= 1.34 fps, Avg. Travel Time= 0.7 min

Peak Storage= 10 cf @ 12.38 hrs

Average Depth at Peak Storage= 0.32', Surface Width= 0.67'

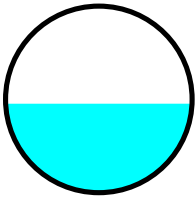
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

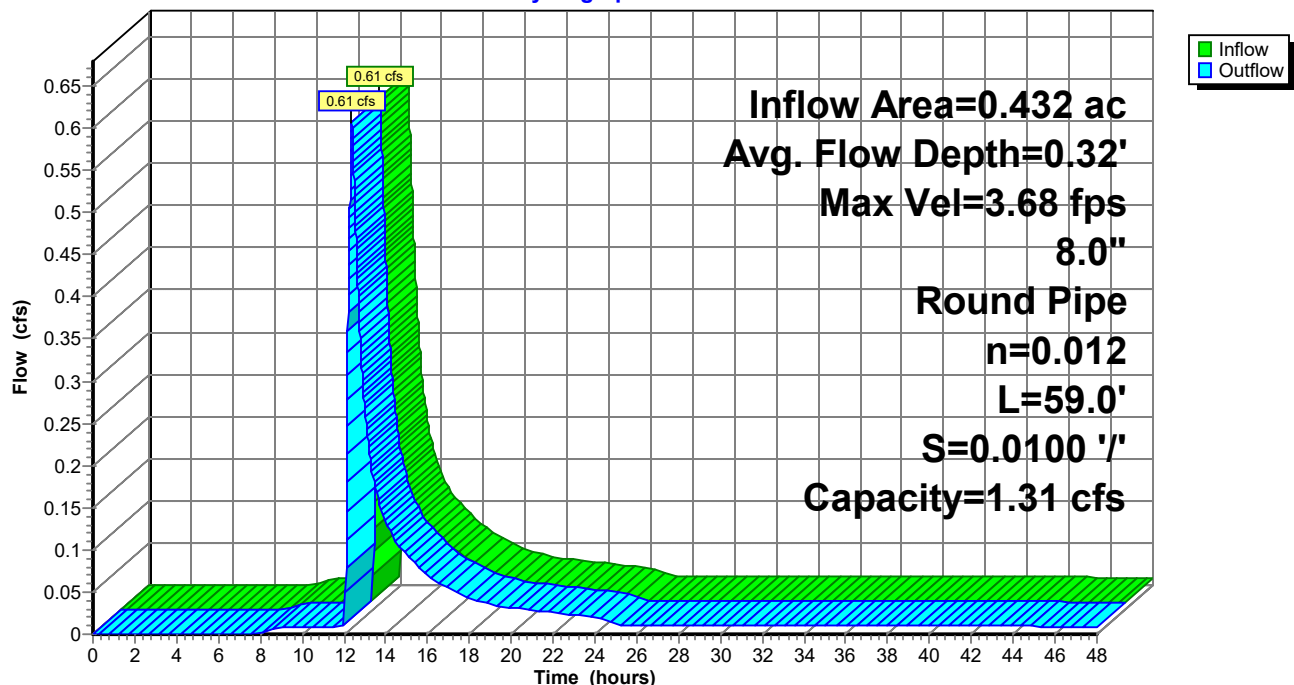
Length= 59.0' Slope= 0.0100 '/'

Inlet Invert= 109.67', Outlet Invert= 109.08'



Reach 24R: DMH 11 to DMH 12

Hydrograph



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Summary for Reach 25R: DMH 12 to DMH 15

Inflow Area = 0.659 ac, 64.00% Impervious, Inflow Depth > 3.03" for 25 Year event
Inflow = 0.97 cfs @ 12.36 hrs, Volume= 0.166 af
Outflow = 0.97 cfs @ 12.36 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 4.11 fps, Min. Travel Time= 0.2 min

Avg. Velocity= 1.53 fps, Avg. Travel Time= 0.5 min

Peak Storage= 11 cf @ 12.36 hrs

Average Depth at Peak Storage= 0.43' , Surface Width= 0.64'

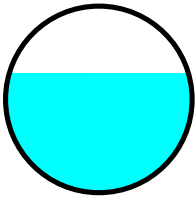
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe

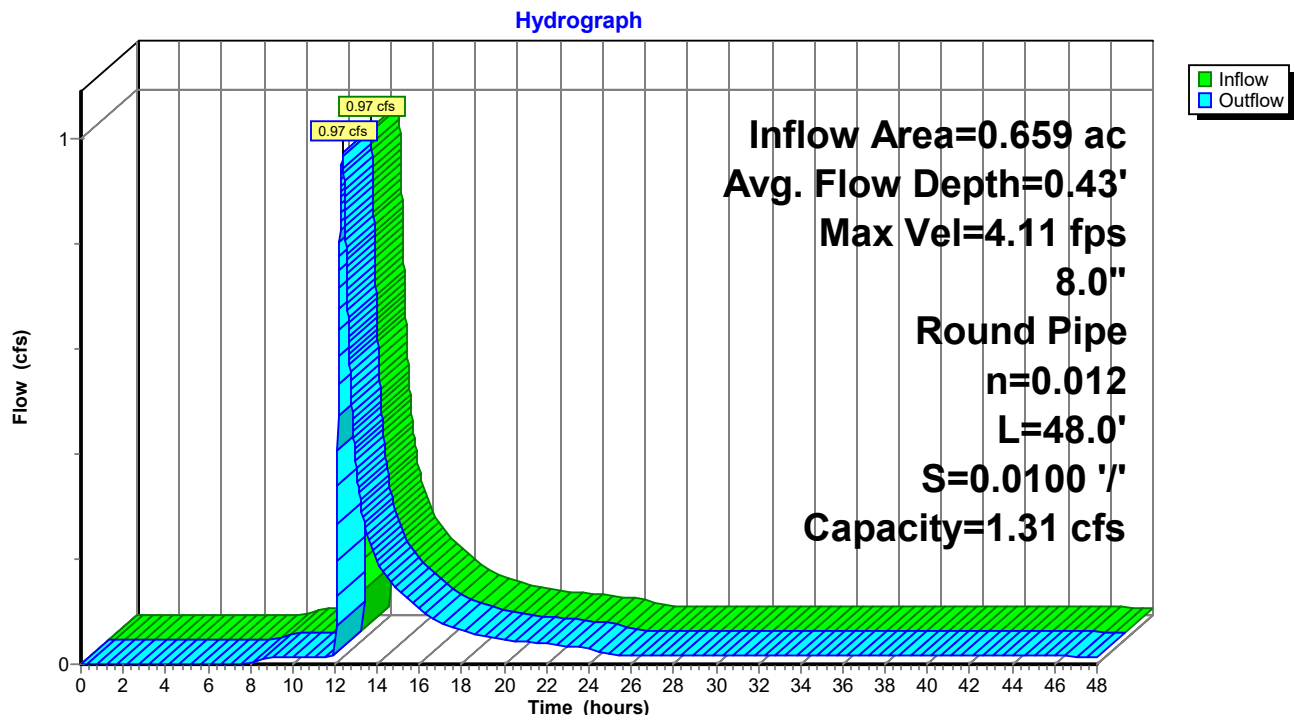
n= 0.012 Corrugated PP, smooth interior

Length= 48.0' Slope= 0.0100 '/'

Inlet Invert= 108.98', Outlet Invert= 108.50'



Reach 25R: DMH 12 to DMH 15



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Summary for Reach 26R: DMH 15 to DMH 14

Inflow Area = 1.471 ac, 41.43% Impervious, Inflow Depth > 1.59" for 25 Year event
Inflow = 0.97 cfs @ 12.37 hrs, Volume= 0.195 af
Outflow = 0.97 cfs @ 12.37 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 4.10 fps, Min. Travel Time= 0.4 min

Avg. Velocity= 1.59 fps, Avg. Travel Time= 1.1 min

Peak Storage= 25 cf @ 12.37 hrs

Average Depth at Peak Storage= 0.34' , Surface Width= 0.95'

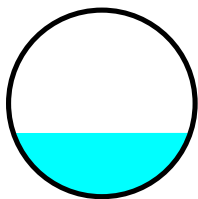
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.86 cfs

12.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

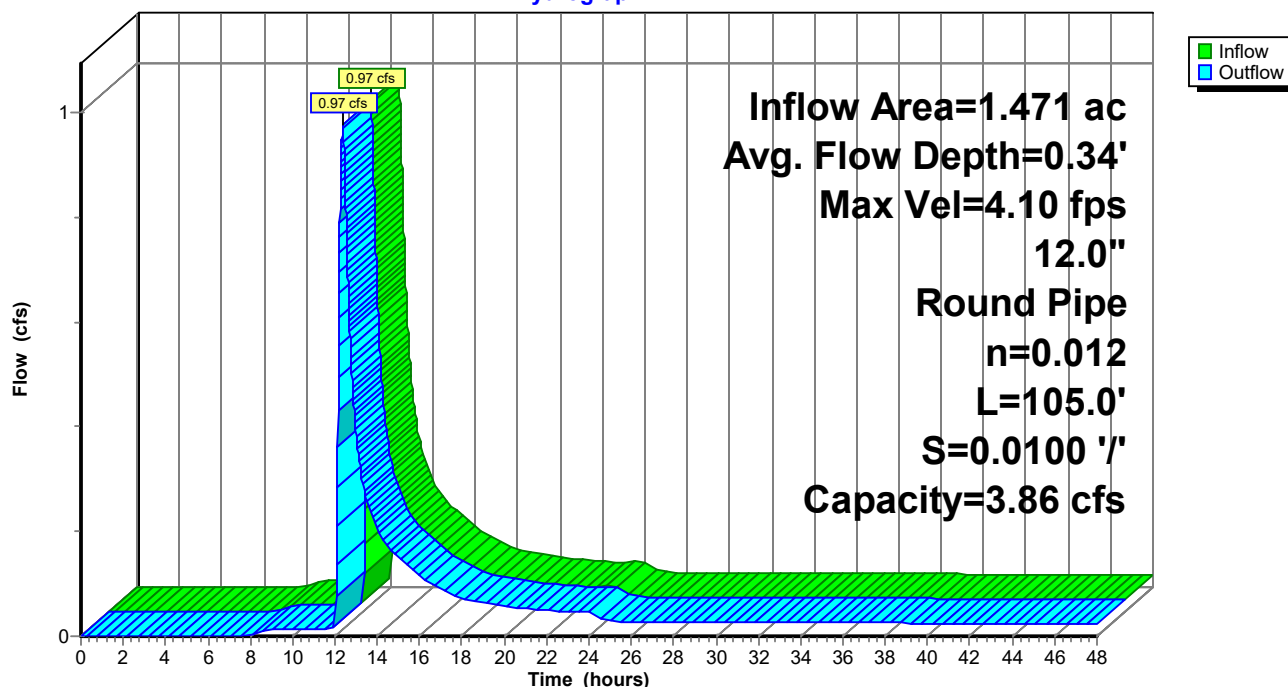
Length= 105.0' Slope= 0.0100 '/'

Inlet Invert= 108.40', Outlet Invert= 107.35'



Reach 26R: DMH 15 to DMH 14

Hydrograph



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Summary for Reach 27R: DMH 14 to DMH 7

Inflow Area = 2.408 ac, 56.92% Impervious, Inflow Depth > 2.71" for 25 Year event
Inflow = 3.55 cfs @ 12.17 hrs, Volume= 0.544 af
Outflow = 3.55 cfs @ 12.17 hrs, Volume= 0.544 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 5.72 fps, Min. Travel Time= 0.1 min

Avg. Velocity= 1.88 fps, Avg. Travel Time= 0.4 min

Peak Storage= 26 cf @ 12.17 hrs

Average Depth at Peak Storage= 0.63', Surface Width= 1.25'

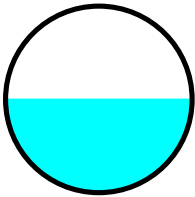
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

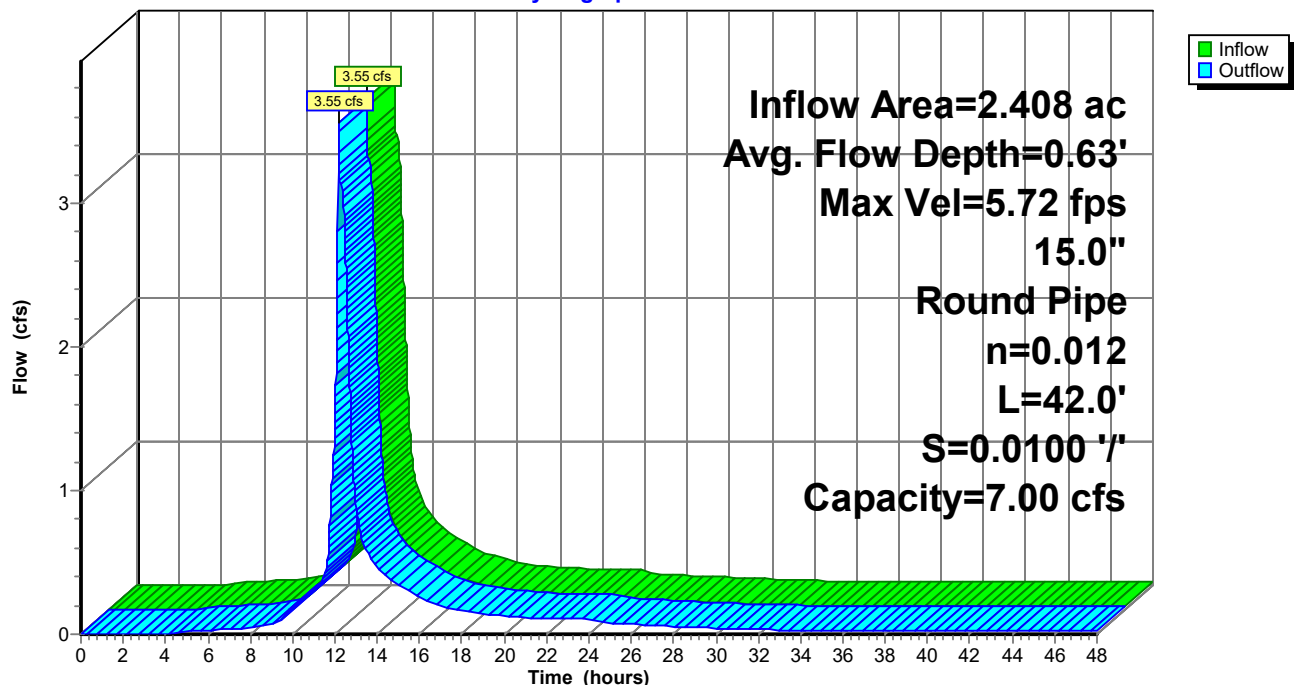
Length= 42.0' Slope= 0.0100 '/'

Inlet Invert= 107.25', Outlet Invert= 106.83'



Reach 27R: DMH 14 to DMH 7

Hydrograph



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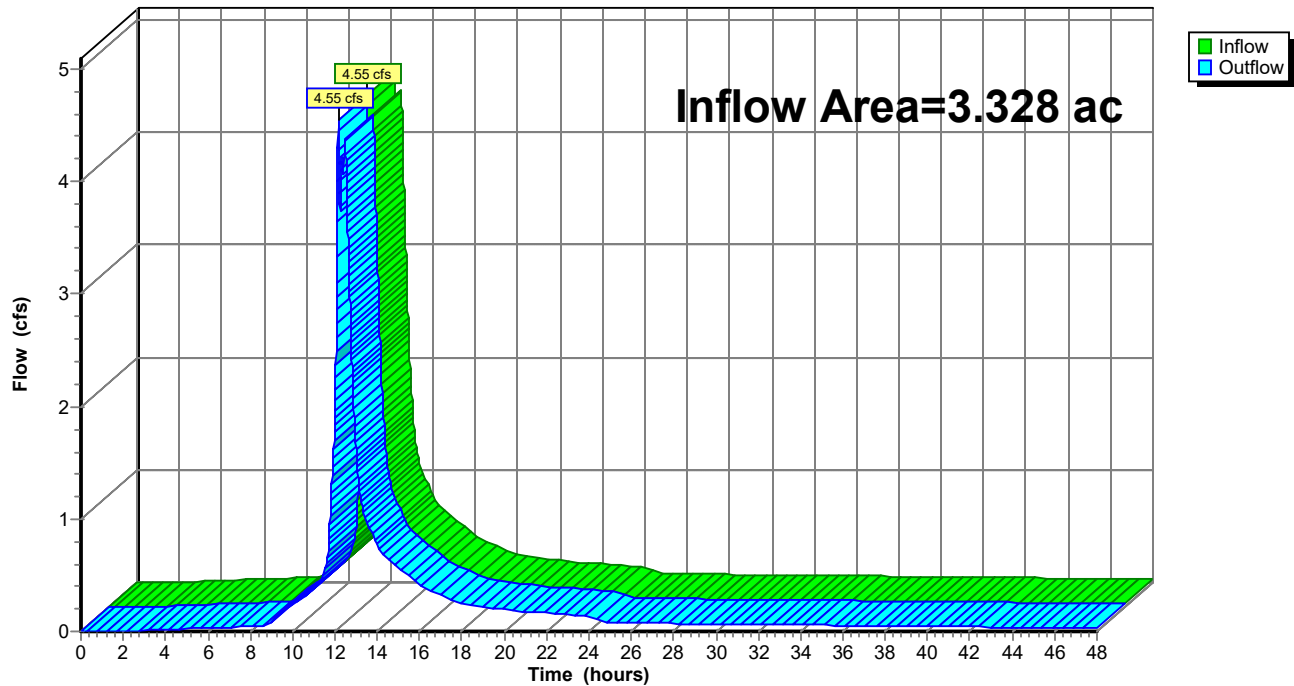
Summary for Reach 28R: POI 1

Inflow Area = 3.328 ac, 43.06% Impervious, Inflow Depth > 2.96" for 25 Year event
Inflow = 4.55 cfs @ 12.16 hrs, Volume= 0.820 af
Outflow = 4.55 cfs @ 12.16 hrs, Volume= 0.820 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 28R: POI 1

Hydrograph



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Summary for Reach 29R: EX. DMH 4 to NEW CB 19

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth > 1.96" for 25 Year event
Inflow = 1.29 cfs @ 12.32 hrs, Volume= 0.244 af
Outflow = 1.29 cfs @ 12.33 hrs, Volume= 0.244 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.61 fps, Min. Travel Time= 0.8 min

Avg. Velocity= 1.35 fps, Avg. Travel Time= 2.1 min

Peak Storage= 61 cf @ 12.33 hrs

Average Depth at Peak Storage= 0.46' , Surface Width= 1.00'

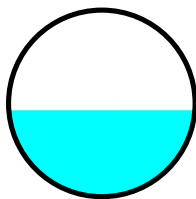
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.93 cfs

12.0" Round Pipe

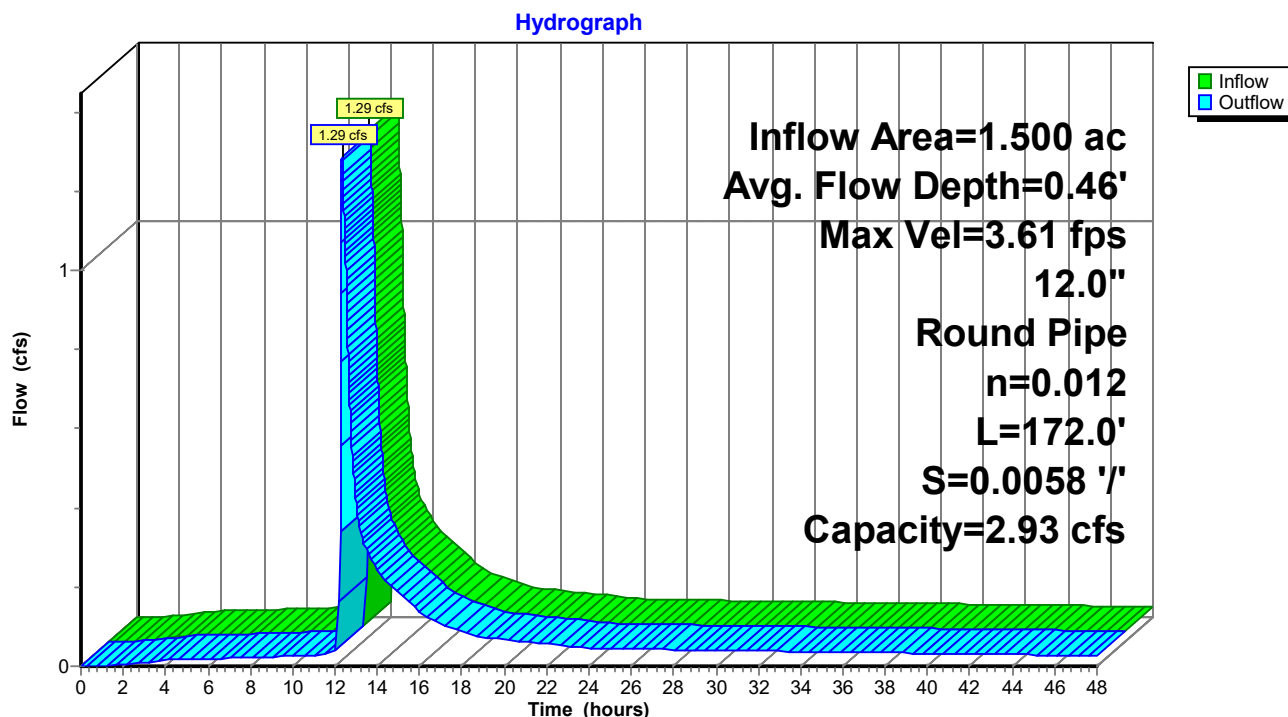
n= 0.012 Corrugated PP, smooth interior

Length= 172.0' Slope= 0.0058 '/'

Inlet Invert= 109.09', Outlet Invert= 108.10'



Reach 29R: EX. DMH 4 to NEW CB 19



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Summary for Reach 31R: 8" SD

Inflow Area = 0.707 ac, 10.73% Impervious, Inflow Depth = 0.70" for 25 Year event
Inflow = 0.20 cfs @ 12.52 hrs, Volume= 0.041 af
Outflow = 0.20 cfs @ 12.52 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.57 fps, Min. Travel Time= 0.2 min

Avg. Velocity= 1.40 fps, Avg. Travel Time= 0.3 min

Peak Storage= 2 cf @ 12.52 hrs

Average Depth at Peak Storage= 0.18' , Surface Width= 0.60'

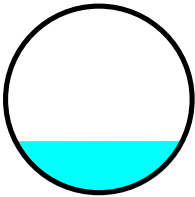
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.21 cfs

8.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

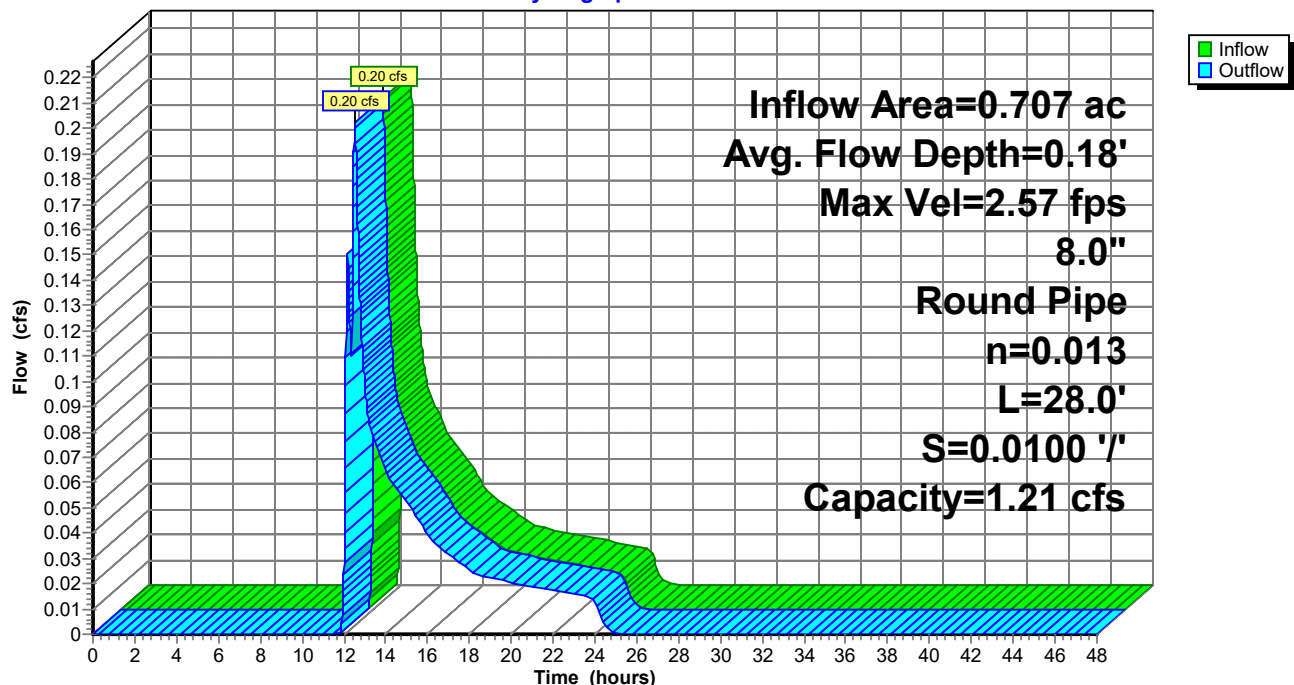
Length= 28.0' Slope= 0.0100 '/'

Inlet Invert= 115.15', Outlet Invert= 114.87'



Reach 31R: 8" SD

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Summary for Reach 32R: 8" UD

Inflow Area = 0.364 ac, 17.16% Impervious, Inflow Depth = 0.98" for 25 Year event
Inflow = 0.21 cfs @ 12.37 hrs, Volume= 0.030 af
Outflow = 0.21 cfs @ 12.38 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.13 fps, Min. Travel Time= 0.8 min

Avg. Velocity= 1.05 fps, Avg. Travel Time= 1.7 min

Peak Storage= 10 cf @ 12.38 hrs

Average Depth at Peak Storage= 0.21', Surface Width= 0.62'

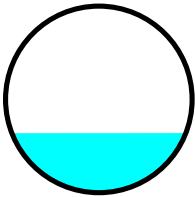
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 0.93 cfs

8.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

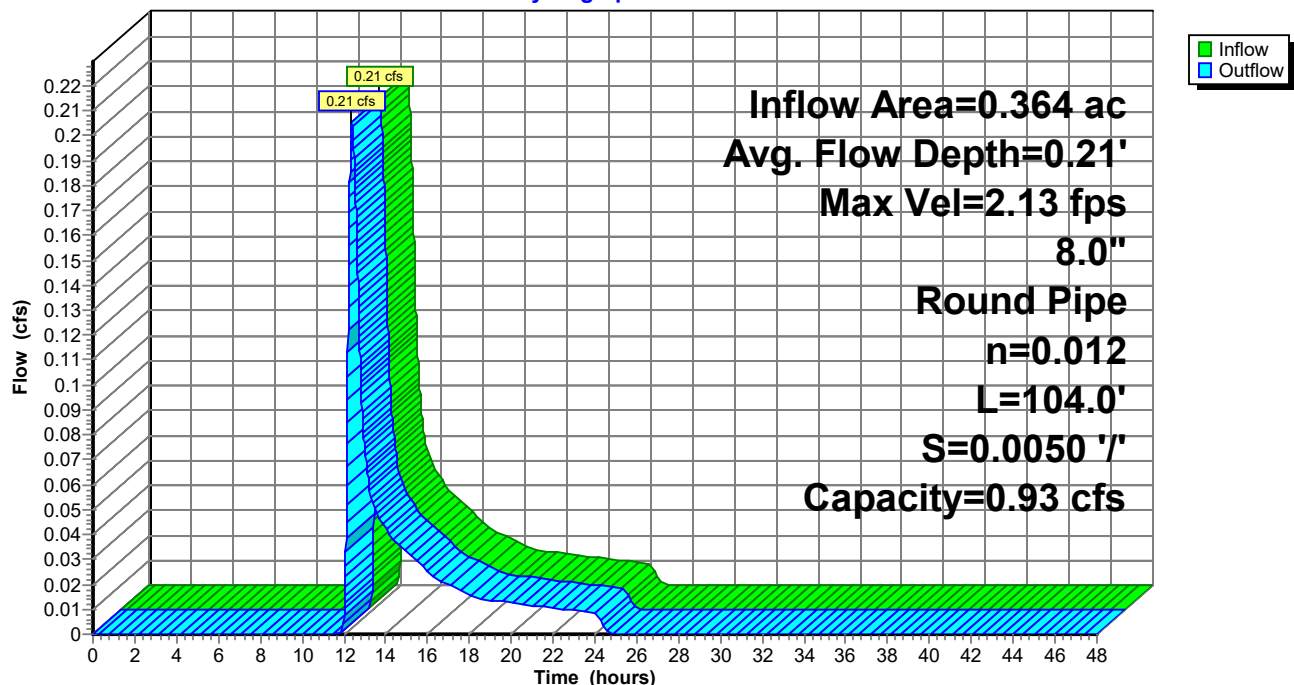
Length= 104.0' Slope= 0.0050 '/'

Inlet Invert= 116.28', Outlet Invert= 115.76'



Reach 32R: 8" UD

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Summary for Reach 33R: 8" SD

Inflow Area = 0.523 ac, 38.77% Impervious, Inflow Depth = 2.10" for 25 Year event
Inflow = 0.74 cfs @ 12.14 hrs, Volume= 0.092 af
Outflow = 0.74 cfs @ 12.15 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.64 fps, Min. Travel Time= 0.3 min

Avg. Velocity= 1.19 fps, Avg. Travel Time= 1.1 min

Peak Storage= 16 cf @ 12.15 hrs

Average Depth at Peak Storage= 0.38' , Surface Width= 0.66'

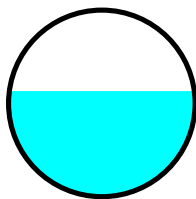
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.21 cfs

8.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

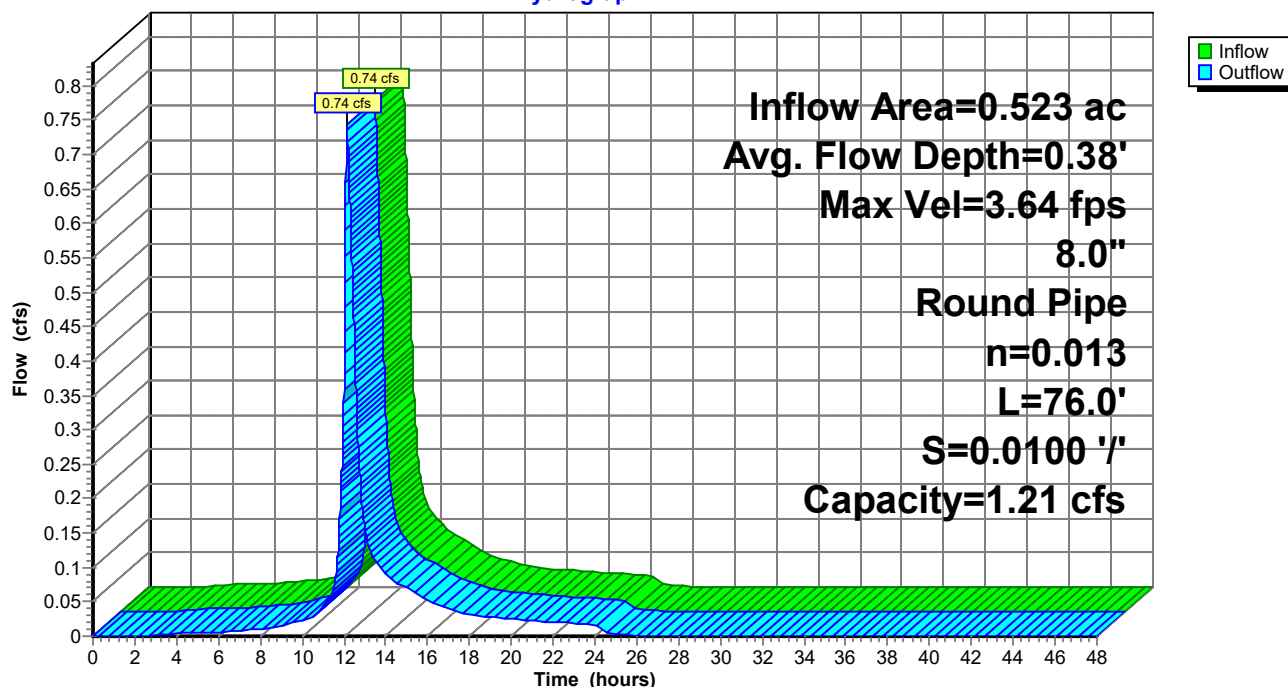
Length= 76.0' Slope= 0.0100 '/'

Inlet Invert= 115.48', Outlet Invert= 114.72'



Reach 33R: 8" SD

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Summary for Reach 34R: 12" SD

Inflow Area = 0.269 ac, 100.00% Impervious, Inflow Depth = 5.56" for 25 Year event
Inflow = 1.53 cfs @ 12.08 hrs, Volume= 0.125 af
Outflow = 1.53 cfs @ 12.08 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.80 fps, Min. Travel Time= 0.1 min

Avg. Velocity= 1.29 fps, Avg. Travel Time= 0.2 min

Peak Storage= 7 cf @ 12.08 hrs

Average Depth at Peak Storage= 0.51', Surface Width= 1.00'

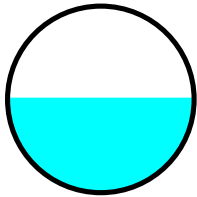
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.96 cfs

12.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

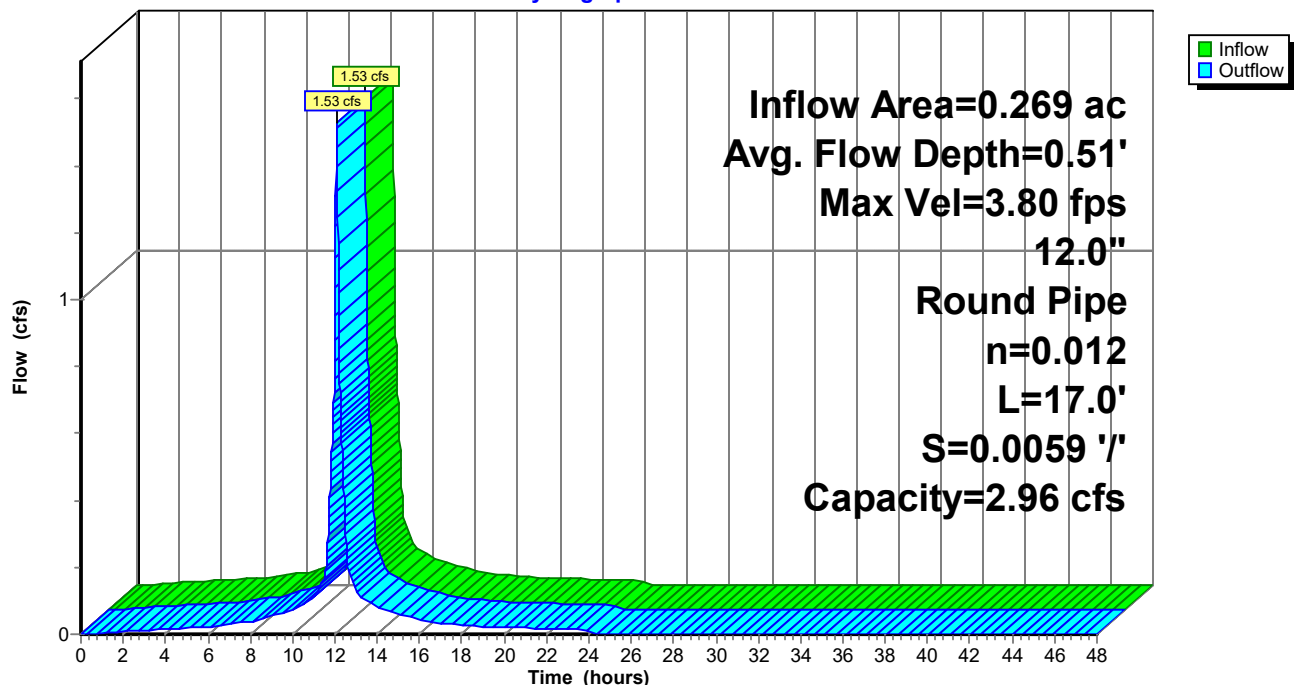
Length= 17.0' Slope= 0.0059 '/'

Inlet Invert= 114.75', Outlet Invert= 114.65'



Reach 34R: 12" SD

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Summary for Reach 35R: 12" SD

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth = 2.06" for 25 Year event
Inflow = 2.31 cfs @ 12.10 hrs, Volume= 0.258 af
Outflow = 2.31 cfs @ 12.10 hrs, Volume= 0.258 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 5.63 fps, Min. Travel Time= 0.0 min

Avg. Velocity= 1.82 fps, Avg. Travel Time= 0.1 min

Peak Storage= 5 cf @ 12.10 hrs

Average Depth at Peak Storage= 0.52', Surface Width= 1.00'

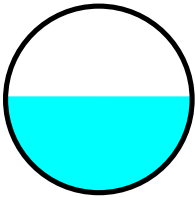
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.36 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

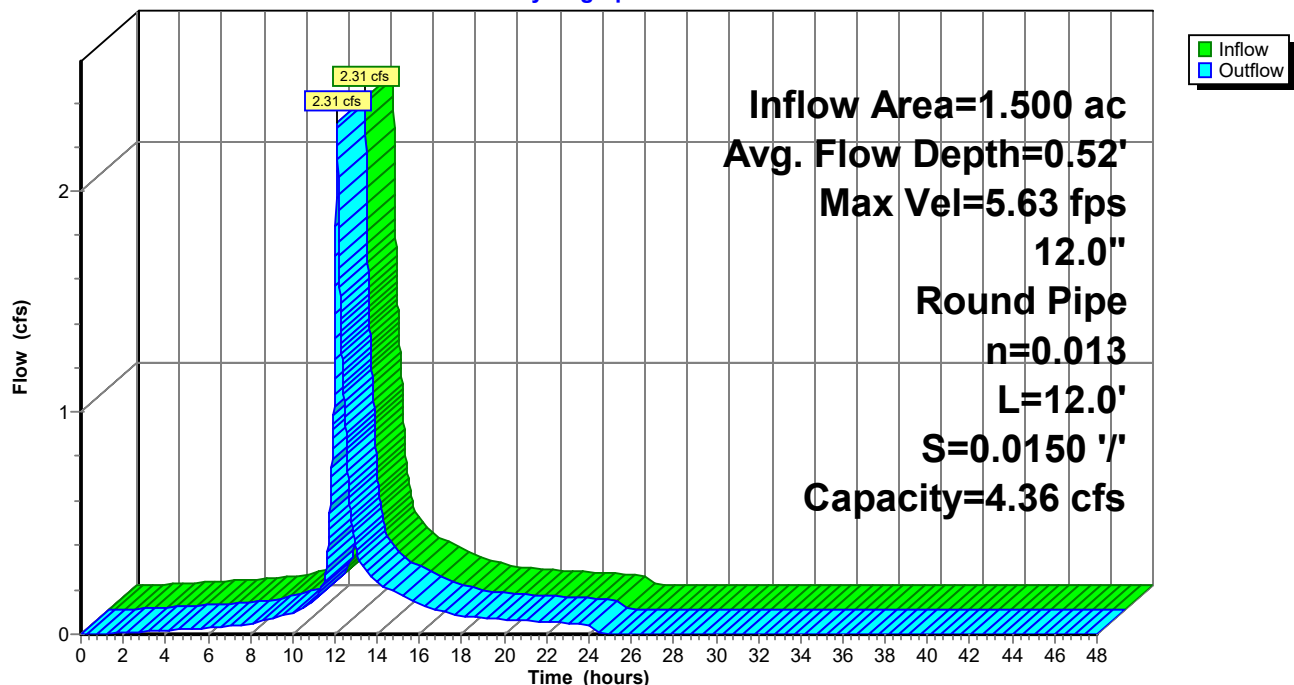
Length= 12.0' Slope= 0.0150 '/'

Inlet Invert= 113.40', Outlet Invert= 113.22'



Reach 35R: 12" SD

Hydrograph



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Summary for Reach 40R: New CB 1 to DMH 2

Inflow Area = 3.221 ac, 64.50% Impervious, Inflow Depth = 1.60" for 25 Year event
Inflow = 6.10 cfs @ 12.11 hrs, Volume= 0.430 af
Outflow = 6.03 cfs @ 12.12 hrs, Volume= 0.430 af, Atten= 1%, Lag= 1.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 6.41 fps, Min. Travel Time= 1.1 min

Avg. Velocity= 1.80 fps, Avg. Travel Time= 3.8 min

Peak Storage= 385 cf @ 12.12 hrs

Average Depth at Peak Storage= 0.89' , Surface Width= 1.13'

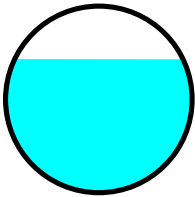
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

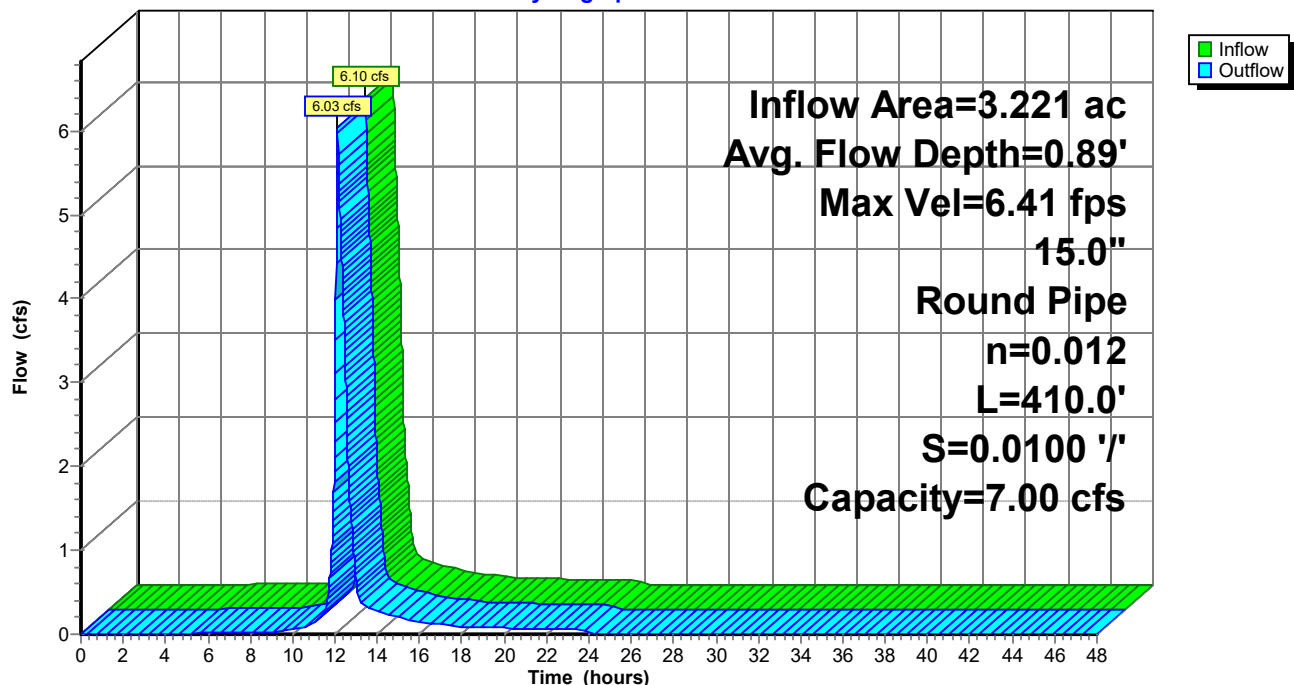
Length= 410.0' Slope= 0.0100 '/'

Inlet Invert= 111.96', Outlet Invert= 107.86'



Reach 40R: New CB 1 to DMH 2

Hydrograph



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Summary for Reach 41R: DMH 2 to DMH 3

Inflow Area = 4.980 ac, 57.39% Impervious, Inflow Depth > 1.83" for 25 Year event
Inflow = 7.34 cfs @ 12.14 hrs, Volume= 0.760 af
Outflow = 7.34 cfs @ 12.15 hrs, Volume= 0.760 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 6.67 fps, Min. Travel Time= 0.2 min

Avg. Velocity= 1.60 fps, Avg. Travel Time= 0.8 min

Peak Storage= 88 cf @ 12.15 hrs

Average Depth at Peak Storage= 0.89' , Surface Width= 1.47'

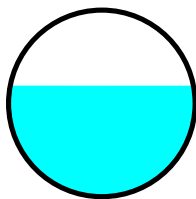
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.02 cfs

18.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

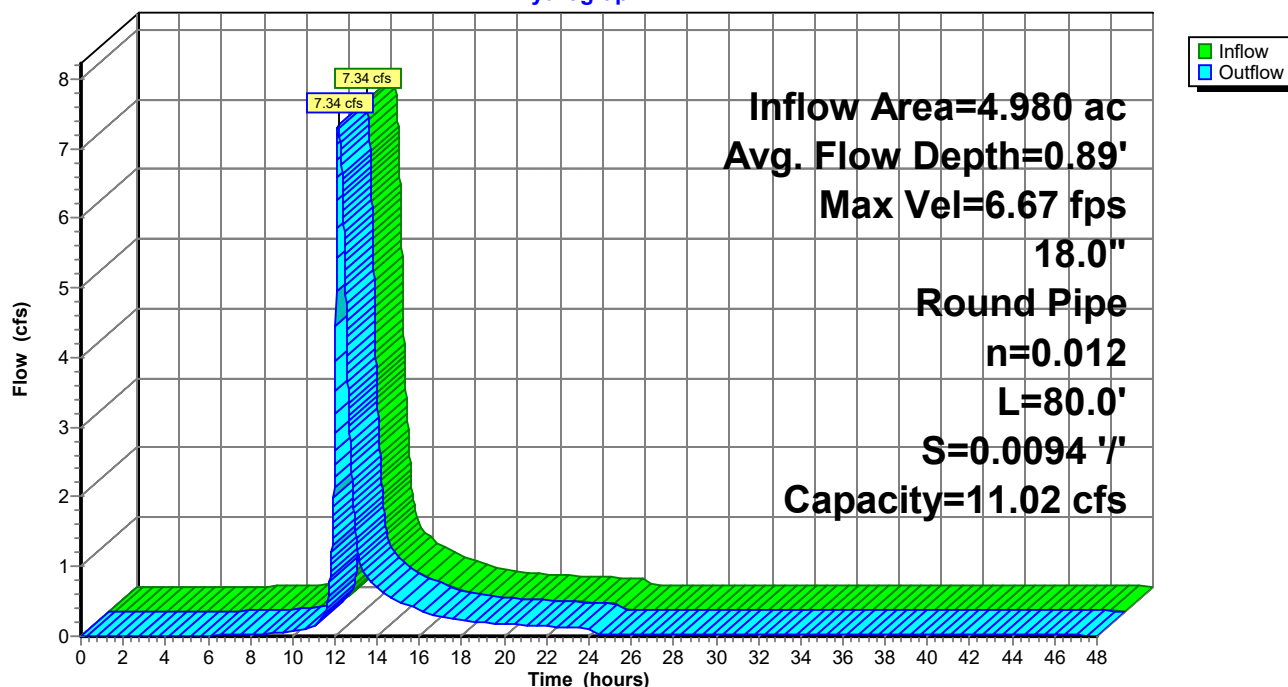
Length= 80.0' Slope= 0.0094 '/

Inlet Invert= 107.97', Outlet Invert= 107.22'



Reach 41R: DMH 2 to DMH 3

Hydrograph



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Summary for Reach 42R: DMH 3 to DMH 7

Inflow Area = 5.346 ac, 58.49% Impervious, Inflow Depth > 1.95" for 25 Year event
Inflow = 7.62 cfs @ 12.15 hrs, Volume= 0.868 af
Outflow = 7.59 cfs @ 12.17 hrs, Volume= 0.867 af, Atten= 0%, Lag= 1.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 6.65 fps, Min. Travel Time= 1.0 min

Avg. Velocity= 1.71 fps, Avg. Travel Time= 3.7 min

Peak Storage= 436 cf @ 12.17 hrs

Average Depth at Peak Storage= 0.92' , Surface Width= 1.46'

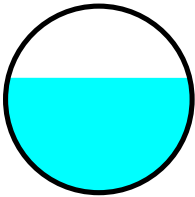
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.86 cfs

18.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

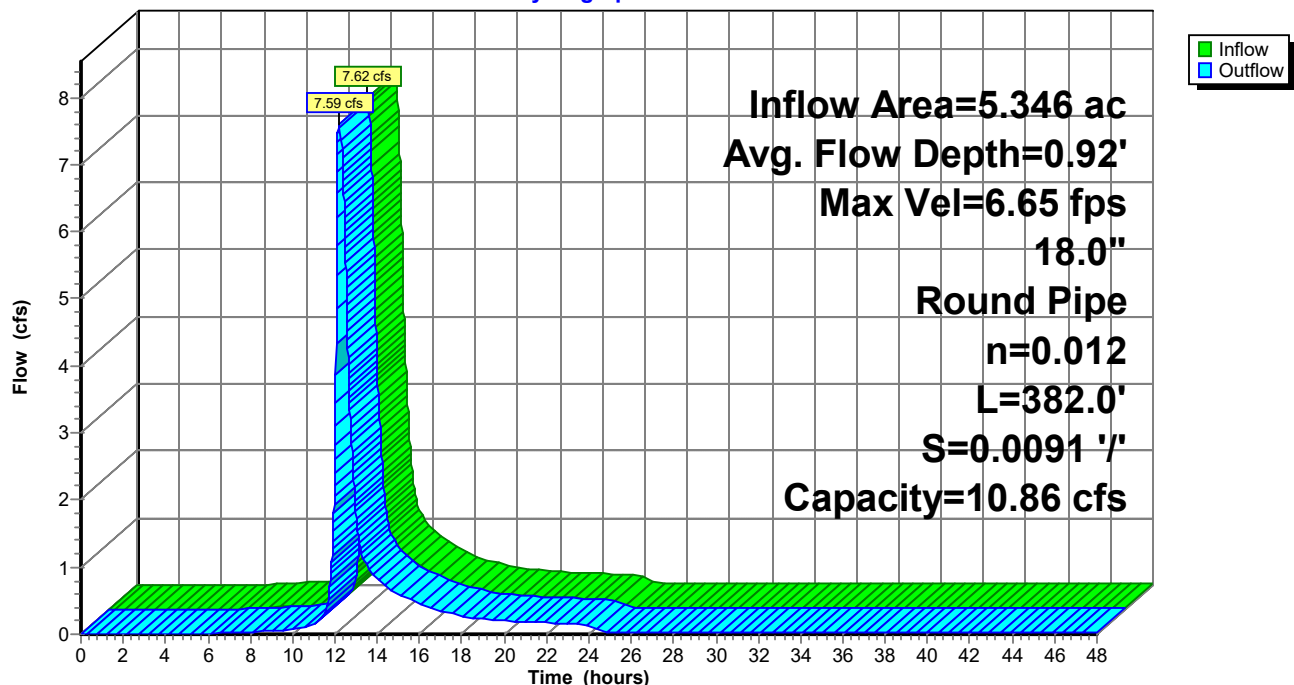
Length= 382.0' Slope= 0.0091 '/'

Inlet Invert= 107.12', Outlet Invert= 103.64'



Reach 42R: DMH 3 to DMH 7

Hydrograph



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Summary for Reach 44R: DMH 7 to Wetland

Inflow Area = 7.754 ac, 58.01% Impervious, Inflow Depth > 2.18" for 25 Year event
Inflow = 11.14 cfs @ 12.17 hrs, Volume= 1.412 af
Outflow = 11.15 cfs @ 12.17 hrs, Volume= 1.412 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 7.62 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 2.11 fps, Avg. Travel Time= 0.2 min

Peak Storage= 44 cf @ 12.17 hrs

Average Depth at Peak Storage= 0.95' , Surface Width= 2.00'

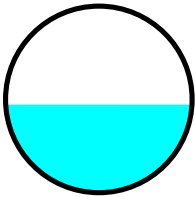
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 24.51 cfs

24.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

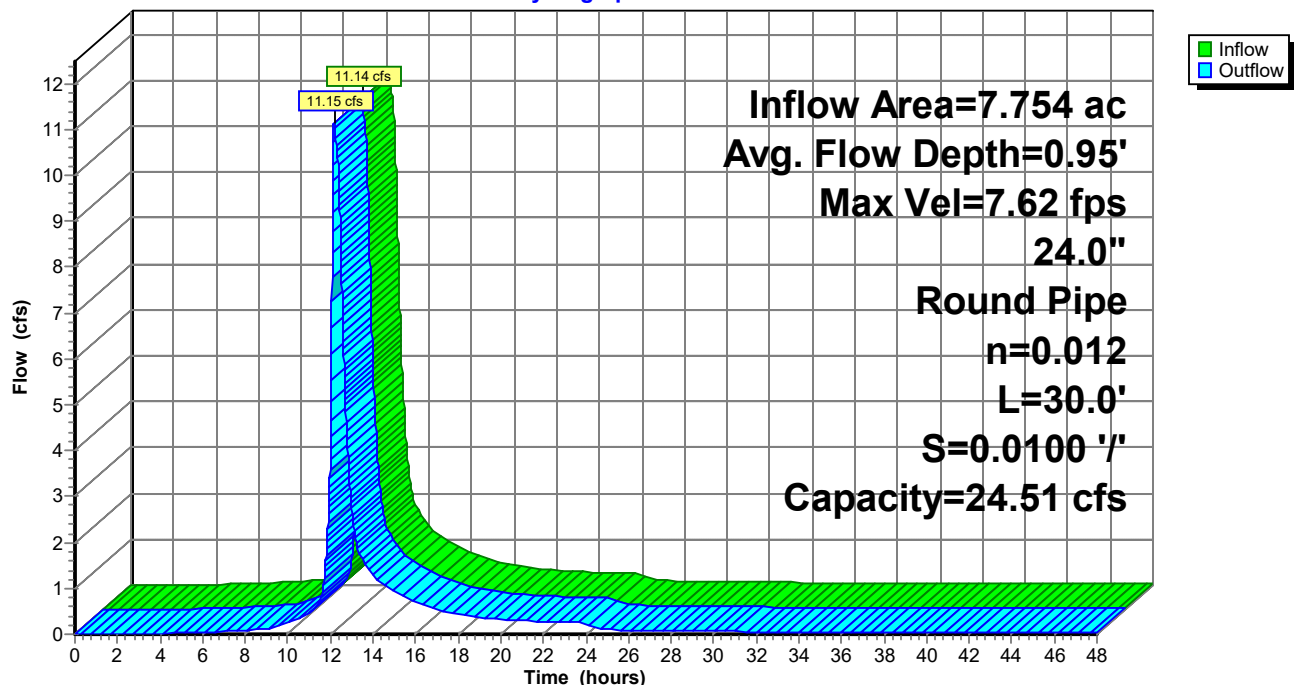
Length= 30.0' Slope= 0.0100 '/'

Inlet Invert= 103.58', Outlet Invert= 103.28'



Reach 44R: DMH 7 to Wetland

Hydrograph



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Summary for Pond 3P: FP1 TANKS

Inflow Area = 0.812 ac, 23.11% Impervious, Inflow Depth = 0.78" for 25 Year event
 Inflow = 0.29 cfs @ 12.57 hrs, Volume= 0.053 af
 Outflow = 0.02 cfs @ 23.61 hrs, Volume= 0.029 af, Atten= 94%, Lag= 662.2 min
 Primary = 0.02 cfs @ 23.61 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 111.34' @ 23.61 hrs Surf.Area= 798 sf Storage= 1,875 cf
 Flood Elev= 111.84' Surf.Area= 798 sf Storage= 2,017 cf

Plug-Flow detention time= 1,002.6 min calculated for 0.029 af (54% of inflow)
 Center-of-Mass det. time= 856.7 min (1,790.7 - 934.0)

Volume	Invert	Avail.Storage	Storage Description
#1	109.90'	4 cf	ACF R-Tank HD 1 Inside #3 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 4 cf Overall x 95.0% Voids
#2	108.46'	1,568 cf	ACF R-Tank HD 2 x 200 Inside #3 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 200 Chambers in 10 Rows 1,737 cf Overall x 95.0% Voids
#3	108.21'	445 cf	27.50"W x 29.00"L x 3.58'H Prismatoid 2,855 cf Overall - 1,742 cf Embedded = 1,113 cf x 40.0% Voids
		2,017 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Device 3	108.46'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads 6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#2	Device 3	111.34'	
#3	Primary	108.46'	
			12.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.46' / 108.41' S= 0.0050 ' S Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 23.61 hrs HW=111.34' (Free Discharge)

↑ **3=Culvert** (Passes 0.02 cfs of 5.84 cfs potential flow)

↑ **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 8.15 fps)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.19 fps)

Post-Development

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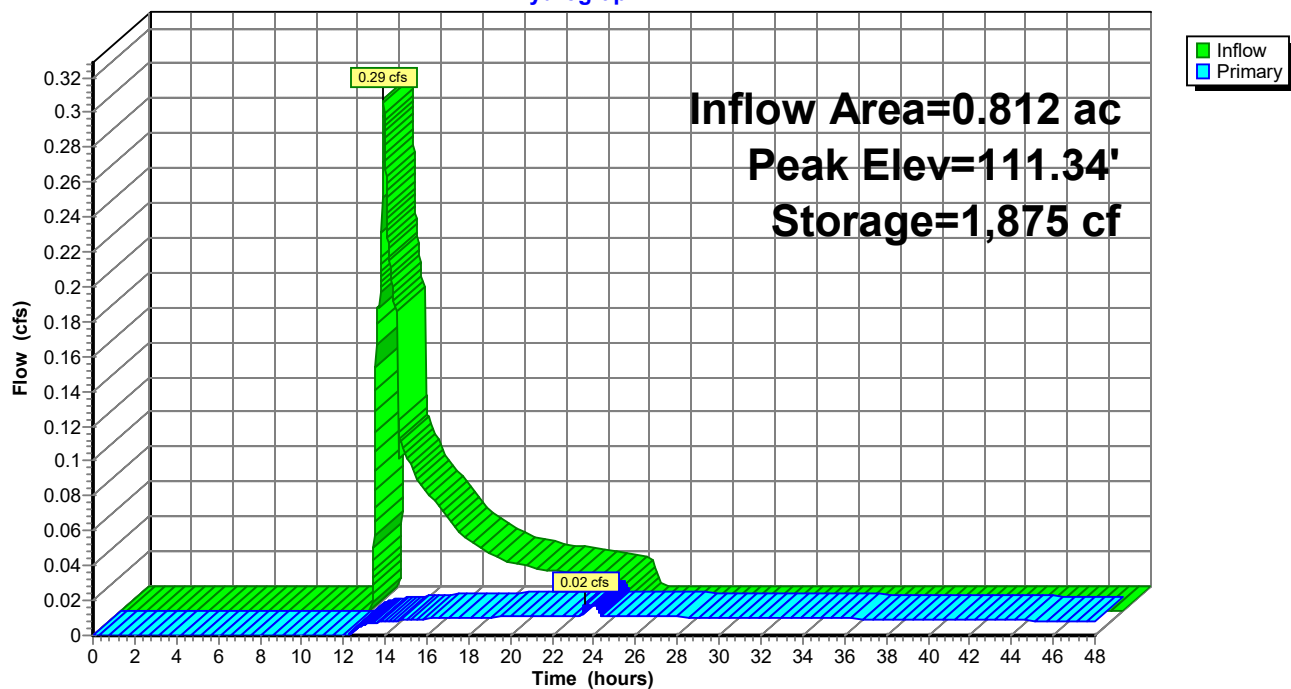
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Pond 3P: FP1 TANKS

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Summary for Pond 4P: FP2 TANKS

Inflow Area = 0.514 ac, 21.94% Impervious, Inflow Depth = 2.21" for 25 Year event
 Inflow = 0.79 cfs @ 12.37 hrs, Volume= 0.094 af
 Outflow = 0.73 cfs @ 12.47 hrs, Volume= 0.086 af, Atten= 8%, Lag= 6.3 min
 Primary = 0.73 cfs @ 12.47 hrs, Volume= 0.086 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 109.77' @ 12.47 hrs Surf.Area= 840 sf Storage= 934 cf

Flood Elev= 111.76' Surf.Area= 840 sf Storage= 1,208 cf

Plug-Flow detention time= 243.2 min calculated for 0.086 af (91% of inflow)

Center-of-Mass det. time= 199.5 min (1,071.0 - 871.5)

Volume	Invert	Avail.Storage	Storage Description
#1	108.38'	24 cf	ACF R-Tank HD 1 x 6 Inside #5 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 27 cf Overall x 95.0% Voids
#2	108.38'	24 cf	ACF R-Tank HD 1 x 6 Inside #5 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 27 cf Overall x 95.0% Voids
#3	108.38'	481 cf	ACF R-Tank HD 1 x 120 Inside #5 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 120 Chambers in 8 Rows 533 cf Overall x 95.0% Voids
#4	108.38'	180 cf	ACF R-Tank HD 1 x 45 Inside #5 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 45 Chambers in 3 Rows 200 cf Overall x 95.0% Voids
#5	108.13'	498 cf	21.00'W x 40.00'L x 2.42'H Prismatic 2,033 cf Overall - 787 cf Embedded = 1,246 cf x 40.0% Voids
		1,208 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Device 3	108.38'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads 6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#2	Device 3	109.65'	
#3	Primary	108.38'	
			12.0" Round Culvert L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.38' / 108.10' S= 0.0040 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

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Primary OutFlow Max=0.73 cfs @ 12.47 hrs HW=109.77' (Free Discharge)

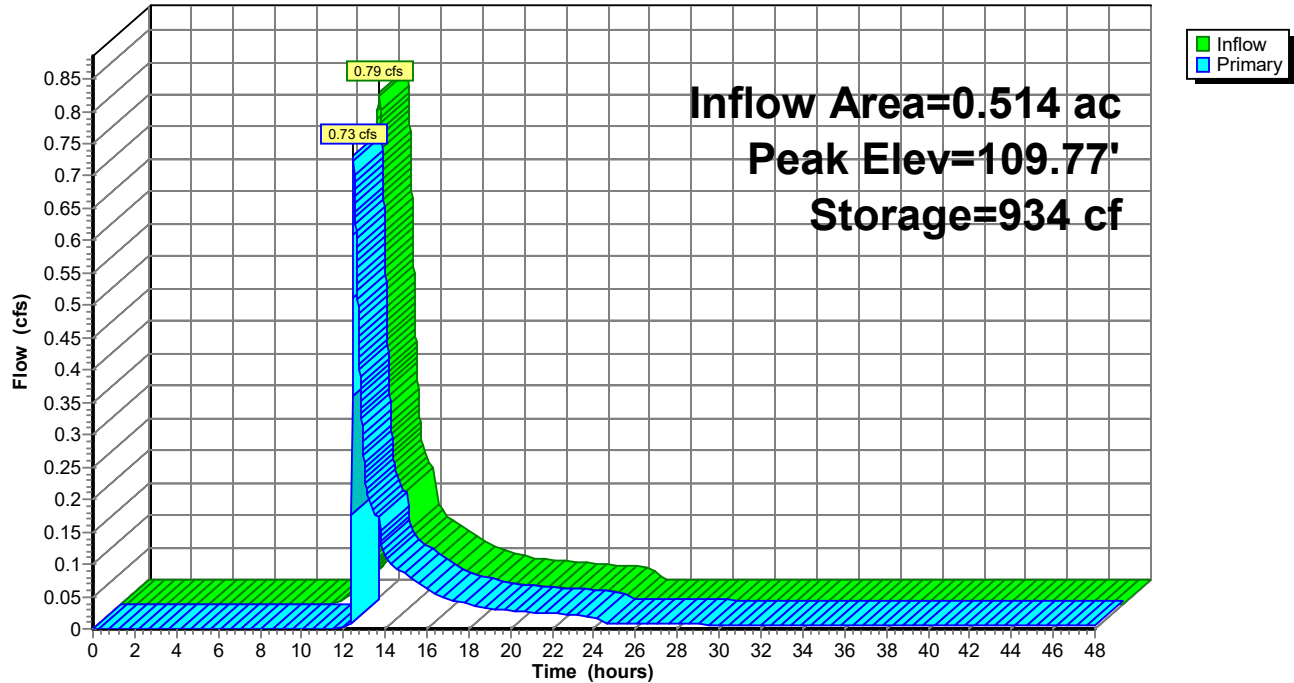
3=Culvert (Passes 0.73 cfs of 2.82 cfs potential flow)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 5.64 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 0.72 cfs @ 0.97 fps)

Pond 4P: FP2 TANKS

Hydrograph



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Summary for Pond 9R: New CB 1 to DMH 2

Inflow Area = 3.112 ac, 66.74% Impervious, Inflow Depth = 1.64" for 25 Year event
Inflow = 6.10 cfs @ 12.11 hrs, Volume= 0.426 af
Outflow = 6.10 cfs @ 12.11 hrs, Volume= 0.426 af, Atten= 0%, Lag= 0.0 min
Primary = 6.10 cfs @ 12.11 hrs, Volume= 0.426 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 113.95' @ 12.11 hrs

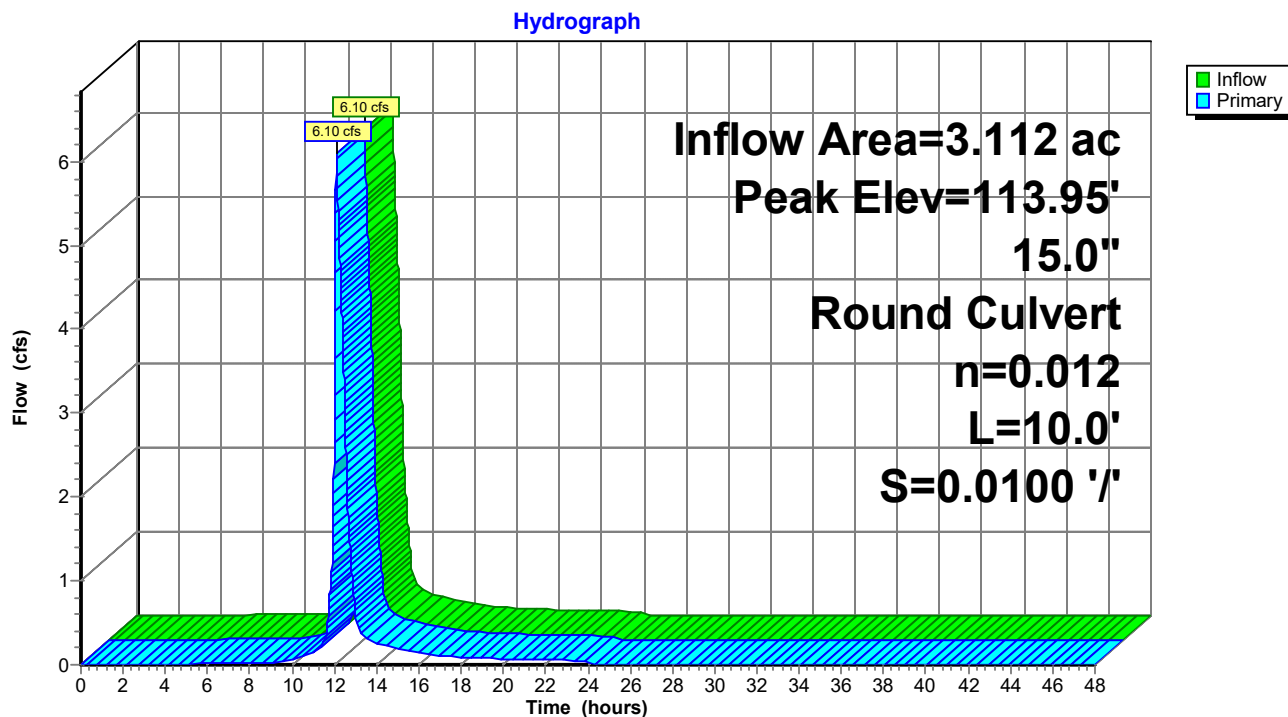
Flood Elev= 117.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	112.15'	15.0" Round Culvert L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 112.15' / 112.05' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.09 cfs @ 12.11 hrs HW=113.95' (Free Discharge)

↑**1=Culvert** (Barrel Controls 6.09 cfs @ 4.96 fps)

Pond 9R: New CB 1 to DMH 2



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Summary for Pond 30P: Raised StormTech SC-740 System

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth = 2.06" for 25 Year event
 Inflow = 2.31 cfs @ 12.10 hrs, Volume= 0.258 af
 Outflow = 1.29 cfs @ 12.32 hrs, Volume= 0.244 af, Atten= 44%, Lag= 13.2 min
 Primary = 1.29 cfs @ 12.32 hrs, Volume= 0.244 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 113.90' @ 12.32 hrs Surf.Area= 0.053 ac Storage= 0.088 af

Plug-Flow detention time= 448.0 min calculated for 0.244 af (95% of inflow)
 Center-of-Mass det. time= 417.6 min (1,227.1 - 809.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	111.22'	0.007 af	6.25'W x 46.34'L x 3.50'H Field A 0.023 af Overall - 0.006 af Embedded = 0.017 af x 40.0% Voids
#2A	111.72'	0.006 af	ADS_StormTech SC-740 +Cap x 6 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#3B	111.22'	0.010 af	6.25'W x 67.70'L x 3.50'H Field B 0.034 af Overall - 0.009 af Embedded = 0.025 af x 40.0% Voids
#4B	111.72'	0.009 af	ADS_StormTech SC-740 +Cap x 9 Inside #3 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#5C	111.22'	0.018 af	6.25'W x 124.66'L x 3.50'H Field C 0.063 af Overall - 0.018 af Embedded = 0.045 af x 40.0% Voids
#6C	111.72'	0.018 af	ADS_StormTech SC-740 +Cap x 17 Inside #5 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#7D	111.22'	0.019 af	6.25'W x 131.78'L x 3.50'H Field D 0.066 af Overall - 0.019 af Embedded = 0.047 af x 40.0% Voids
#8D	111.72'	0.019 af	ADS_StormTech SC-740 +Cap x 18 Inside #7 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		0.106 af	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard
 Storage Group C created with Chamber Wizard
 Storage Group D created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	110.72'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 3	113.72'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#3	Primary	110.72'	12.0" Round Culvert L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 110.72' / 110.69' S= 0.0100 '/' Cc= 0.900

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$n = 0.013$ Corrugated PE, smooth interior, Flow Area= 0.79 sf

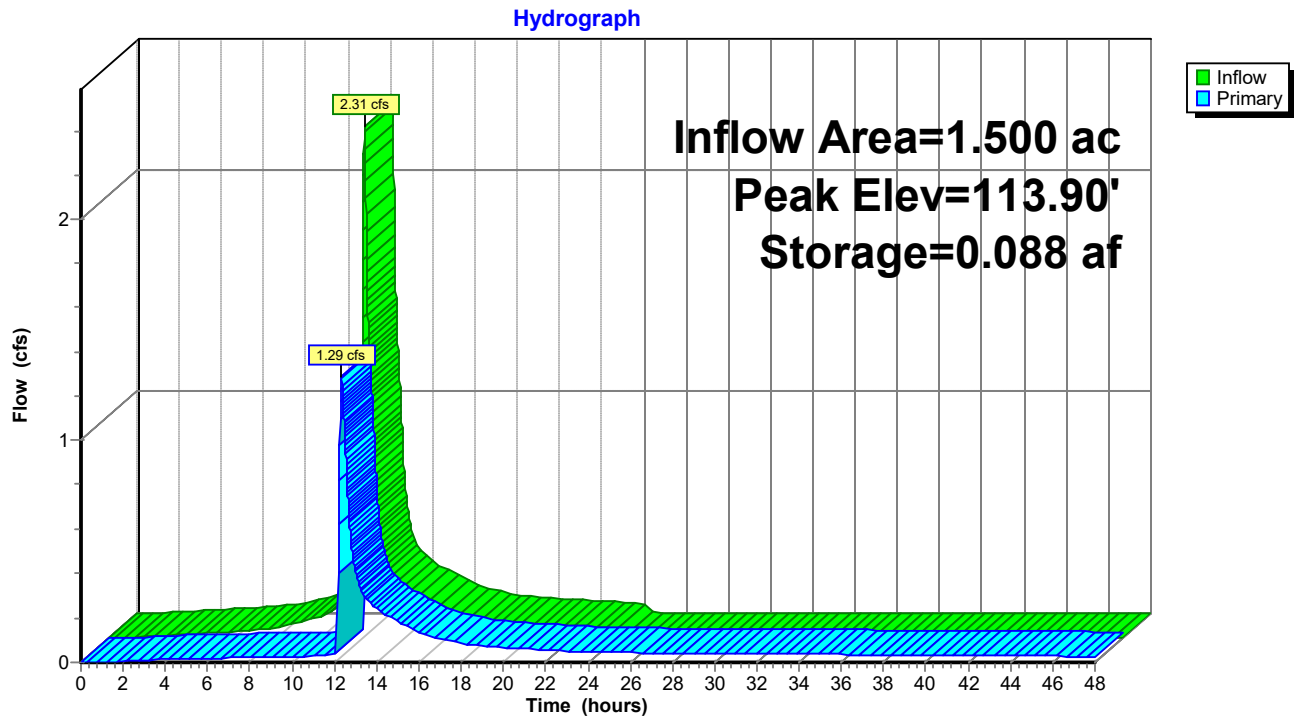
Primary OutFlow Max=1.29 cfs @ 12.32 hrs HW=113.90' (Free Discharge)

3=Culvert (Passes 1.29 cfs of 4.89 cfs potential flow)

1=Orifice/Grate (Orifice Controls 0.05 cfs @ 8.53 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 1.24 cfs @ 1.16 fps)

Pond 30P: Raised StormTech SC-740 System



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Summary for Pond 36P: PP1

Inflow Area = 0.050 ac, 81.59% Impervious, Inflow Depth = 4.33" for 25 Year event
 Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.018 af
 Outflow = 0.20 cfs @ 12.14 hrs, Volume= 0.017 af, Atten= 17%, Lag= 3.2 min
 Primary = 0.20 cfs @ 12.14 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 116.01' @ 12.14 hrs Surf.Area= 1,110 sf Storage= 152 cf

Plug-Flow detention time= 83.2 min calculated for 0.017 af (92% of inflow)
 Center-of-Mass det. time= 43.0 min (838.8 - 795.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.59'	939 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.59	1,110	0.0	0	0
115.60	1,110	20.0	2	2
116.35	1,110	33.0	275	277
116.68	1,110	40.0	147	423
117.00	1,110	20.0	71	495
119.00	1,110	20.0	444	939

Device	Routing	Invert	Outlet Devices	
#1	Primary	115.76'	7.500 in/hr Exfiltration over Surface area above 115.76' Excluded Surface area = 1,110 sf	
#2	Primary	115.76'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Primary OutFlow Max=0.20 cfs @ 12.14 hrs HW=116.01' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.00 cfs)

└ **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 1.70 fps)

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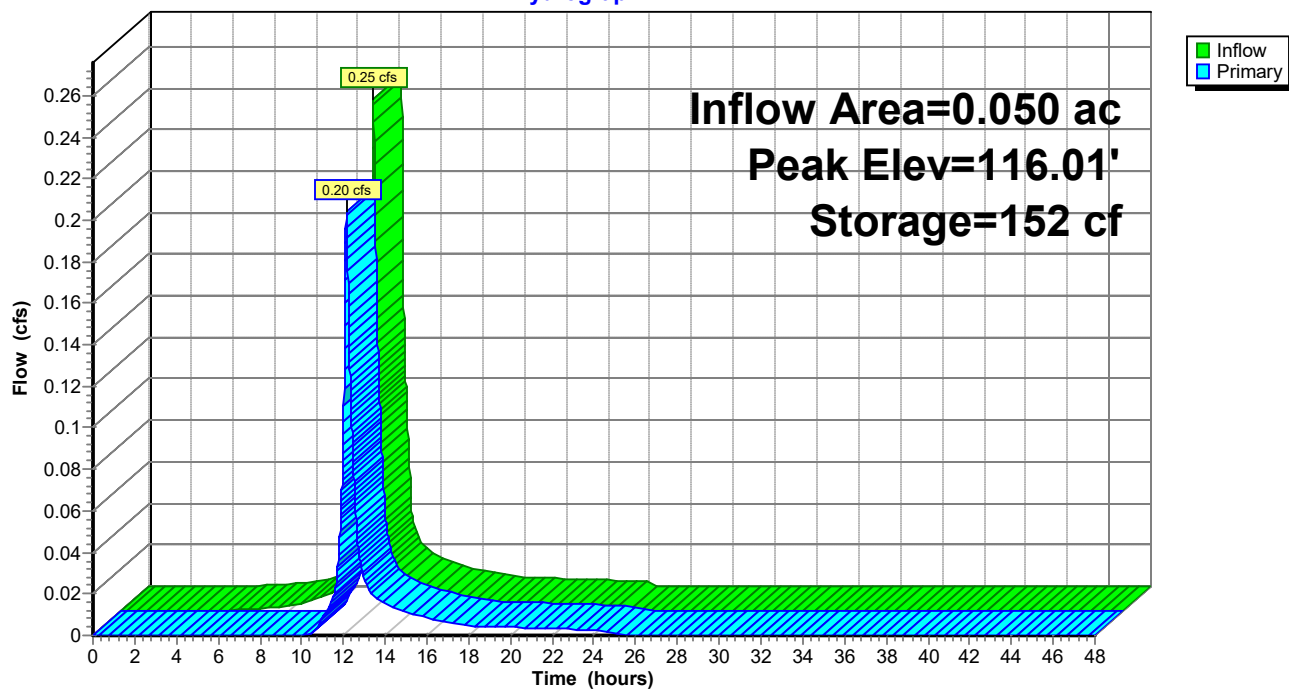
Type III 24-hr 25 Year Rainfall=5.80"

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Pond 36P: PP1

Hydrograph



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Summary for Pond 37P: PP2

Inflow Area = 0.077 ac, 100.00% Impervious, Inflow Depth = 5.56" for 25 Year event
 Inflow = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af
 Outflow = 0.36 cfs @ 12.14 hrs, Volume= 0.036 af, Atten= 18%, Lag= 3.4 min
 Primary = 0.36 cfs @ 12.14 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.99' @ 12.14 hrs Surf.Area= 1,212 sf Storage= 160 cf

Plug-Flow detention time= 24.6 min calculated for 0.036 af (100% of inflow)
 Center-of-Mass det. time= 23.6 min (769.2 - 745.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.59'	1,025 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.59	1,212	0.0	0	0
115.60	1,212	20.0	2	2
116.35	1,212	33.0	300	302
116.68	1,212	40.0	160	462
117.00	1,212	20.0	78	540
119.00	1,212	20.0	485	1,025

Device	Routing	Invert	Outlet Devices
#1	Primary	115.76'	7.500 in/hr Exfiltration over Surface area above 115.76' Excluded Surface area = 1,212 sf
#2	Primary	115.60'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.36 cfs @ 12.14 hrs HW=115.99' (Free Discharge)

1=Exfiltration (Exfiltration Controls 0.00 cfs)

2=Orifice/Grate (Orifice Controls 0.36 cfs @ 2.14 fps)

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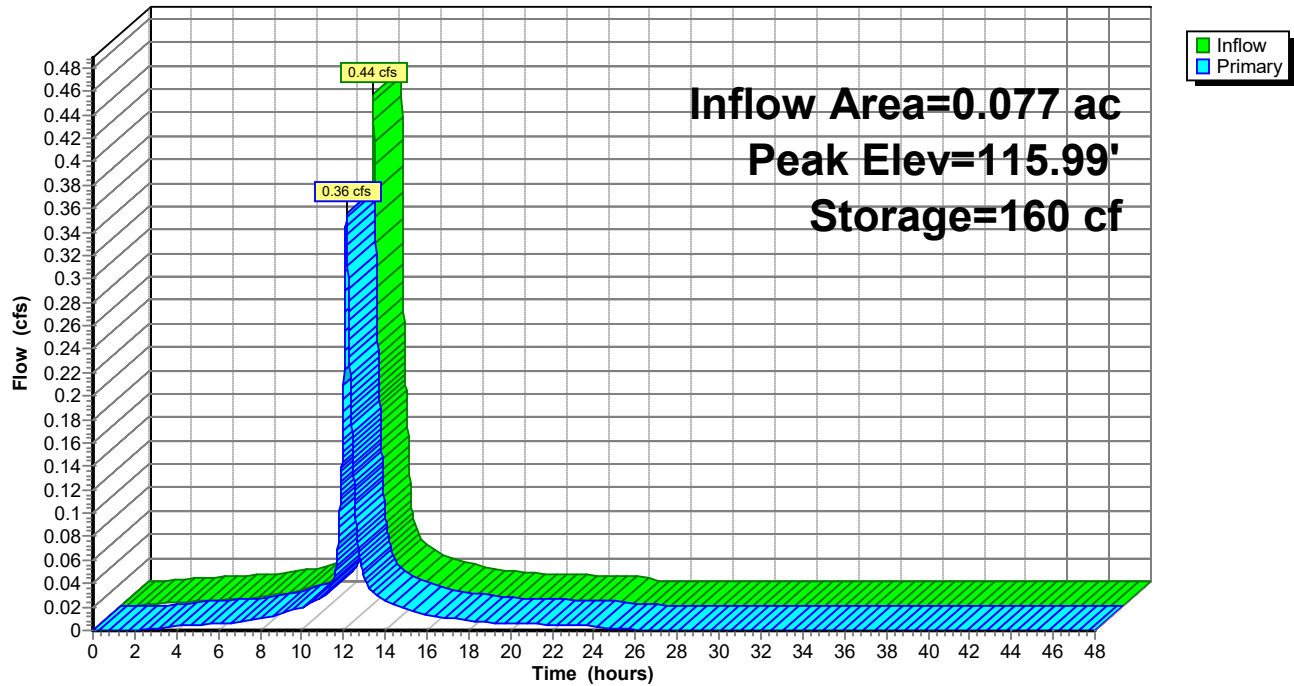
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Pond 37P: PP2

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Summary for Pond 38P: Rain Garden West

Inflow Area = 0.503 ac, 7.99% Impervious, Inflow Depth = 0.66" for 25 Year event
Inflow = 0.16 cfs @ 12.36 hrs, Volume= 0.028 af
Outflow = 0.13 cfs @ 12.56 hrs, Volume= 0.025 af, Atten= 20%, Lag= 11.9 min
Primary = 0.13 cfs @ 12.56 hrs, Volume= 0.025 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 120.32' @ 12.56 hrs Surf.Area= 631 sf Storage= 174 cf

Plug-Flow detention time= 83.0 min calculated for 0.025 af (89% of inflow)
Center-of-Mass det. time= 33.1 min (968.5 - 935.4)

Volume	Invert	Avail.Storage	Storage Description
#1	120.00'	729 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.00	453	0	0
121.00	1,005	729	729

Device	Routing	Invert	Outlet Devices
#1	Device 2	120.25'	8.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	117.25'	8.0" Round Culvert L= 187.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 117.25' / 115.25' S= 0.0107 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.13 cfs @ 12.56 hrs HW=120.32' (Free Discharge)

↑ **2=Culvert** (Passes 0.13 cfs of 1.71 cfs potential flow)
↑ **1=Orifice/Grate** (Weir Controls 0.13 cfs @ 0.87 fps)

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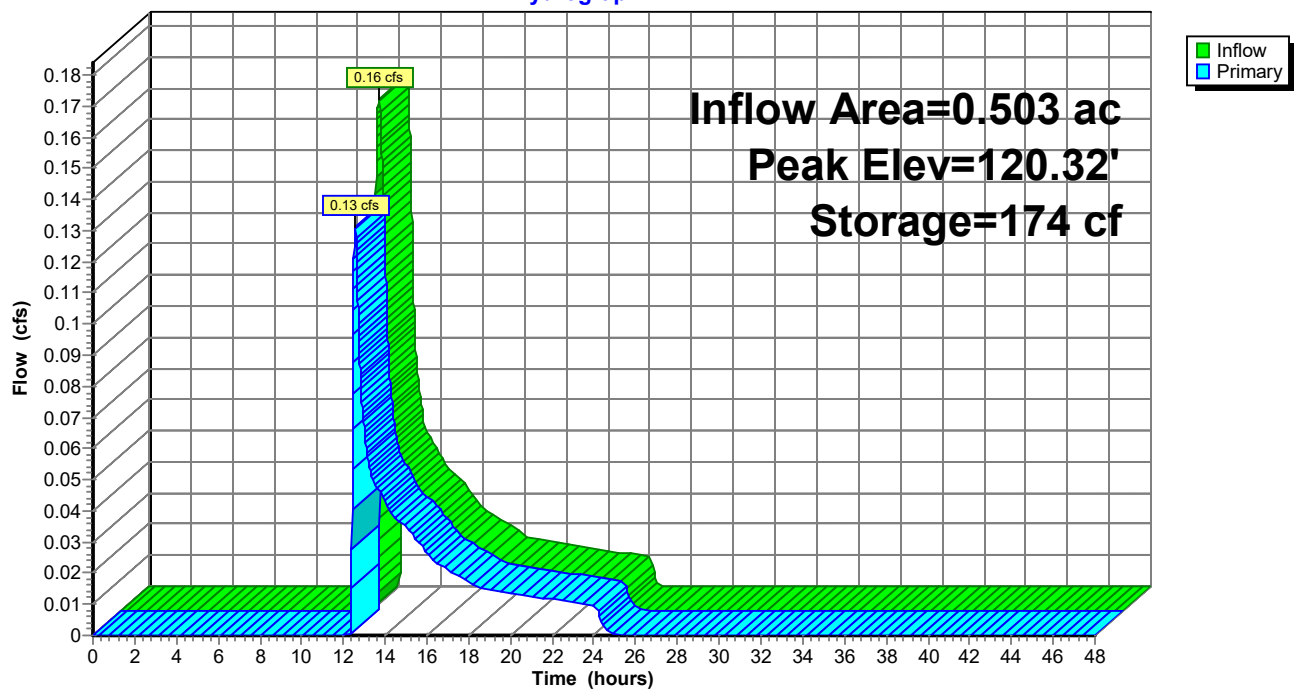
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Pond 38P: Rain Garden West

Hydrograph



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Summary for Pond DS-2: Drip Strip

Inflow Area = 0.220 ac, 79.17% Impervious, Inflow Depth = 4.99" for 25 Year event
Inflow = 1.20 cfs @ 12.08 hrs, Volume= 0.092 af
Outflow = 0.54 cfs @ 12.26 hrs, Volume= 0.092 af, Atten= 55%, Lag= 10.4 min
Discarded = 0.28 cfs @ 11.76 hrs, Volume= 0.087 af
Primary = 0.26 cfs @ 12.26 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 116.14' @ 12.26 hrs Surf.Area= 1,600 sf Storage= 706 cf

Plug-Flow detention time= 11.7 min calculated for 0.092 af (100% of inflow)
Center-of-Mass det. time= 11.7 min (785.7 - 774.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 11.76 hrs HW=115.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.26 cfs @ 12.26 hrs HW=116.14' (Free Discharge)

↑ **2=Orifice/Grate** (Weir Controls 0.26 cfs @ 1.21 fps)

Post-Development

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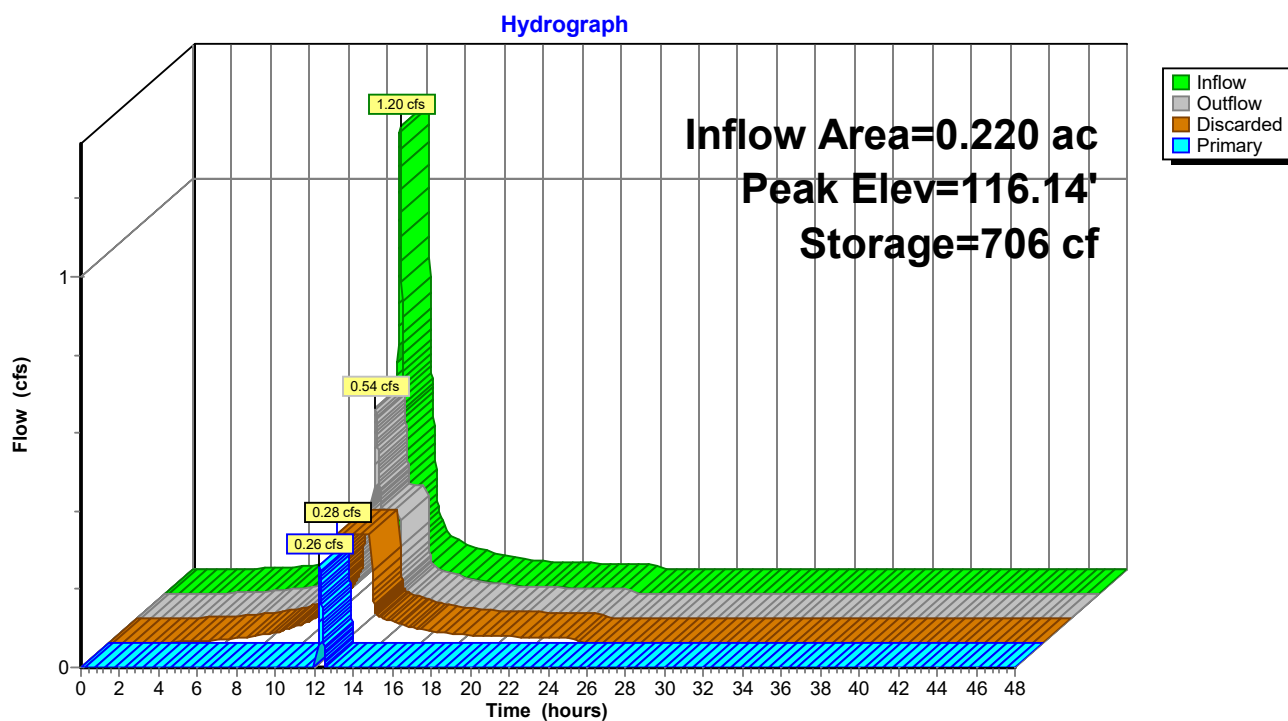
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Pond DS-2: Drip Strip



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Summary for Pond DS-3: Drip Strip

Inflow Area = 0.399 ac, 76.31% Impervious, Inflow Depth = 4.99" for 25 Year event
Inflow = 2.17 cfs @ 12.08 hrs, Volume= 0.166 af
Outflow = 1.26 cfs @ 12.19 hrs, Volume= 0.166 af, Atten= 42%, Lag= 6.6 min
Discarded = 0.28 cfs @ 11.62 hrs, Volume= 0.129 af
Primary = 0.98 cfs @ 12.19 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 117.08' @ 12.19 hrs Surf.Area= 1,600 sf Storage= 1,168 cf

Plug-Flow detention time= 11.5 min calculated for 0.166 af (100% of inflow)
Center-of-Mass det. time= 11.5 min (785.4 - 774.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 11.62 hrs HW=115.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.98 cfs @ 12.19 hrs HW=117.07' (Free Discharge)

↑ **2=Orifice/Grate** (Orifice Controls 0.98 cfs @ 4.99 fps)

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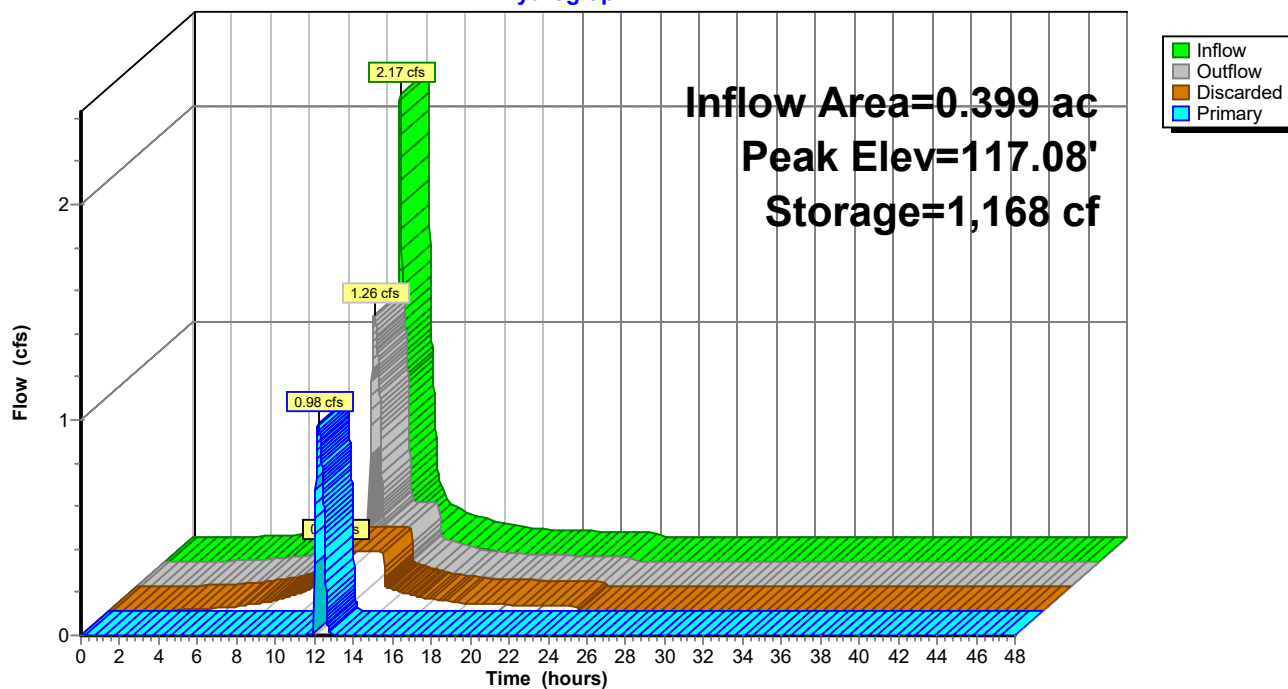
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Pond DS-3: Drip Strip

Hydrograph



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Summary for Pond DS1: Drip Strip

Inflow Area = 0.220 ac, 79.17% Impervious, Inflow Depth = 4.99" for 25 Year event
Inflow = 1.20 cfs @ 12.08 hrs, Volume= 0.092 af
Outflow = 0.54 cfs @ 12.26 hrs, Volume= 0.092 af, Atten= 55%, Lag= 10.4 min
Discarded = 0.28 cfs @ 11.76 hrs, Volume= 0.087 af
Primary = 0.26 cfs @ 12.26 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 116.14' @ 12.26 hrs Surf.Area= 1,600 sf Storage= 706 cf

Plug-Flow detention time= 11.7 min calculated for 0.092 af (100% of inflow)
Center-of-Mass det. time= 11.7 min (785.7 - 774.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 11.76 hrs HW=115.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.26 cfs @ 12.26 hrs HW=116.14' (Free Discharge)

↑ **2=Orifice/Grate** (Weir Controls 0.26 cfs @ 1.21 fps)

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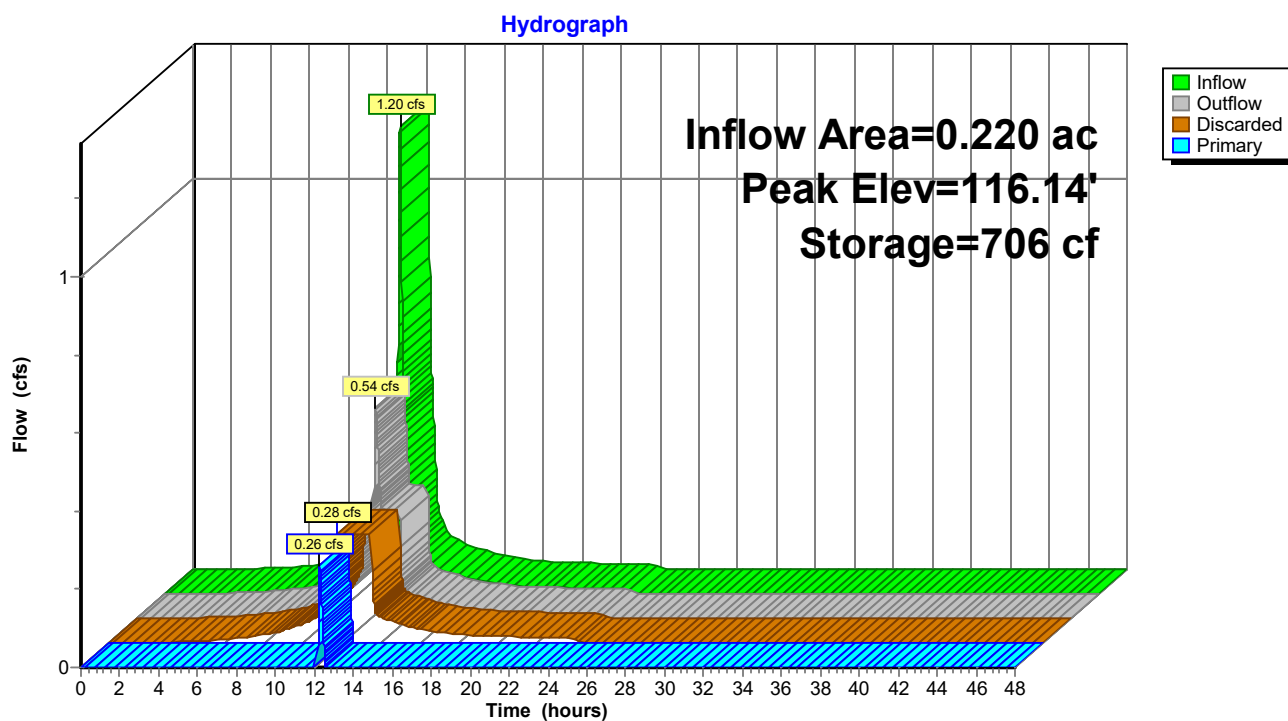
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Pond DS1: Drip Strip



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Summary for Pond FP1: FP1 Filter

Inflow Area = 0.812 ac, 23.11% Impervious, Inflow Depth = 0.78" for 25 Year event
Inflow = 0.31 cfs @ 12.45 hrs, Volume= 0.053 af
Outflow = 0.29 cfs @ 12.57 hrs, Volume= 0.053 af, Atten= 6%, Lag= 7.0 min
Primary = 0.21 cfs @ 12.57 hrs, Volume= 0.052 af
Secondary = 0.08 cfs @ 12.57 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 113.98' @ 12.57 hrs Surf.Area= 91 sf Storage= 98 cf

Plug-Flow detention time= 1.7 min calculated for 0.053 af (100% of inflow)

Center-of-Mass det. time= 1.7 min (934.0 - 932.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	111.84'	133 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.84	75	0.0	0	0
113.34	75	40.0	45	45
114.34	100	100.0	88	133

Device	Routing	Invert	Outlet Devices
#1	Primary	111.84'	100.000 in/hr Exfiltration over Surface area
#2	Secondary	113.84'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 12.57 hrs HW=113.98' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Secondary OutFlow Max=0.08 cfs @ 12.57 hrs HW=113.98' (Free Discharge)

↑ **2=Orifice/Grate** (Orifice Controls 0.08 cfs @ 1.26 fps)

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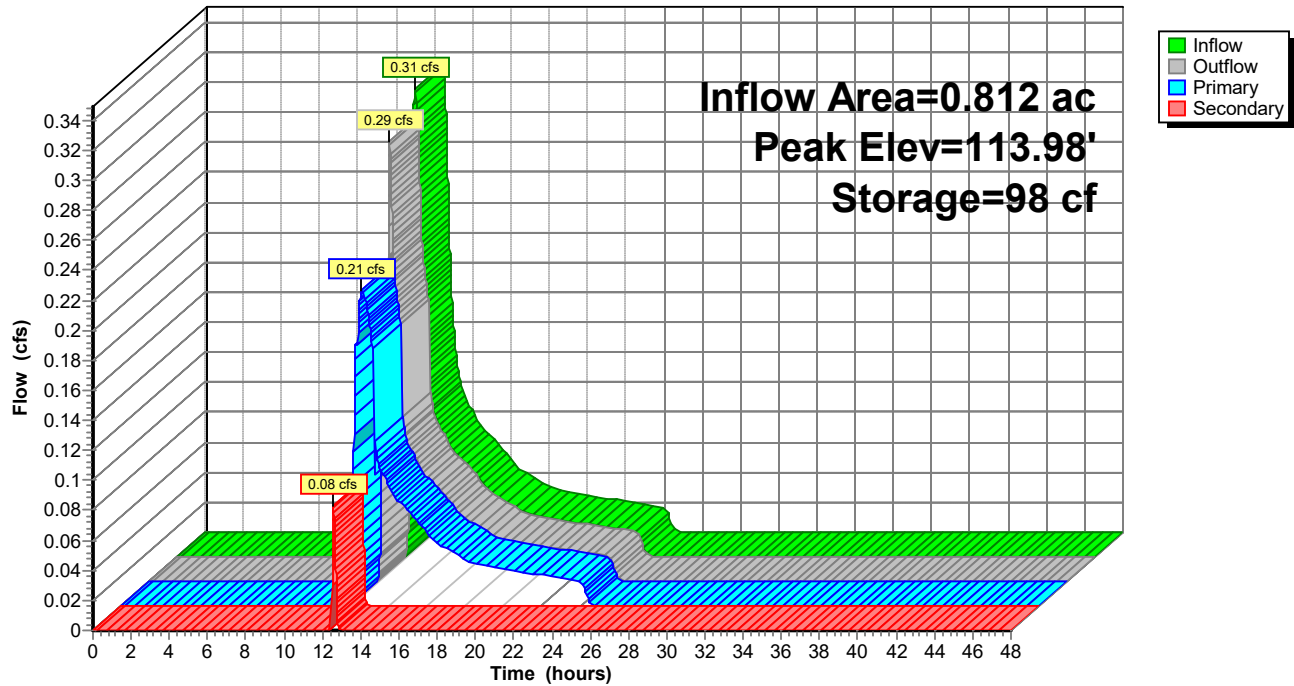
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Pond FP1: FP1 Filter

Hydrograph



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Summary for Pond FP2: FP2 Filter

Inflow Area = 0.514 ac, 21.94% Impervious, Inflow Depth = 2.21" for 25 Year event
Inflow = 0.79 cfs @ 12.36 hrs, Volume= 0.094 af
Outflow = 0.79 cfs @ 12.37 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.4 min
Primary = 0.21 cfs @ 12.37 hrs, Volume= 0.071 af
Secondary = 0.58 cfs @ 12.37 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 112.70' @ 12.37 hrs Surf.Area= 91 sf Storage= 98 cf

Plug-Flow detention time= 1.9 min calculated for 0.094 af (100% of inflow)

Center-of-Mass det. time= 1.9 min (871.5 - 869.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	110.56'	133 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
110.56	75	0.0	0	0
112.06	75	40.0	45	45
113.06	100	100.0	88	133

Device	Routing	Invert	Outlet Devices
#1	Primary	110.56'	100.000 in/hr Exfiltration over Surface area
#2	Secondary	112.55'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 12.37 hrs HW=112.70' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Secondary OutFlow Max=0.58 cfs @ 12.37 hrs HW=112.70' (Free Discharge)

↑**2=Orifice/Grate** (Weir Controls 0.58 cfs @ 1.25 fps)

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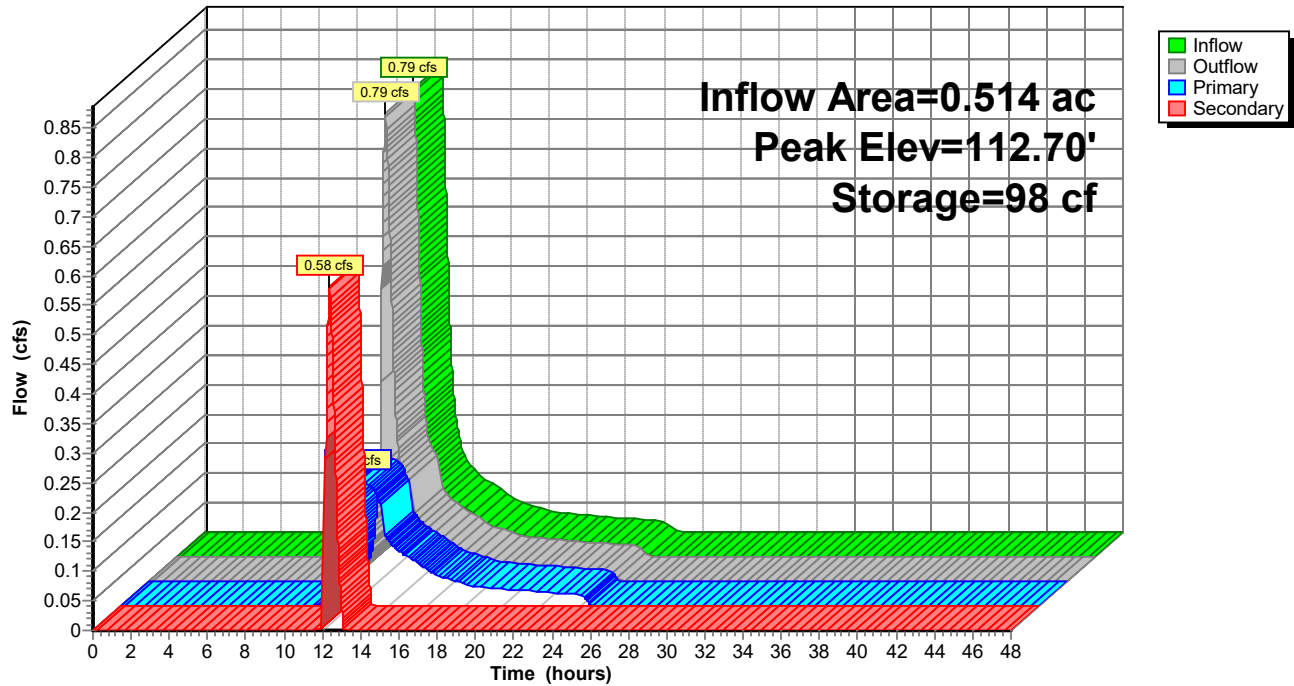
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Pond FP2: FP2 Filter

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Summary for Pond IT-1: Infiltration Trench

Inflow Area = 1.157 ac, 72.26% Impervious, Inflow Depth = 2.57" for 25 Year event
 Inflow = 3.28 cfs @ 12.09 hrs, Volume= 0.247 af
 Outflow = 1.68 cfs @ 12.29 hrs, Volume= 0.247 af, Atten= 49%, Lag= 11.9 min
 Discarded = 0.28 cfs @ 11.46 hrs, Volume= 0.157 af
 Primary = 1.40 cfs @ 12.29 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.45' @ 12.29 hrs Surf.Area= 1,600 sf Storage= 1,890 cf

Plug-Flow detention time= 12.3 min calculated for 0.247 af (100% of inflow)
 Center-of-Mass det. time= 12.3 min (808.8 - 796.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	112.00'	2,880 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.00	1,600	0.0	0	0
113.00	1,600	30.0	480	480
114.00	1,600	30.0	480	960
115.00	1,600	40.0	640	1,600
116.00	1,600	40.0	640	2,240
117.00	1,600	40.0	640	2,880

Device	Routing	Invert	Outlet Devices	
#1	Discarded	112.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	113.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 11.46 hrs HW=112.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=1.40 cfs @ 12.29 hrs HW=115.45' (Free Discharge)

↑ **2=Orifice/Grate** (Orifice Controls 1.40 cfs @ 7.15 fps)

Post-Development

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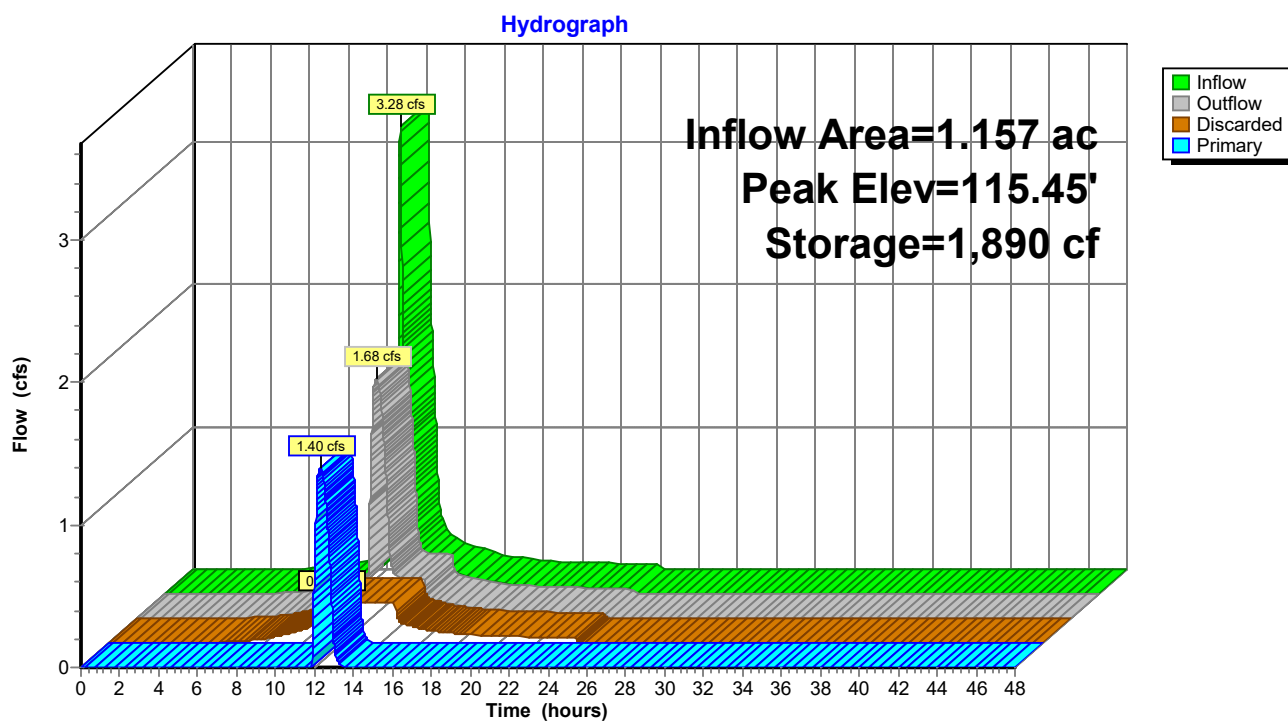
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Pond IT-1: Infiltration Trench



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Summary for Pond PP1: Porous Pavement 1

Inflow Area = 0.440 ac, 72.24% Impervious, Inflow Depth = 3.80" for 25 Year event
 Inflow = 1.95 cfs @ 12.09 hrs, Volume= 0.140 af
 Outflow = 0.57 cfs @ 12.43 hrs, Volume= 0.133 af, Atten= 71%, Lag= 20.6 min
 Primary = 0.57 cfs @ 12.43 hrs, Volume= 0.133 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 113.96' @ 12.43 hrs Surf.Area= 6,156 sf Storage= 2,617 cf
 Flood Elev= 114.67' Surf.Area= 6,156 sf Storage= 4,358 cf

Plug-Flow detention time= 354.3 min calculated for 0.133 af (95% of inflow)
 Center-of-Mass det. time= 328.7 min (1,139.0 - 810.3)

Volume	Invert	Avail.Storage	Storage Description
#1	111.22'	4,358 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.22	6,156	0.0	0	0
112.90	6,156	0.0	0	0
114.67	6,156	40.0	4,358	4,358
115.25	6,156	0.0	0	4,358

Device	Routing	Invert	Outlet Devices
#1	Primary	111.23'	8.0" Round Culvert L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.23' / 110.88' S= 0.0100 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	111.23'	0.6" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	113.45'	0.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	113.95'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.57 cfs @ 12.43 hrs HW=113.96' (Free Discharge)

1=Culvert (Passes 0.57 cfs of 2.47 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.02 cfs @ 7.92 fps)
 3=Broad-Crested Rectangular Weir (Weir Controls 0.53 cfs @ 2.06 fps)
 4=Broad-Crested Rectangular Weir (Weir Controls 0.02 cfs @ 0.31 fps)

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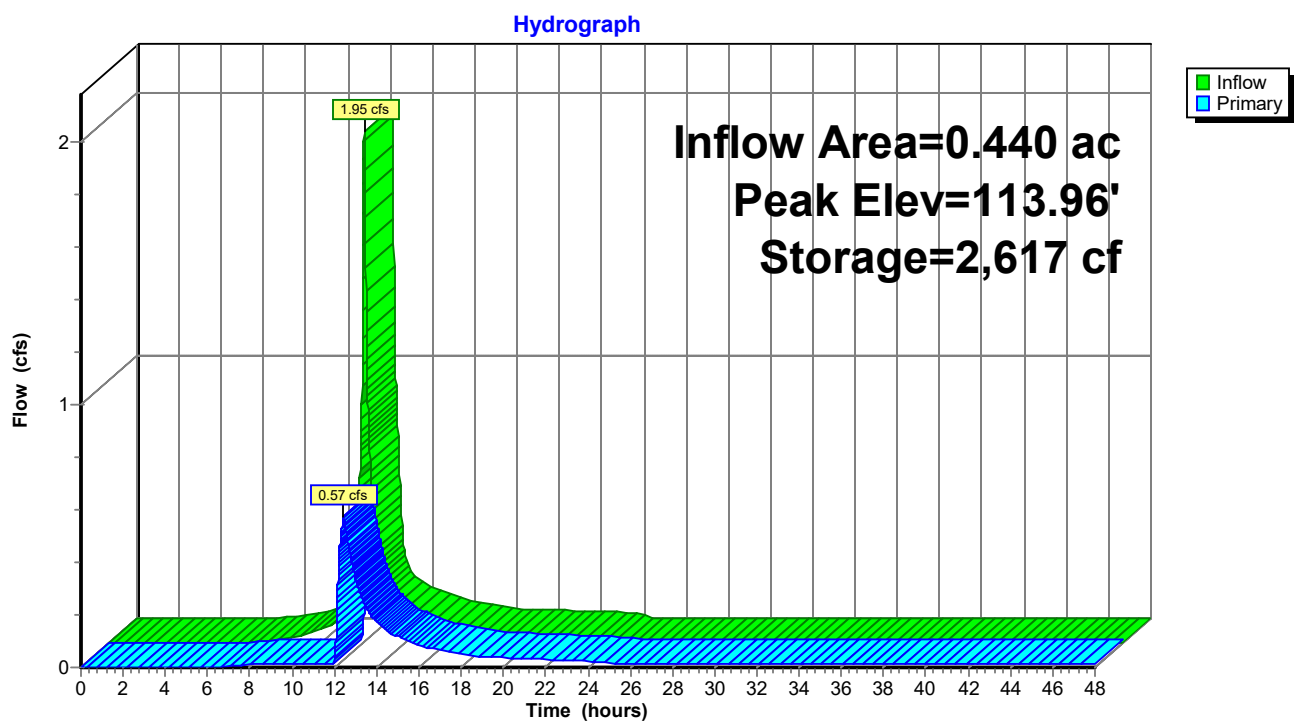
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Pond PP1: Porous Pavement 1



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Summary for Pond PP2: Porous Pavement 2

Inflow Area = 0.366 ac, 73.59% Impervious, Inflow Depth = 3.80" for 25 Year event
Inflow = 1.62 cfs @ 12.09 hrs, Volume= 0.116 af
Outflow = 0.59 cfs @ 12.38 hrs, Volume= 0.108 af, Atten= 63%, Lag= 17.5 min
Primary = 0.59 cfs @ 12.38 hrs, Volume= 0.108 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 113.81' @ 12.38 hrs Surf.Area= 5,346 sf Storage= 2,138 cf
Flood Elev= 114.27' Surf.Area= 5,346 sf Storage= 2,138 cf

Plug-Flow detention time= 331.8 min calculated for 0.108 af (93% of inflow)
Center-of-Mass det. time= 293.8 min (1,104.1 - 810.3)

Volume	Invert	Avail.Storage	Storage Description
#1	111.10'	2,138 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.10	5,346	0.0	0	0
112.77	5,346	0.0	0	0
113.77	5,346	40.0	2,138	2,138
114.35	5,346	0.0	0	2,138

Device	Routing	Invert	Outlet Devices
#1	Primary	111.10'	8.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.10' / 110.70' S= 0.0160 ' S Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	111.10'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	113.29'	0.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	113.79'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.58 cfs @ 12.38 hrs HW=113.81' (Free Discharge)

1=Culvert (Passes 0.58 cfs of 2.59 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.01 cfs @ 7.89 fps)
3=Broad-Crested Rectangular Weir (Weir Controls 0.53 cfs @ 2.07 fps)
4=Broad-Crested Rectangular Weir (Weir Controls 0.03 cfs @ 0.34 fps)

Post-Development

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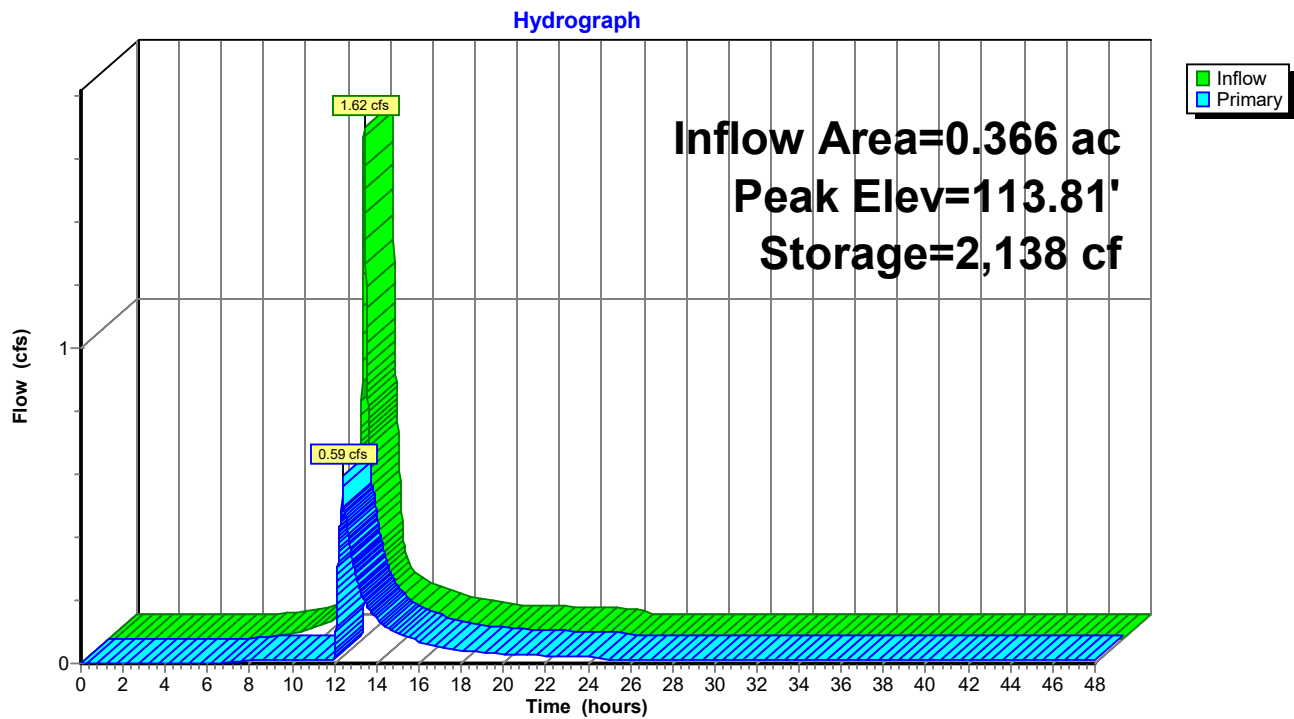
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Pond PP2: Porous Pavement 2



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Summary for Pond PP3: Porous Pavement 3

Inflow Area = 0.432 ac, 64.46% Impervious, Inflow Depth = 3.31" for 25 Year event
Inflow = 1.68 cfs @ 12.09 hrs, Volume= 0.119 af
Outflow = 0.61 cfs @ 12.37 hrs, Volume= 0.108 af, Atten= 64%, Lag= 17.1 min
Primary = 0.61 cfs @ 12.37 hrs, Volume= 0.108 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 113.17' @ 12.37 hrs Surf.Area= 3,744 sf Storage= 2,051 cf

Plug-Flow detention time= 339.4 min calculated for 0.108 af (91% of inflow)
Center-of-Mass det. time= 294.8 min (1,117.9 - 823.1)

Volume	Invert	Avail.Storage	Storage Description
#1	110.13'	3,025 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
110.13	3,744	0.0	0	0
111.10	3,744	0.0	0	0
111.80	3,744	0.0	0	0
113.82	3,744	40.0	3,025	3,025
114.40	3,744	0.0	0	3,025

Device	Routing	Invert	Outlet Devices
#1	Primary	110.13'	8.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.13' / 109.73' S= 0.0100 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	110.13'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	112.65'	0.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	113.15'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.60 cfs @ 12.37 hrs HW=113.17' (Free Discharge)

1=Culvert (Passes 0.60 cfs of 2.55 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.01 cfs @ 8.37 fps)
3=Broad-Crested Rectangular Weir (Weir Controls 0.54 cfs @ 2.08 fps)
4=Broad-Crested Rectangular Weir (Weir Controls 0.04 cfs @ 0.38 fps)

Post-Development

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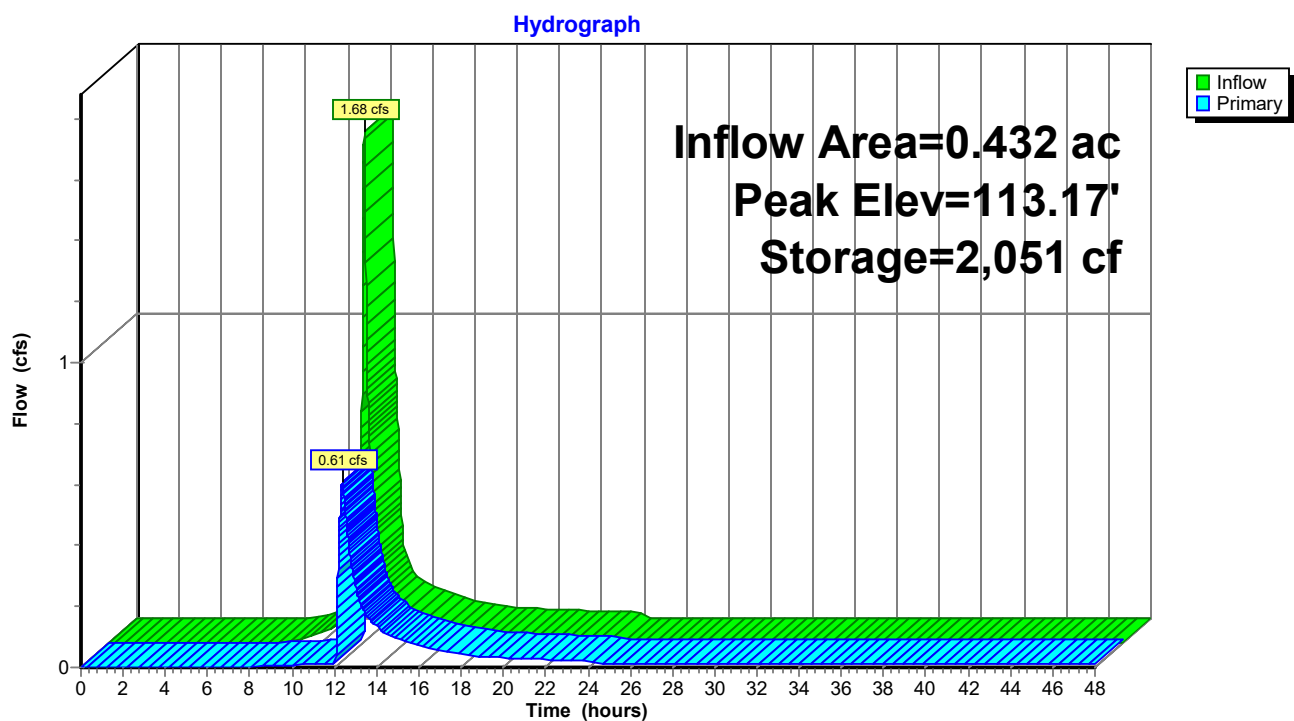
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Pond PP3: Porous Pavement 3



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Summary for Pond PP4: Porous Pavement 4

Inflow Area = 0.227 ac, 63.12% Impervious, Inflow Depth = 3.21" for 25 Year event
 Inflow = 0.85 cfs @ 12.09 hrs, Volume= 0.061 af
 Outflow = 0.39 cfs @ 12.29 hrs, Volume= 0.058 af, Atten= 55%, Lag= 11.9 min
 Primary = 0.39 cfs @ 12.29 hrs, Volume= 0.058 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 113.22' @ 12.29 hrs Surf.Area= 1,620 sf Storage= 917 cf
 Flood Elev= 113.60' Surf.Area= 1,620 sf Storage= 1,166 cf

Plug-Flow detention time= 349.9 min calculated for 0.058 af (96% of inflow)
 Center-of-Mass det. time= 325.5 min (1,151.0 - 825.5)

Volume	Invert	Avail.Storage	Storage Description
#1	110.10'	1,166 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
110.10	1,620	0.0	0	0
111.80	1,620	0.0	0	0
113.60	1,620	40.0	1,166	1,166
114.14	1,620	0.0	0	1,166

Device	Routing	Invert	Outlet Devices
#1	Primary	110.13'	8.0" Round Culvert L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.13' / 109.78' S= 0.0100 ' S Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	110.13'	0.4" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	112.80'	0.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	113.30'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.39 cfs @ 12.29 hrs HW=113.22' (Free Discharge)

1=Culvert (Passes 0.39 cfs of 2.64 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.01 cfs @ 8.43 fps)
 3=Broad-Crested Rectangular Weir (Weir Controls 0.38 cfs @ 1.82 fps)
 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Post-Development

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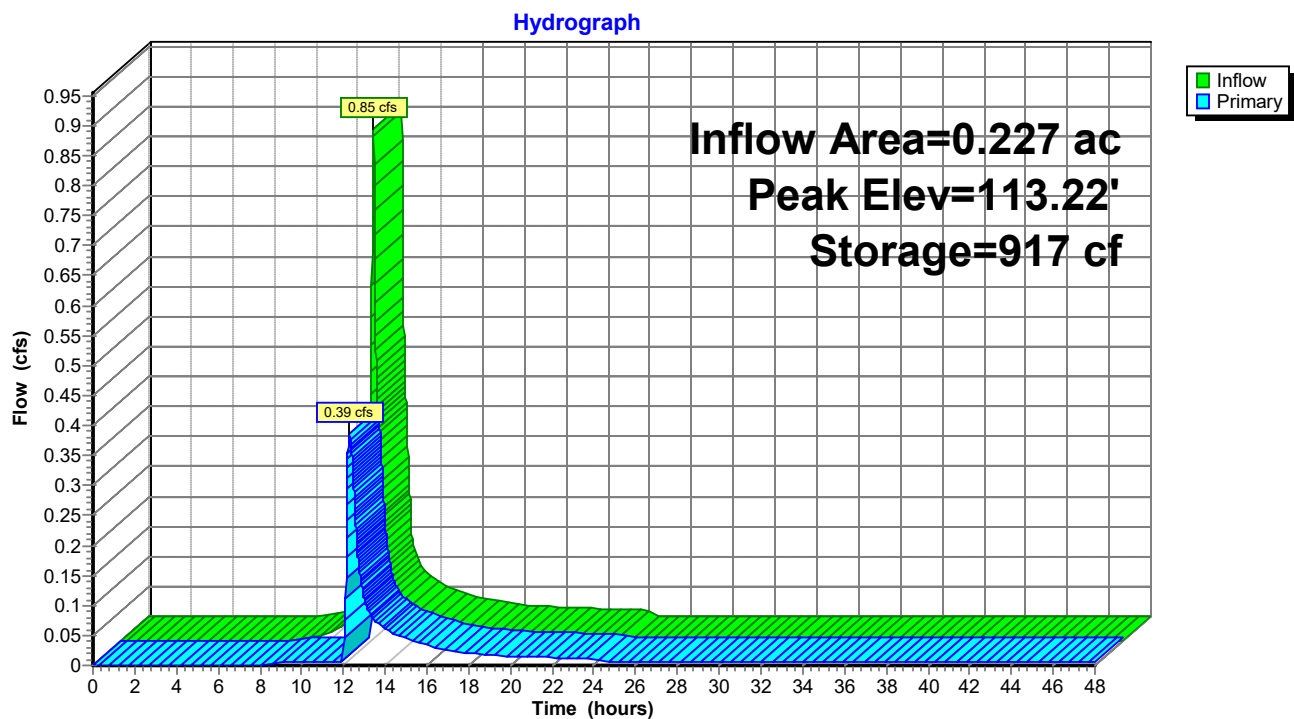
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Pond PP4: Porous Pavement 4



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Summary for Pond R1: Detention Pond 1

Inflow Area = 0.734 ac, 100.00% Impervious, Inflow Depth = 5.56" for 25 Year event
Inflow = 4.17 cfs @ 12.08 hrs, Volume= 0.340 af
Outflow = 2.92 cfs @ 12.16 hrs, Volume= 0.335 af, Atten= 30%, Lag= 4.8 min
Primary = 2.92 cfs @ 12.16 hrs, Volume= 0.335 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 113.01' @ 12.16 hrs Surf.Area= 1,156 sf Storage= 3,125 cf

Plug-Flow detention time= 108.9 min calculated for 0.335 af (98% of inflow)
Center-of-Mass det. time= 98.8 min (844.4 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	110.06'	2,744 cf	ACF R-Tank HD 2 x 350 Inside #2 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 350 Chambers in 14 Rows 3,040 cf Overall x 95.0% Voids
#2	109.56'	555 cf	34.00'W x 34.00'L x 3.83'H Prismatic 4,427 cf Overall - 3,040 cf Embedded = 1,387 cf x 40.0% Voids
		3,299 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	110.06'	10.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.06' / 109.68' S= 0.0380 ' / Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	110.06'	1.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	112.90'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	111.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.90 cfs @ 12.16 hrs HW=113.01' (Free Discharge)

- 1=Culvert (Passes 2.90 cfs of 4.18 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.10 cfs @ 8.18 fps)
- 3=Broad-Crested Rectangular Weir (Weir Controls 0.62 cfs @ 0.92 fps)
- 4=Orifice/Grate (Orifice Controls 2.18 cfs @ 6.24 fps)

Post-Development

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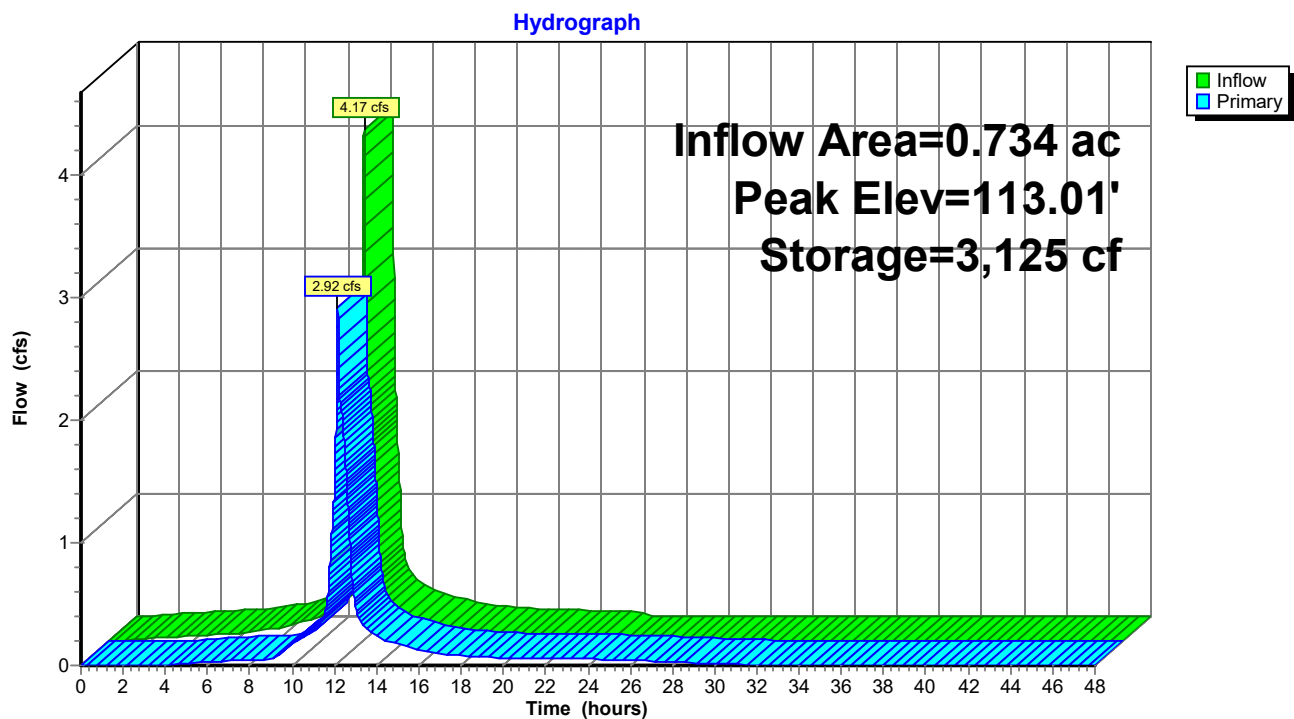
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Pond R1: Detention Pond 1



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Summary for Pond R2: Detention Pond 2

Inflow Area = 0.734 ac, 100.00% Impervious, Inflow Depth = 5.56" for 25 Year event
Inflow = 4.17 cfs @ 12.08 hrs, Volume= 0.340 af
Outflow = 3.39 cfs @ 12.14 hrs, Volume= 0.334 af, Atten= 19%, Lag= 3.5 min
Primary = 3.39 cfs @ 12.14 hrs, Volume= 0.334 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 112.90' @ 12.14 hrs Surf.Area= 1,344 sf Storage= 3,236 cf

Plug-Flow detention time= 139.8 min calculated for 0.334 af (98% of inflow)
Center-of-Mass det. time= 127.1 min (872.8 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	110.06'	2,587 cf	ACF R-Tank HD 2 x 330 Inside #2 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 330 Chambers in 15 Rows 2,866 cf Overall x 95.0% Voids
#2	109.56'	912 cf	24.00'W x 56.00'L x 3.83'H Prismatic 5,148 cf Overall - 2,866 cf Embedded = 2,281 cf x 40.0% Voids
3,499 cf			Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	108.14'	12.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.14' / 108.10' S= 0.0040 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	110.06'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	112.70'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	111.00'	7.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.37 cfs @ 12.14 hrs HW=112.90' (Free Discharge)

- 1=Culvert (Passes 3.37 cfs of 7.80 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.04 cfs @ 8.05 fps)
- 3=Broad-Crested Rectangular Weir (Weir Controls 1.47 cfs @ 1.23 fps)
- 4=Orifice/Grate (Orifice Controls 1.86 cfs @ 6.06 fps)

Post-Development

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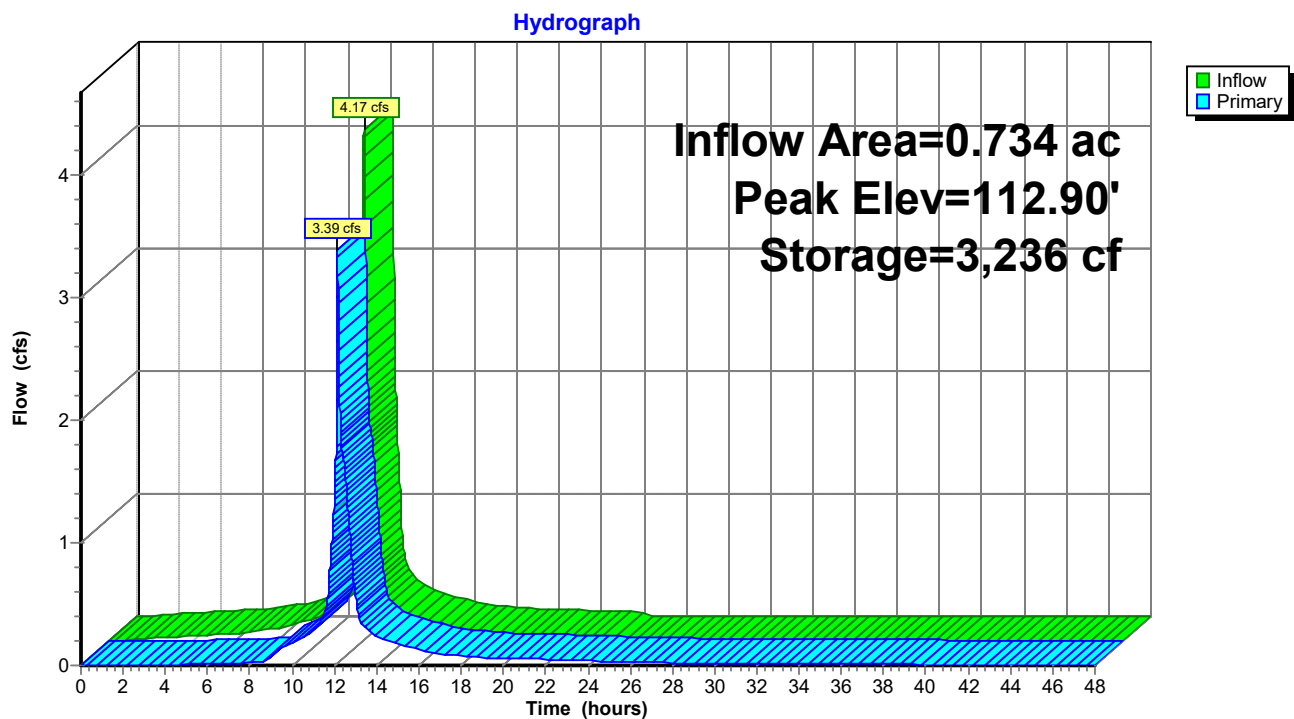
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Pond R2: Detention Pond 2



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Summary for Pond RG-1: Rain Garden

Inflow Area = 0.168 ac, 58.87% Impervious, Inflow Depth = 3.02" for 25 Year event
Inflow = 0.59 cfs @ 12.09 hrs, Volume= 0.042 af
Outflow = 0.43 cfs @ 12.17 hrs, Volume= 0.042 af, Atten= 28%, Lag= 4.6 min
Discarded = 0.08 cfs @ 11.70 hrs, Volume= 0.031 af
Primary = 0.35 cfs @ 12.17 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 115.86' @ 12.17 hrs Surf.Area= 460 sf Storage= 206 cf

Plug-Flow detention time= 5.8 min calculated for 0.042 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (836.2 - 830.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	114.50'	1,185 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
114.50	460	33.0	0	0
115.00	460	33.0	76	76
115.50	460	33.0	76	152
116.00	460	33.0	76	228
116.50	460	100.0	230	458
117.00	460	100.0	230	688
117.50	505	100.0	241	929
118.00	520	100.0	256	1,185

Device	Routing	Invert	Outlet Devices
#1	Discarded	114.50'	7.500 in/hr Exfiltration over Surface area
#2	Device 3	115.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	114.50'	8.0" Round Culvert L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 114.50' / 112.15' S= 0.0157 ' S= 0.0157 ' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#4	Device 3	117.50'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.08 cfs @ 11.70 hrs HW=114.54' (Free Discharge)
↑ **1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.35 cfs @ 12.17 hrs HW=115.86' (Free Discharge)
↑ **3=Culvert** (Passes 0.35 cfs of 1.69 cfs potential flow)
↑ **2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 4.00 fps)
↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

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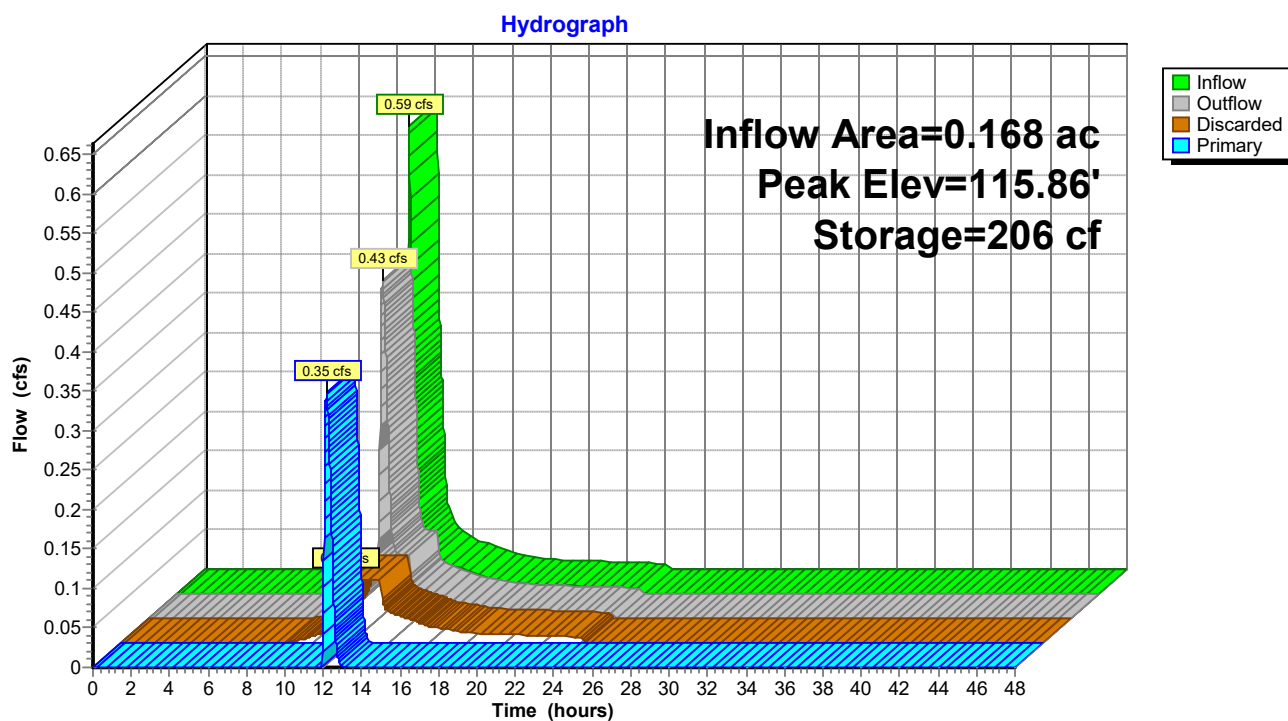
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Pond RG-1: Rain Garden



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Summary for Pond RG-2: Rain Garden

Inflow Area = 0.478 ac, 64.28% Impervious, Inflow Depth = 1.50" for 25 Year event
Inflow = 0.77 cfs @ 12.09 hrs, Volume= 0.060 af
Outflow = 0.50 cfs @ 12.36 hrs, Volume= 0.060 af, Atten= 35%, Lag= 15.9 min
Discarded = 0.17 cfs @ 11.82 hrs, Volume= 0.047 af
Primary = 0.33 cfs @ 12.36 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 115.78' @ 12.36 hrs Surf.Area= 960 sf Storage= 408 cf

Plug-Flow detention time= 6.8 min calculated for 0.060 af (100% of inflow)
Center-of-Mass det. time= 6.8 min (841.0 - 834.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	114.49'	2,177 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
114.49	960	0.0	0	0
114.50	960	33.0	3	3
115.00	960	33.0	158	162
115.50	960	33.0	158	320
116.00	960	33.0	158	478
116.50	960	33.0	158	637
117.00	960	100.0	480	1,117
117.50	1,040	100.0	500	1,617
118.00	1,200	100.0	560	2,177

Device	Routing	Invert	Outlet Devices
#1	Discarded	114.49'	7.500 in/hr Exfiltration over Surface area
#2	Device 3	115.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	114.50'	8.0" Round Culvert L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 114.50' / 113.00' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#4	Device 3	117.50'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.17 cfs @ 11.82 hrs HW=114.50' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=0.33 cfs @ 12.36 hrs HW=115.78' (Free Discharge)

↑ **3=Culvert** (Passes 0.33 cfs of 1.41 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.33 cfs @ 3.76 fps)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

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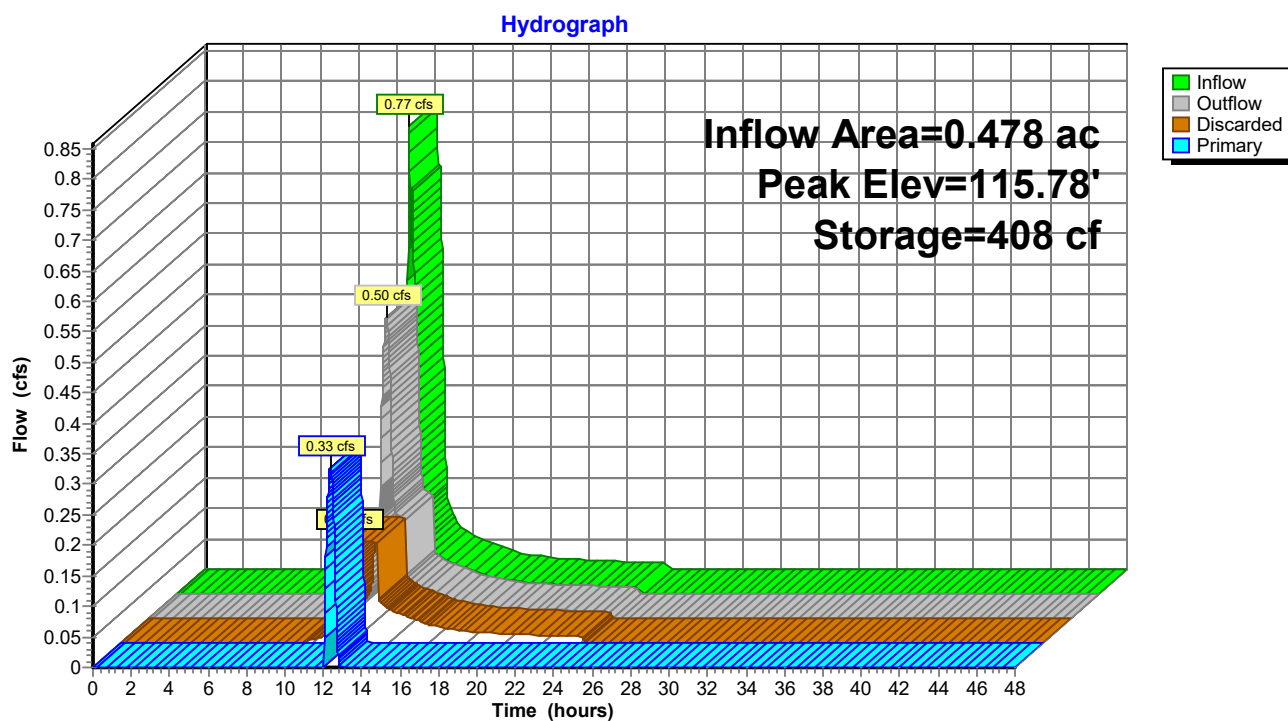
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Pond RG-2: Rain Garden



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Type III 24-hr Focal Point Rainfall=0.95"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Area 1	Runoff Area=15,851 sf 17.16% Impervious Runoff Depth=0.00" Flow Length=300' Tc=20.7 min CN=49 Runoff=0.00 cfs 0.000 af
Subcatchment 2S: Area 2	Runoff Area=1,429 sf 70.05% Impervious Runoff Depth=0.07" Tc=6.0 min CN=80 Runoff=0.00 cfs 0.000 af
Subcatchment 3S: Area to PP1	Runoff Area=2,173 sf 81.59% Impervious Runoff Depth=0.20" Tc=6.0 min CN=87 Runoff=0.01 cfs 0.001 af
Subcatchment 4S: Area to PP2	Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af
Subcatchment 5S: Area to Rain Garden East	Runoff Area=8,904 sf 17.46% Impervious Runoff Depth=0.00" Flow Length=150' Slope=0.0200 ' Tc=9.2 min CN=49 Runoff=0.00 cfs 0.000 af
Subcatchment 6S: Bldg 1 Roof	Runoff Area=11,717 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.23 cfs 0.017 af
Subcatchment 7S: Area to Rain Garden	Runoff Area=21,901 sf 7.99% Impervious Runoff Depth=0.00" Flow Length=170' Tc=14.0 min CN=44 Runoff=0.00 cfs 0.000 af
Subcatchment 9S:	Runoff Area=1,785 sf 50.98% Impervious Runoff Depth=0.00" Tc=6.0 min CN=69 Runoff=0.00 cfs 0.000 af
Subcatchment 10S:	Runoff Area=12,293 sf 82.32% Impervious Runoff Depth=0.22" Tc=6.0 min CN=88 Runoff=0.06 cfs 0.005 af
Subcatchment 11S: Area to Rain Garden 2	Runoff Area=11,240 sf 51.56% Impervious Runoff Depth=0.00" Tc=6.0 min CN=69 Runoff=0.00 cfs 0.000 af
Subcatchment 12S: Area to Rain Garden 1	Runoff Area=7,303 sf 58.87% Impervious Runoff Depth=0.02" Tc=6.0 min CN=74 Runoff=0.00 cfs 0.000 af
Subcatchment 13S: Area to Infiltration	Runoff Area=15,495 sf 77.47% Impervious Runoff Depth=0.15" Tc=6.0 min CN=85 Runoff=0.04 cfs 0.004 af
Subcatchment 14S: Roof Area to Drip	Runoff Area=6,080 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.12 cfs 0.009 af
Subcatchment 15S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=0.41" Tc=6.0 min CN=93 Runoff=0.11 cfs 0.008 af
Subcatchment 16S: Roof Area to Drip Strip	Runoff Area=9,600 sf 79.17% Impervious Runoff Depth=0.41" Tc=6.0 min CN=93 Runoff=0.11 cfs 0.008 af
Subcatchment 17S: Roof Area to Drip	Runoff Area=17,390 sf 76.31% Impervious Runoff Depth=0.41" Tc=6.0 min CN=93 Runoff=0.19 cfs 0.014 af

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Subcatchment 18S: North of Mother House	Runoff Area=44,775 sf 50.92% Impervious Runoff Depth=0.00" Tc=6.0 min CN=69 Runoff=0.00 cfs 0.000 af
Subcatchment 19A: St. Josephs	Runoff Area=57,470 sf 35.07% Impervious Runoff Depth=0.00" Flow Length=407' Tc=19.8 min CN=60 Runoff=0.00 cfs 0.000 af
Subcatchment 20A: North Parking - West	Runoff Area=19,180 sf 72.24% Impervious Runoff Depth=0.10" Tc=6.0 min CN=82 Runoff=0.02 cfs 0.004 af
Subcatchment 20B: North Parking - East	Runoff Area=15,935 sf 73.59% Impervious Runoff Depth=0.10" Tc=6.0 min CN=82 Runoff=0.02 cfs 0.003 af
Subcatchment 21A: Building 5	Runoff Area=19,410 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.37 cfs 0.028 af
Subcatchment 21B: Buiding 4	Runoff Area=12,580 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.24 cfs 0.018 af
Subcatchment 22A: The Common	Runoff Area=35,370 sf 23.11% Impervious Runoff Depth=0.00" Flow Length=209' Slope=0.0100 '/' Tc=23.0 min UI Adjusted CN=46 Runoff=0.00 cfs 0.000 af
Subcatchment 22B: Detention Pond 1	Runoff Area=8,850 sf 13.39% Impervious Runoff Depth=0.00" Tc=6.0 min CN=47 Runoff=0.00 cfs 0.000 af
Subcatchment 23A: South Parking - West	Runoff Area=18,825 sf 64.46% Impervious Runoff Depth=0.04" Tc=6.0 min CN=77 Runoff=0.00 cfs 0.001 af
Subcatchment 23B: South Parking - East	Runoff Area=9,870 sf 63.12% Impervious Runoff Depth=0.03" Tc=6.0 min CN=76 Runoff=0.00 cfs 0.001 af
Subcatchment 24A: Building 2	Runoff Area=12,580 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.24 cfs 0.018 af
Subcatchment 24B: Building 3	Runoff Area=19,410 sf 100.00% Impervious Runoff Depth=0.74" Tc=6.0 min CN=98 Runoff=0.37 cfs 0.028 af
Subcatchment 25A: South of Building 2	Runoff Area=22,380 sf 21.94% Impervious Runoff Depth=0.00" Flow Length=140' Slope=0.0100 '/' Tc=25.0 min CN=65 Runoff=0.00 cfs 0.000 af
Subcatchment 25B: South of Building 3	Runoff Area=9,075 sf 8.10% Impervious Runoff Depth=0.03" Tc=6.0 min CN=76 Runoff=0.00 cfs 0.001 af
Subcatchment 25C: South of Building 3	Runoff Area=2,390 sf 19.25% Impervious Runoff Depth=0.06" Tc=6.0 min CN=79 Runoff=0.00 cfs 0.000 af
Subcatchment 26S: Wetland to POI 2	Runoff Area=10,500 sf 5.52% Impervious Runoff Depth=0.00" Flow Length=155' Slope=0.0500 '/' Tc=22.1 min CN=62 Runoff=0.00 cfs 0.000 af
Subcatchment 27S: Wetland to POI 1	Runoff Area=13,833 sf 3.43% Impervious Runoff Depth=0.03" Flow Length=165' Slope=0.0500 '/' Tc=27.3 min CN=76 Runoff=0.00 cfs 0.001 af

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Subcatchment 28S: Runoff Area=4,725 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=105' Slope=0.0100 '/' Tc=13.2 min CN=39 Runoff=0.00 cfs 0.000 af

Reach 1R: CB 19 TO WETLAND Avg. Flow Depth=0.09' Max Vel=1.48 fps Inflow=0.06 cfs 0.061 af
15.0" Round Pipe n=0.012 L=126.0' S=0.0062 '/' Capacity=5.51 cfs Outflow=0.06 cfs 0.061 af

Reach 2R: POI 2 Inflow=0.16 cfs 0.057 af
Outflow=0.16 cfs 0.057 af

Reach 4R: Wetland to POI 2 Avg. Flow Depth=0.04' Max Vel=1.06 fps Inflow=0.16 cfs 0.057 af
n=0.035 L=145.0' S=0.0500 '/' Capacity=24.99 cfs Outflow=0.16 cfs 0.057 af

Reach 6R: Wetland to POI 1 Avg. Flow Depth=0.01' Max Vel=0.55 fps Inflow=0.06 cfs 0.061 af
n=0.035 L=210.0' S=0.0500 '/' Capacity=57.05 cfs Outflow=0.06 cfs 0.061 af

Reach 24R: DMH 11 to DMH 12 Avg. Flow Depth=0.02' Max Vel=0.77 fps Inflow=0.00 cfs 0.001 af
8.0" Round Pipe n=0.012 L=59.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.00 cfs 0.001 af

Reach 25R: DMH 12 to DMH 15 Avg. Flow Depth=0.02' Max Vel=0.80 fps Inflow=0.00 cfs 0.002 af
8.0" Round Pipe n=0.012 L=48.0' S=0.0100 '/' Capacity=1.31 cfs Outflow=0.00 cfs 0.002 af

Reach 26R: DMH 15 to DMH 14 Avg. Flow Depth=0.02' Max Vel=0.76 fps Inflow=0.00 cfs 0.002 af
12.0" Round Pipe n=0.012 L=105.0' S=0.0100 '/' Capacity=3.86 cfs Outflow=0.00 cfs 0.002 af

Reach 27R: DMH 14 to DMH 7 Avg. Flow Depth=0.08' Max Vel=1.73 fps Inflow=0.06 cfs 0.042 af
15.0" Round Pipe n=0.012 L=42.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=0.06 cfs 0.042 af

Reach 28R: POI 1 Inflow=0.06 cfs 0.062 af
Outflow=0.06 cfs 0.062 af

Reach 29R: EX. DMH 4 to NEW CB 19 Avg. Flow Depth=0.06' Max Vel=1.14 fps Inflow=0.02 cfs 0.022 af
12.0" Round Pipe n=0.012 L=172.0' S=0.0058 '/' Capacity=2.93 cfs Outflow=0.02 cfs 0.022 af

Reach 31R: 8" SD Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
8.0" Round Pipe n=0.013 L=28.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.00 cfs 0.000 af

Reach 32R: 8" UD Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
8.0" Round Pipe n=0.012 L=104.0' S=0.0050 '/' Capacity=0.93 cfs Outflow=0.00 cfs 0.000 af

Reach 33R: 8" SD Avg. Flow Depth=0.08' Max Vel=1.59 fps Inflow=0.04 cfs 0.005 af
8.0" Round Pipe n=0.013 L=76.0' S=0.0100 '/' Capacity=1.21 cfs Outflow=0.04 cfs 0.005 af

Reach 34R: 12" SD Avg. Flow Depth=0.19' Max Vel=2.22 fps Inflow=0.23 cfs 0.017 af
12.0" Round Pipe n=0.012 L=17.0' S=0.0059 '/' Capacity=2.96 cfs Outflow=0.23 cfs 0.017 af

Reach 35R: 12" SD Avg. Flow Depth=0.16' Max Vel=3.03 fps Inflow=0.25 cfs 0.022 af
12.0" Round Pipe n=0.013 L=12.0' S=0.0150 '/' Capacity=4.36 cfs Outflow=0.25 cfs 0.022 af

Reach 40R: New CB 1 to DMH 2 Avg. Flow Depth=0.11' Max Vel=2.09 fps Inflow=0.12 cfs 0.009 af
15.0" Round Pipe n=0.012 L=410.0' S=0.0100 '/' Capacity=7.00 cfs Outflow=0.11 cfs 0.009 af

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Reach 41R: DMH 2 to DMH 3 Avg. Flow Depth=0.11' Max Vel=2.06 fps Inflow=0.12 cfs 0.012 af
18.0" Round Pipe n=0.012 L=80.0' S=0.0094 '/' Capacity=11.02 cfs Outflow=0.12 cfs 0.012 af

Reach 42R: DMH 3 to DMH 7 Avg. Flow Depth=0.11' Max Vel=2.04 fps Inflow=0.13 cfs 0.015 af
18.0" Round Pipe n=0.012 L=382.0' S=0.0091 '/' Capacity=10.86 cfs Outflow=0.12 cfs 0.015 af

Reach 44R: DMH 7 to Wetland Avg. Flow Depth=0.12' Max Vel=2.22 fps Inflow=0.16 cfs 0.057 af
24.0" Round Pipe n=0.012 L=30.0' S=0.0100 '/' Capacity=24.51 cfs Outflow=0.16 cfs 0.057 af

Pond 3P: FP1 TANKS Peak Elev=108.21' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 4P: FP2 TANKS Peak Elev=108.13' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 9R: New CB 1 to DMH 2 Peak Elev=112.32' Inflow=0.12 cfs 0.009 af
15.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.12 cfs 0.009 af

Pond 30P: Raised StormTech SC-740 Peak Elev=111.64' Storage=0.009 af Inflow=0.25 cfs 0.022 af
Outflow=0.02 cfs 0.022 af

Pond 36P: PP1 Peak Elev=115.69' Storage=36 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.000 af

Pond 37P: PP2 Peak Elev=115.71' Storage=48 cf Inflow=0.06 cfs 0.005 af
Outflow=0.04 cfs 0.005 af

Pond 38P: Rain Garden West Peak Elev=120.00' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond DS-2: Drip Strip Peak Elev=115.02' Storage=11 cf Inflow=0.11 cfs 0.008 af
Discarded=0.10 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.008 af

Pond DS-3: Drip Strip Peak Elev=115.03' Storage=21 cf Inflow=0.19 cfs 0.014 af
Discarded=0.18 cfs 0.014 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.014 af

Pond DS1: Drip Strip Peak Elev=115.02' Storage=11 cf Inflow=0.11 cfs 0.008 af
Discarded=0.10 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.008 af

Pond FP1: FP1 Filter Peak Elev=111.84' Storage=0 cf Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond FP2: FP2 Filter Peak Elev=110.56' Storage=0 cf Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond IT-1: Infiltration Trench Peak Elev=112.02' Storage=9 cf Inflow=0.11 cfs 0.010 af
Discarded=0.10 cfs 0.010 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.010 af

Pond PP1: Porous Pavement 1 Peak Elev=112.90' Storage=11 cf Inflow=0.02 cfs 0.004 af
Outflow=0.01 cfs 0.004 af

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Pond PP2: Porous Pavement 2

Peak Elev=112.78' Storage=12 cf Inflow=0.02 cfs 0.003 af
Outflow=0.01 cfs 0.003 af

Pond PP3: Porous Pavement 3

Peak Elev=110.34' Storage=0 cf Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond PP4: Porous Pavement 4

Peak Elev=110.19' Storage=0 cf Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond R1: Detention Pond 1

Peak Elev=110.96' Storage=1,135 cf Inflow=0.62 cfs 0.045 af
Outflow=0.05 cfs 0.040 af

Pond R2: Detention Pond 2

Peak Elev=111.05' Storage=1,302 cf Inflow=0.62 cfs 0.045 af
Outflow=0.03 cfs 0.039 af

Pond RG-1: Rain Garden

Peak Elev=114.50' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond RG-2: Rain Garden

Peak Elev=114.49' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 11.324 ac Runoff Volume = 0.171 af Average Runoff Depth = 0.18"
47.50% Pervious = 5.379 ac 52.50% Impervious = 5.944 ac

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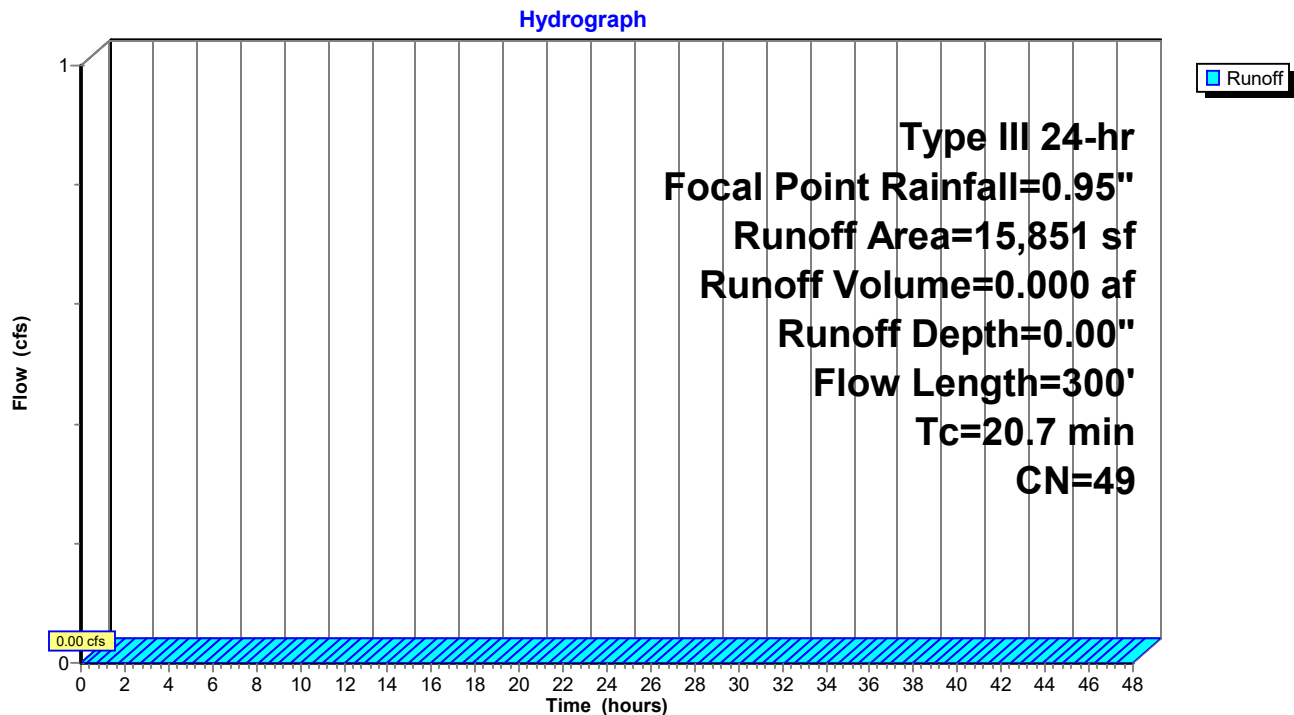
Summary for Subcatchment 1S: Area 1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
2,720	98	Paved parking, HSG A
13,131	39	>75% Grass cover, Good, HSG A
15,851	49	Weighted Average
13,131		82.84% Pervious Area
2,720		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	150	0.0100	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
2.5	150	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.7	300	Total			

Subcatchment 1S: Area 1

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Summary for Subcatchment 2S: Area 2

Runoff = 0.00 cfs @ 12.35 hrs, Volume= 0.000 af, Depth= 0.07"

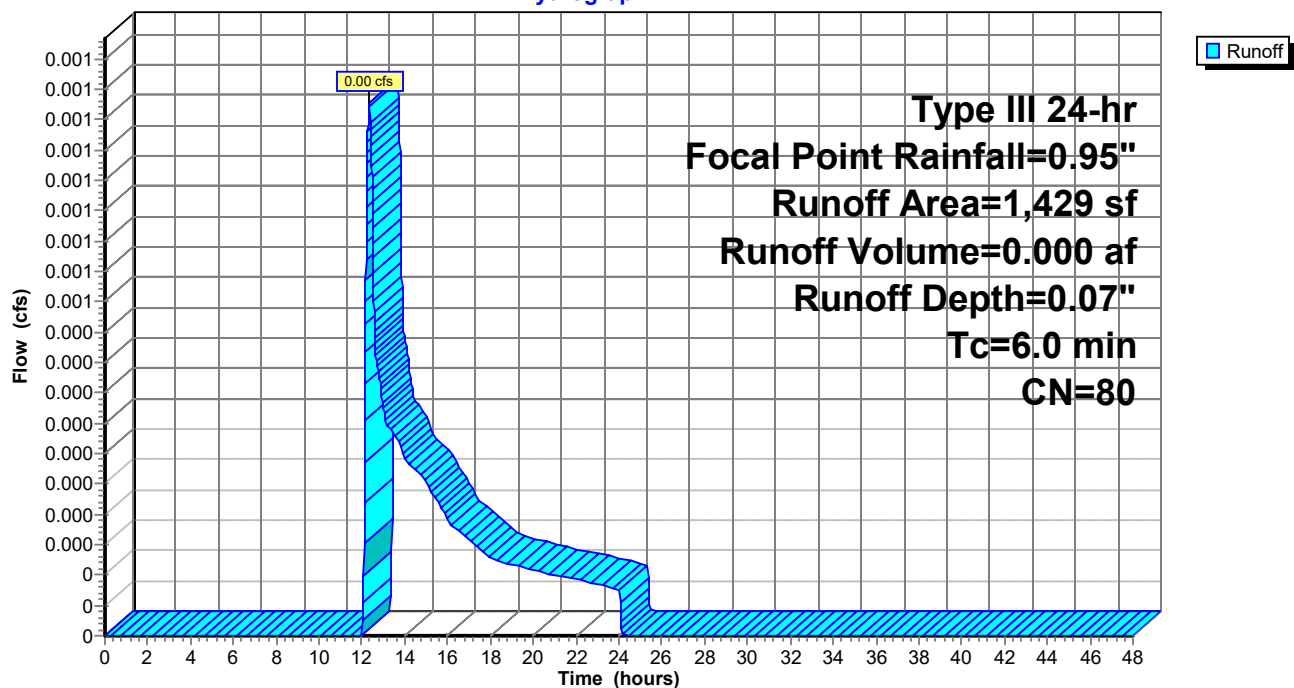
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
428	39	>75% Grass cover, Good, HSG A
1,001	98	Paved parking, HSG A
1,429	80	Weighted Average
428		29.95% Pervious Area
1,001		70.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: Area 2

Hydrograph



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Summary for Subcatchment 3S: Area to PP1

Runoff = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af, Depth= 0.20"

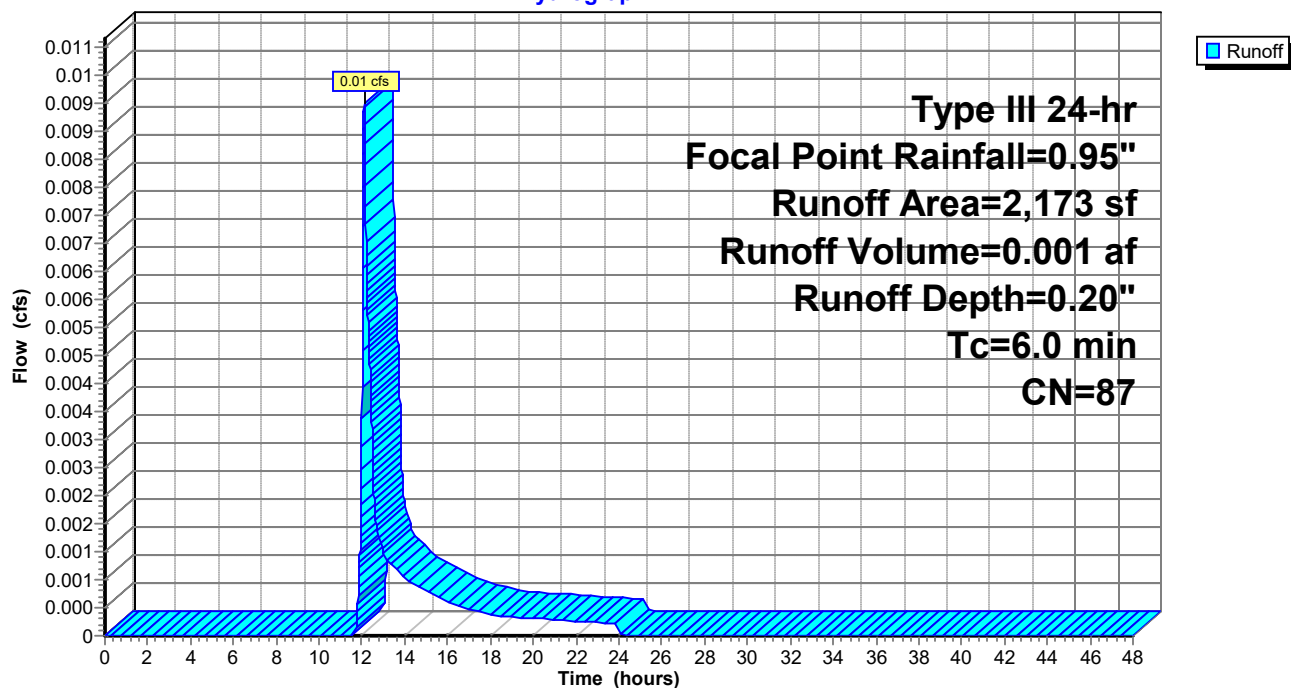
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
400	39	>75% Grass cover, Good, HSG A
1,773	98	Paved parking, HSG A
2,173	87	Weighted Average
400		18.41% Pervious Area
1,773		81.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 3S: Area to PP1

Hydrograph



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Summary for Subcatchment 4S: Area to PP2

Runoff = 0.06 cfs @ 12.08 hrs, Volume= 0.005 af, Depth= 0.74"

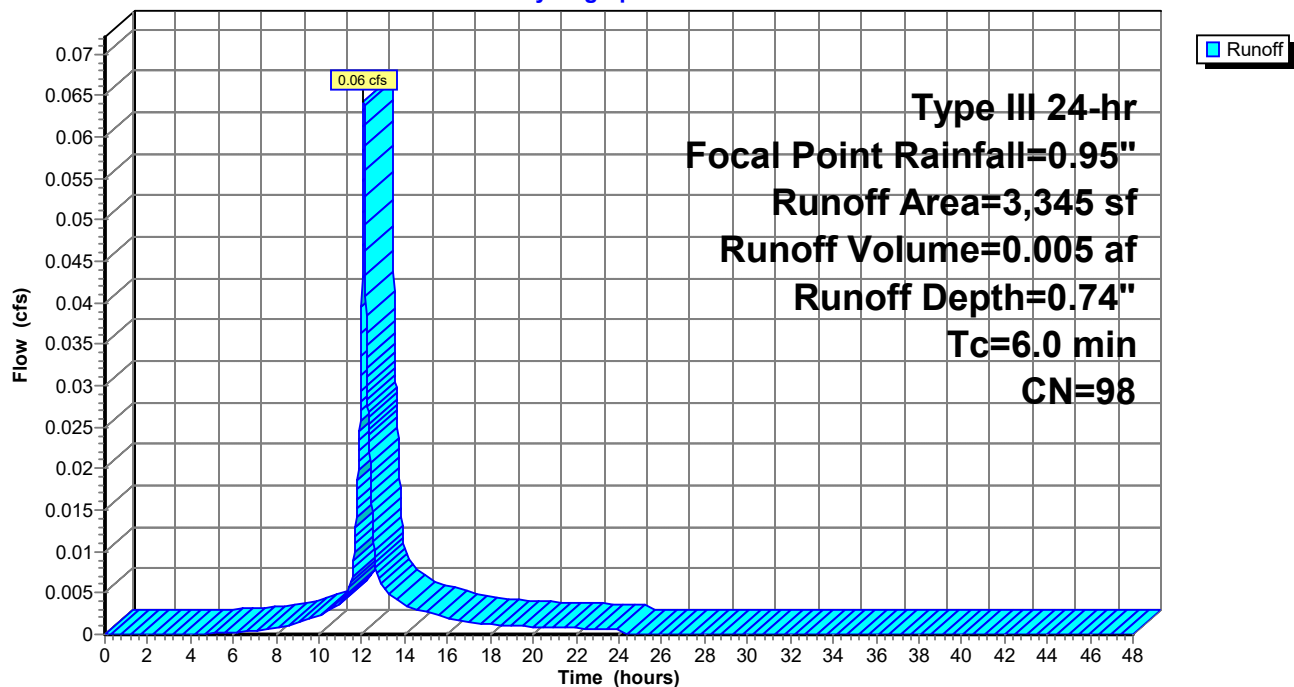
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
3,345	98	Paved parking, HSG A
3,345		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 4S: Area to PP2

Hydrograph



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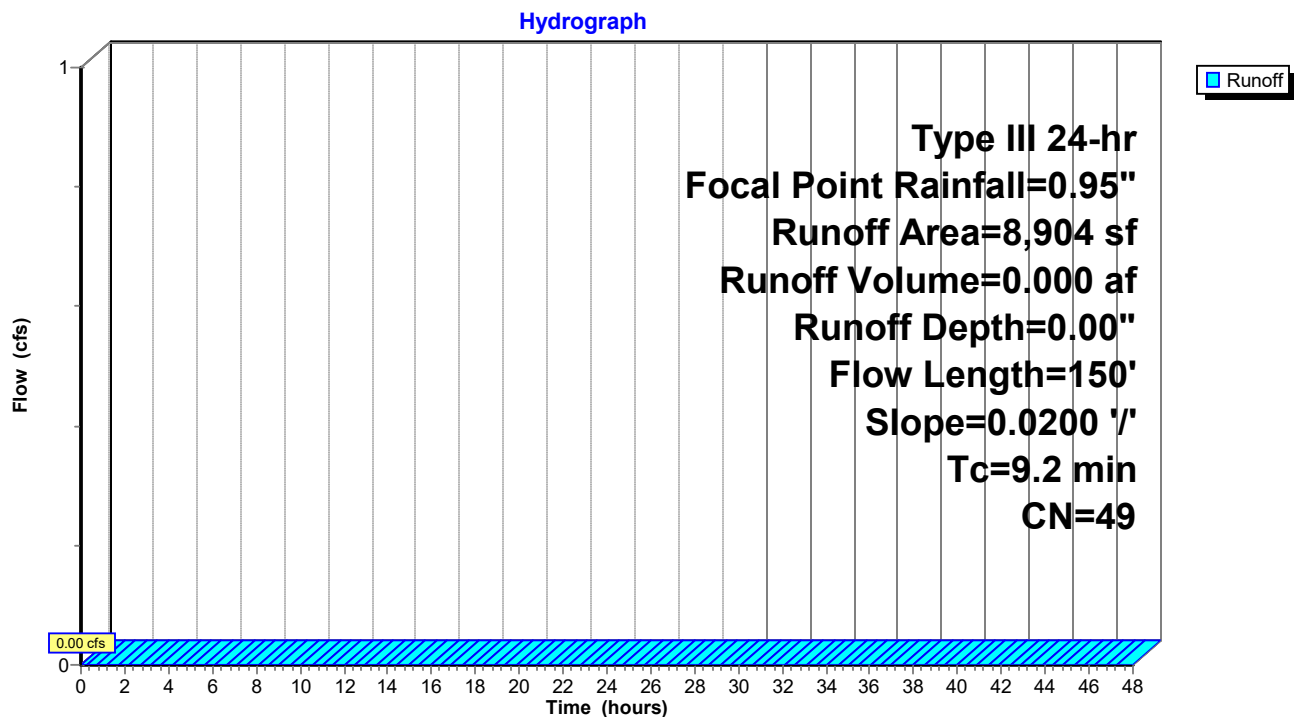
Summary for Subcatchment 5S: Area to Rain Garden East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	1,555	98	
	7,349	39	>75% Grass cover, Good, HSG A
	8,904	49	Weighted Average
	7,349		82.54% Pervious Area
	1,555		17.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	75	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
1.3	75	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	150	Total			

Subcatchment 5S: Area to Rain Garden East

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Summary for Subcatchment 6S: Bldg 1 Roof

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 0.74"

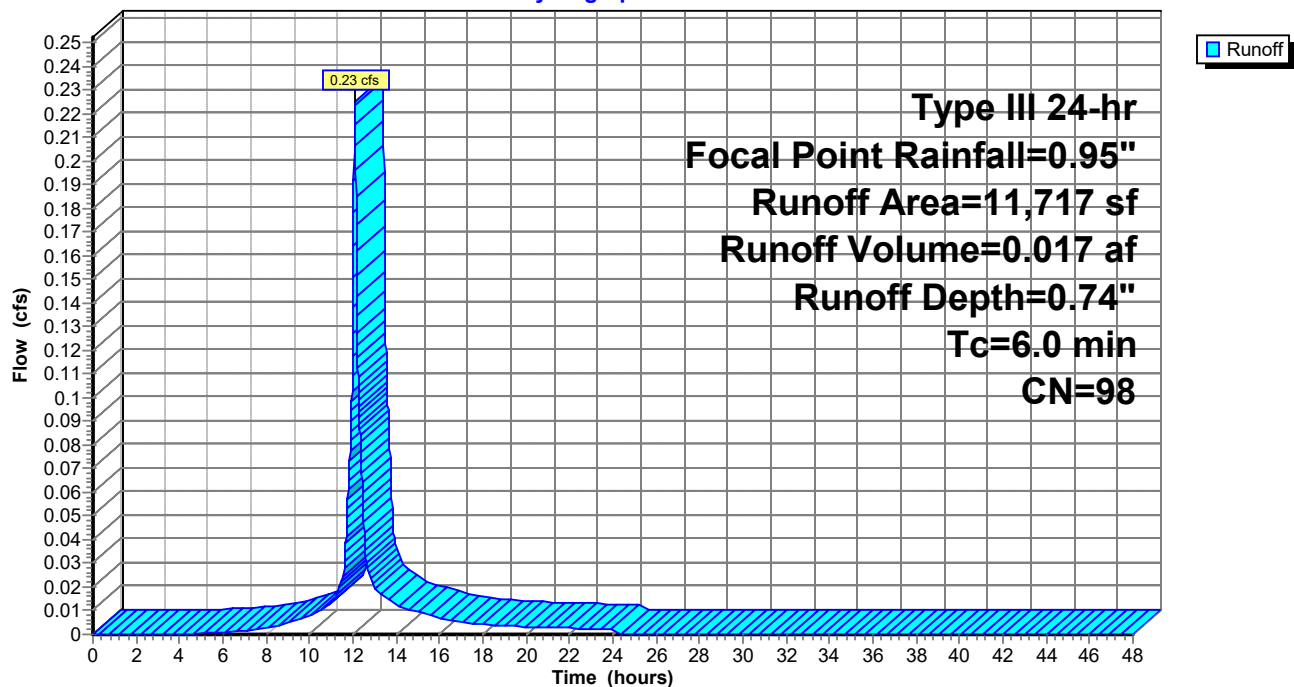
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
11,717	98	Roofs, HSG A
11,717		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 6S: Bldg 1 Roof

Hydrograph



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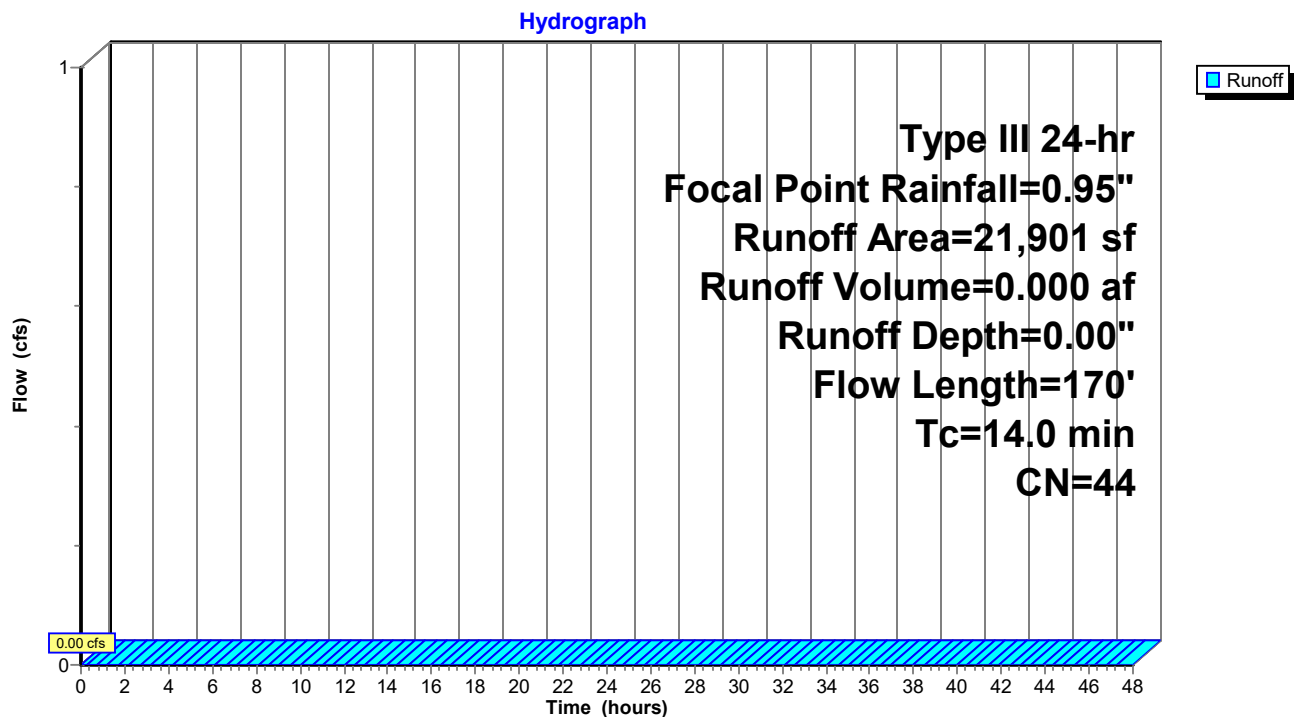
Summary for Subcatchment 7S: Area to Rain Garden West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
1,750	98	Paved parking, HSG A
20,151	39	>75% Grass cover, Good, HSG A
21,901	44	Weighted Average
20,151		92.01% Pervious Area
1,750		7.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	150	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.2	20	0.0600	1.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	170	Total			

Subcatchment 7S: Area to Rain Garden West

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Summary for Subcatchment 9S:

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

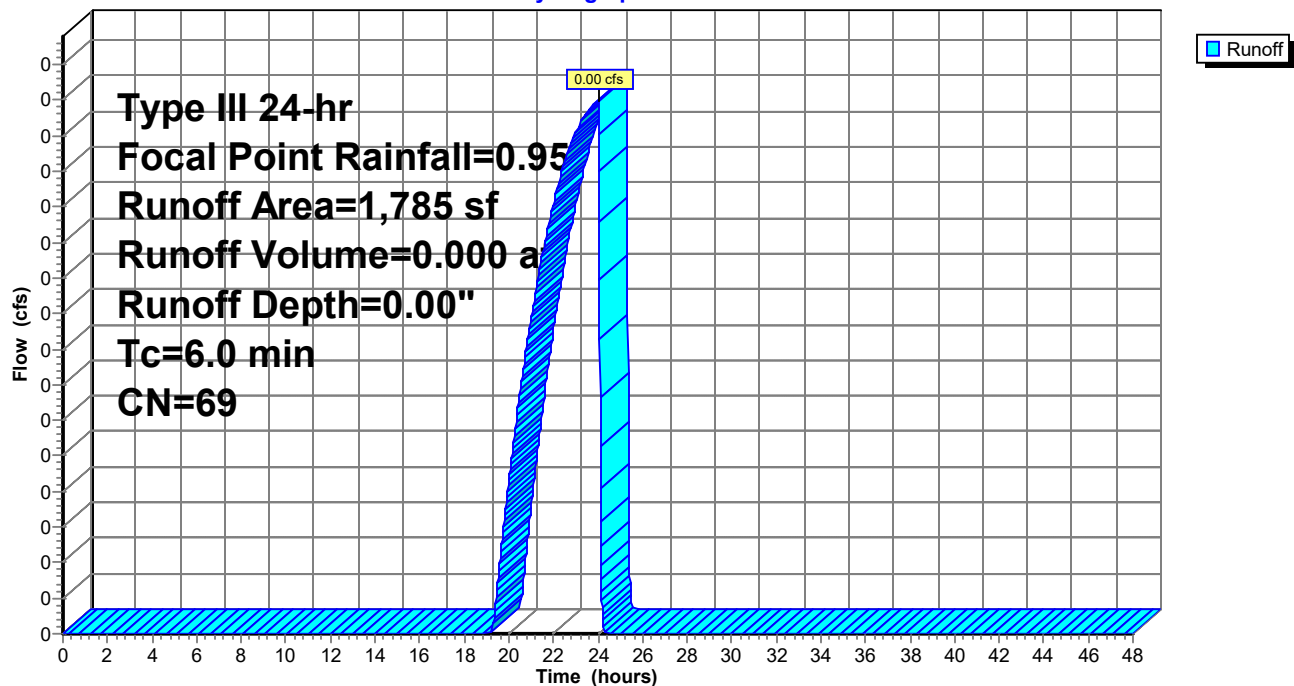
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
875	39	>75% Grass cover, Good, HSG A
910	98	Paved parking, HSG A
1,785	69	Weighted Average
875		49.02% Pervious Area
910		50.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 9S:

Hydrograph



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Summary for Subcatchment 10S:

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 0.005 af, Depth= 0.22"

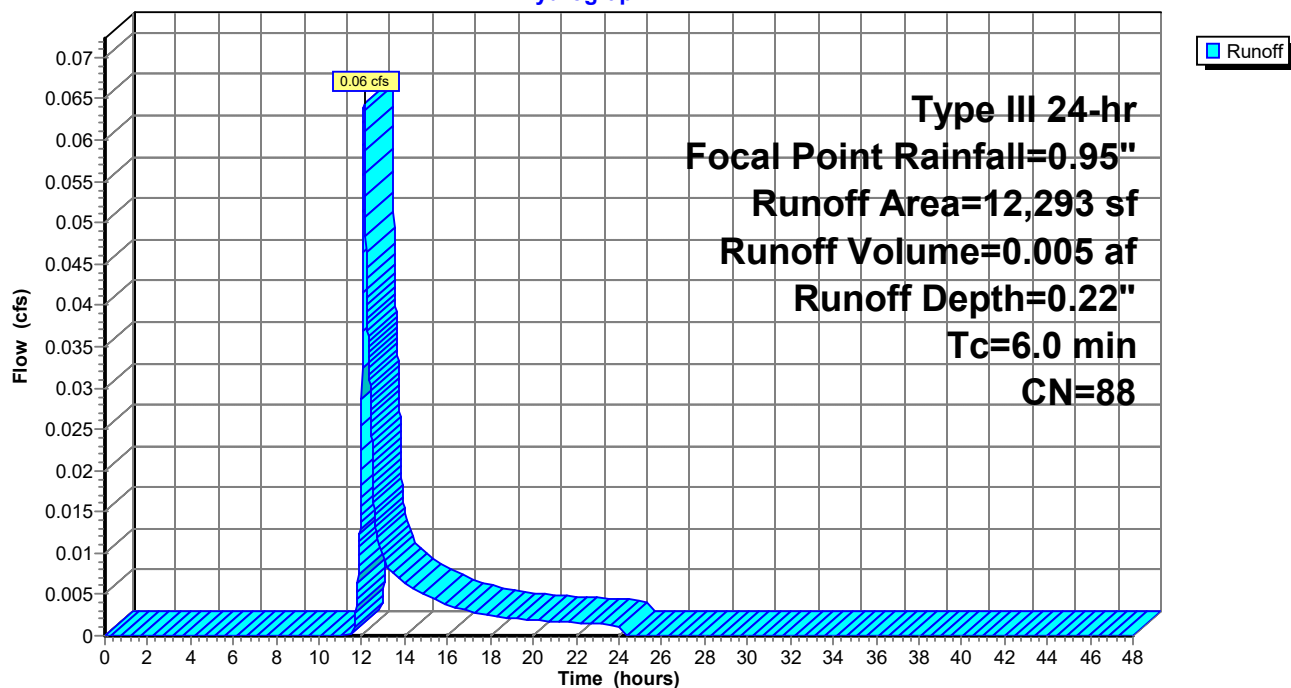
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
10,120	98	Paved parking & roofs
2,173	39	>75% Grass cover, Good, HSG A
12,293	88	Weighted Average
2,173		17.68% Pervious Area
10,120		82.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 10S:

Hydrograph



Post-Development

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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 11S: Area to Rain Garden 2

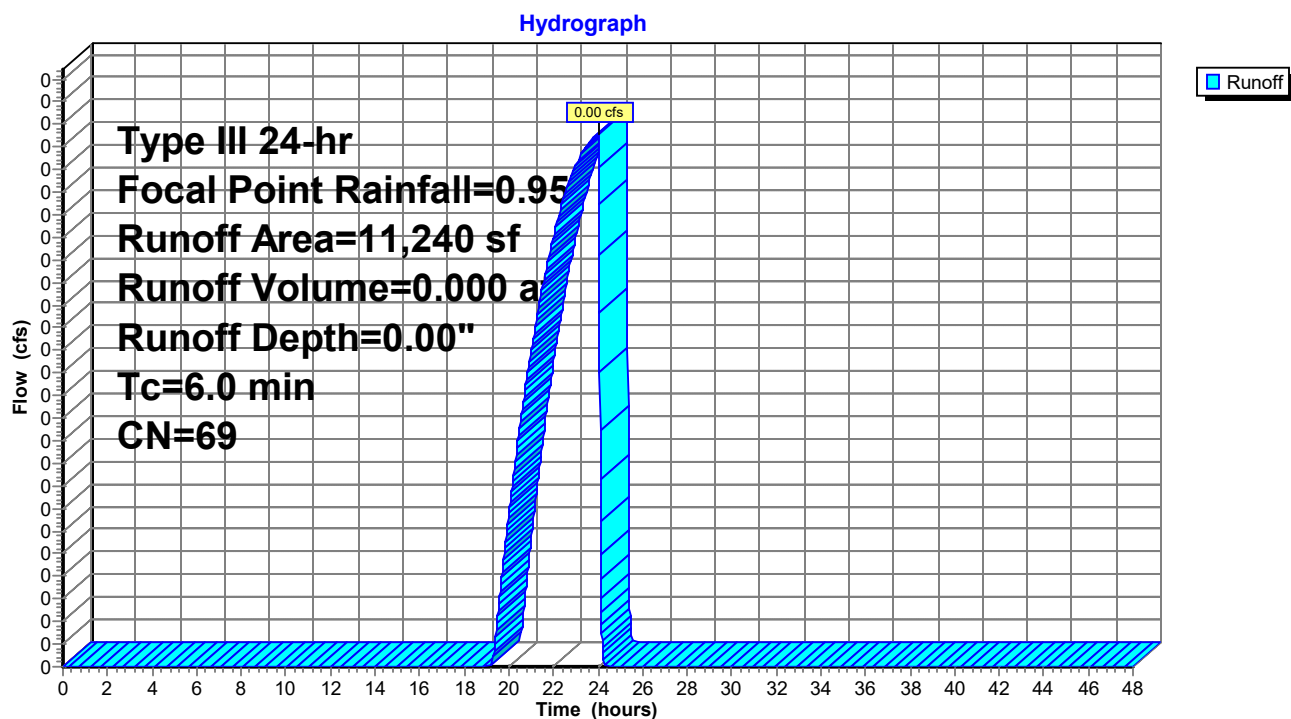
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
5,795	98	Paved parking & roofs
5,445	39	>75% Grass cover, Good, HSG A
11,240	69	Weighted Average
5,445		48.44% Pervious Area
5,795		51.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 11S: Area to Rain Garden 2



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 12S: Area to Rain Garden 1

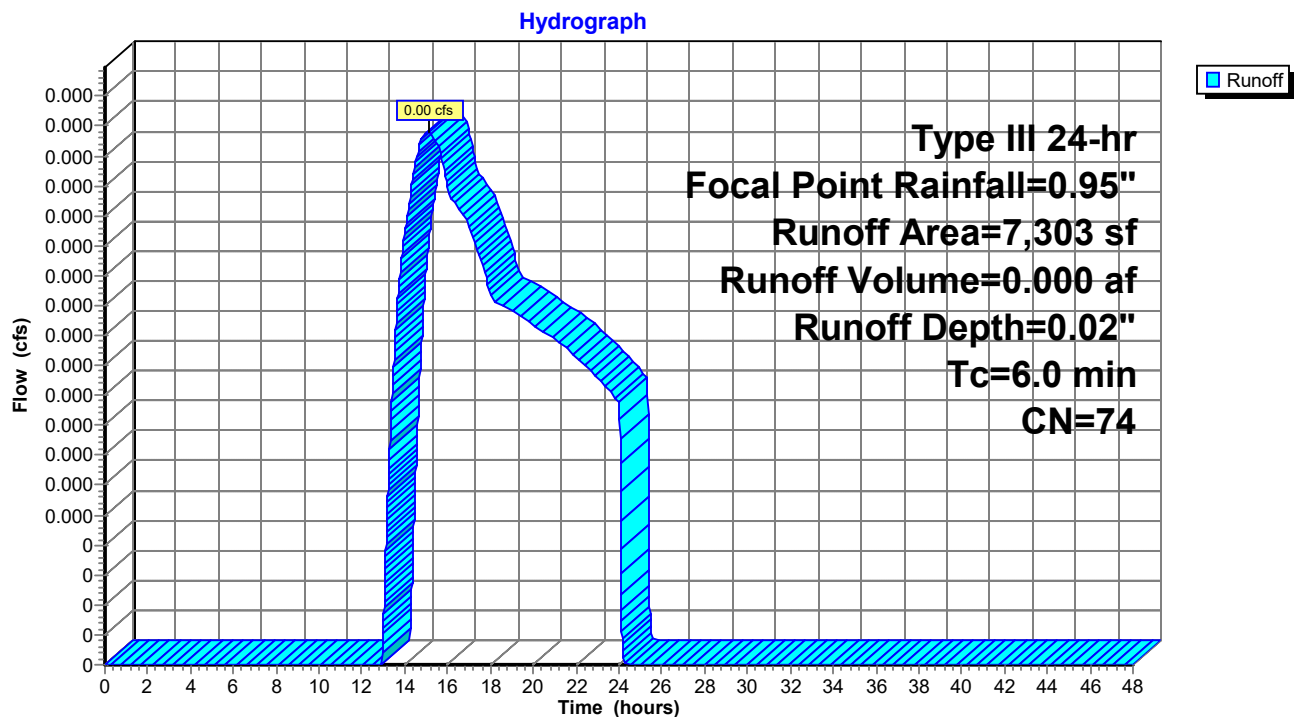
Runoff = 0.00 cfs @ 15.10 hrs, Volume= 0.000 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
4,299	98	Paved parking & roofs
3,004	39	>75% Grass cover, Good, HSG A
7,303	74	Weighted Average
3,004		41.13% Pervious Area
4,299		58.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 12S: Area to Rain Garden 1



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 13S: Area to Infiltration Trench

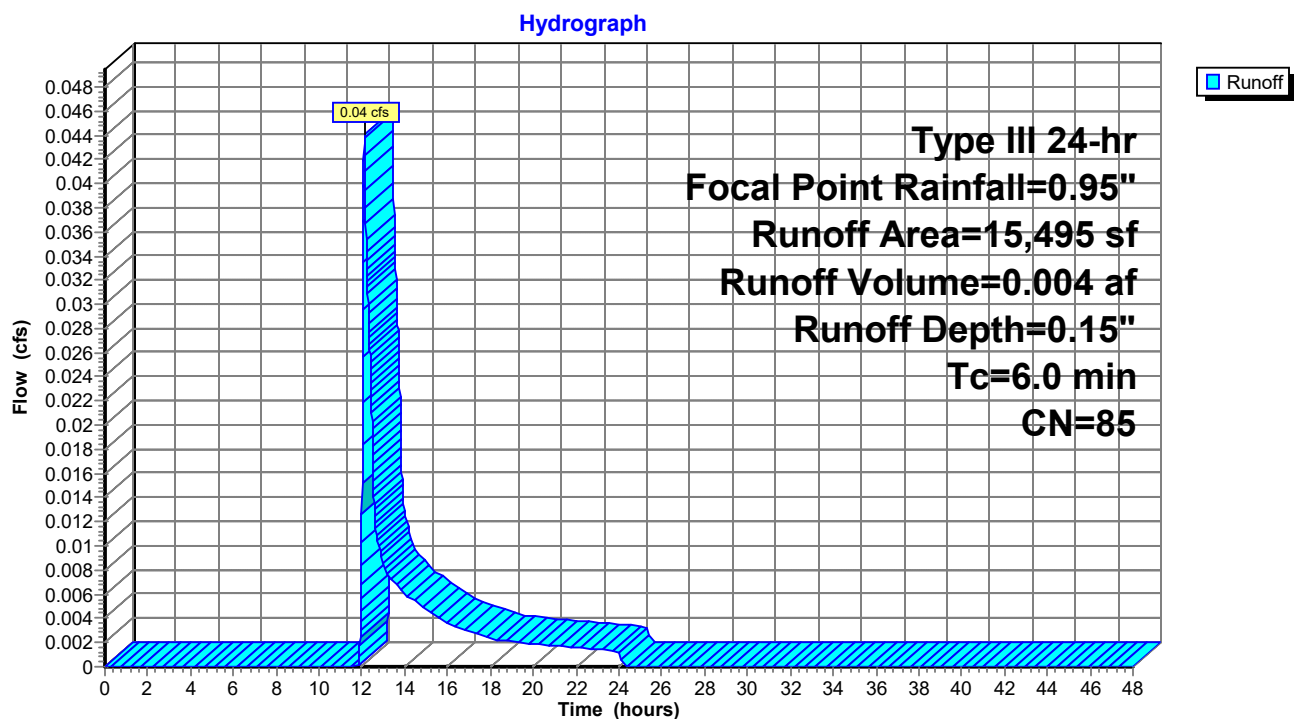
Runoff = 0.04 cfs @ 12.11 hrs, Volume= 0.004 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
12,004	98	Paved parking & roofs
3,491	39	>75% Grass cover, Good, HSG A
15,495	85	Weighted Average
3,491		22.53% Pervious Area
12,004		77.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 13S: Area to Infiltration Trench



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 14S: Roof Area to Drip Strip 4

Runoff = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 0.74"

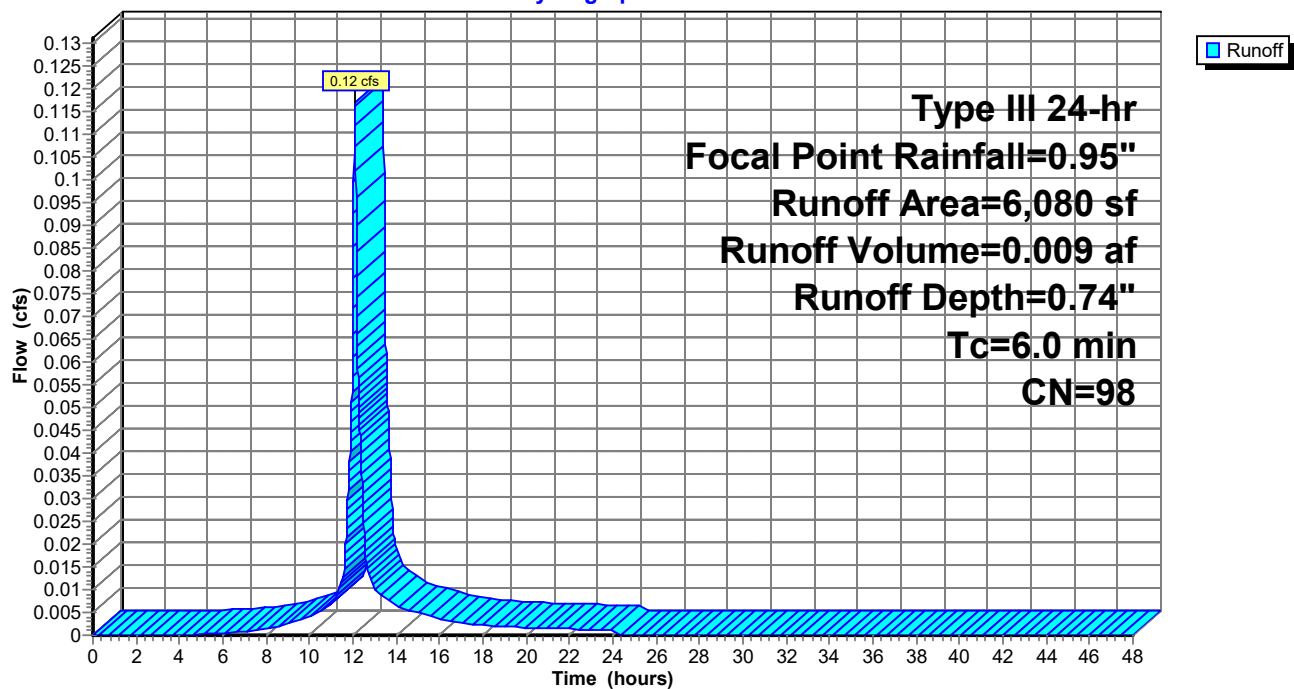
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	6,080	98	Roofs
*	0	76	Drip stone, HSG A
	6,080	98	Weighted Average
	6,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 14S: Roof Area to Drip Strip 4

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 15S: Roof Area to Drip Strip 1

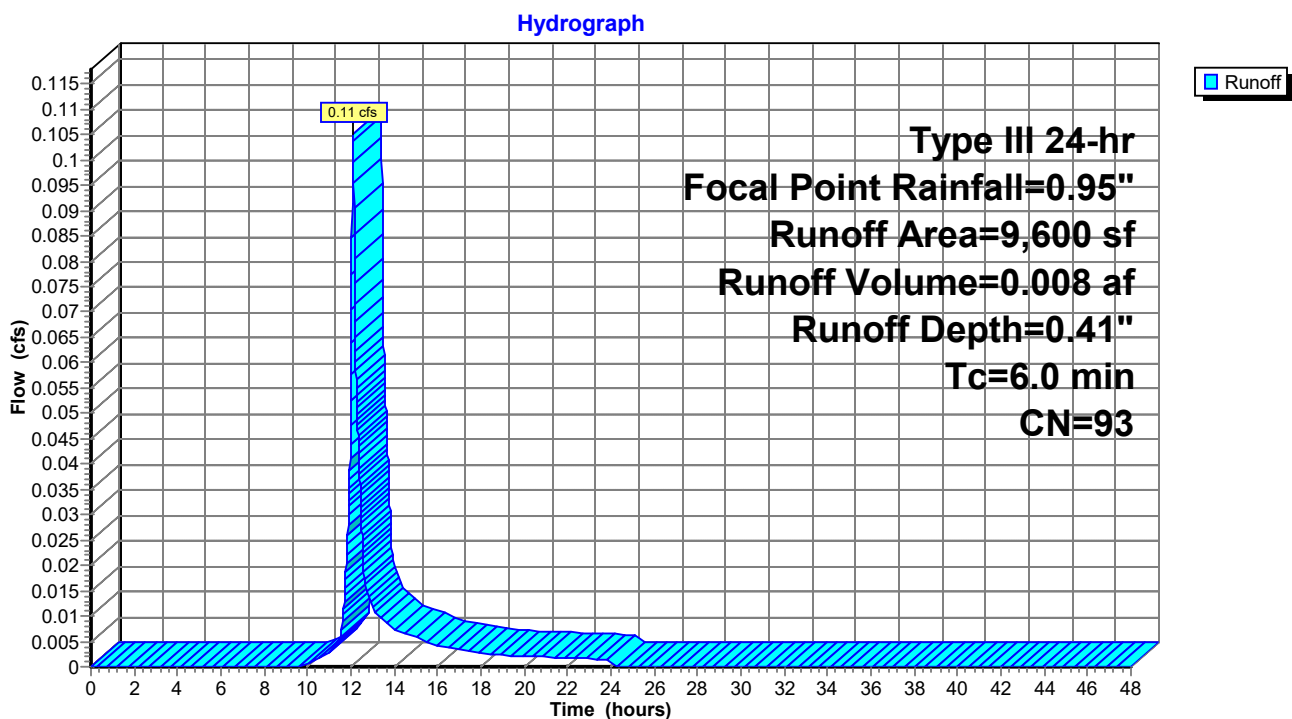
Runoff = 0.11 cfs @ 12.09 hrs, Volume= 0.008 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	7,600	98	Roofs
*	2,000	76	Drip stone, HSG A
	9,600	93	Weighted Average
	2,000		20.83% Pervious Area
	7,600		79.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 15S: Roof Area to Drip Strip 1



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 16S: Roof Area to Drip Strip 2

Runoff = 0.11 cfs @ 12.09 hrs, Volume= 0.008 af, Depth= 0.41"

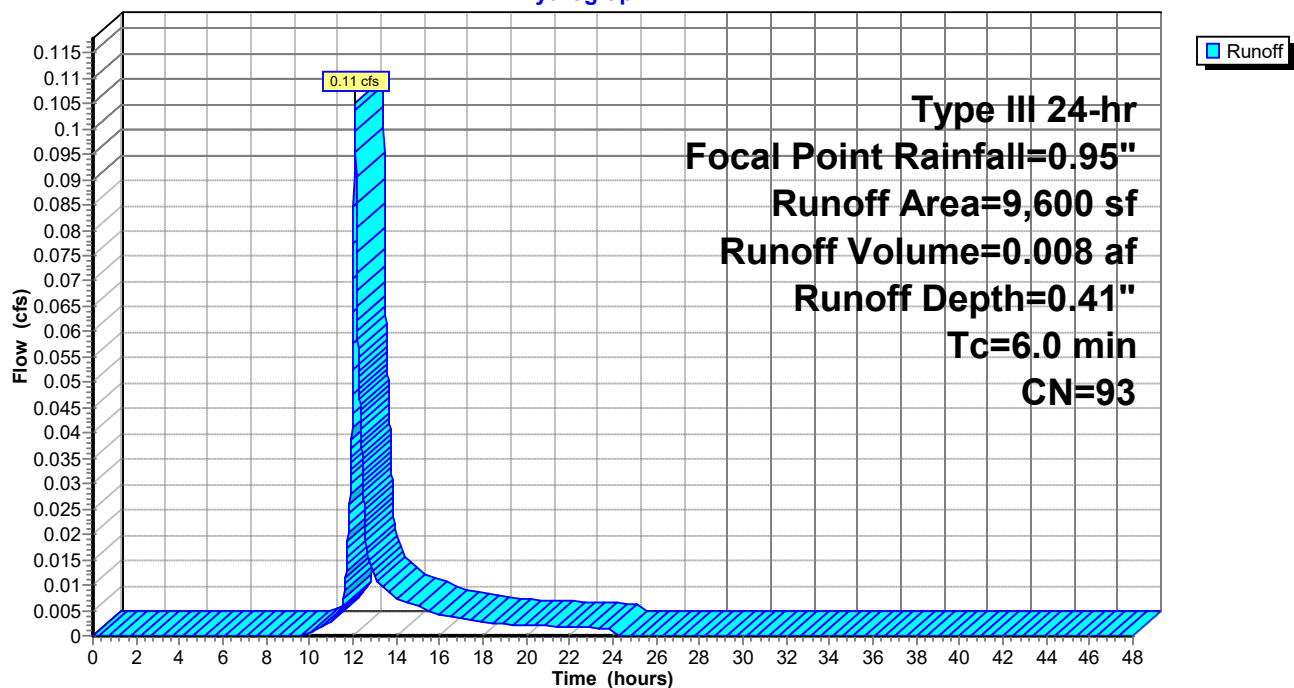
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	7,600	98	Roofs
*	2,000	76	Drip stone, HSG A
	9,600	93	Weighted Average
	2,000		20.83% Pervious Area
	7,600		79.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 16S: Roof Area to Drip Strip 2

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 17S: Roof Area to Drip Strip 3

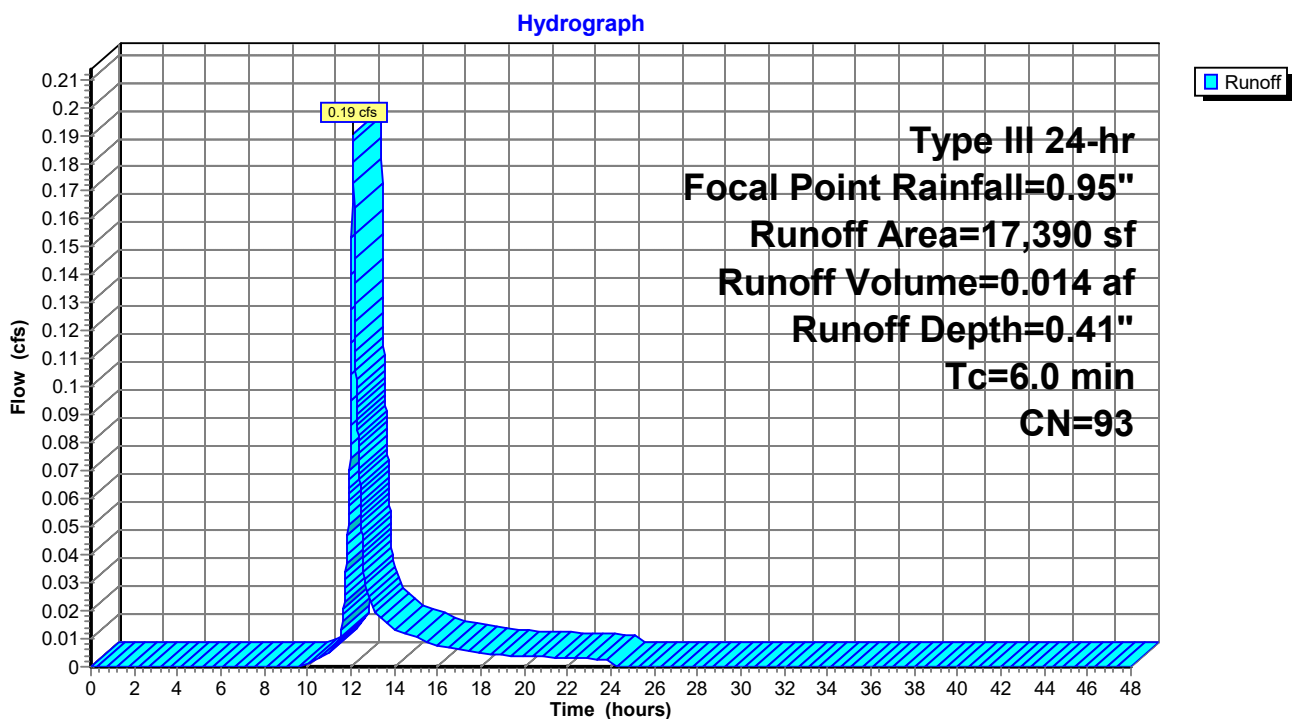
Runoff = 0.19 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	13,270	98	Roofs
*	4,120	76	Drip stone, HSG A
	17,390	93	Weighted Average
	4,120		23.69% Pervious Area
	13,270		76.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Minimum Tc

Subcatchment 17S: Roof Area to Drip Strip 3



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 18S: North of Mother House

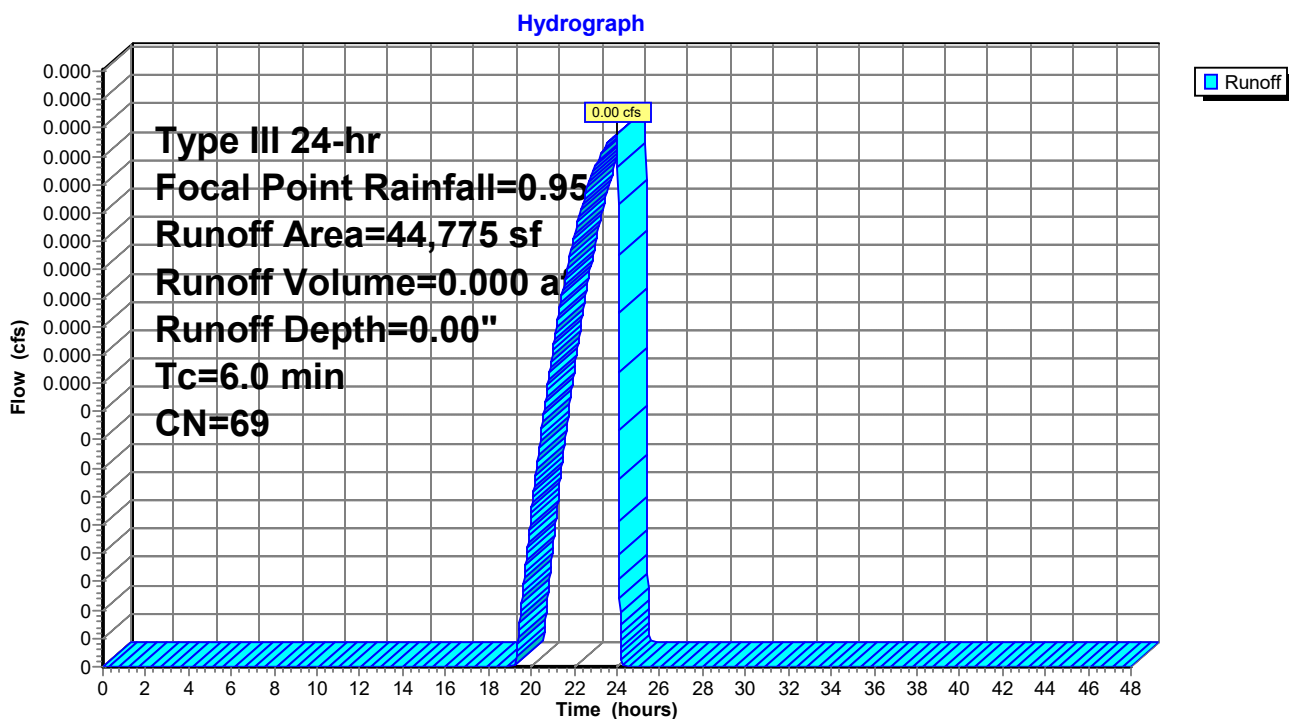
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
21,975	39	>75% Grass cover, Good, HSG A
22,800	98	Paved parking, HSG A
44,775	69	Weighted Average
21,975		49.08% Pervious Area
22,800		50.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 18S: North of Mother House



Post-Development

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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 19A: St. Josephs

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

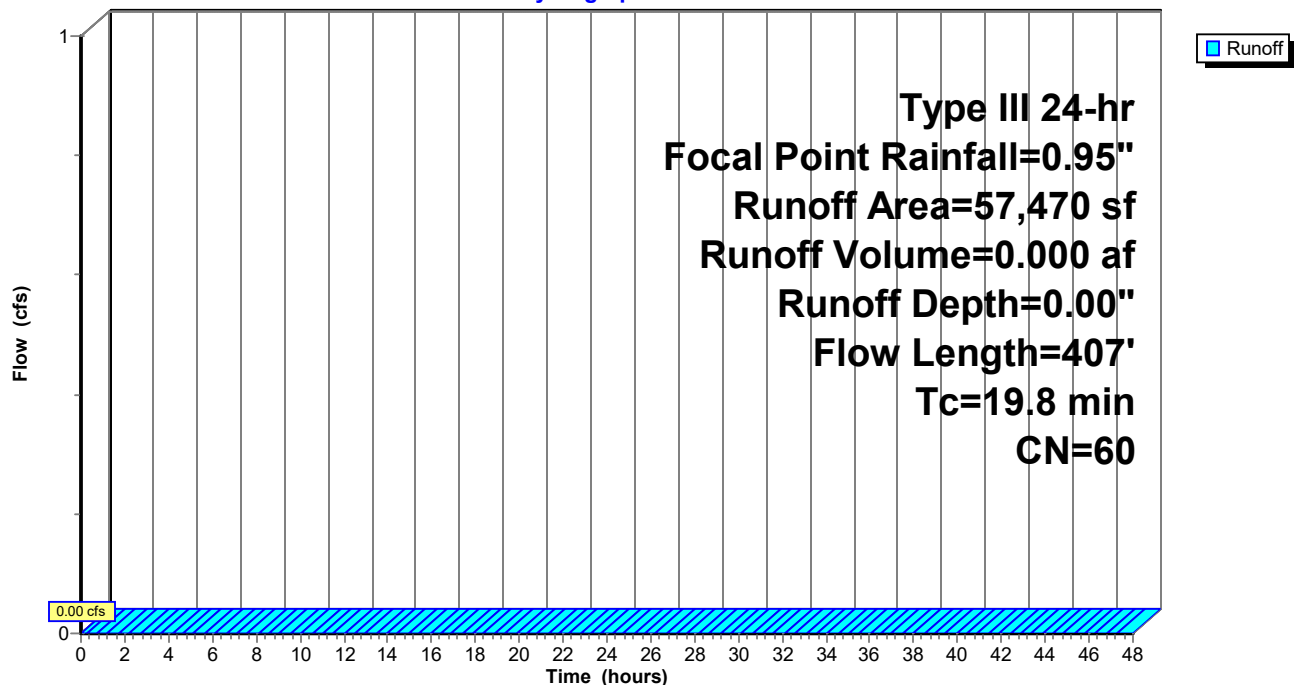
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	20,155	98	Impervious
	37,315	39	>75% Grass cover, Good, HSG A
	57,470	60	Weighted Average
	37,315		64.93% Pervious Area
	20,155		35.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	122	0.0160	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
1.2	285	0.0064	3.93	3.09	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
19.8	407	Total			

Subcatchment 19A: St. Josephs

Hydrograph



Post-Development

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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 20A: North Parking - West

Runoff = 0.02 cfs @ 12.15 hrs, Volume= 0.004 af, Depth= 0.10"

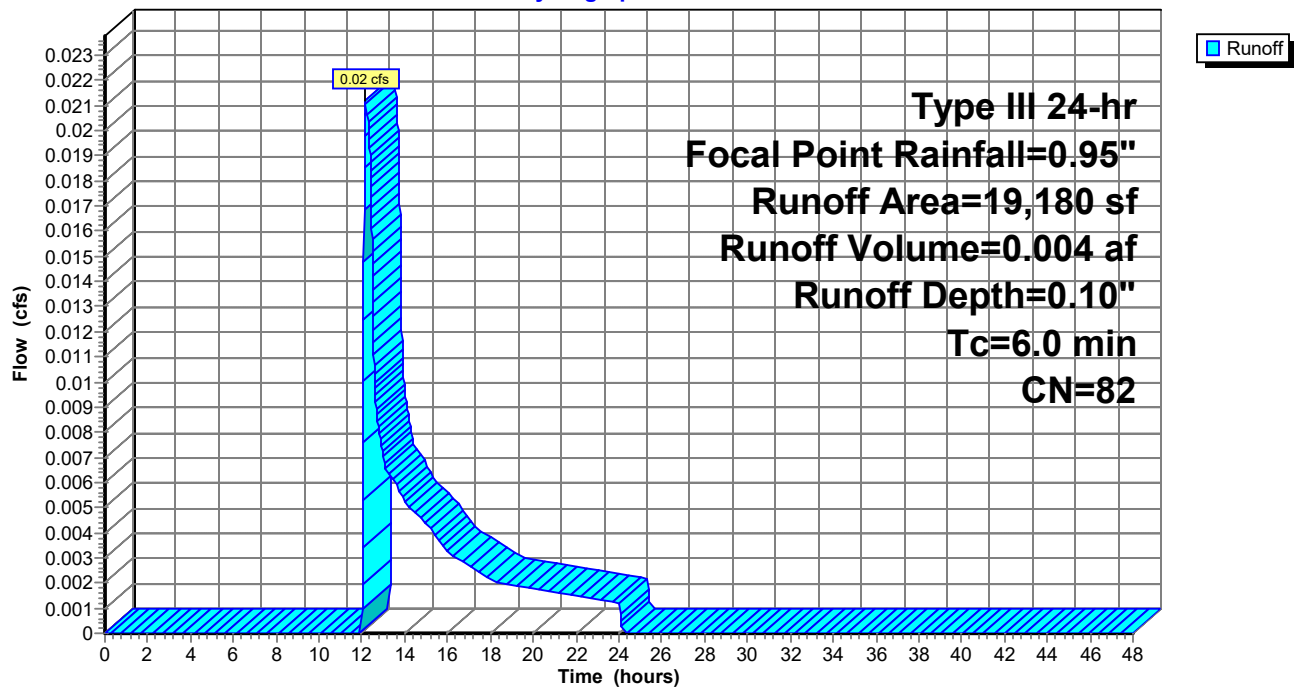
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	7,700	98	Paved parking, HSG A
*	6,156	98	Porous pavement
	5,324	39	>75% Grass cover, Good, HSG A
	19,180	82	Weighted Average
	5,324		27.76% Pervious Area
	13,856		72.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 20A: North Parking - West

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 20B: North Parking - East

Runoff = 0.02 cfs @ 12.15 hrs, Volume= 0.003 af, Depth= 0.10"

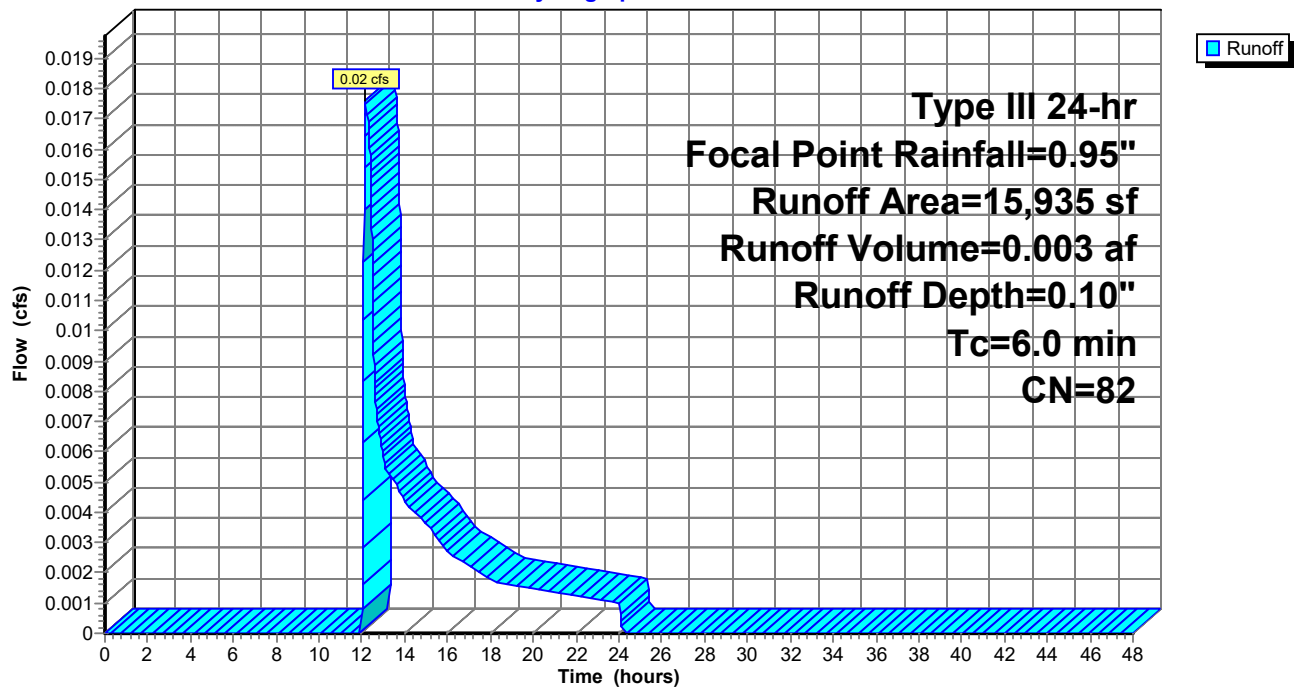
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	6,380	98	Paved parking, HSG A
*	5,346	98	Porous pavement
	4,209	39	>75% Grass cover, Good, HSG A
	15,935	82	Weighted Average
	4,209		26.41% Pervious Area
	11,726		73.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 20B: North Parking - East

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 21A: Building 5

Runoff = 0.37 cfs @ 12.08 hrs, Volume= 0.028 af, Depth= 0.74"

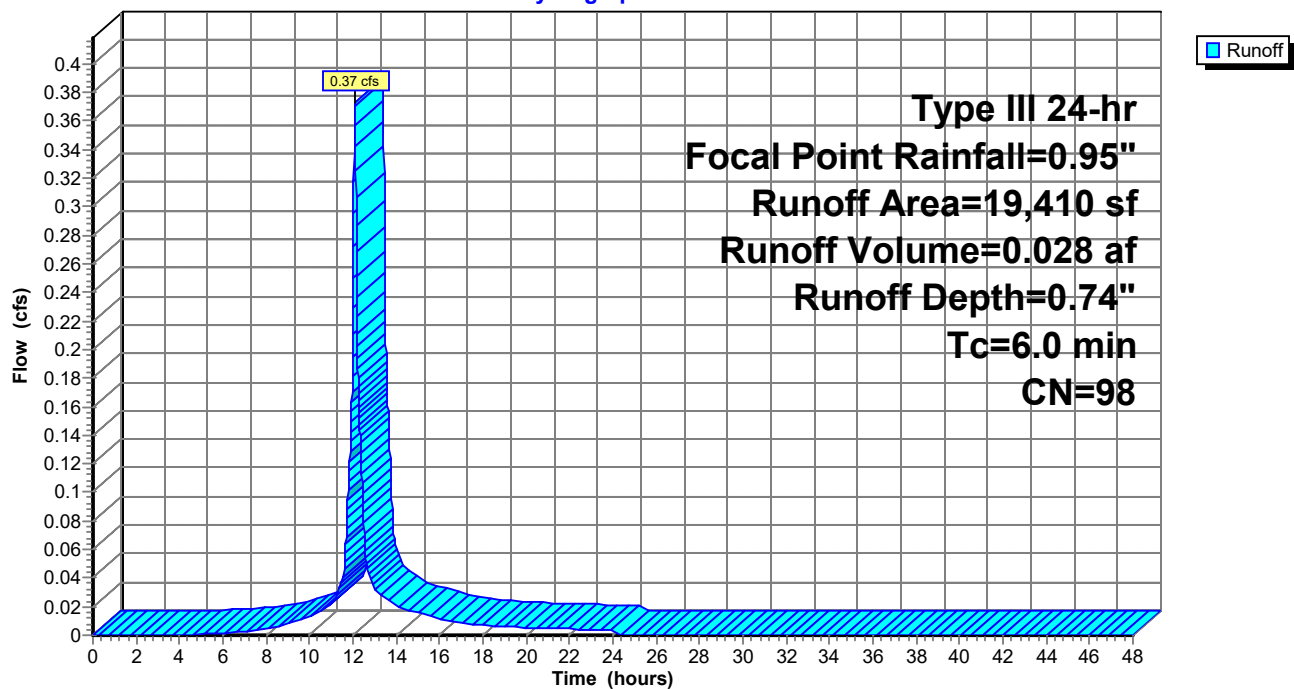
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	19,410	98	Roof & Sidewalk
	0	39	>75% Grass cover, Good, HSG A
	19,410	98	Weighted Average
	19,410		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 21A: Building 5

Hydrograph



Post-Development

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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 21B: Buiding 4

Runoff = 0.24 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 0.74"

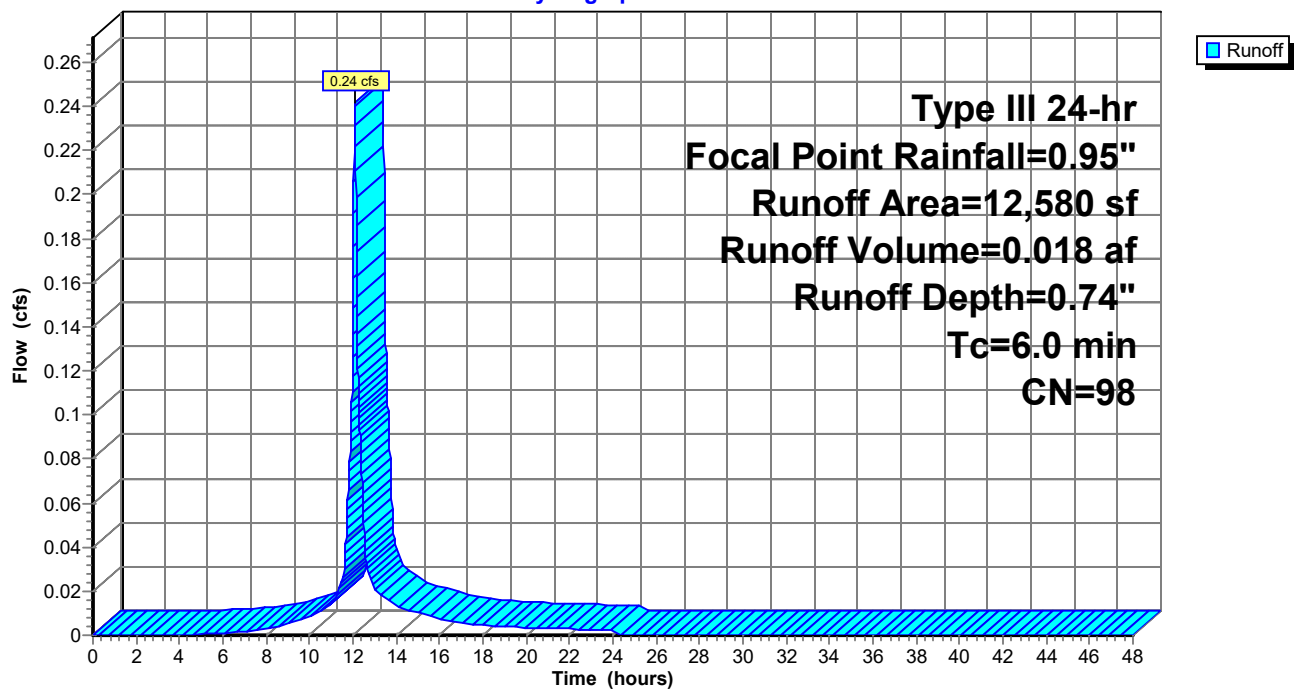
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	12,580	98	Roof & Sidewalk
	0	39	>75% Grass cover, Good, HSG A
	12,580	98	Weighted Average
	12,580		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 21B: Buiding 4

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 22A: The Common

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

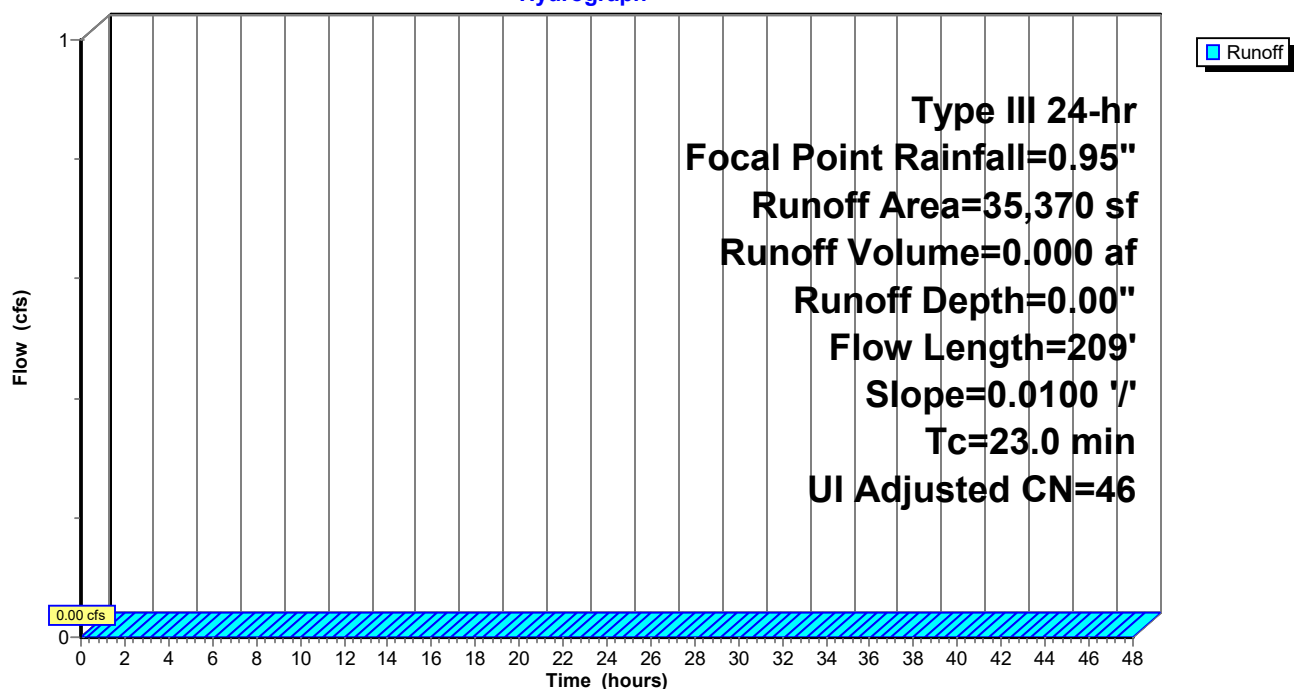
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Adj	Description
8,175	98		Unconnected pavement, HSG A
27,195	39		>75% Grass cover, Good, HSG A
35,370	53	46	Weighted Average, UI Adjusted
27,195			76.89% Pervious Area
8,175			23.11% Impervious Area
8,175			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	120	0.0100	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.1	15	0.0100	2.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	74	0.0100	1.50		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
23.0	209	Total			

Subcatchment 22A: The Common

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 22B: Detention Pond 1

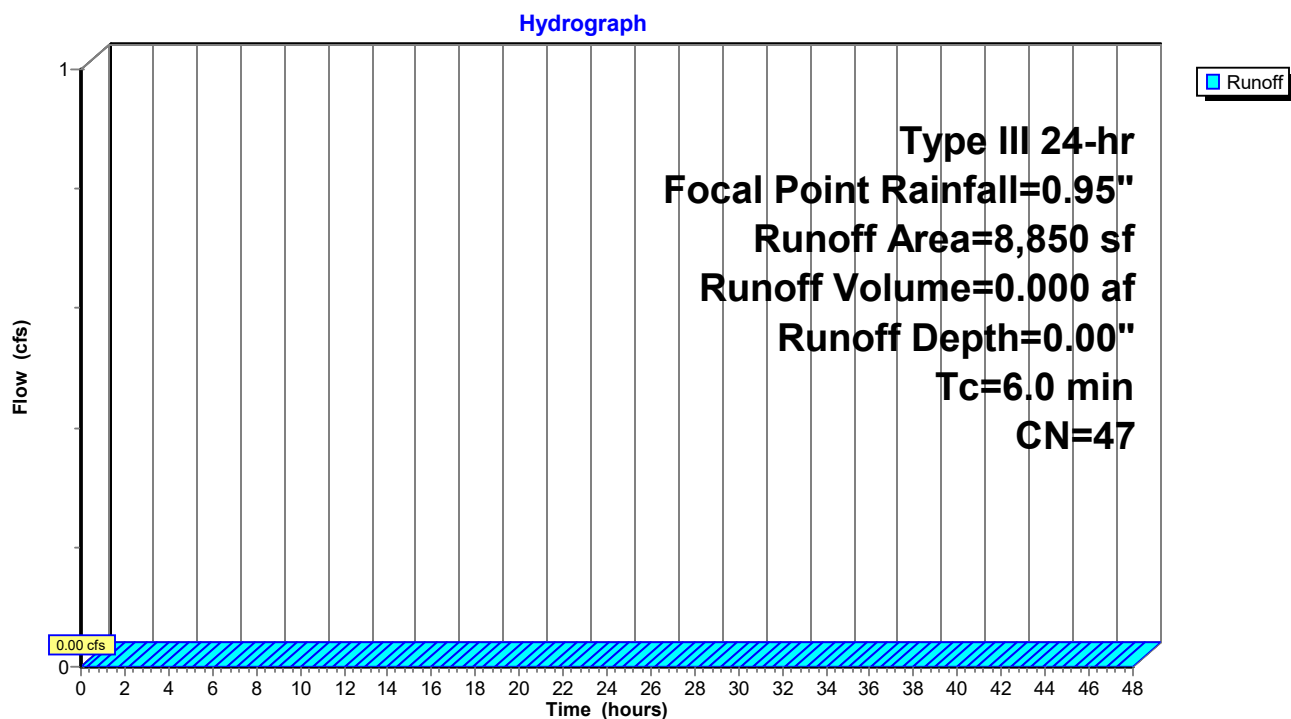
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	1,185	98	Walkways
	7,665	39	>75% Grass cover, Good, HSG A
	8,850	47	Weighted Average
	7,665		86.61% Pervious Area
	1,185		13.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 22B: Detention Pond 1



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Summary for Subcatchment 23A: South Parking - West

Runoff = 0.00 cfs @ 12.48 hrs, Volume= 0.001 af, Depth= 0.04"

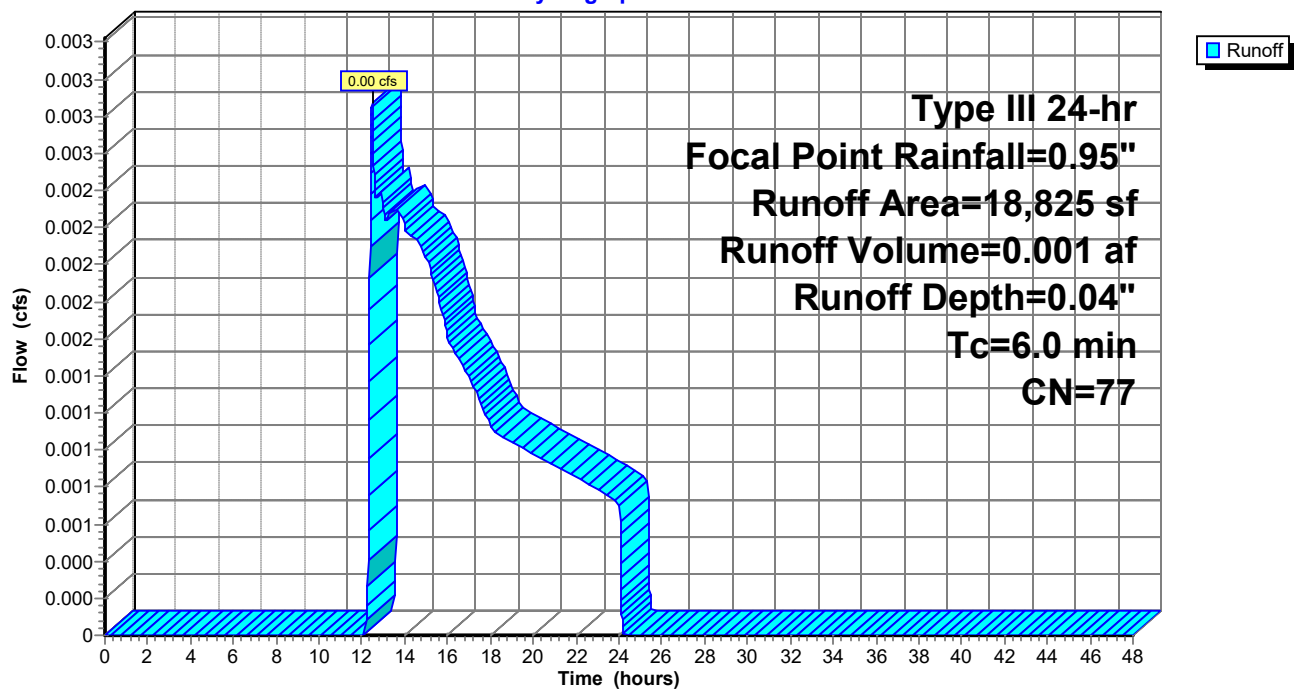
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	8,390	98	Paved parking, HSG A
*	3,744	98	Porous pavement
	6,691	39	>75% Grass cover, Good, HSG A
	18,825	77	Weighted Average
	6,691		35.54% Pervious Area
	12,134		64.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 23A: South Parking - West

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 23B: South Parking - East

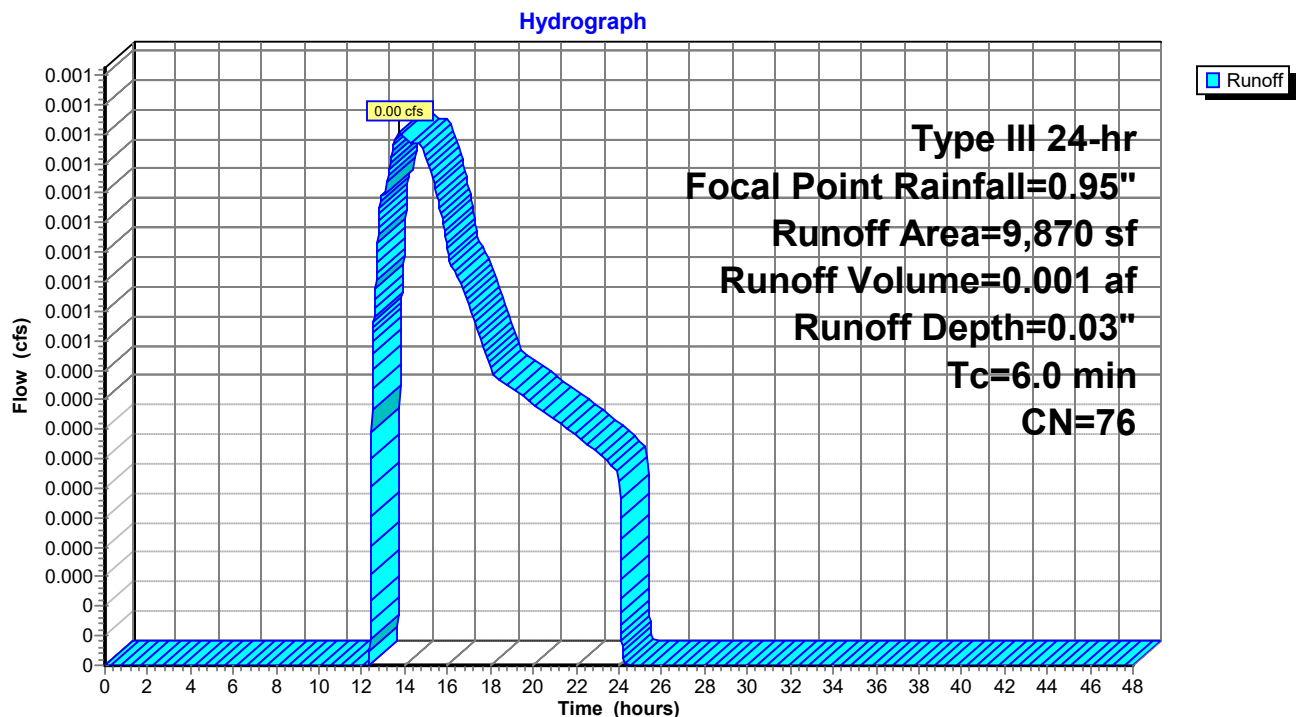
Runoff = 0.00 cfs @ 13.74 hrs, Volume= 0.001 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	4,610	98	Paved parking, HSG A
*	1,620	98	Porous pavement
	3,640	39	>75% Grass cover, Good, HSG A
	9,870	76	Weighted Average
	3,640		36.88% Pervious Area
	6,230		63.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 23B: South Parking - East



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 24A: Building 2

Runoff = 0.24 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 0.74"

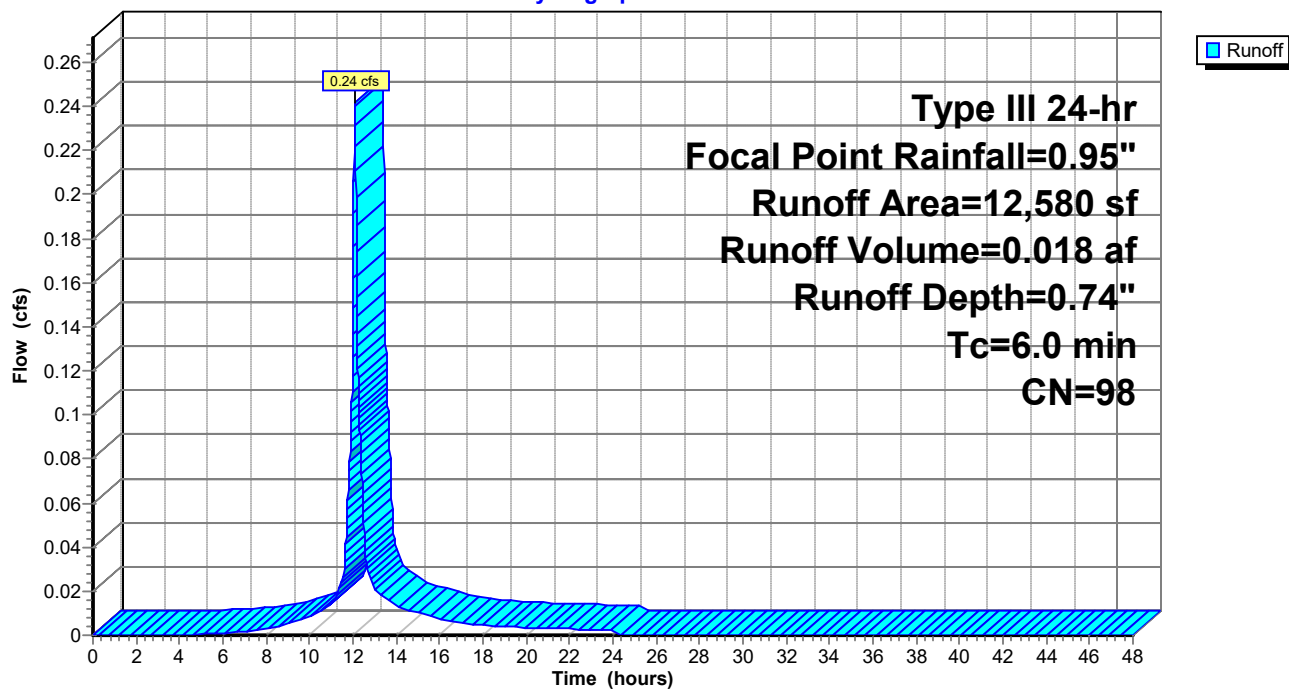
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	12,580	98	Roof & Pavement
	0	39	>75% Grass cover, Good, HSG A
	12,580	98	Weighted Average
	12,580		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 24A: Building 2

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 24B: Building 3

Runoff = 0.37 cfs @ 12.08 hrs, Volume= 0.028 af, Depth= 0.74"

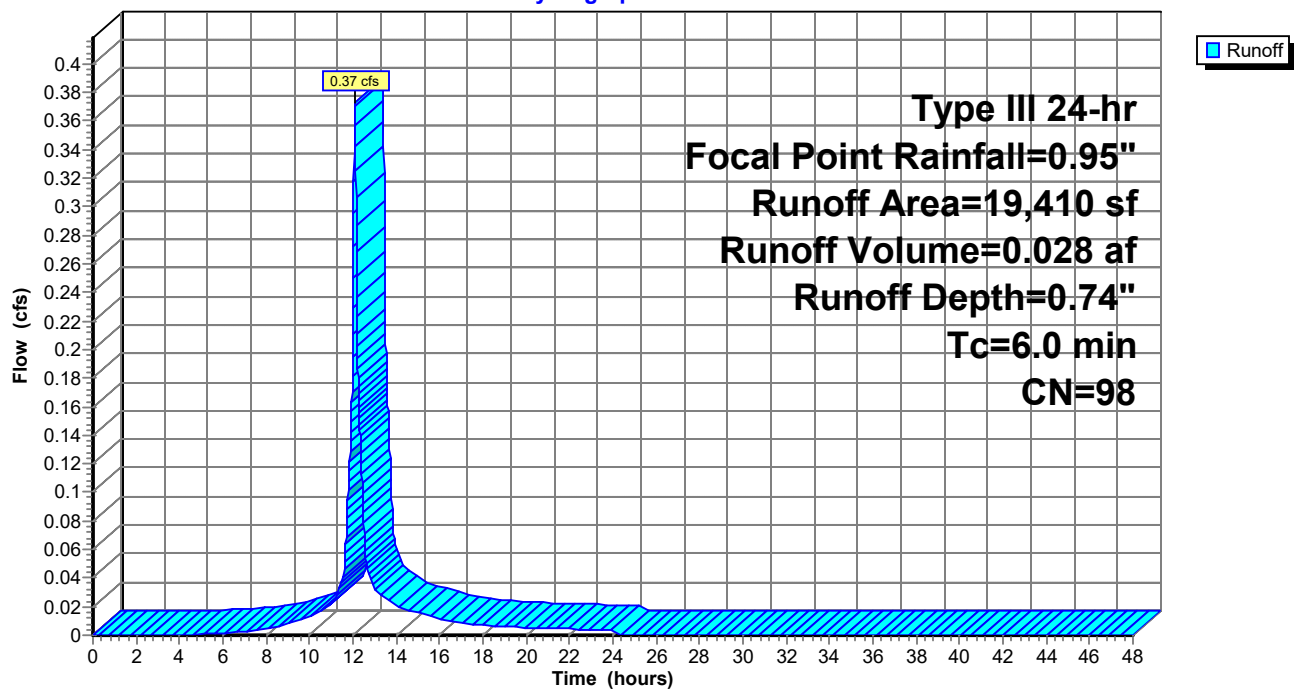
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	19,410	98	Roof & Sidewalk
	0	74	>75% Grass cover, Good, HSG C
	19,410	98	Weighted Average
	19,410		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 24B: Building 3

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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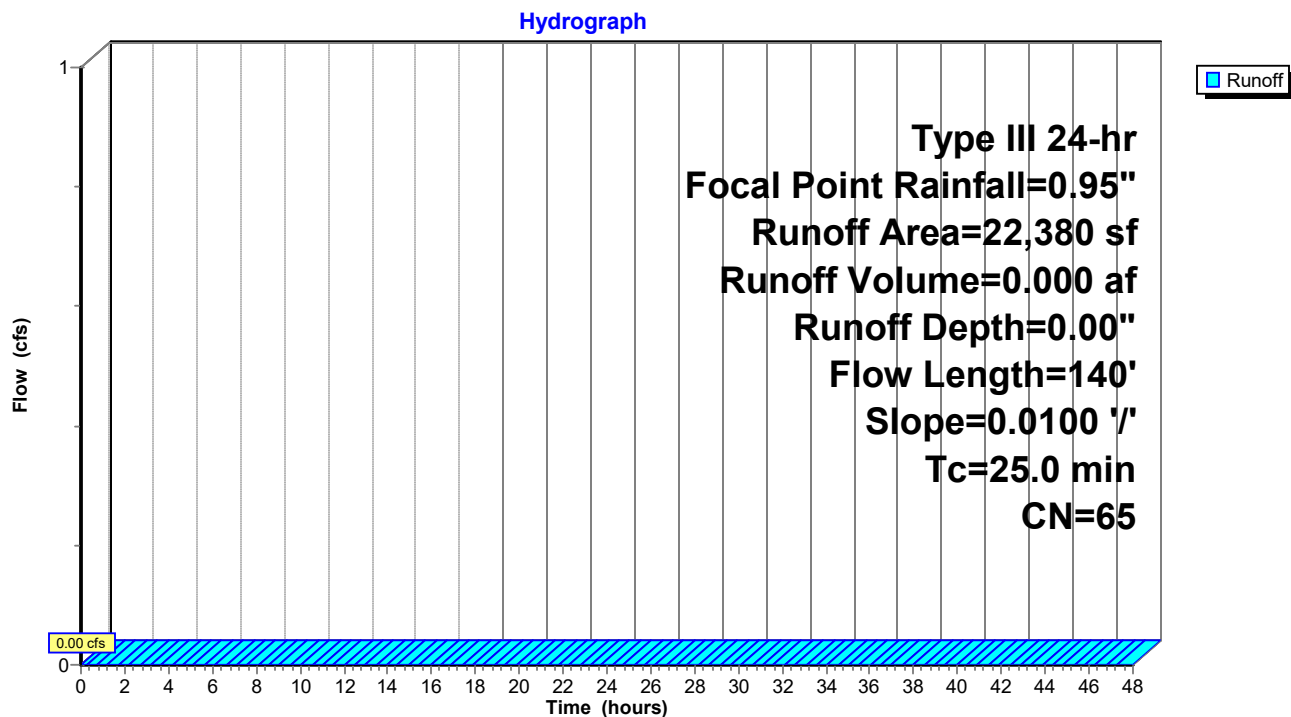
Summary for Subcatchment 25A: South of Building 2

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
8,900	39	>75% Grass cover, Good, HSG A
4,910	98	Paved parking, HSG A
8,570	74	>75% Grass cover, Good, HSG C
22,380	65	Weighted Average
17,470		78.06% Pervious Area
4,910		21.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0	140	0.0100	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"

Subcatchment 25A: South of Building 2

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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Subcatchment 25B: South of Building 3

Runoff = 0.00 cfs @ 13.74 hrs, Volume= 0.001 af, Depth= 0.03"

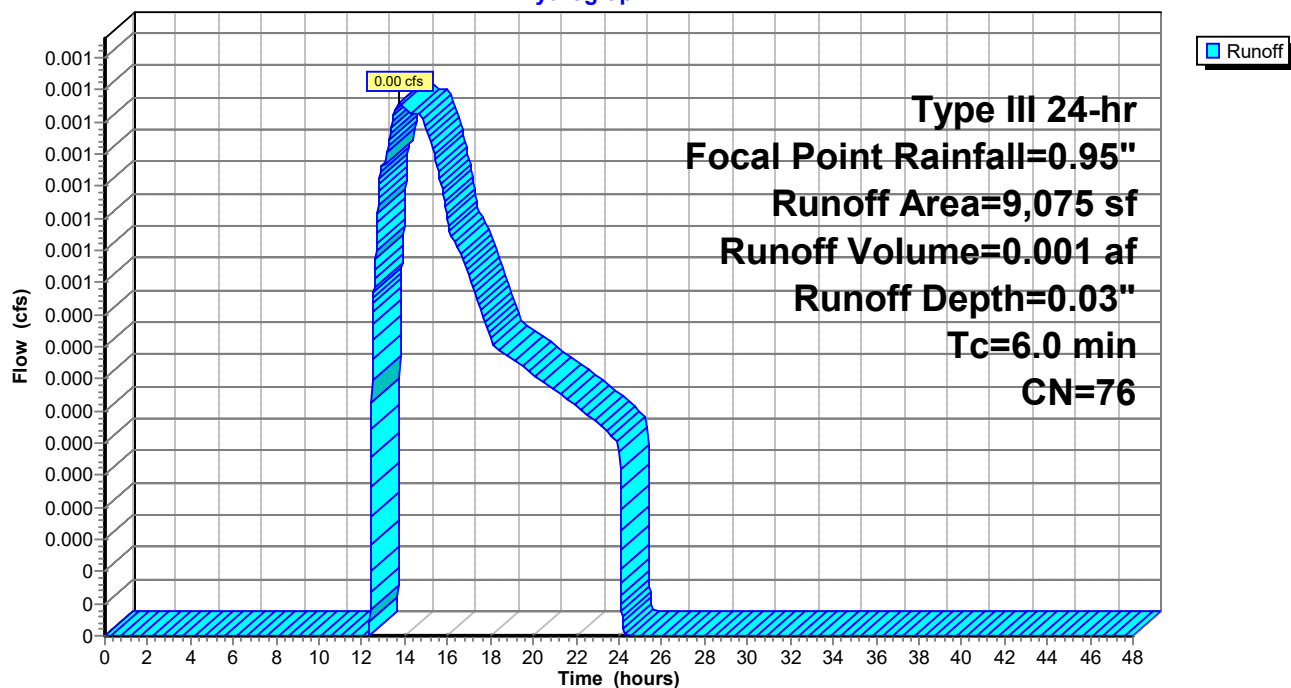
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

	Area (sf)	CN	Description
*	8,340	74	>75% Grass cover, Good, HSG C
	735	98	Walkways
	9,075	76	Weighted Average
	8,340		91.90% Pervious Area
	735		8.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 25B: South of Building 3

Hydrograph



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Summary for Subcatchment 25C: South of Building 3

Runoff = 0.00 cfs @ 12.39 hrs, Volume= 0.000 af, Depth= 0.06"

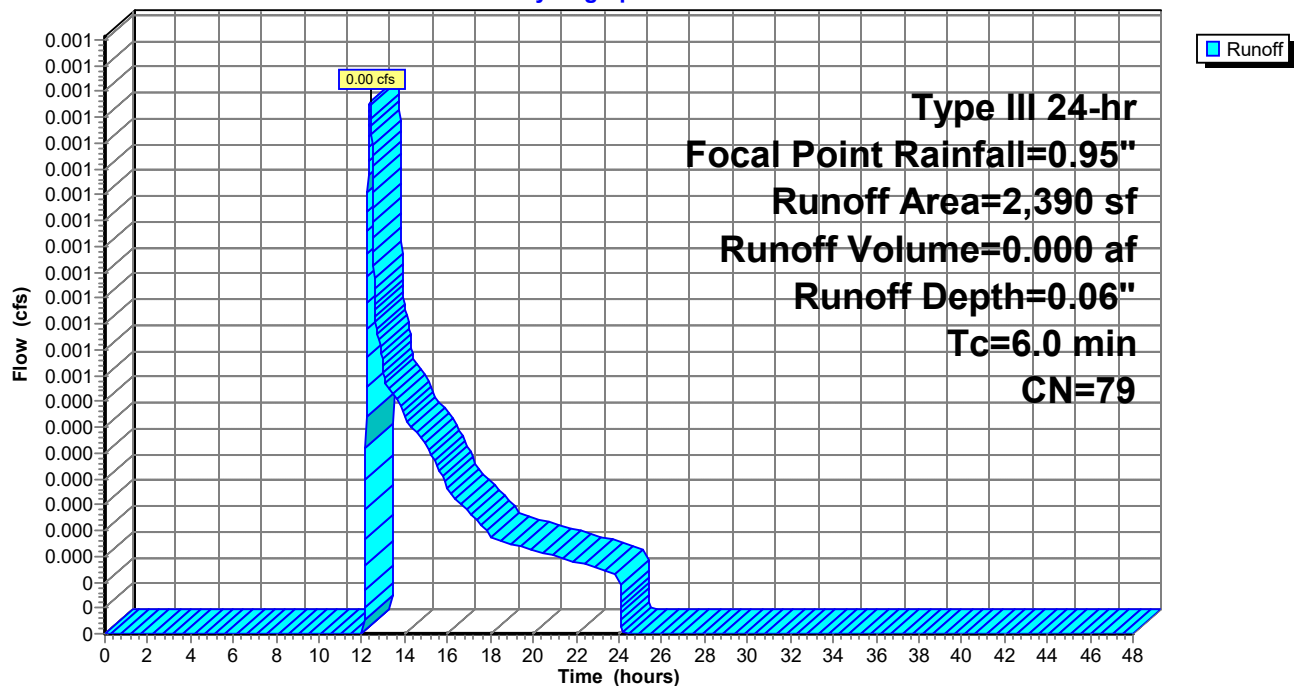
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
1,930	74	>75% Grass cover, Good, HSG C
* 460	98	Walkways
2,390	79	Weighted Average
1,930		80.75% Pervious Area
460		19.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 25C: South of Building 3

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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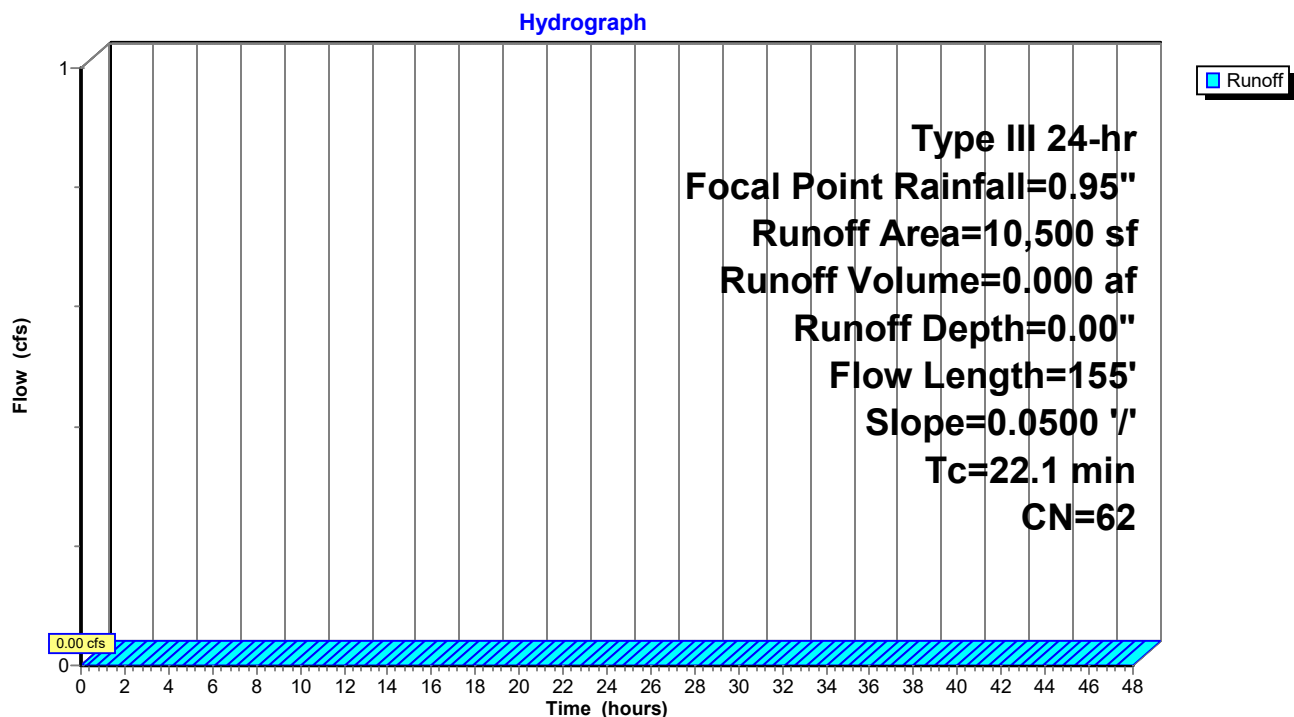
Summary for Subcatchment 26S: Wetland to POI 2

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
4,528	39	>75% Grass cover, Good, HSG A
5,392	77	Woods, Good, HSG D
* 580	98	Walking Path
10,500	62	Weighted Average
9,920		94.48% Pervious Area
580		5.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	75	0.0500	0.06		Sheet Flow,
					Woods: Dense underbrush n= 0.800 P2= 3.10"
1.2	80	0.0500	1.12		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
22.1	155	Total			

Subcatchment 26S: Wetland to POI 2

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Summary for Subcatchment 27S: Wetland to POI 1

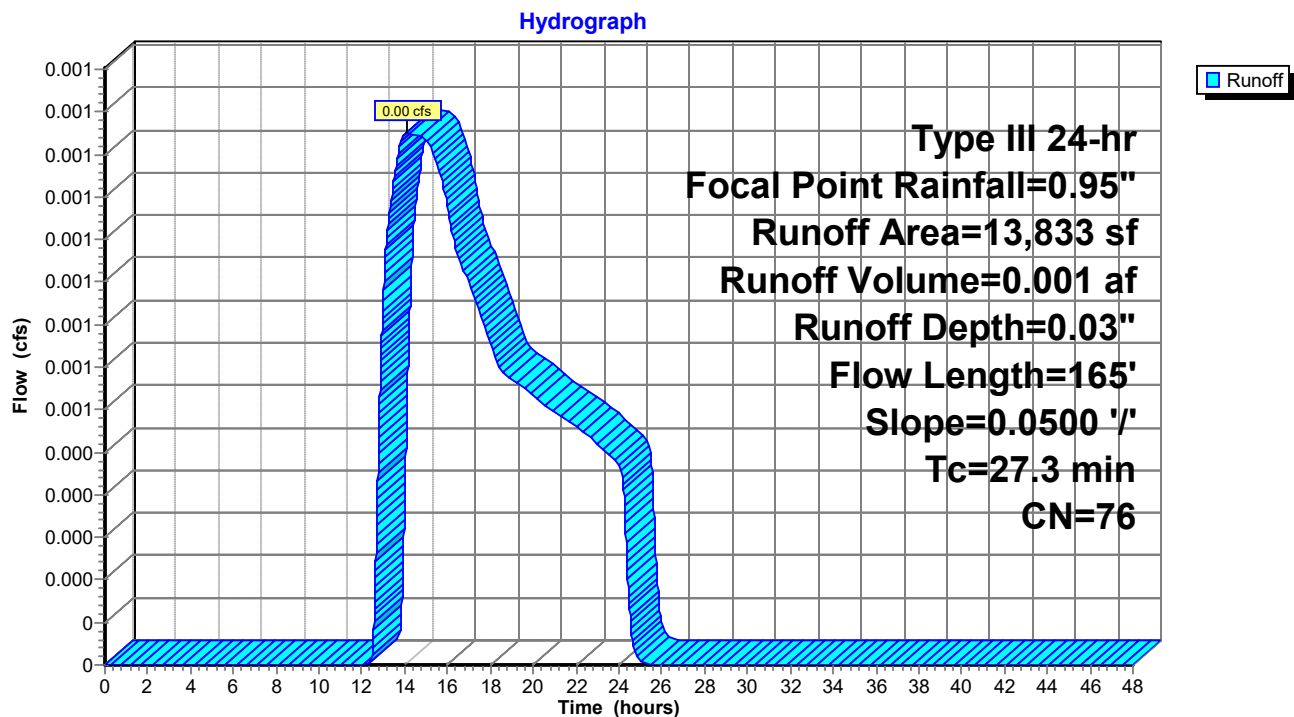
Runoff = 0.00 cfs @ 14.10 hrs, Volume= 0.001 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
3,935	74	>75% Grass cover, Good, HSG C
9,282	77	Woods, Good, HSG D
141	39	>75% Grass cover, Good, HSG A
* 475	98	Walking Path
13,833	76	Weighted Average
13,358		96.57% Pervious Area
475		3.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.3	100	0.0500	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
1.0	65	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
27.3	165	Total			

Subcatchment 27S: Wetland to POI 1



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Type III 24-hr Focal Point Rainfall=0.95"

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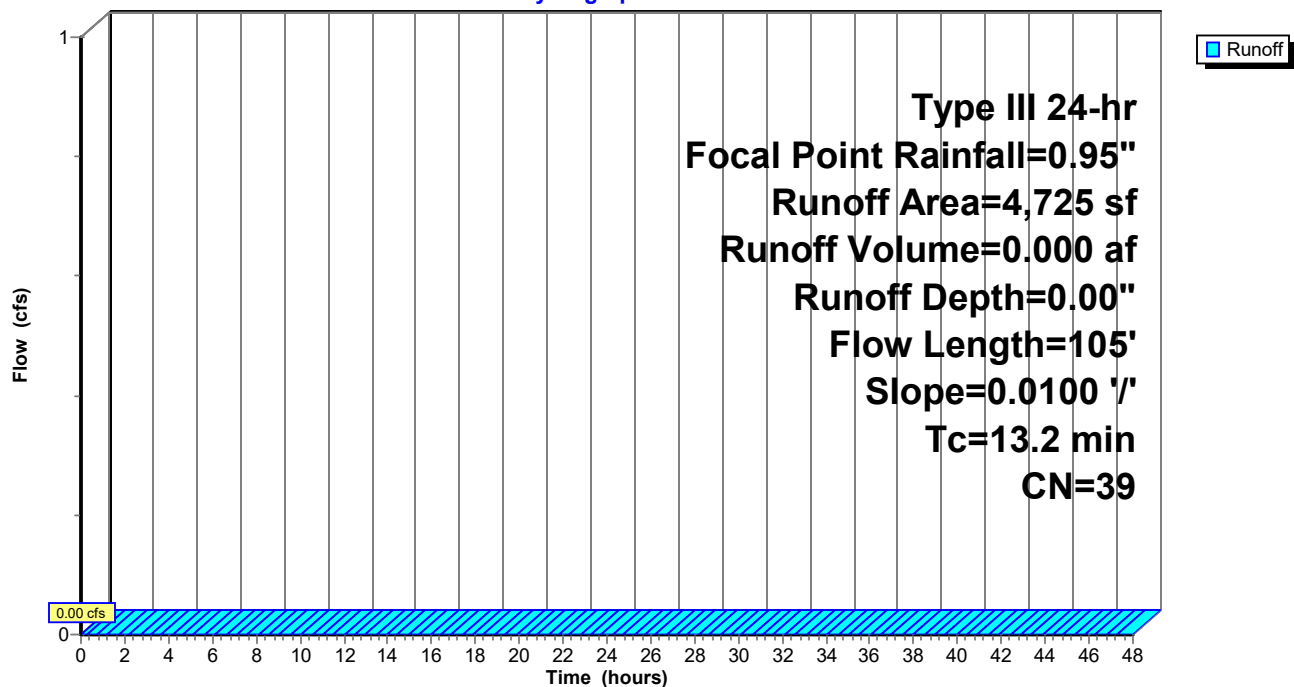
Summary for Subcatchment 28S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr Focal Point Rainfall=0.95"

Area (sf)	CN	Description
4,725	39	>75% Grass cover, Good, HSG A
4,725		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	60	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.5	45	0.0100	1.50		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
13.2	105	Total			

Subcatchment 28S:**Hydrograph**

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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Reach 1R: CB 19 TO WETLAND

Inflow Area = 3.011 ac, 47.24% Impervious, Inflow Depth > 0.24" for Focal Point event
Inflow = 0.06 cfs @ 13.99 hrs, Volume= 0.061 af
Outflow = 0.06 cfs @ 14.01 hrs, Volume= 0.061 af, Atten= 0%, Lag= 1.1 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.48 fps, Min. Travel Time= 1.4 min

Avg. Velocity= 0.87 fps, Avg. Travel Time= 2.4 min

Peak Storage= 5 cf @ 14.01 hrs

Average Depth at Peak Storage= 0.09' , Surface Width= 0.65'

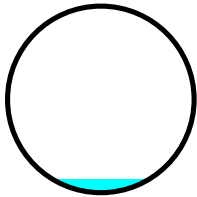
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 5.51 cfs

15.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

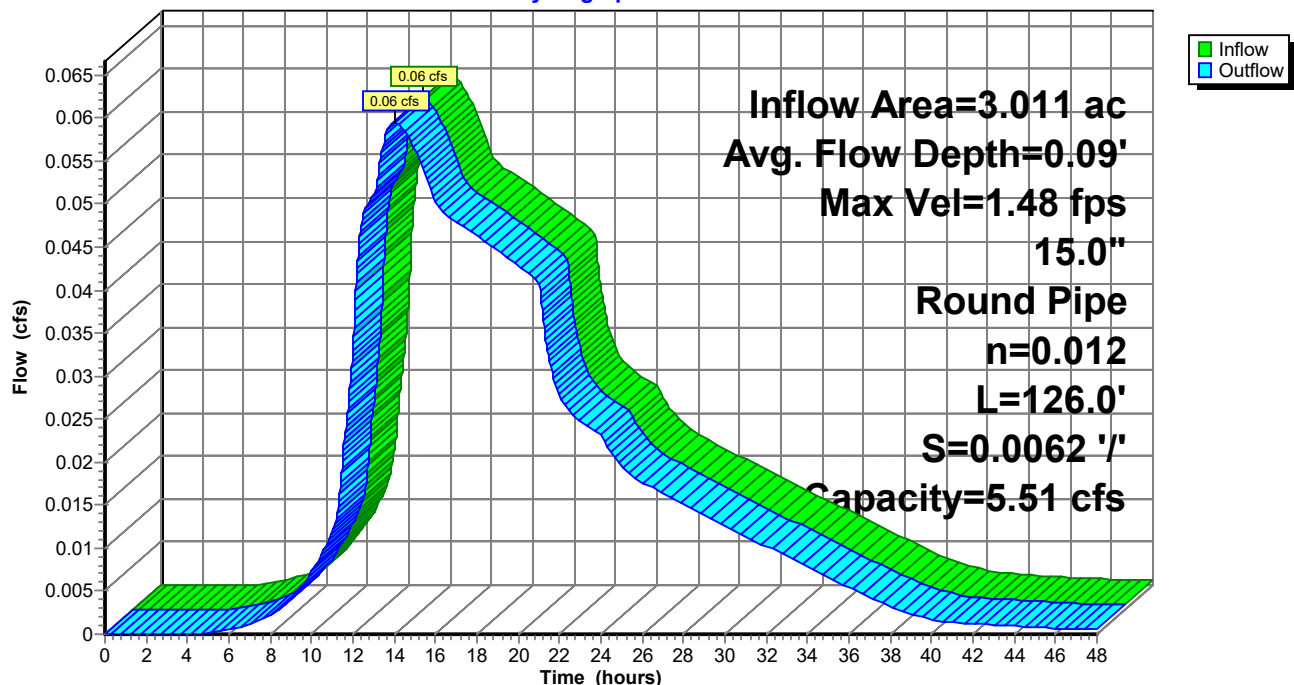
Length= 126.0' Slope= 0.0062 '/'

Inlet Invert= 108.10', Outlet Invert= 107.32'



Reach 1R: CB 19 TO WETLAND

Hydrograph



Post-Development

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Type III 24-hr Focal Point Rainfall=0.95"

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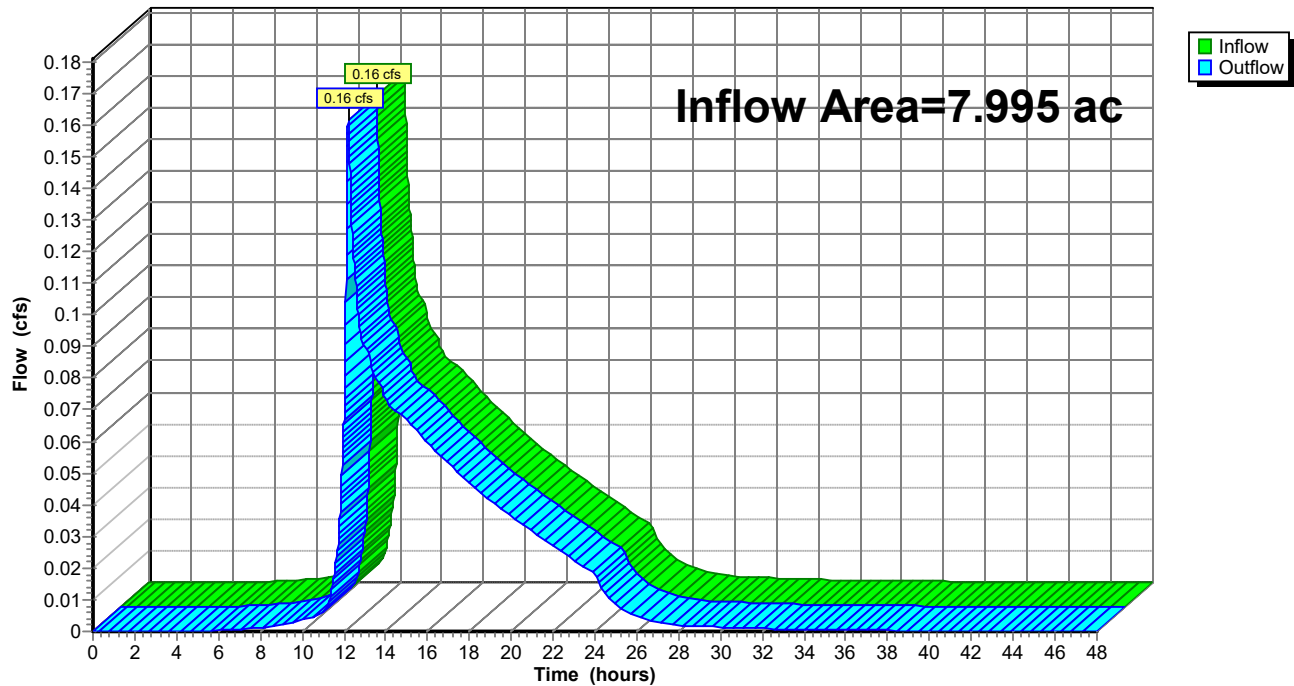
Summary for Reach 2R: POI 2

Inflow Area = 7.995 ac, 56.42% Impervious, Inflow Depth > 0.09" for Focal Point event
Inflow = 0.16 cfs @ 12.20 hrs, Volume= 0.057 af
Outflow = 0.16 cfs @ 12.20 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: POI 2

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Reach 4R: Wetland to POI 2

Inflow Area = 7.754 ac, 58.01% Impervious, Inflow Depth > 0.09" for Focal Point event
Inflow = 0.16 cfs @ 12.17 hrs, Volume= 0.057 af
Outflow = 0.16 cfs @ 12.20 hrs, Volume= 0.057 af, Atten= 2%, Lag= 1.6 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.06 fps, Min. Travel Time= 2.3 min

Avg. Velocity = 0.46 fps, Avg. Travel Time= 5.2 min

Peak Storage= 22 cf @ 12.20 hrs

Average Depth at Peak Storage= 0.04' , Surface Width= 4.05'

Bank-Full Depth= 0.80' Flow Area= 3.6 sf, Capacity= 24.99 cfs

4.00' x 0.80' deep channel, n= 0.035 Earth, dense weeds

Side Slope Z-value= 0.7 '/' Top Width= 5.12'

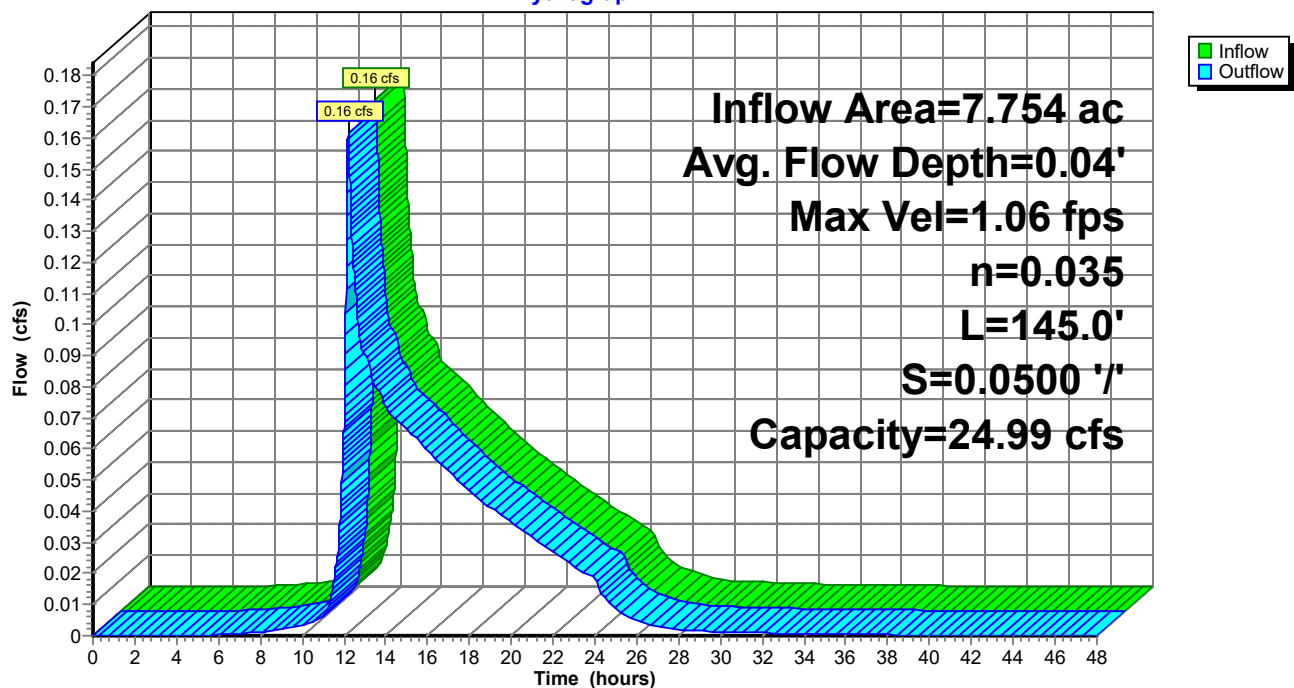
Length= 145.0' Slope= 0.0500 '/'

Inlet Invert= 102.89', Outlet Invert= 95.64'



Reach 4R: Wetland to POI 2

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Reach 6R: Wetland to POI 1

Inflow Area = 3.011 ac, 47.24% Impervious, Inflow Depth > 0.24" for Focal Point event
Inflow = 0.06 cfs @ 14.01 hrs, Volume= 0.061 af
Outflow = 0.06 cfs @ 14.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 4.8 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.55 fps, Min. Travel Time= 6.4 min

Avg. Velocity= 0.40 fps, Avg. Travel Time= 8.8 min

Peak Storage= 23 cf @ 14.09 hrs

Average Depth at Peak Storage= 0.01', Surface Width= 8.13'

Bank-Full Depth= 0.75' Flow Area= 8.8 sf, Capacity= 57.05 cfs

8.00' x 0.75' deep channel, n= 0.035 Earth, dense weeds

Side Slope Z-value= 5.0 '/' Top Width= 15.50'

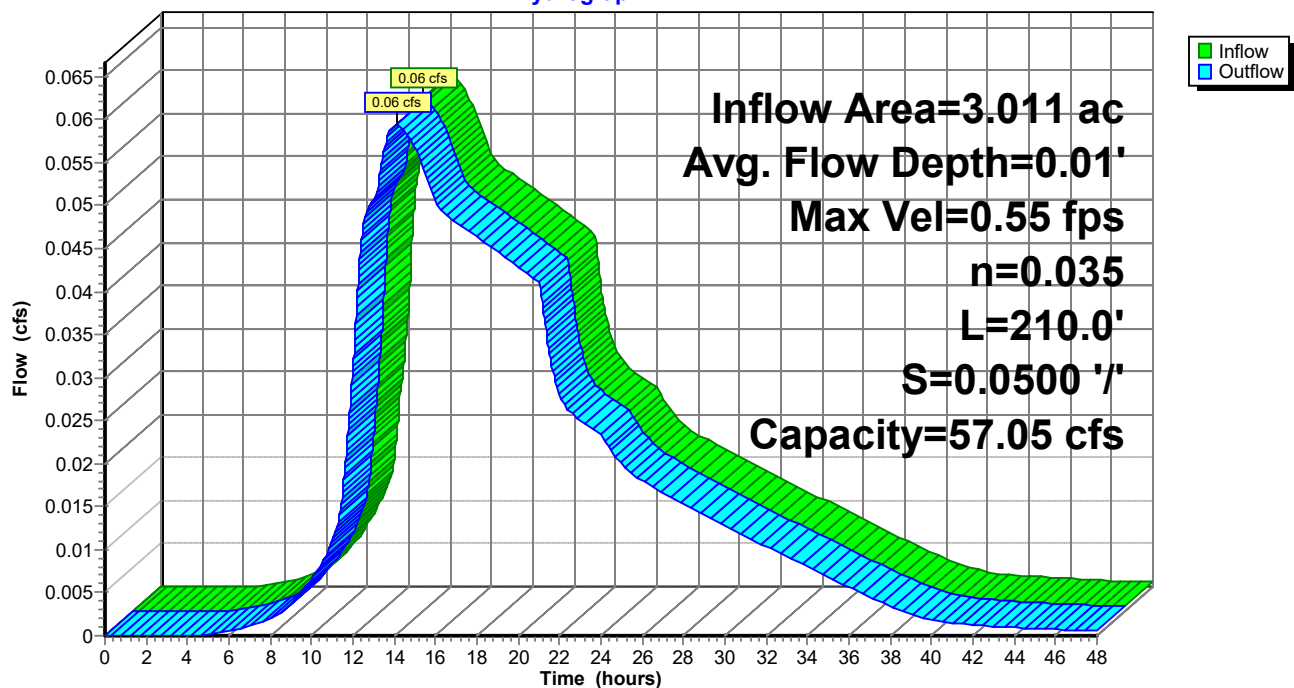
Length= 210.0' Slope= 0.0500 '/'

Inlet Invert= 107.32', Outlet Invert= 96.82'



Reach 6R: Wetland to POI 1

Hydrograph



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Summary for Reach 24R: DMH 11 to DMH 12

Inflow Area = 0.432 ac, 64.46% Impervious, Inflow Depth = 0.04" for Focal Point event
Inflow = 0.00 cfs @ 12.48 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 12.50 hrs, Volume= 0.001 af, Atten= 1%, Lag= 0.9 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.77 fps, Min. Travel Time= 1.3 min

Avg. Velocity = 0.60 fps, Avg. Travel Time= 1.6 min

Peak Storage= 0 cf @ 12.50 hrs

Average Depth at Peak Storage= 0.02' , Surface Width= 0.24'

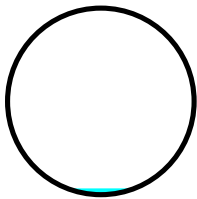
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

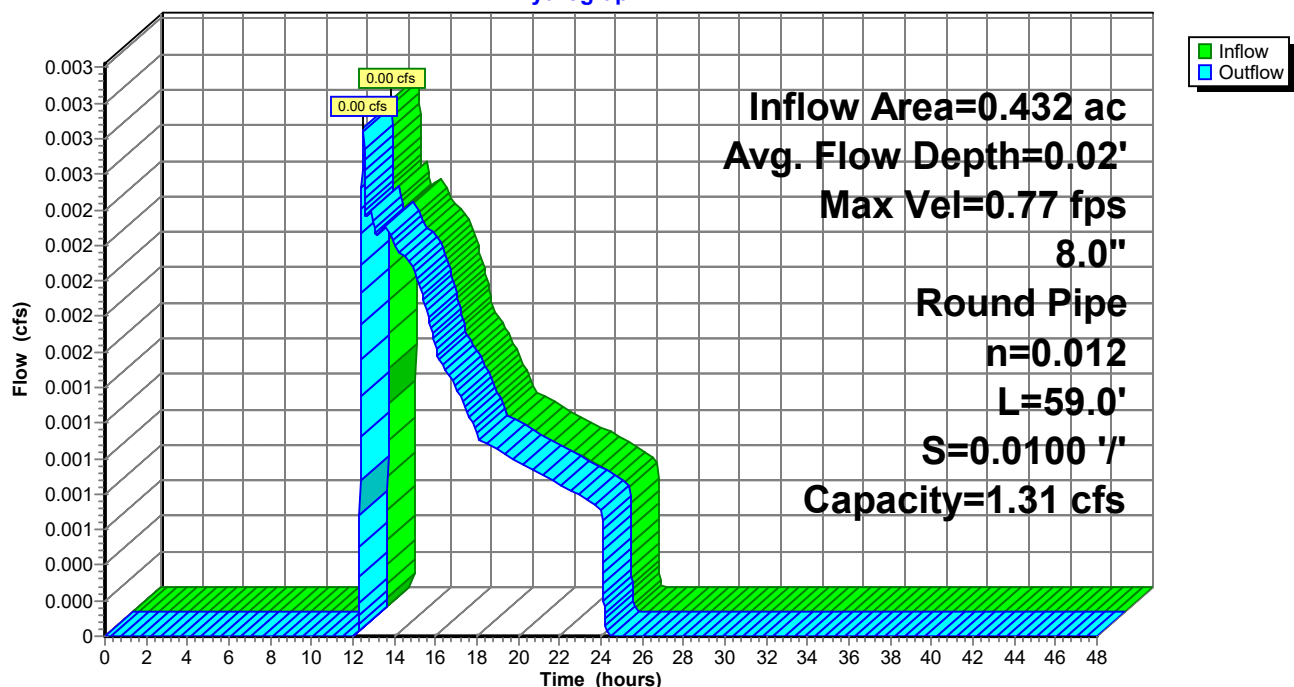
Length= 59.0' Slope= 0.0100 '/

Inlet Invert= 109.67', Outlet Invert= 109.08'



Reach 24R: DMH 11 to DMH 12

Hydrograph



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Summary for Reach 25R: DMH 12 to DMH 15

Inflow Area = 0.659 ac, 64.00% Impervious, Inflow Depth = 0.03" for Focal Point event
Inflow = 0.00 cfs @ 12.51 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 12.52 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.80 fps, Min. Travel Time= 1.0 min

Avg. Velocity= 0.66 fps, Avg. Travel Time= 1.2 min

Peak Storage= 0 cf @ 12.52 hrs

Average Depth at Peak Storage= 0.02', Surface Width= 0.25'

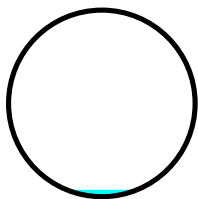
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

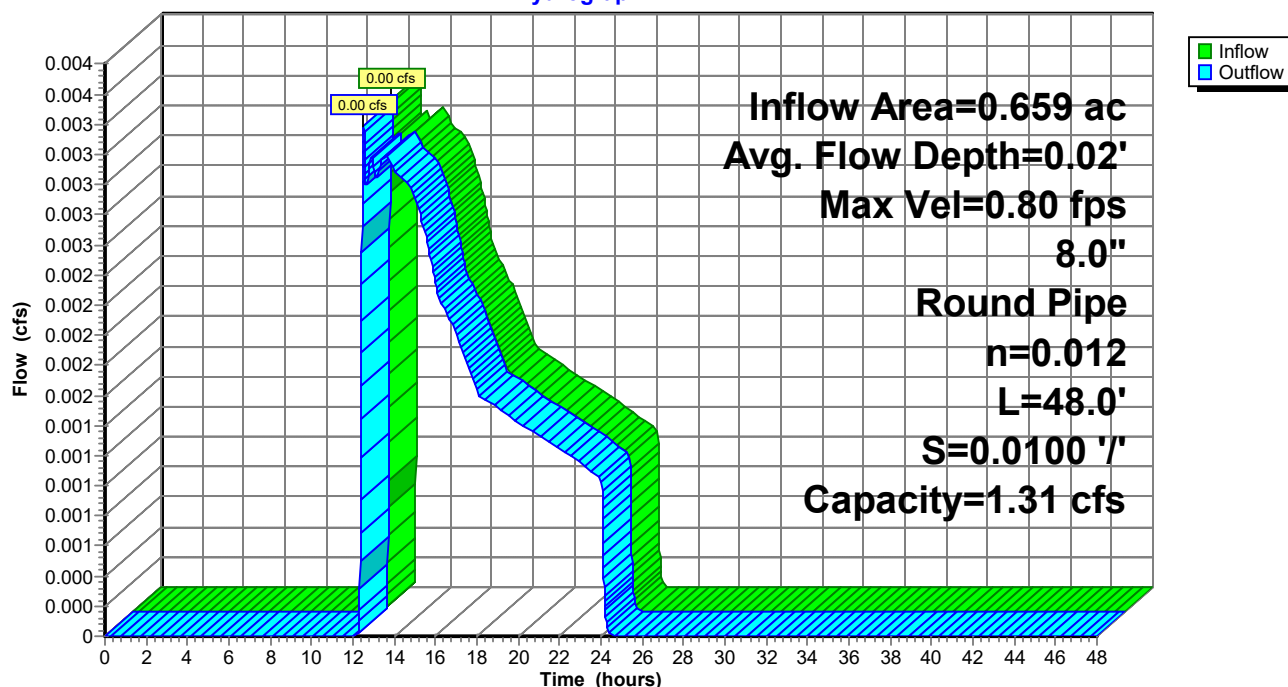
Length= 48.0' Slope= 0.0100 '/'

Inlet Invert= 108.98', Outlet Invert= 108.50'



Reach 25R: DMH 12 to DMH 15

Hydrograph



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Summary for Reach 26R: DMH 15 to DMH 14

Inflow Area = 1.471 ac, 41.43% Impervious, Inflow Depth = 0.02" for Focal Point event
Inflow = 0.00 cfs @ 12.52 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 12.55 hrs, Volume= 0.002 af, Atten= 2%, Lag= 1.8 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.76 fps, Min. Travel Time= 2.3 min

Avg. Velocity = 0.64 fps, Avg. Travel Time= 2.7 min

Peak Storage= 0 cf @ 12.55 hrs

Average Depth at Peak Storage= 0.02' , Surface Width= 0.29'

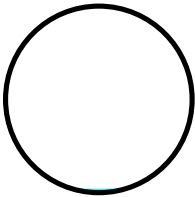
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.86 cfs

12.0" Round Pipe

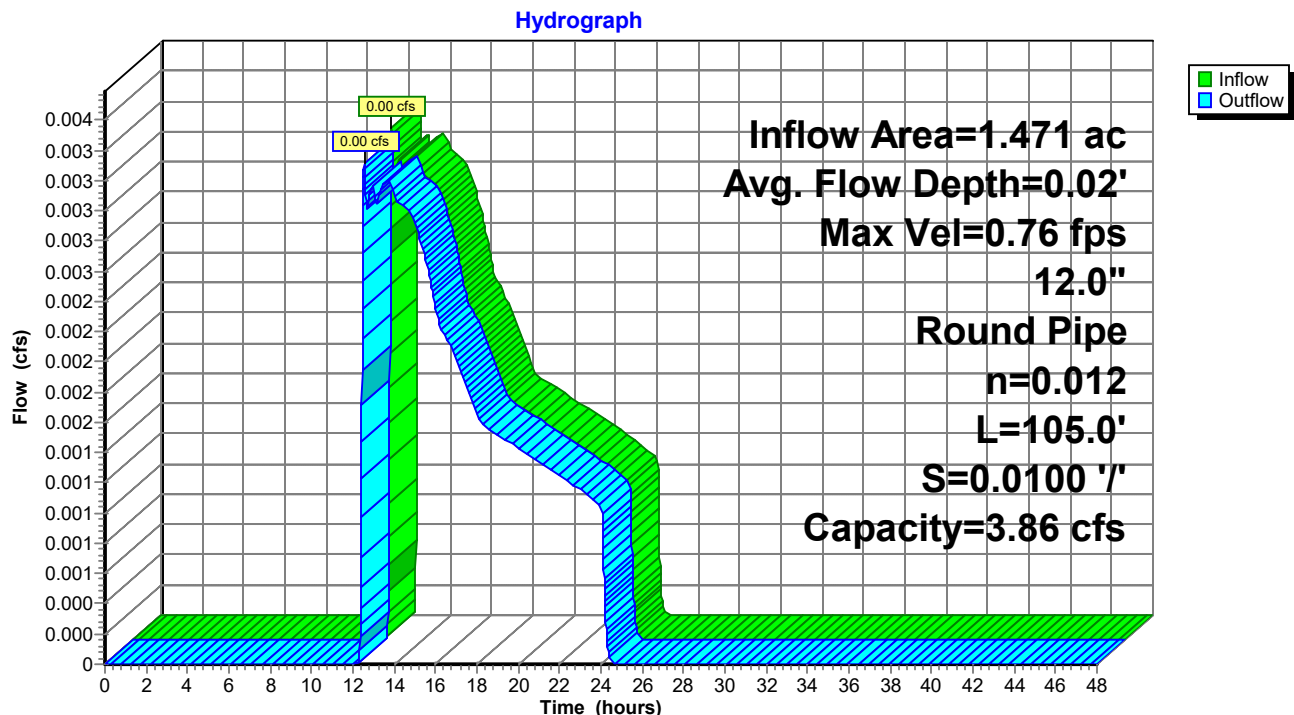
n= 0.012 Corrugated PP, smooth interior

Length= 105.0' Slope= 0.0100 '/'

Inlet Invert= 108.40', Outlet Invert= 107.35'



Reach 26R: DMH 15 to DMH 14



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Summary for Reach 27R: DMH 14 to DMH 7

Inflow Area = 2.408 ac, 56.92% Impervious, Inflow Depth > 0.21" for Focal Point event
Inflow = 0.06 cfs @ 12.96 hrs, Volume= 0.042 af
Outflow = 0.06 cfs @ 12.96 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.73 fps, Min. Travel Time= 0.4 min

Avg. Velocity= 0.90 fps, Avg. Travel Time= 0.8 min

Peak Storage= 1 cf @ 12.96 hrs

Average Depth at Peak Storage= 0.08' , Surface Width= 0.61'

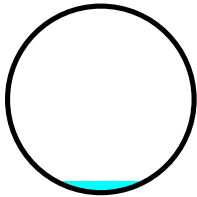
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

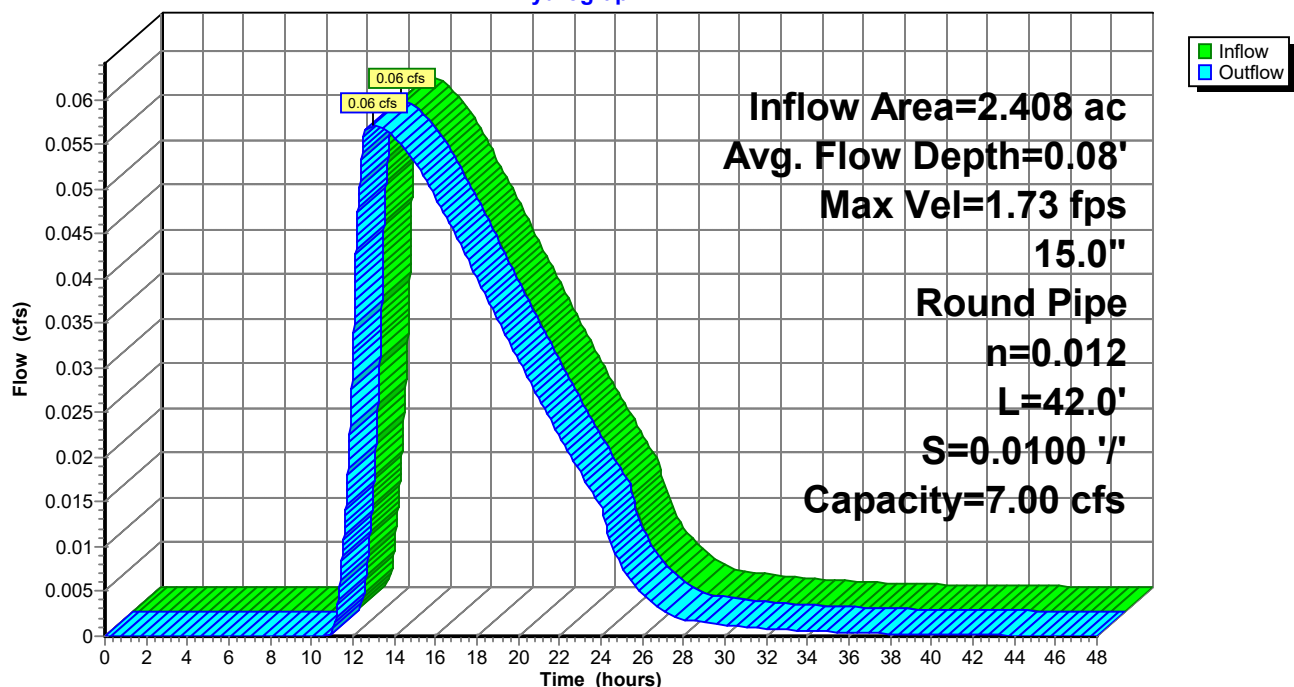
Length= 42.0' Slope= 0.0100 '/'

Inlet Invert= 107.25', Outlet Invert= 106.83'



Reach 27R: DMH 14 to DMH 7

Hydrograph



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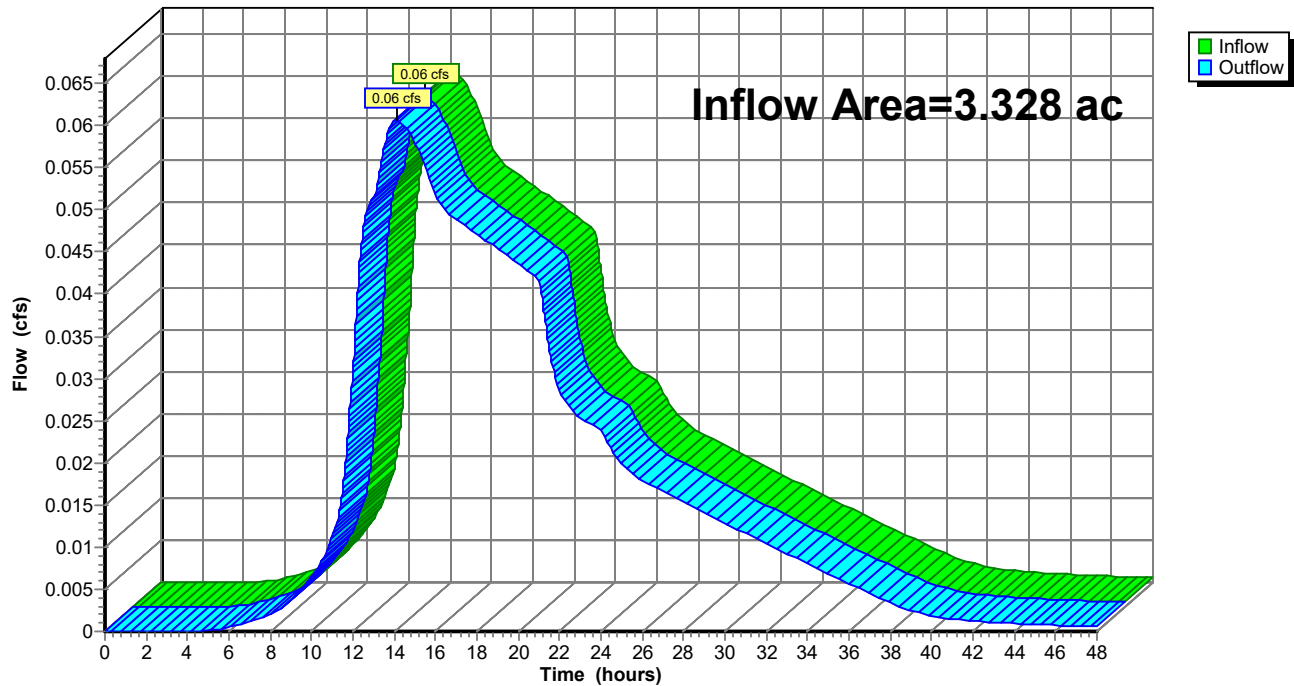
Summary for Reach 28R: POI 1

Inflow Area = 3.328 ac, 43.06% Impervious, Inflow Depth > 0.22" for Focal Point event
Inflow = 0.06 cfs @ 14.10 hrs, Volume= 0.062 af
Outflow = 0.06 cfs @ 14.10 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 28R: POI 1

Hydrograph



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Summary for Reach 29R: EX. DMH 4 to NEW CB 19

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth = 0.17" for Focal Point event
Inflow = 0.02 cfs @ 13.29 hrs, Volume= 0.022 af
Outflow = 0.02 cfs @ 13.32 hrs, Volume= 0.022 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.14 fps, Min. Travel Time= 2.5 min

Avg. Velocity = 0.76 fps, Avg. Travel Time= 3.8 min

Peak Storage= 4 cf @ 13.32 hrs

Average Depth at Peak Storage= 0.06' , Surface Width= 0.49'

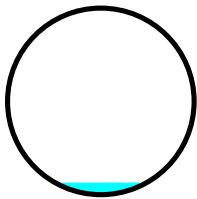
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.93 cfs

12.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

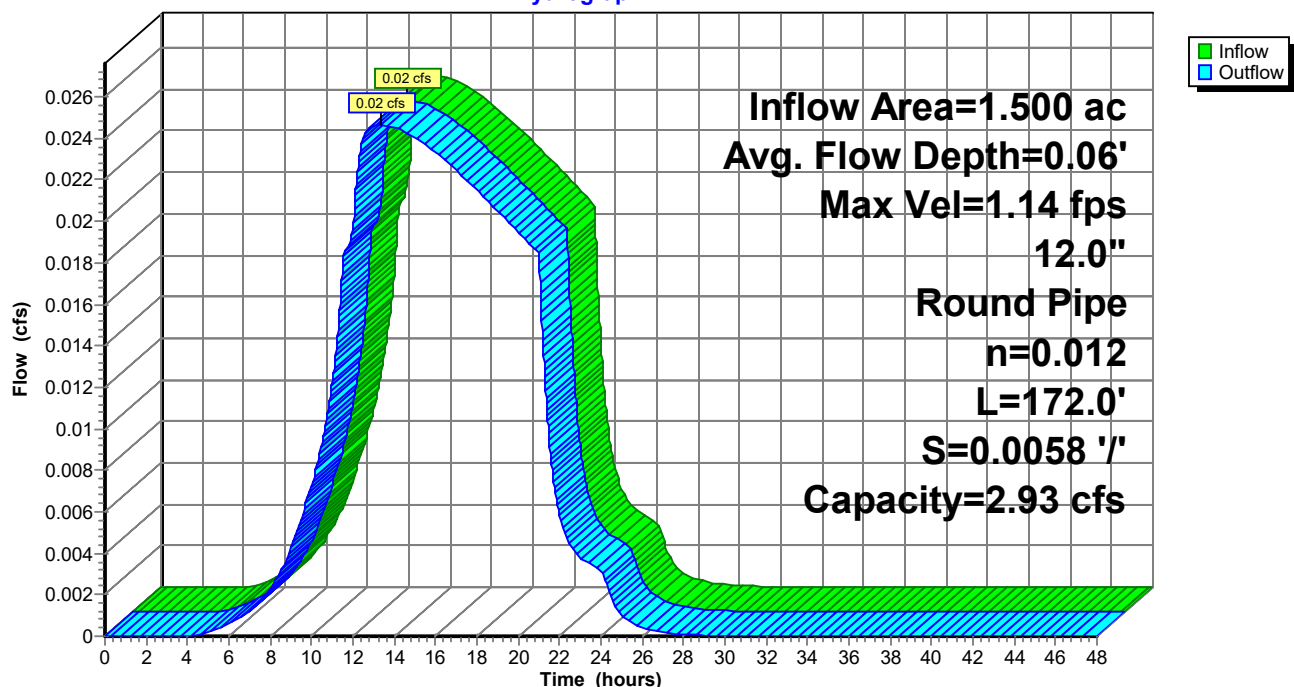
Length= 172.0' Slope= 0.0058 '/'

Inlet Invert= 109.09', Outlet Invert= 108.10'



Reach 29R: EX. DMH 4 to NEW CB 19

Hydrograph



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Reach 31R: 8" SD

Inflow Area = 0.707 ac, 10.73% Impervious, Inflow Depth = 0.00" for Focal Point event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

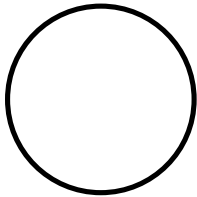
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.21 cfs

8.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

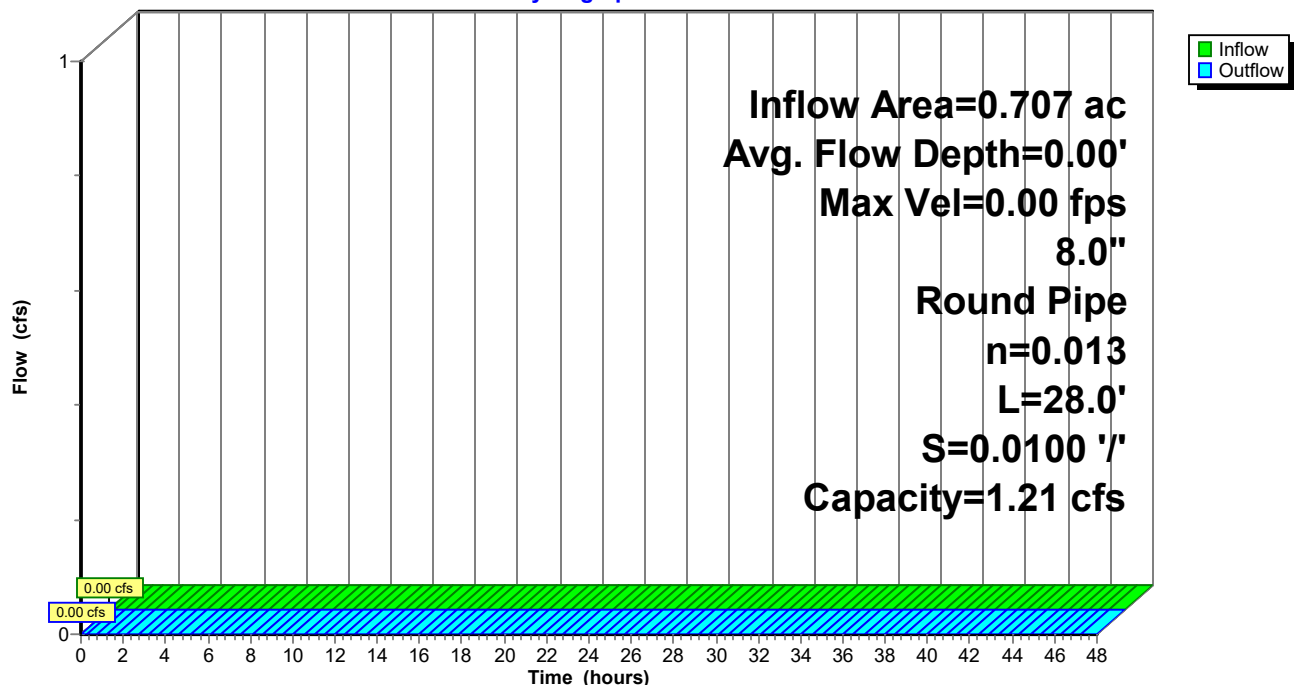
Length= 28.0' Slope= 0.0100 '/'

Inlet Invert= 115.15', Outlet Invert= 114.87'



Reach 31R: 8" SD

Hydrograph



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Summary for Reach 32R: 8" UD

Inflow Area = 0.364 ac, 17.16% Impervious, Inflow Depth = 0.00" for Focal Point event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs

Average Depth at Peak Storage= 0.00'

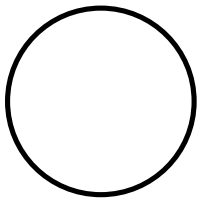
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 0.93 cfs

8.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

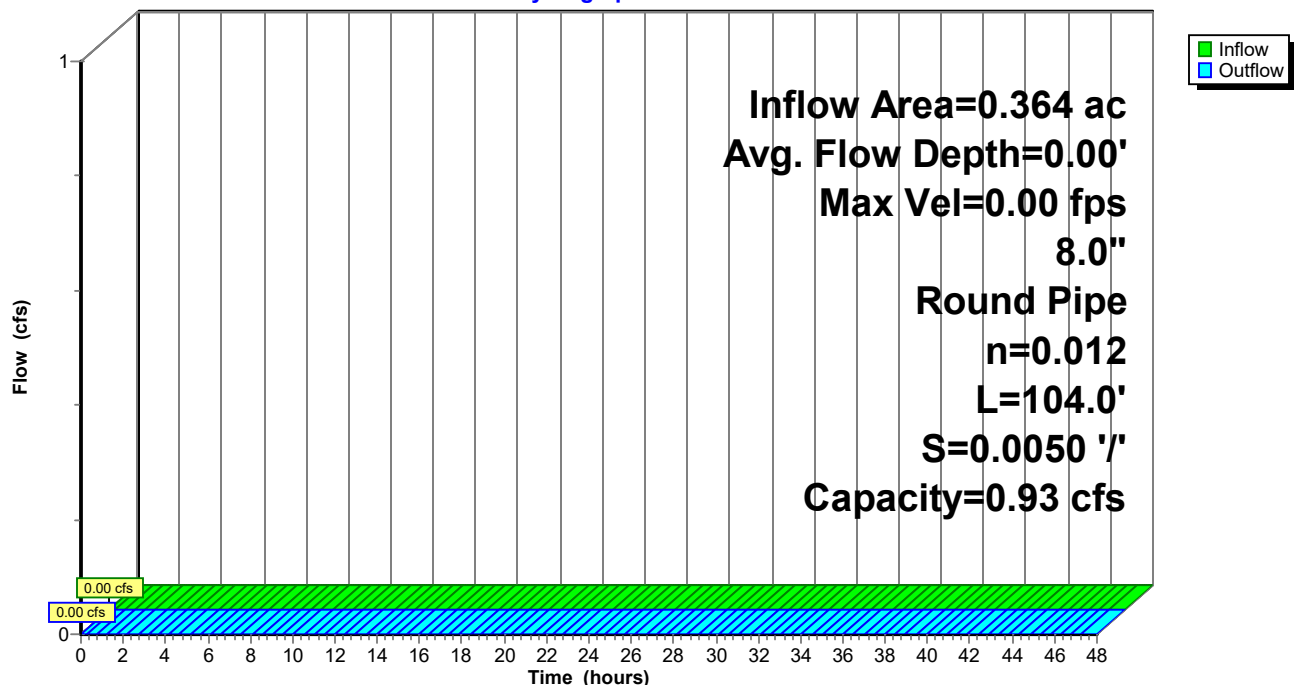
Length= 104.0' Slope= 0.0050 '/'

Inlet Invert= 116.28', Outlet Invert= 115.76'



Reach 32R: 8" UD

Hydrograph



Post-Development

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Summary for Reach 33R: 8" SD

Inflow Area = 0.523 ac, 38.77% Impervious, Inflow Depth = 0.11" for Focal Point event
Inflow = 0.04 cfs @ 12.19 hrs, Volume= 0.005 af
Outflow = 0.04 cfs @ 12.20 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.59 fps, Min. Travel Time= 0.8 min

Avg. Velocity = 0.59 fps, Avg. Travel Time= 2.1 min

Peak Storage= 2 cf @ 12.20 hrs

Average Depth at Peak Storage= 0.08' , Surface Width= 0.44'

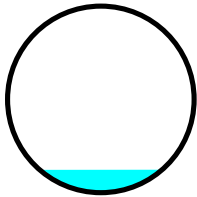
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.21 cfs

8.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

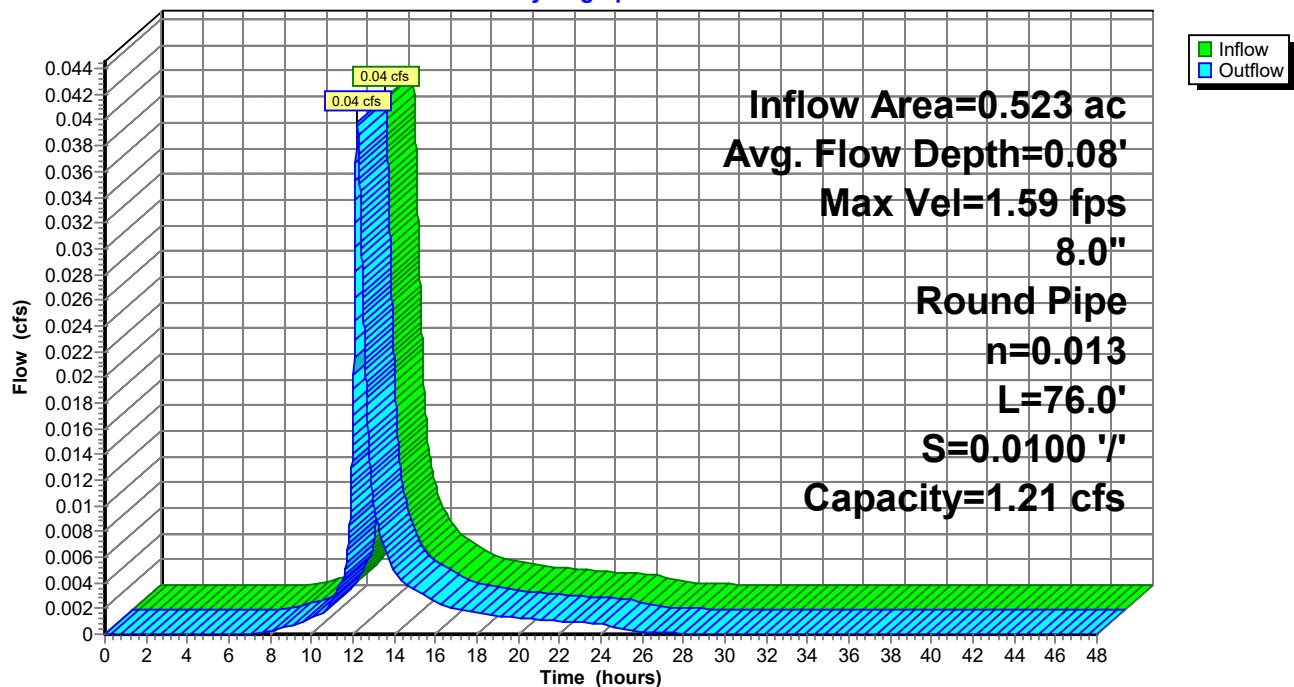
Length= 76.0' Slope= 0.0100 '/'

Inlet Invert= 115.48', Outlet Invert= 114.72'



Reach 33R: 8" SD

Hydrograph



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Summary for Reach 34R: 12" SD

Inflow Area = 0.269 ac, 100.00% Impervious, Inflow Depth = 0.74" for Focal Point event
Inflow = 0.23 cfs @ 12.08 hrs, Volume= 0.017 af
Outflow = 0.23 cfs @ 12.09 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.22 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 0.73 fps, Avg. Travel Time= 0.4 min

Peak Storage= 2 cf @ 12.09 hrs

Average Depth at Peak Storage= 0.19' , Surface Width= 0.78'

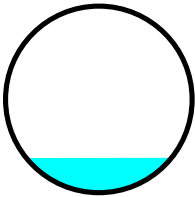
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.96 cfs

12.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

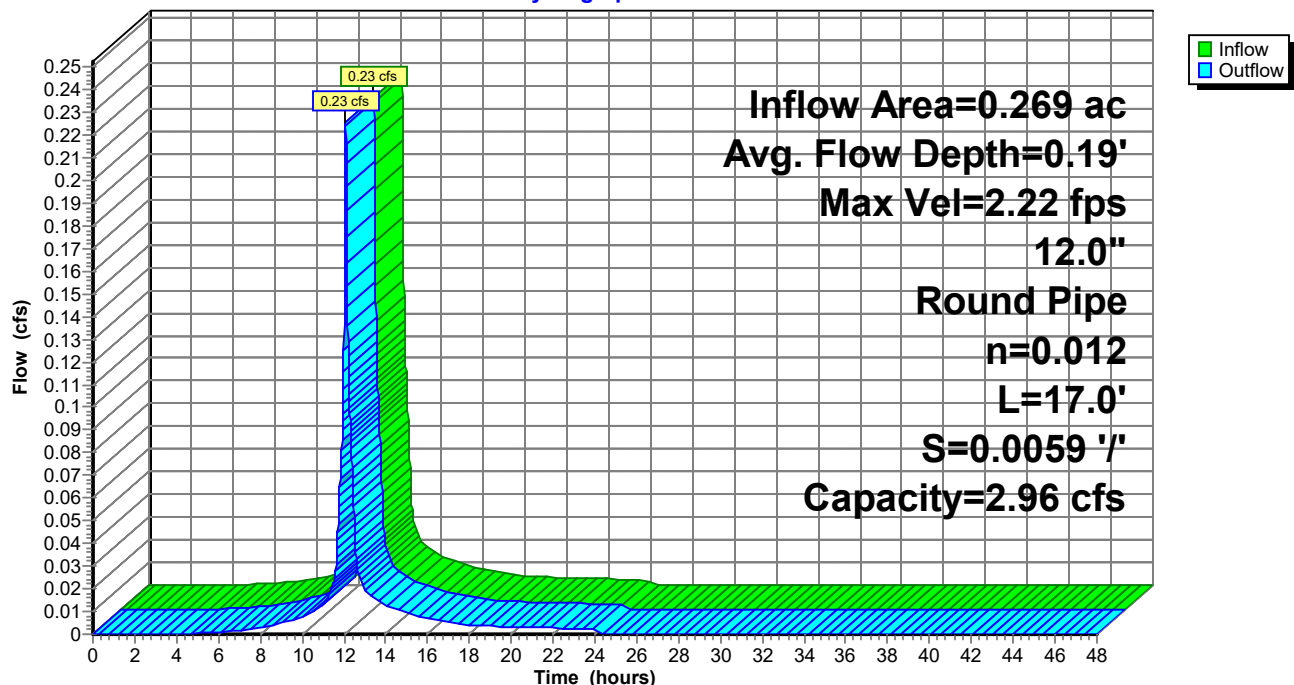
Length= 17.0' Slope= 0.0059 '/'

Inlet Invert= 114.75', Outlet Invert= 114.65'



Reach 34R: 12" SD

Hydrograph



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Summary for Reach 35R: 12" SD

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth = 0.17" for Focal Point event
Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.022 af
Outflow = 0.25 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 3.03 fps, Min. Travel Time= 0.1 min

Avg. Velocity= 0.95 fps, Avg. Travel Time= 0.2 min

Peak Storage= 1 cf @ 12.09 hrs

Average Depth at Peak Storage= 0.16' , Surface Width= 0.74'

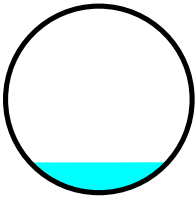
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.36 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

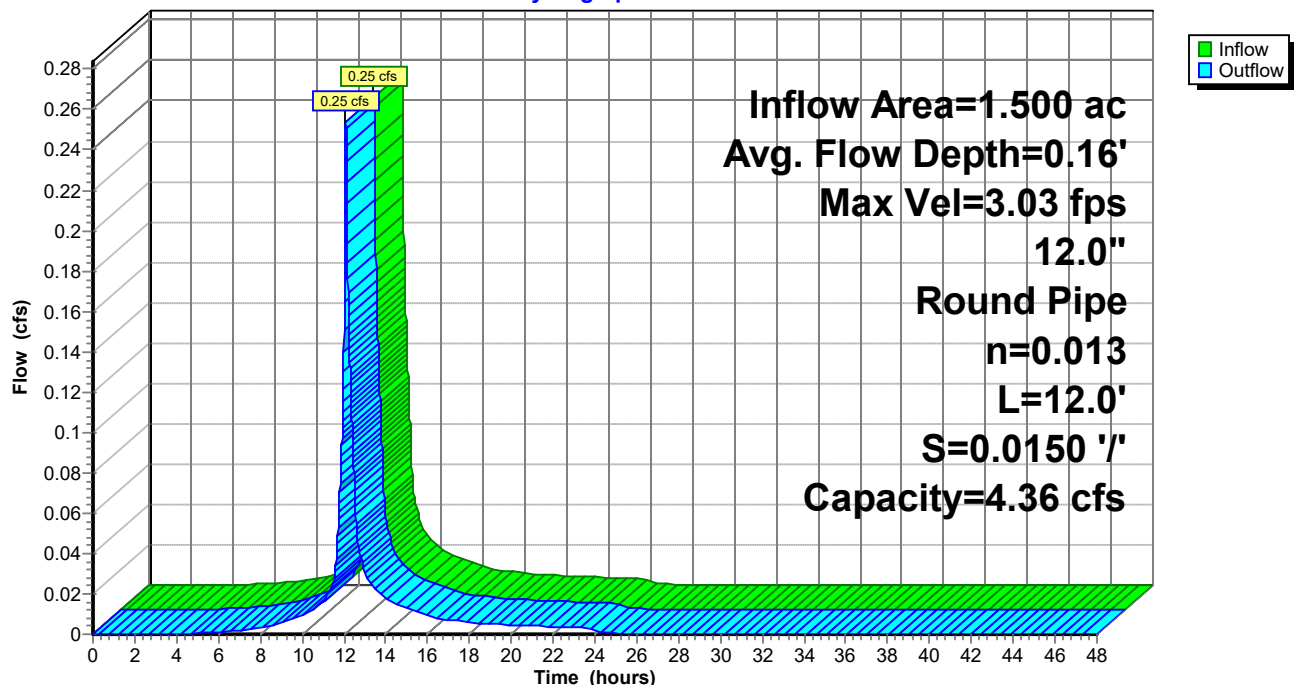
Length= 12.0' Slope= 0.0150 '/'

Inlet Invert= 113.40', Outlet Invert= 113.22'



Reach 35R: 12" SD

Hydrograph



Post-Development

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Summary for Reach 40R: New CB 1 to DMH 2

Inflow Area = 3.221 ac, 64.50% Impervious, Inflow Depth = 0.03" for Focal Point event
Inflow = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.11 cfs @ 12.12 hrs, Volume= 0.009 af, Atten= 8%, Lag= 2.1 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.09 fps, Min. Travel Time= 3.3 min

Avg. Velocity = 0.73 fps, Avg. Travel Time= 9.4 min

Peak Storage= 21 cf @ 12.12 hrs

Average Depth at Peak Storage= 0.11', Surface Width= 0.70'

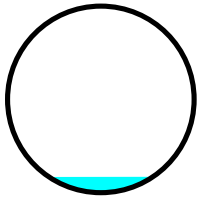
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

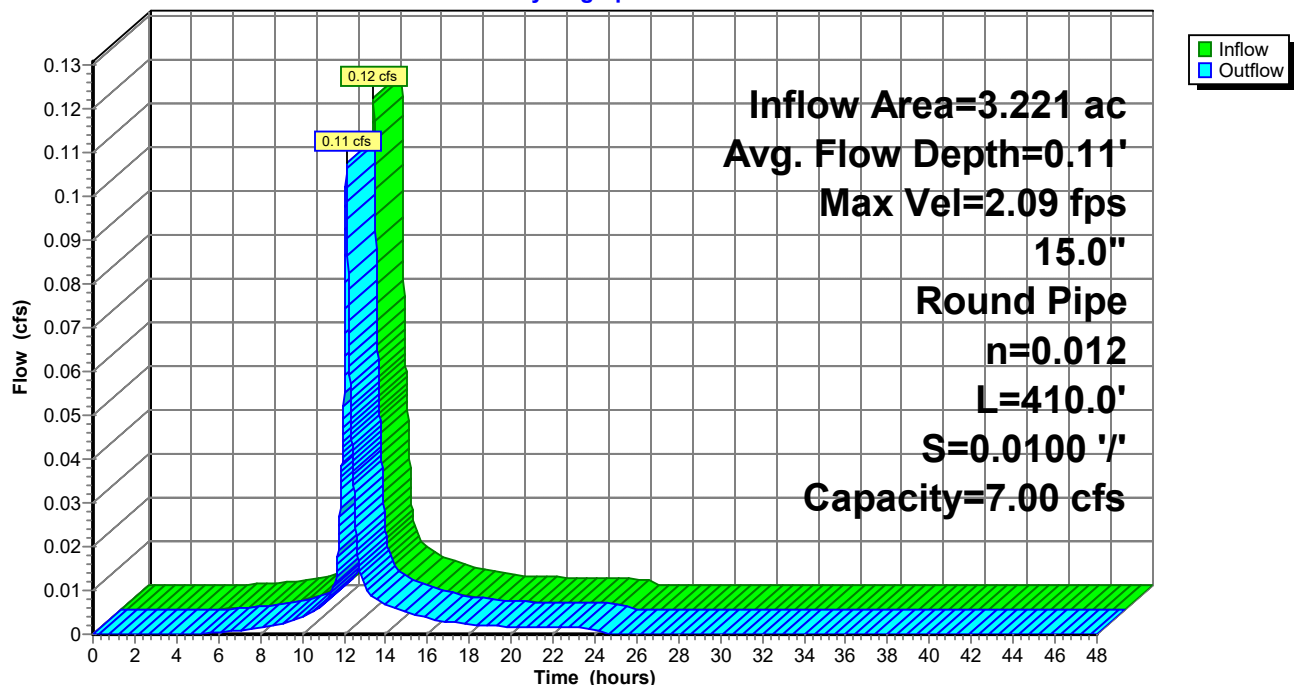
Length= 410.0' Slope= 0.0100 '/'

Inlet Invert= 111.96', Outlet Invert= 107.86'



Reach 40R: New CB 1 to DMH 2

Hydrograph



Post-Development

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Summary for Reach 41R: DMH 2 to DMH 3

Inflow Area = 4.980 ac, 57.39% Impervious, Inflow Depth = 0.03" for Focal Point event
Inflow = 0.12 cfs @ 12.12 hrs, Volume= 0.012 af
Outflow = 0.12 cfs @ 12.13 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.06 fps, Min. Travel Time= 0.6 min

Avg. Velocity= 0.80 fps, Avg. Travel Time= 1.7 min

Peak Storage= 5 cf @ 12.13 hrs

Average Depth at Peak Storage= 0.11', Surface Width= 0.78'

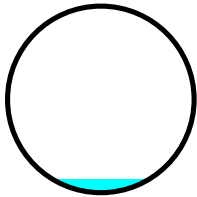
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.02 cfs

18.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

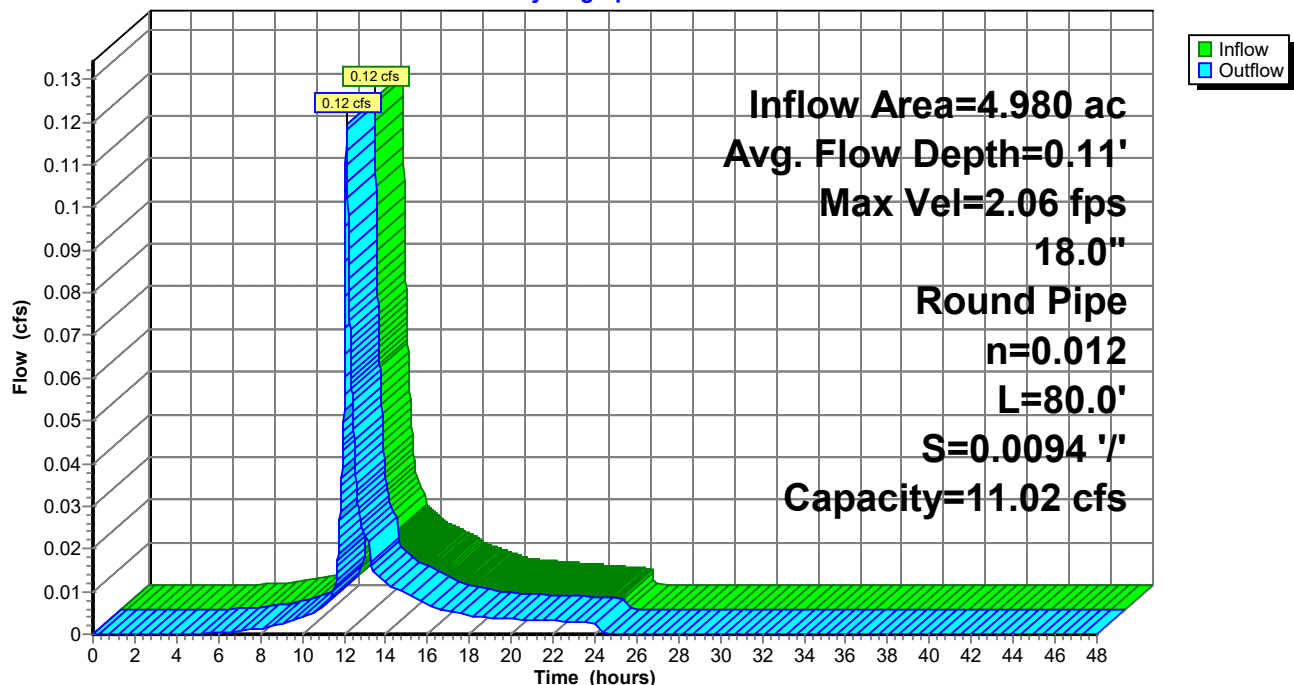
Length= 80.0' Slope= 0.0094 '/

Inlet Invert= 107.97', Outlet Invert= 107.22'



Reach 41R: DMH 2 to DMH 3

Hydrograph



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Summary for Reach 42R: DMH 3 to DMH 7

Inflow Area = 5.346 ac, 58.49% Impervious, Inflow Depth = 0.03" for Focal Point event
Inflow = 0.13 cfs @ 12.13 hrs, Volume= 0.015 af
Outflow = 0.12 cfs @ 12.17 hrs, Volume= 0.015 af, Atten= 6%, Lag= 2.4 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.04 fps, Min. Travel Time= 3.1 min

Avg. Velocity = 0.84 fps, Avg. Travel Time= 7.6 min

Peak Storage= 22 cf @ 12.17 hrs

Average Depth at Peak Storage= 0.11', Surface Width= 0.78'

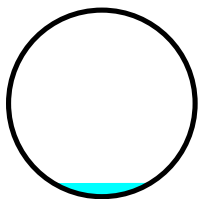
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.86 cfs

18.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

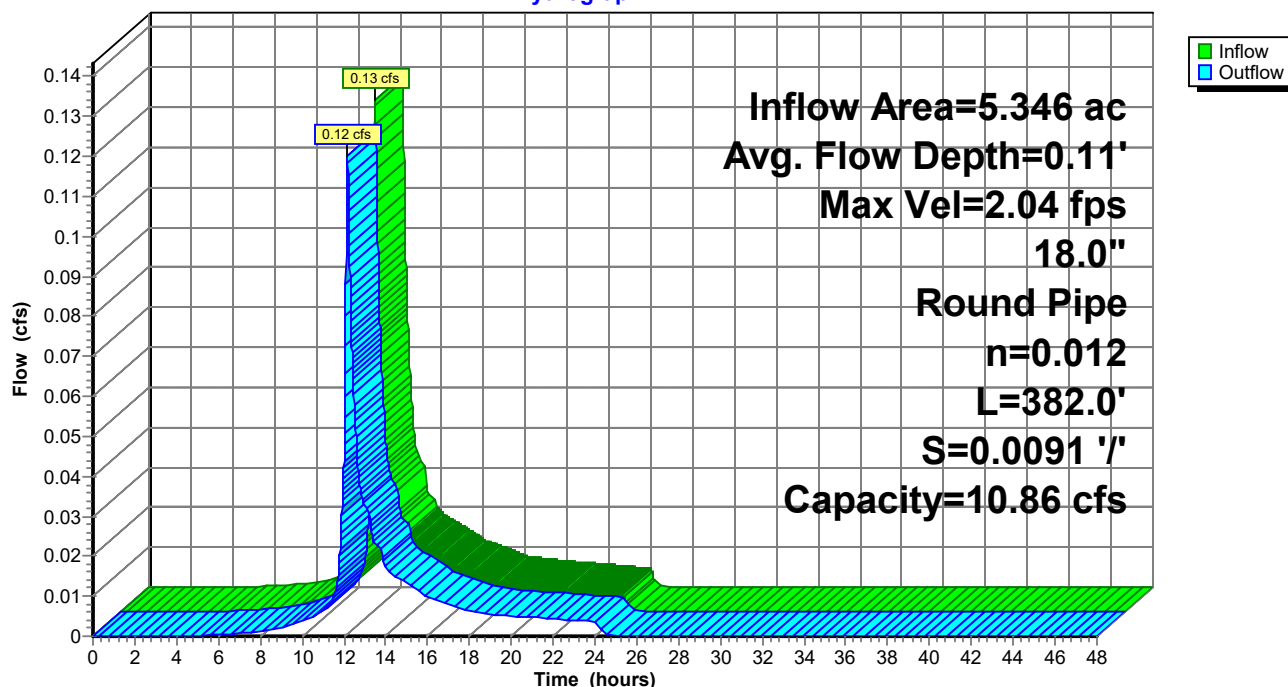
Length= 382.0' Slope= 0.0091 '/'

Inlet Invert= 107.12', Outlet Invert= 103.64'



Reach 42R: DMH 3 to DMH 7

Hydrograph



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Summary for Reach 44R: DMH 7 to Wetland

Inflow Area = 7.754 ac, 58.01% Impervious, Inflow Depth > 0.09" for Focal Point event
Inflow = 0.16 cfs @ 12.17 hrs, Volume= 0.057 af
Outflow = 0.16 cfs @ 12.17 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 2.22 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 0.97 fps, Avg. Travel Time= 0.5 min

Peak Storage= 2 cf @ 12.17 hrs

Average Depth at Peak Storage= 0.12', Surface Width= 0.94'

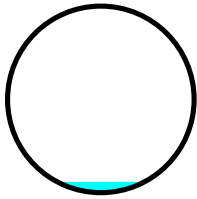
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 24.51 cfs

24.0" Round Pipe

n= 0.012 Corrugated PP, smooth interior

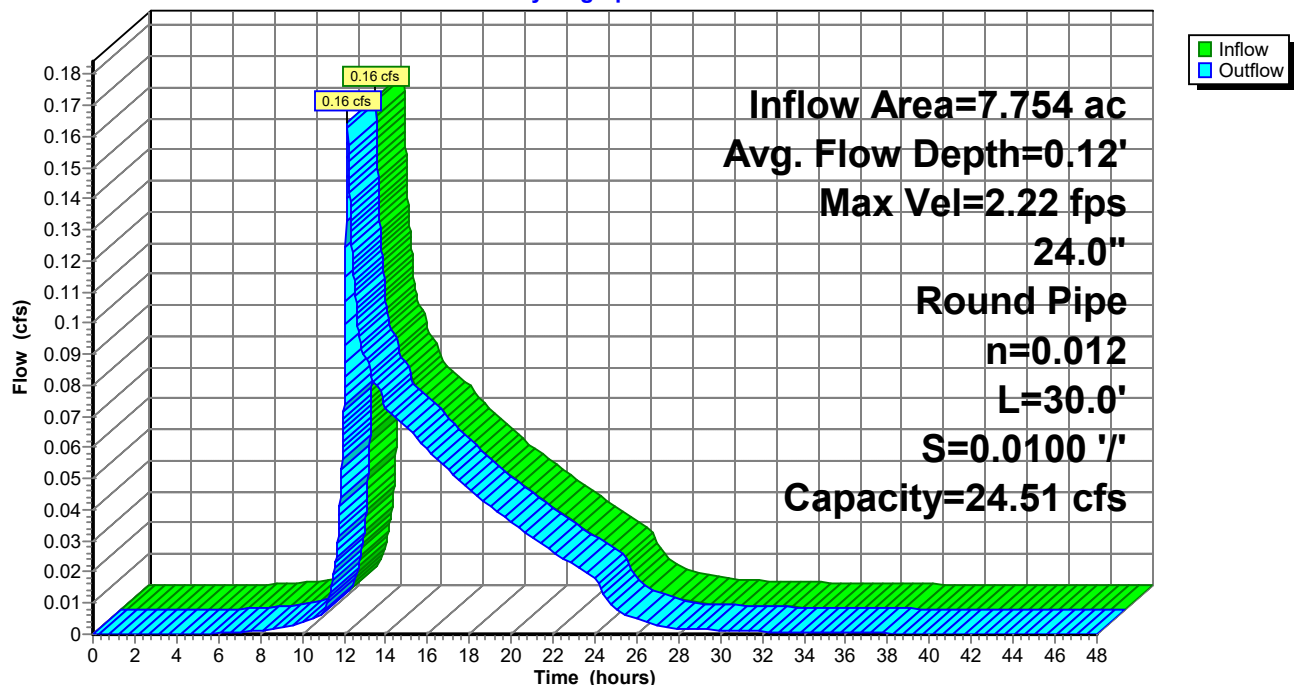
Length= 30.0' Slope= 0.0100 '/'

Inlet Invert= 103.58', Outlet Invert= 103.28'



Reach 44R: DMH 7 to Wetland

Hydrograph



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Summary for Pond 3P: FP1 TANKS

Inflow Area = 0.812 ac, 23.11% Impervious, Inflow Depth = 0.00" for Focal Point event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 108.21' @ 0.00 hrs Surf.Area= 798 sf Storage= 0 cf

Flood Elev= 111.84' Surf.Area= 798 sf Storage= 2,017 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	109.90'	4 cf	ACF R-Tank HD 1 Inside #3 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 4 cf Overall x 95.0% Voids
#2	108.46'	1,568 cf	ACF R-Tank HD 2 x 200 Inside #3 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 200 Chambers in 10 Rows 1,737 cf Overall x 95.0% Voids
#3	108.21'	445 cf	27.50"W x 29.00"L x 3.58'H Prismatoid 2,855 cf Overall - 1,742 cf Embedded = 1,113 cf x 40.0% Voids
		2,017 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Device 3	108.46'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads 6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#2	Device 3	111.34'	
#3	Primary	108.46'	
			12.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.46' / 108.41' S= 0.0050 ' S Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=108.21' (Free Discharge)

3=Culvert (Controls 0.00 cfs)

1=Orifice/Grate (Controls 0.00 cfs)

2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Post-Development

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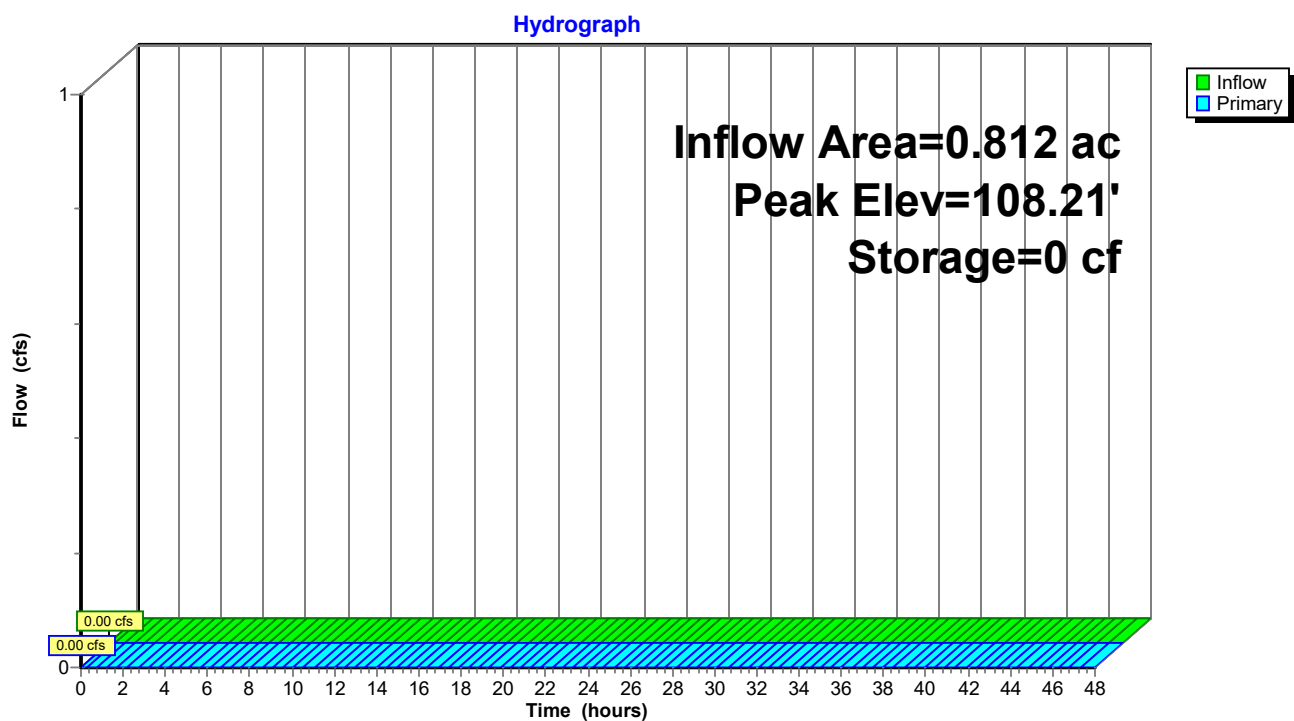
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Pond 3P: FP1 TANKS



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Summary for Pond 4P: FP2 TANKS

Inflow Area = 0.514 ac, 21.94% Impervious, Inflow Depth = 0.00" for Focal Point event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 108.13' @ 0.00 hrs Surf.Area= 840 sf Storage= 0 cf

Flood Elev= 111.76' Surf.Area= 840 sf Storage= 1,208 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	108.38'	24 cf	ACF R-Tank HD 1 x 6 Inside #5 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 27 cf Overall x 95.0% Voids
#2	108.38'	24 cf	ACF R-Tank HD 1 x 6 Inside #5 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 27 cf Overall x 95.0% Voids
#3	108.38'	481 cf	ACF R-Tank HD 1 x 120 Inside #5 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 120 Chambers in 8 Rows 533 cf Overall x 95.0% Voids
#4	108.38'	180 cf	ACF R-Tank HD 1 x 45 Inside #5 Inside= 15.7"W x 17.3"H => 1.80 sf x 2.35'L = 4.2 cf Outside= 15.7"W x 17.3"H => 1.89 sf x 2.35'L = 4.4 cf 45 Chambers in 3 Rows 200 cf Overall x 95.0% Voids
#5	108.13'	498 cf	21.00'W x 40.00'L x 2.42'H Prismatic 2,033 cf Overall - 787 cf Embedded = 1,246 cf x 40.0% Voids
		1,208 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Device 3	108.38'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads 6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#2	Device 3	109.65'	
#3	Primary	108.38'	
			12.0" Round Culvert L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.38' / 108.10' S= 0.0040 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Post-Development

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Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=108.13' (Free Discharge)

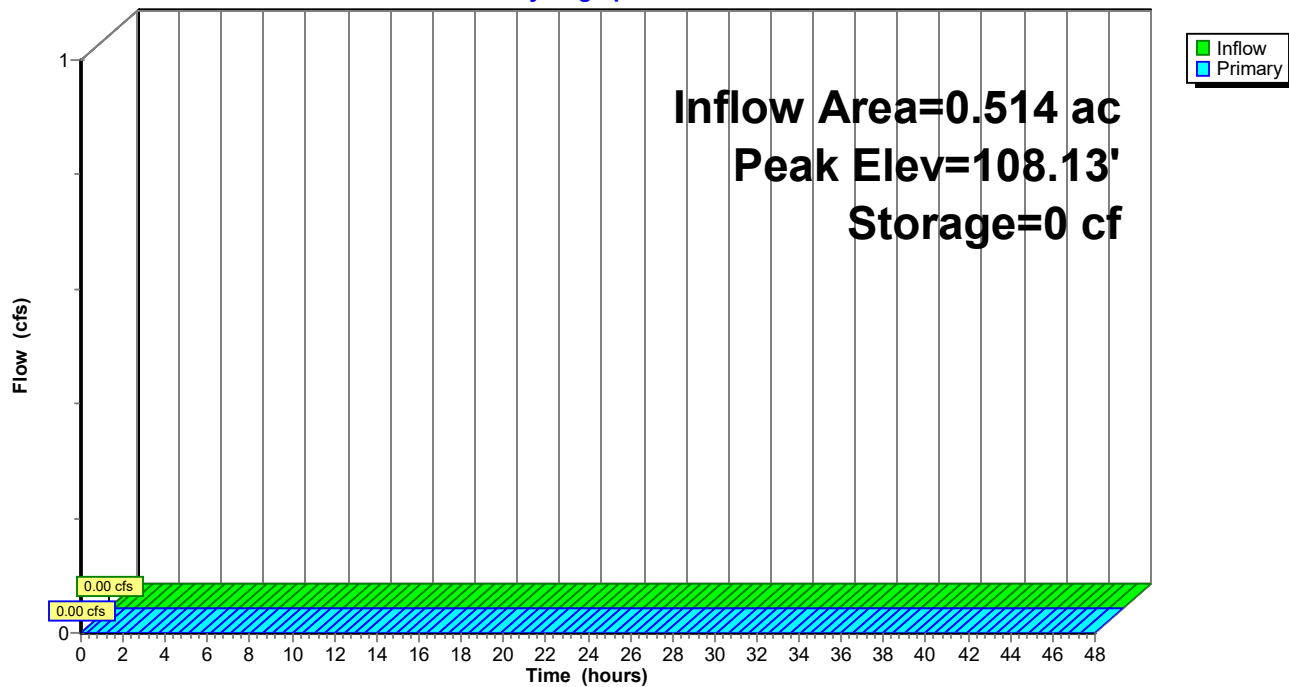
3=Culvert (Controls 0.00 cfs)

1=Orifice/Grate (Controls 0.00 cfs)

2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4P: FP2 TANKS

Hydrograph



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Summary for Pond 9R: New CB 1 to DMH 2

Inflow Area = 3.112 ac, 66.74% Impervious, Inflow Depth = 0.03" for Focal Point event
Inflow = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 112.32' @ 12.08 hrs

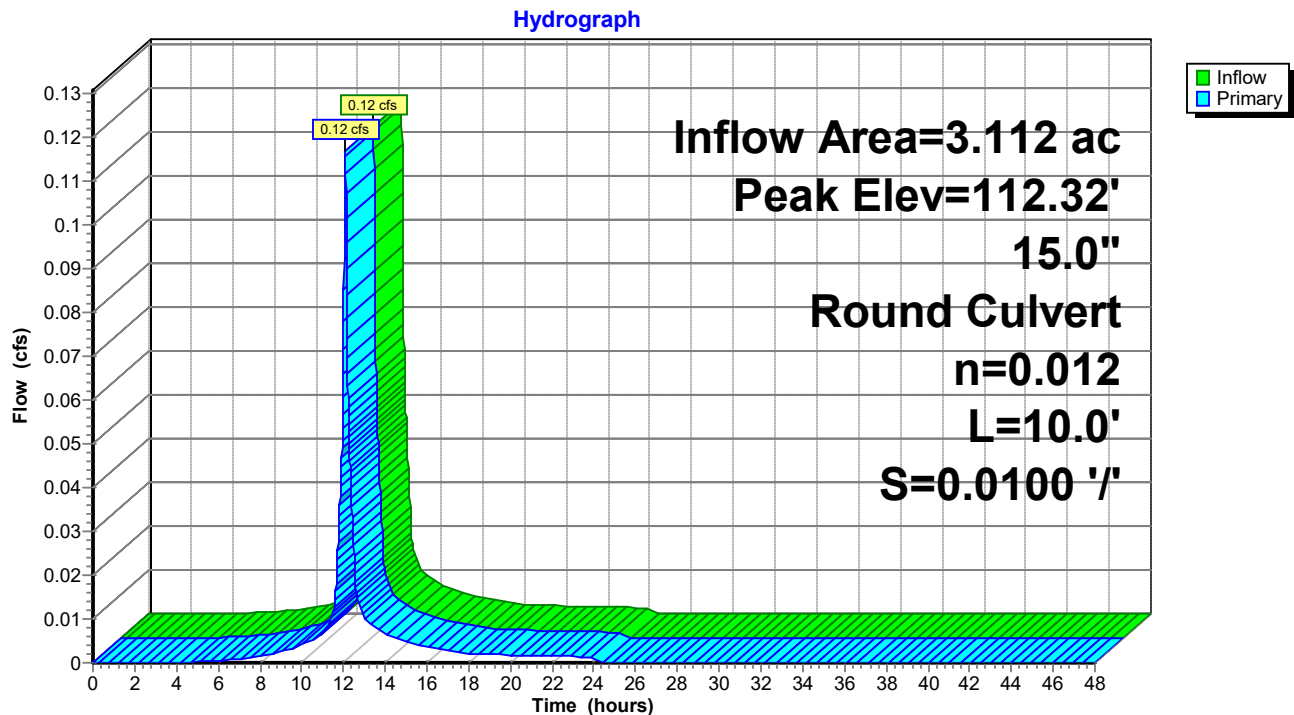
Flood Elev= 117.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	112.15'	15.0" Round Culvert L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 112.15' / 112.05' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.11 cfs @ 12.08 hrs HW=112.32' (Free Discharge)

↑1=Culvert (Barrel Controls 0.11 cfs @ 1.82 fps)

Pond 9R: New CB 1 to DMH 2



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Summary for Pond 30P: Raised StormTech SC-740 System

Inflow Area = 1.500 ac, 36.53% Impervious, Inflow Depth = 0.17" for Focal Point event
 Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.022 af
 Outflow = 0.02 cfs @ 13.29 hrs, Volume= 0.022 af, Atten= 90%, Lag= 71.6 min
 Primary = 0.02 cfs @ 13.29 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 111.64' @ 13.29 hrs Surf.Area= 0.053 ac Storage= 0.009 af

Plug-Flow detention time= 150.9 min calculated for 0.022 af (100% of inflow)
 Center-of-Mass det. time= 150.9 min (954.3 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	111.22'	0.007 af	6.25'W x 46.34'L x 3.50'H Field A 0.023 af Overall - 0.006 af Embedded = 0.017 af x 40.0% Voids
#2A	111.72'	0.006 af	ADS_StormTech SC-740 +Cap x 6 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#3B	111.22'	0.010 af	6.25'W x 67.70'L x 3.50'H Field B 0.034 af Overall - 0.009 af Embedded = 0.025 af x 40.0% Voids
#4B	111.72'	0.009 af	ADS_StormTech SC-740 +Cap x 9 Inside #3 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#5C	111.22'	0.018 af	6.25'W x 124.66'L x 3.50'H Field C 0.063 af Overall - 0.018 af Embedded = 0.045 af x 40.0% Voids
#6C	111.72'	0.018 af	ADS_StormTech SC-740 +Cap x 17 Inside #5 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
#7D	111.22'	0.019 af	6.25'W x 131.78'L x 3.50'H Field D 0.066 af Overall - 0.019 af Embedded = 0.047 af x 40.0% Voids
#8D	111.72'	0.019 af	ADS_StormTech SC-740 +Cap x 18 Inside #7 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		0.106 af	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard
 Storage Group C created with Chamber Wizard
 Storage Group D created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Device 3	110.72'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 3	113.72'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#3	Primary	110.72'	12.0" Round Culvert L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 110.72' / 110.69' S= 0.0100 '/' Cc= 0.900

Post-Development

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$n = 0.013$ Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 13.29 hrs HW=111.64' (Free Discharge)

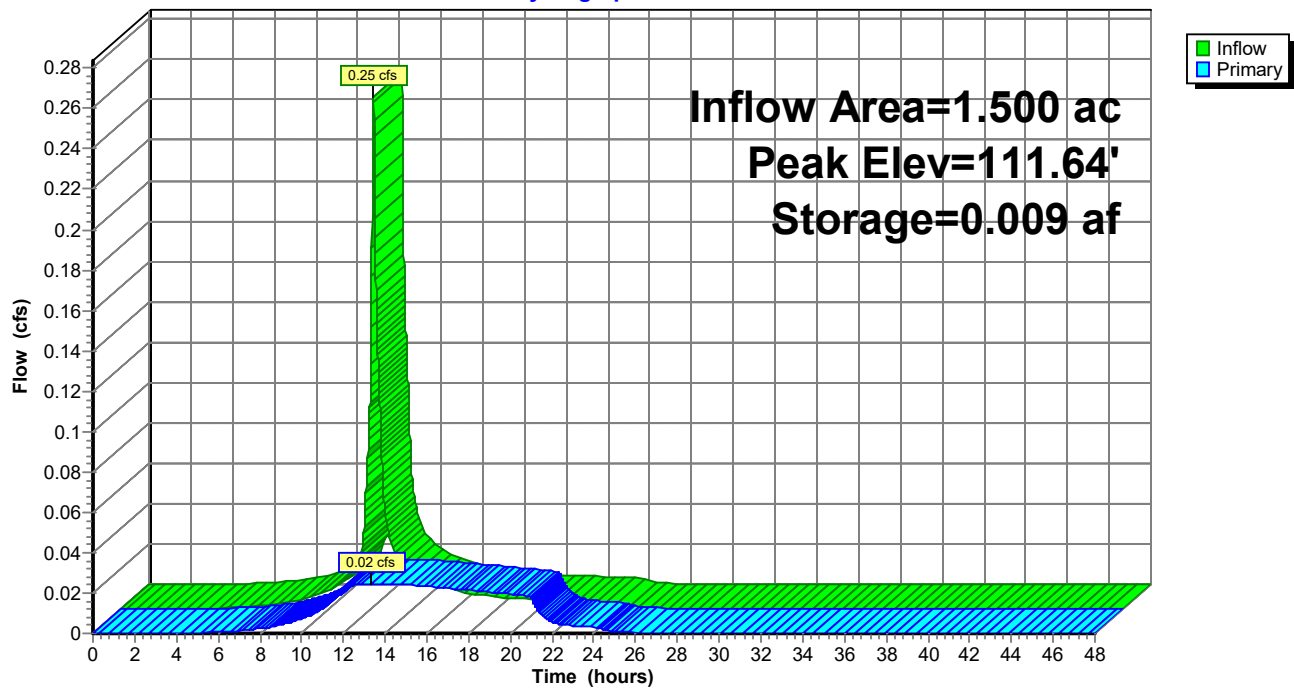
3=Culvert (Passes 0.02 cfs of 1.69 cfs potential flow)

1=Orifice/Grate (Orifice Controls 0.02 cfs @ 4.52 fps)

2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 30P: Raised StormTech SC-740 System

Hydrograph



Post-Development

Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Pond 36P: PP1

Inflow Area = 0.050 ac, 81.59% Impervious, Inflow Depth = 0.20" for Focal Point event
 Inflow = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.69' @ 24.34 hrs Surf.Area= 1,110 sf Storage= 36 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.59'	939 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.59	1,110	0.0	0	0
115.60	1,110	20.0	2	2
116.35	1,110	33.0	275	277
116.68	1,110	40.0	147	423
117.00	1,110	20.0	71	495
119.00	1,110	20.0	444	939

Device	Routing	Invert	Outlet Devices
#1	Primary	115.76'	7.500 in/hr Exfiltration over Surface area above 115.76' Excluded Surface area = 1,110 sf
#2	Primary	115.76'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=115.59' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.00 cfs)
 ↓ **2=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

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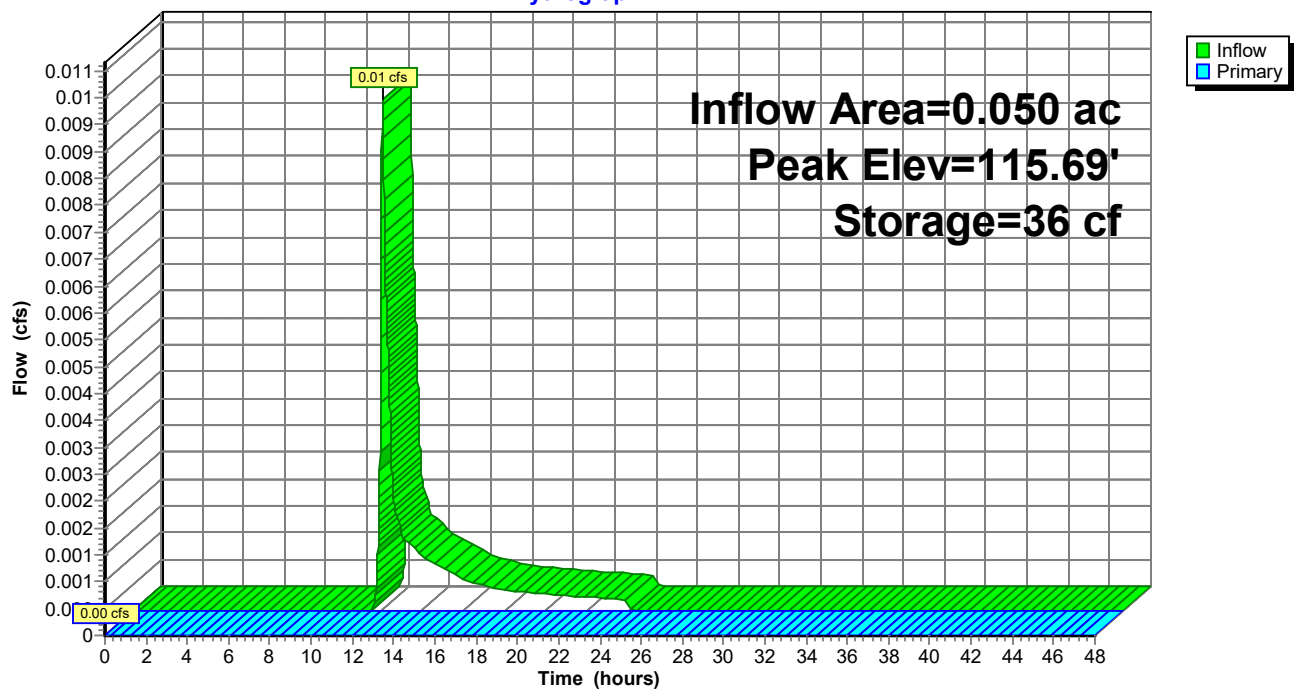
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Pond 36P: PP1

Hydrograph



Post-Development

Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Pond 37P: PP2

Inflow Area = 0.077 ac, 100.00% Impervious, Inflow Depth = 0.74" for Focal Point event
 Inflow = 0.06 cfs @ 12.08 hrs, Volume= 0.005 af
 Outflow = 0.04 cfs @ 12.19 hrs, Volume= 0.005 af, Atten= 39%, Lag= 6.1 min
 Primary = 0.04 cfs @ 12.19 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.71' @ 12.19 hrs Surf.Area= 1,212 sf Storage= 48 cf

Plug-Flow detention time= 61.0 min calculated for 0.005 af (99% of inflow)
 Center-of-Mass det. time= 53.5 min (843.1 - 789.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.59'	1,025 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.59	1,212	0.0	0	0
115.60	1,212	20.0	2	2
116.35	1,212	33.0	300	302
116.68	1,212	40.0	160	462
117.00	1,212	20.0	78	540
119.00	1,212	20.0	485	1,025

Device	Routing	Invert	Outlet Devices
#1	Primary	115.76'	7.500 in/hr Exfiltration over Surface area above 115.76' Excluded Surface area = 1,212 sf
#2	Primary	115.60'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 12.19 hrs HW=115.71' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.00 cfs)

└ **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.15 fps)

Post-Development

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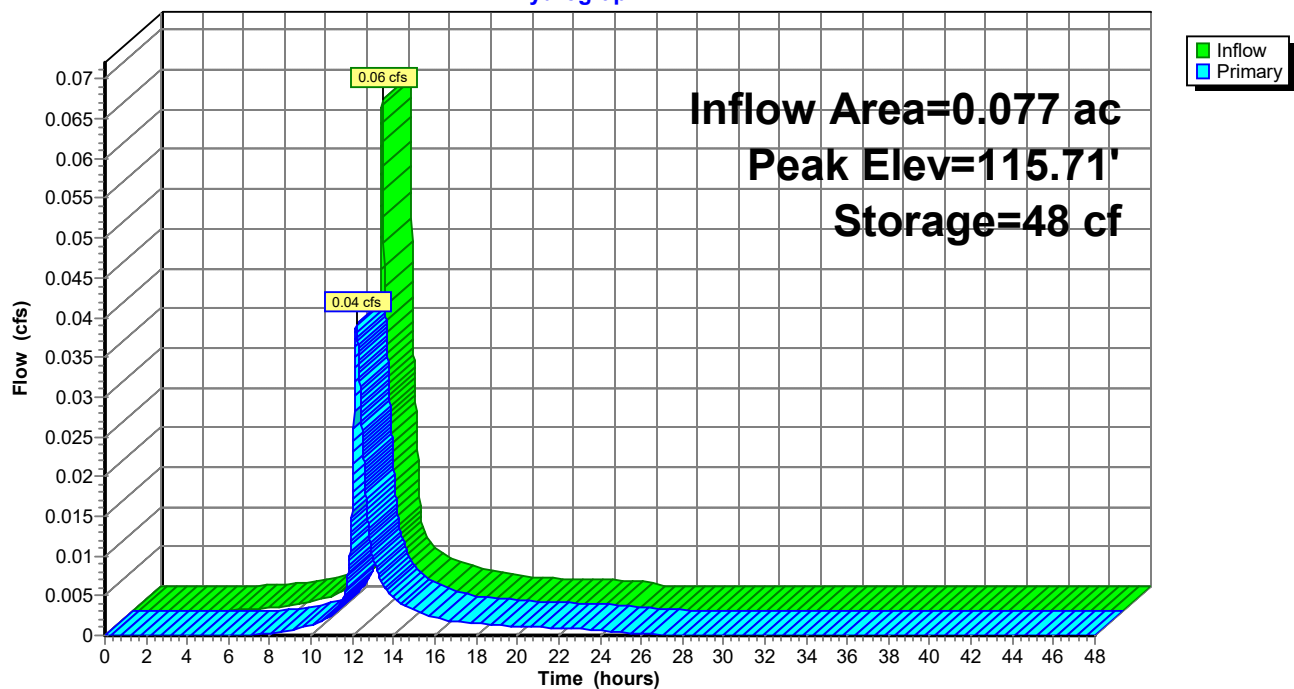
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Pond 37P: PP2

Hydrograph



Post-Development

Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Pond 38P: Rain Garden West

Inflow Area = 0.503 ac, 7.99% Impervious, Inflow Depth = 0.00" for Focal Point event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 120.00' @ 0.00 hrs Surf.Area= 453 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	120.00'	729 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.00	453	0	0
121.00	1,005	729	729

Device	Routing	Invert	Outlet Devices
#1	Device 2	120.25'	8.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	117.25'	8.0" Round Culvert L= 187.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 117.25' / 115.25' S= 0.0107 ' / ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.00' (Free Discharge)↑ **2=Culvert** (Passes 0.00 cfs of 1.65 cfs potential flow)↑ **1=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

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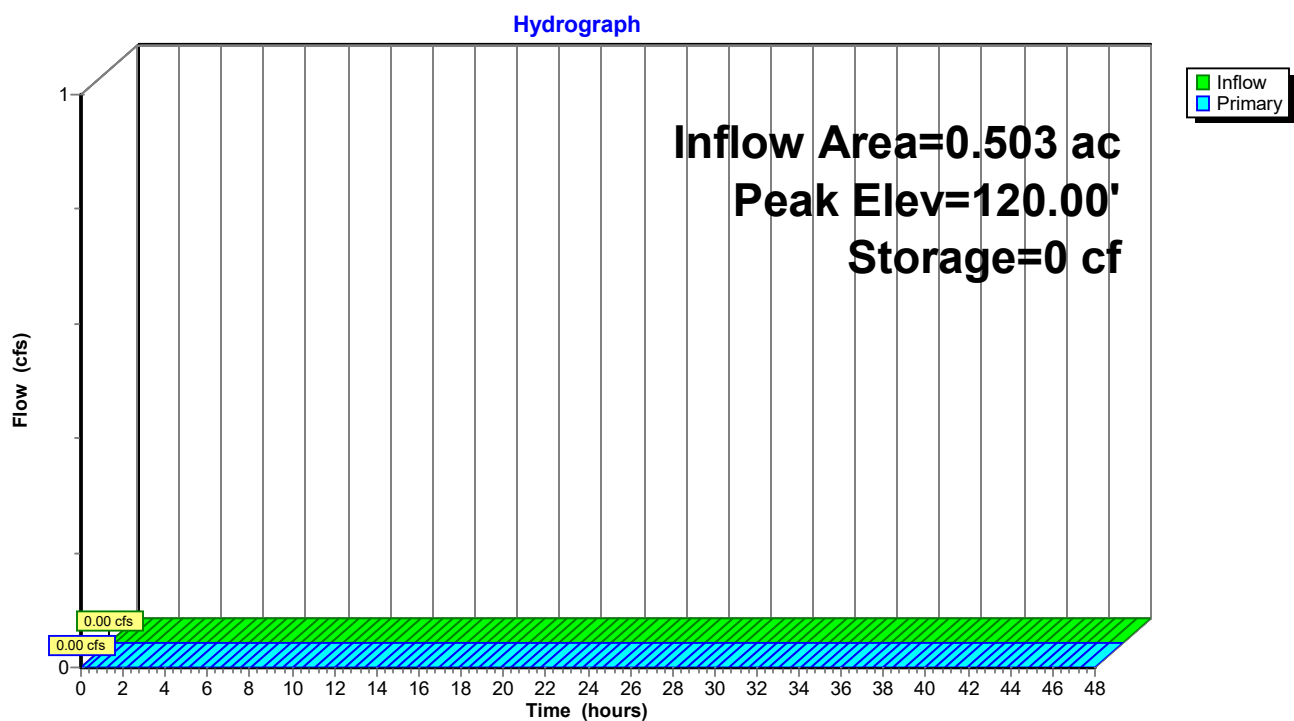
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Type III 24-hr Focal Point Rainfall=0.95"

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Pond 38P: Rain Garden West



Post-Development

Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Pond DS-2: Drip Strip

Inflow Area = 0.220 ac, 79.17% Impervious, Inflow Depth = 0.41" for Focal Point event
 Inflow = 0.11 cfs @ 12.09 hrs, Volume= 0.008 af
 Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.008 af, Atten= 6%, Lag= 1.8 min
 Discarded = 0.10 cfs @ 12.12 hrs, Volume= 0.008 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.02' @ 12.12 hrs Surf.Area= 1,600 sf Storage= 11 cf

Plug-Flow detention time= 1.9 min calculated for 0.008 af (100% of inflow)
 Center-of-Mass det. time= 1.9 min (845.4 - 843.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 12.12 hrs HW=115.02' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=115.00' (Free Discharge)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

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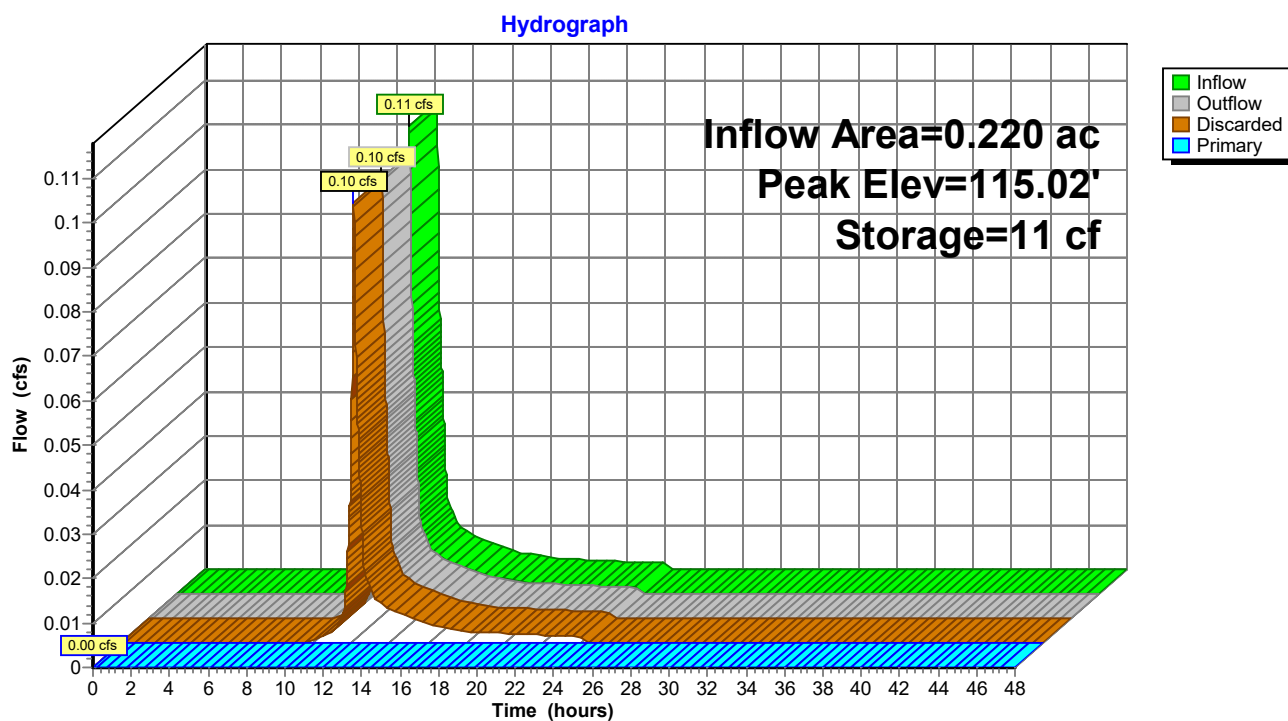
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Pond DS-2: Drip Strip



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Summary for Pond DS-3: Drip Strip

Inflow Area = 0.399 ac, 76.31% Impervious, Inflow Depth = 0.41" for Focal Point event
 Inflow = 0.19 cfs @ 12.09 hrs, Volume= 0.014 af
 Outflow = 0.18 cfs @ 12.12 hrs, Volume= 0.014 af, Atten= 6%, Lag= 1.8 min
 Discarded = 0.18 cfs @ 12.12 hrs, Volume= 0.014 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.03' @ 12.12 hrs Surf.Area= 1,600 sf Storage= 21 cf

Plug-Flow detention time= 1.9 min calculated for 0.014 af (100% of inflow)
 Center-of-Mass det. time= 1.9 min (845.4 - 843.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 12.12 hrs HW=115.03' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=115.00' (Free Discharge)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

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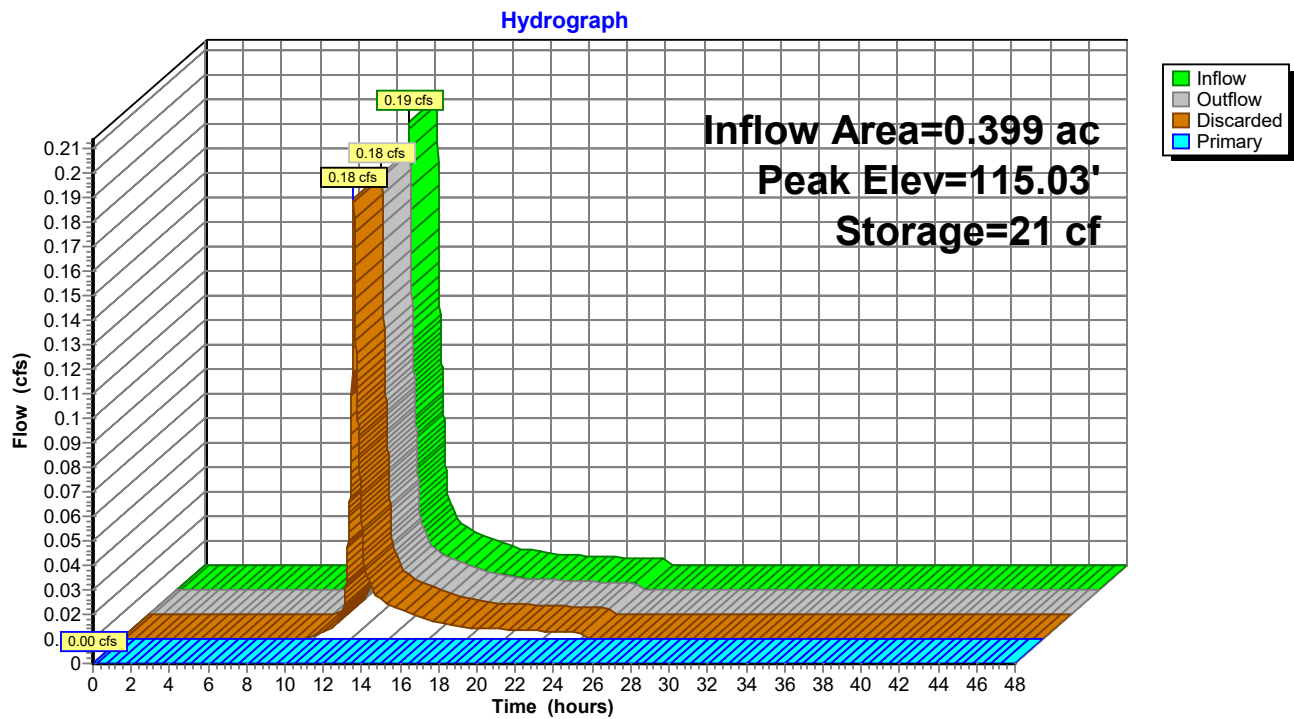
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Pond DS-3: Drip Strip



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Summary for Pond DS1: Drip Strip

Inflow Area = 0.220 ac, 79.17% Impervious, Inflow Depth = 0.41" for Focal Point event
 Inflow = 0.11 cfs @ 12.09 hrs, Volume= 0.008 af
 Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.008 af, Atten= 6%, Lag= 1.8 min
 Discarded = 0.10 cfs @ 12.12 hrs, Volume= 0.008 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 115.02' @ 12.12 hrs Surf.Area= 1,600 sf Storage= 11 cf

Plug-Flow detention time= 1.9 min calculated for 0.008 af (100% of inflow)
 Center-of-Mass det. time= 1.9 min (845.4 - 843.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	115.00'	3,040 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,600	0.0	0	0
116.00	1,600	40.0	640	640
117.00	1,600	30.0	480	1,120
118.00	1,600	40.0	640	1,760
119.00	1,600	40.0	640	2,400
120.00	1,600	40.0	640	3,040

Device	Routing	Invert	Outlet Devices	
#1	Discarded	115.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	116.00'	6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 12.12 hrs HW=115.02' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=115.00' (Free Discharge)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

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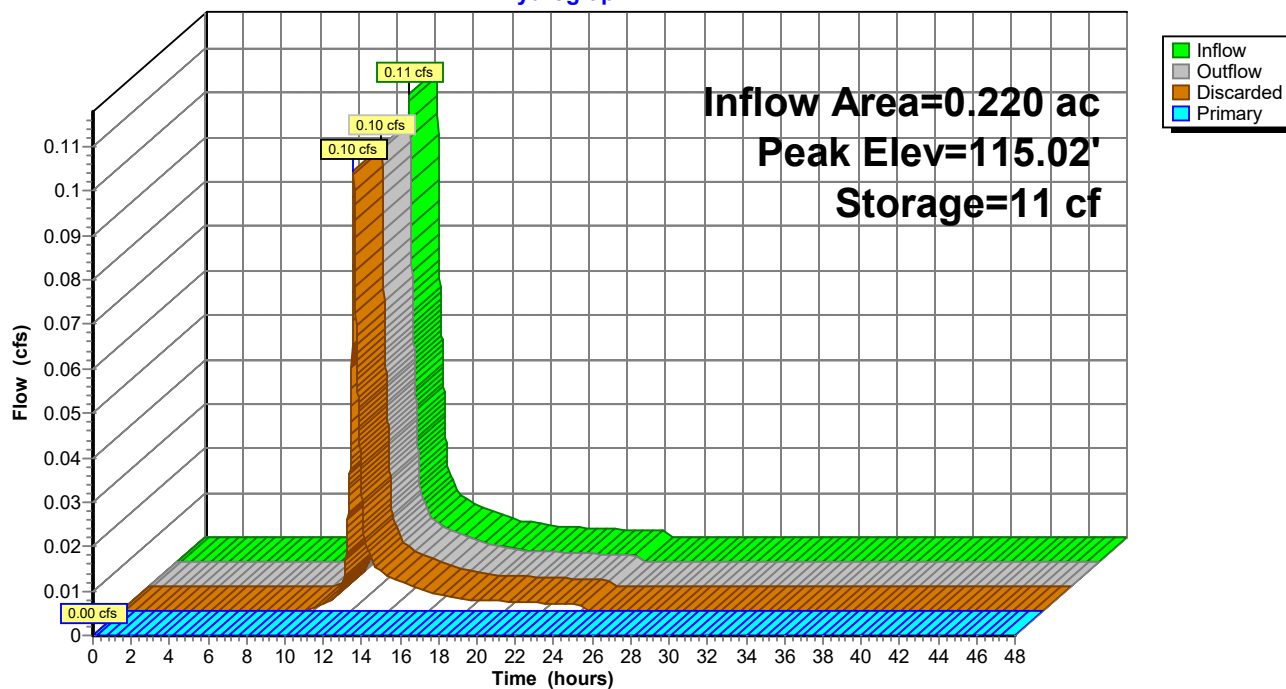
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Pond DS1: Drip Strip

Hydrograph



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Summary for Pond FP1: FP1 Filter

Inflow Area = 0.812 ac, 23.11% Impervious, Inflow Depth = 0.00" for Focal Point event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 111.84' @ 0.00 hrs Surf.Area= 75 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	111.84'	133 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.84	75	0.0	0	0
113.34	75	40.0	45	45
114.34	100	100.0	88	133

Device	Routing	Invert	Outlet Devices
#1	Primary	111.84'	100.000 in/hr Exfiltration over Surface area
#2	Secondary	113.84'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=111.84' (Free Discharge)

↑ **1=Exfiltration** (Passes 0.00 cfs of 0.17 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=111.84' (Free Discharge)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

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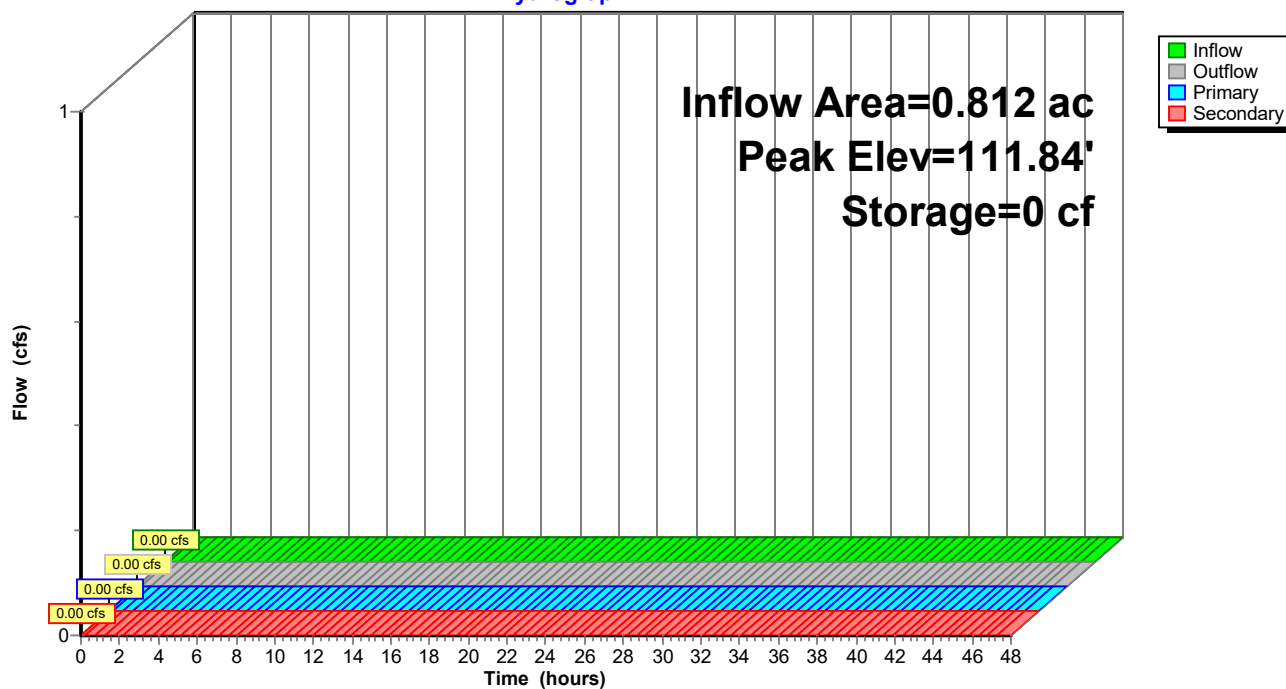
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Pond FP1: FP1 Filter

Hydrograph



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Summary for Pond FP2: FP2 Filter

Inflow Area = 0.514 ac, 21.94% Impervious, Inflow Depth = 0.00" for Focal Point event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 110.56' @ 0.00 hrs Surf.Area= 75 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	110.56'	133 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
110.56	75	0.0	0	0
112.06	75	40.0	45	45
113.06	100	100.0	88	133

Device	Routing	Invert	Outlet Devices
#1	Primary	110.56'	100.000 in/hr Exfiltration over Surface area
#2	Secondary	112.55'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=110.56' (Free Discharge)↑ **1=Exfiltration** (Passes 0.00 cfs of 0.17 cfs potential flow)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=110.56' (Free Discharge)↑ **2=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

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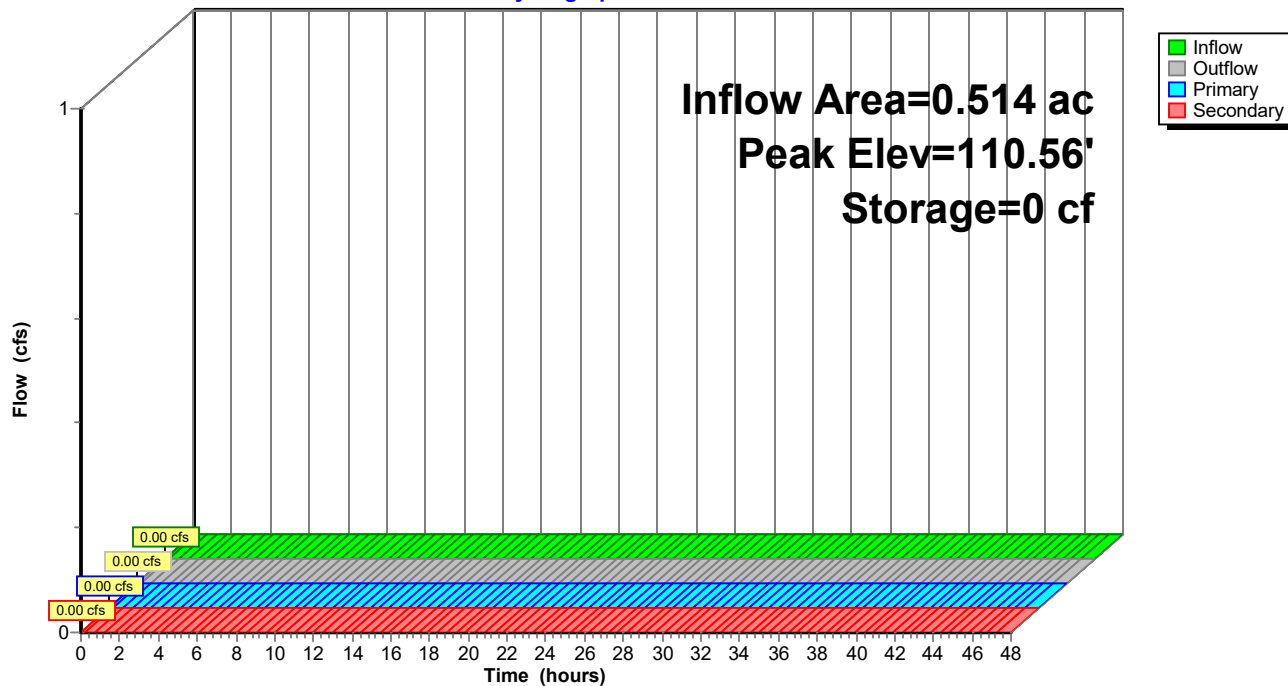
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Pond FP2: FP2 Filter

Hydrograph



Post-Development

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Summary for Pond IT-1: Infiltration Trench

Inflow Area = 1.157 ac, 72.26% Impervious, Inflow Depth = 0.10" for Focal Point event
 Inflow = 0.11 cfs @ 12.11 hrs, Volume= 0.010 af
 Outflow = 0.10 cfs @ 12.13 hrs, Volume= 0.010 af, Atten= 4%, Lag= 1.5 min
 Discarded = 0.10 cfs @ 12.13 hrs, Volume= 0.010 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 112.02' @ 12.13 hrs Surf.Area= 1,600 sf Storage= 9 cf

Plug-Flow detention time= 1.4 min calculated for 0.010 af (100% of inflow)
 Center-of-Mass det. time= 1.4 min (894.0 - 892.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	112.00'	2,880 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.00	1,600	0.0	0	0
113.00	1,600	30.0	480	480
114.00	1,600	30.0	480	960
115.00	1,600	40.0	640	1,600
116.00	1,600	40.0	640	2,240
117.00	1,600	40.0	640	2,880

Device	Routing	Invert	Outlet Devices	
#1	Discarded	112.00'	7.500 in/hr Exfiltration over Surface area	
#2	Primary	113.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads	

Discarded OutFlow Max=0.28 cfs @ 12.13 hrs HW=112.02' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=112.00' (Free Discharge)
 ↑ **2=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

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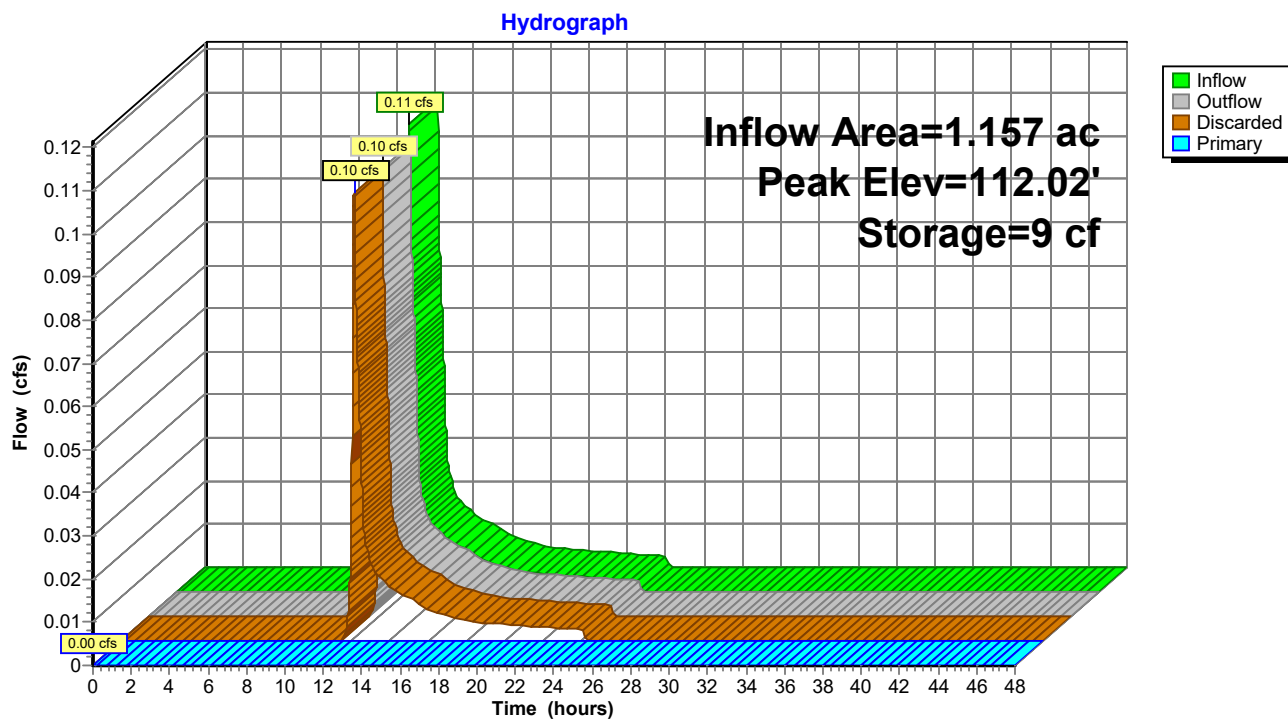
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Pond IT-1: Infiltration Trench



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Type III 24-hr Focal Point Rainfall=0.95"

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Summary for Pond PP1: Porous Pavement 1

Inflow Area = 0.440 ac, 72.24% Impervious, Inflow Depth = 0.10" for Focal Point event
Inflow = 0.02 cfs @ 12.15 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.54 hrs, Volume= 0.004 af, Atten= 43%, Lag= 23.2 min
Primary = 0.01 cfs @ 12.54 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 112.90' @ 12.54 hrs Surf.Area= 6,156 sf Storage= 11 cf
Flood Elev= 114.67' Surf.Area= 6,156 sf Storage= 4,358 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.9 min (939.1 - 936.3)

Volume	Invert	Avail.Storage	Storage Description
#1	111.22'	4,358 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.22	6,156	0.0	0	0
112.90	6,156	0.0	0	0
114.67	6,156	40.0	4,358	4,358
115.25	6,156	0.0	0	4,358

Device	Routing	Invert	Outlet Devices
#1	Primary	111.23'	8.0" Round Culvert L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.23' / 110.88' S= 0.0100 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	111.23'	0.6" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	113.45'	0.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	113.95'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.01 cfs @ 12.54 hrs HW=112.90' (Free Discharge)

1=Culvert (Passes 0.01 cfs of 1.85 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.01 cfs @ 6.18 fps)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Post-Development

Prepared by Gorrill Palmer

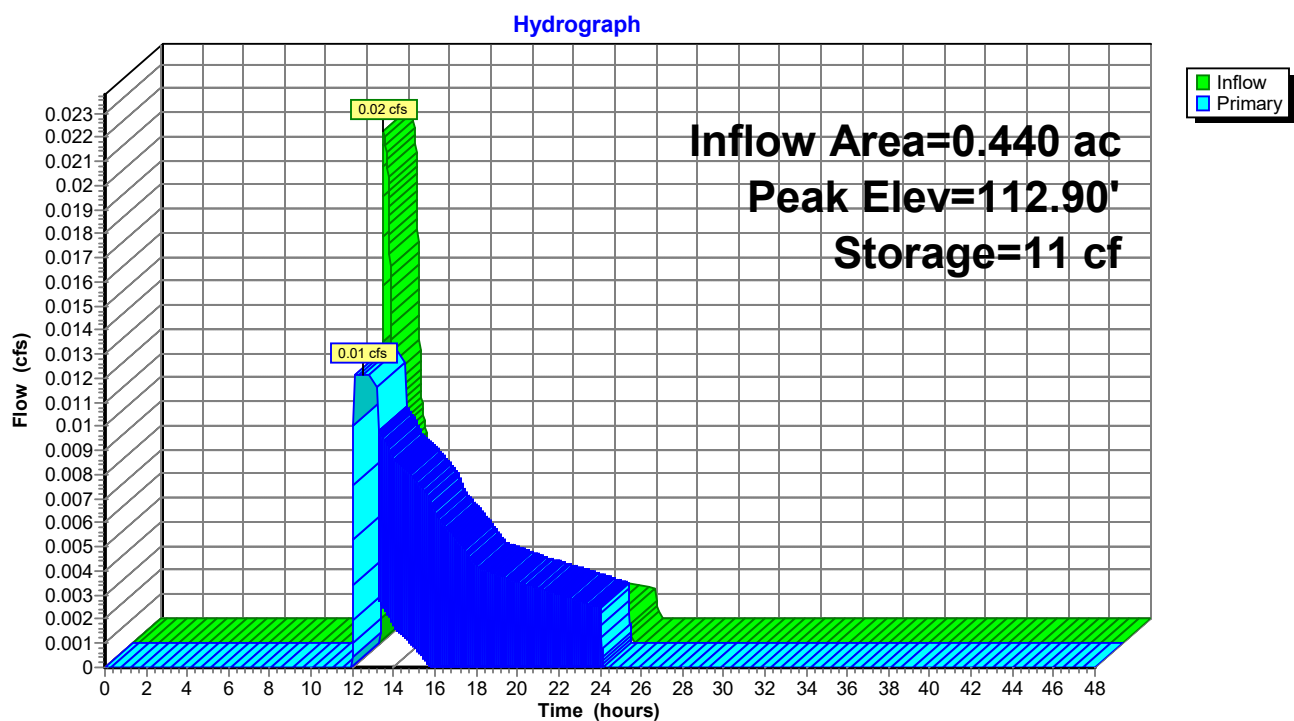
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Pond PP1: Porous Pavement 1



Post-Development

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Summary for Pond PP2: Porous Pavement 2

Inflow Area = 0.366 ac, 73.59% Impervious, Inflow Depth = 0.10" for Focal Point event
Inflow = 0.02 cfs @ 12.15 hrs, Volume= 0.003 af
Outflow = 0.01 cfs @ 12.58 hrs, Volume= 0.003 af, Atten= 52%, Lag= 25.9 min
Primary = 0.01 cfs @ 12.58 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 112.78' @ 12.58 hrs Surf.Area= 5,346 sf Storage= 12 cf
Flood Elev= 114.27' Surf.Area= 5,346 sf Storage= 2,138 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.6 min (941.9 - 936.3)

Volume	Invert	Avail.Storage	Storage Description
#1	111.10'	2,138 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.10	5,346	0.0	0	0
112.77	5,346	0.0	0	0
113.77	5,346	40.0	2,138	2,138
114.35	5,346	0.0	0	2,138

Device	Routing	Invert	Outlet Devices
#1	Primary	111.10'	8.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.10' / 110.70' S= 0.0160 ' S= 0.0160 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	111.10'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	113.29'	0.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	113.79'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.01 cfs @ 12.58 hrs HW=112.78' (Free Discharge)

1=Culvert (Passes 0.01 cfs of 1.95 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.01 cfs @ 6.19 fps)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Post-Development

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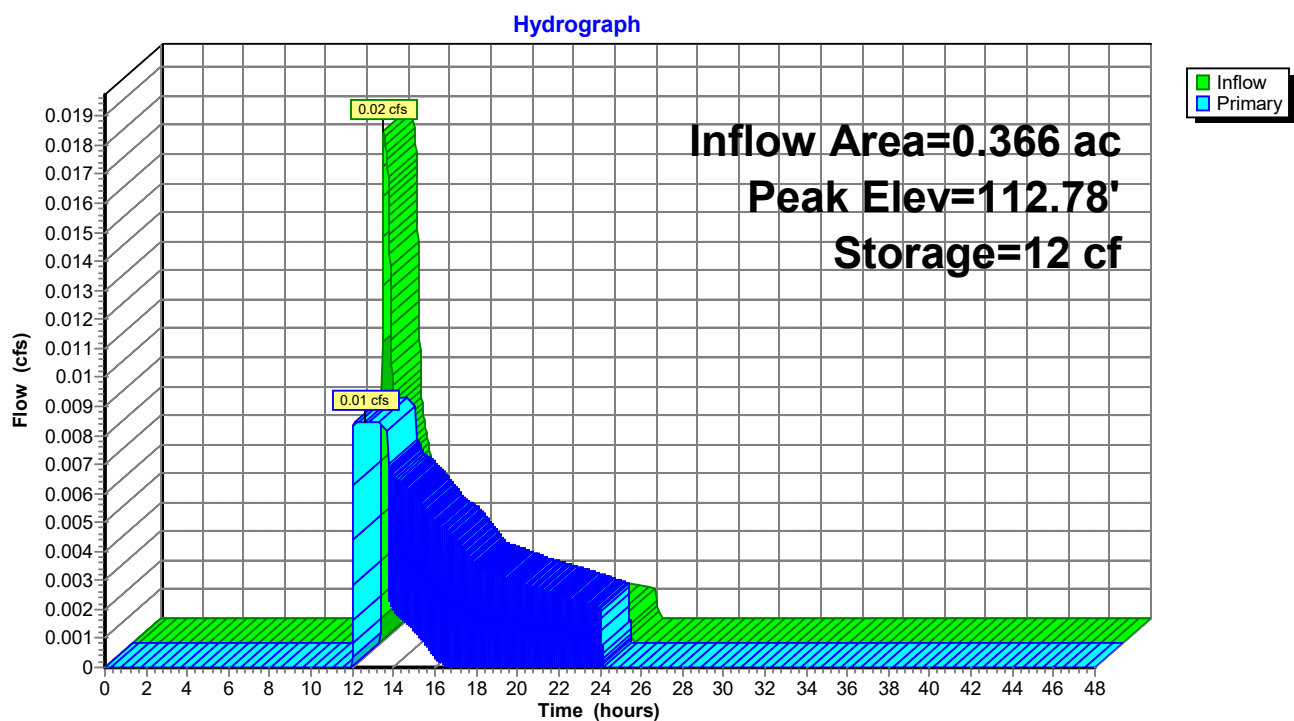
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Pond PP2: Porous Pavement 2



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Summary for Pond PP3: Porous Pavement 3

Inflow Area = 0.432 ac, 64.46% Impervious, Inflow Depth = 0.04" for Focal Point event
 Inflow = 0.00 cfs @ 12.48 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 12.48 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 12.48 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 110.34' @ 12.48 hrs Surf.Area= 3,744 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: no plugs found)
 Center-of-Mass det. time= 0.0 min (1,012.1 - 1,012.1)

Volume	Invert	Avail.Storage	Storage Description
#1	110.13'	3,025 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
110.13	3,744	0.0	0	0
111.10	3,744	0.0	0	0
111.80	3,744	0.0	0	0
113.82	3,744	40.0	3,025	3,025
114.40	3,744	0.0	0	3,025

Device	Routing	Invert	Outlet Devices
#1	Primary	110.13'	8.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.13' / 109.73' S= 0.0100 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	110.13'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	112.65'	0.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	113.15'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.00 cfs @ 12.48 hrs HW=110.34' (Free Discharge)

1=Culvert (Passes 0.00 cfs of 0.15 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.00 cfs @ 2.11 fps)
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Post-Development

Prepared by Gorrill Palmer

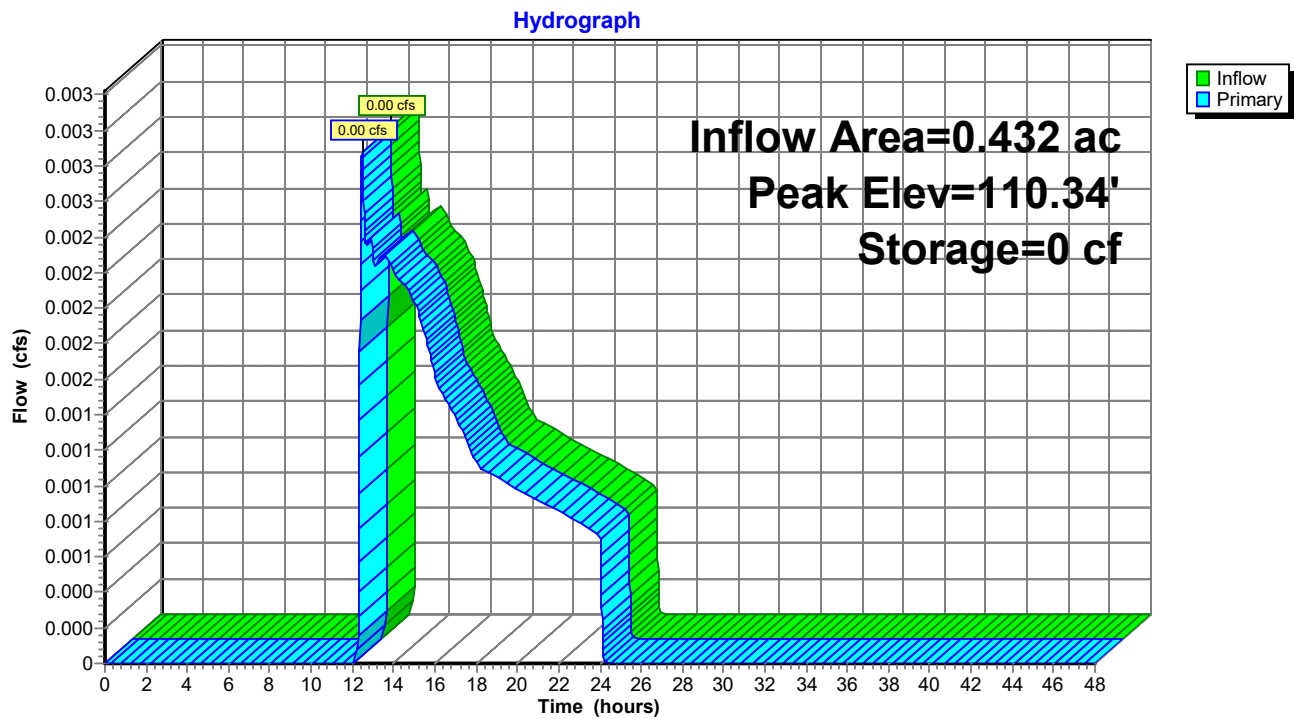
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Pond PP3: Porous Pavement 3



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Summary for Pond PP4: Porous Pavement 4

Inflow Area = 0.227 ac, 63.12% Impervious, Inflow Depth = 0.03" for Focal Point event
Inflow = 0.00 cfs @ 13.74 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 13.74 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 13.74 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 110.19' @ 13.74 hrs Surf.Area= 1,620 sf Storage= 0 cf
Flood Elev= 113.60' Surf.Area= 1,620 sf Storage= 1,166 cf

Plug-Flow detention time= 0.0 min calculated for 0.001 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (1,033.7 - 1,033.7)

Volume	Invert	Avail.Storage	Storage Description
#1	110.10'	1,166 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
110.10	1,620	0.0	0	0
111.80	1,620	0.0	0	0
113.60	1,620	40.0	1,166	1,166
114.14	1,620	0.0	0	1,166

Device	Routing	Invert	Outlet Devices
#1	Primary	110.13'	8.0" Round Culvert L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.13' / 109.78' S= 0.0100 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	110.13'	0.4" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	112.80'	0.5' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	113.30'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32

Primary OutFlow Max=0.00 cfs @ 13.74 hrs HW=110.19' (Free Discharge)

1=Culvert (Passes 0.00 cfs of 0.01 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.00 cfs @ 1.05 fps)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Post-Development

Prepared by Gorrill Palmer

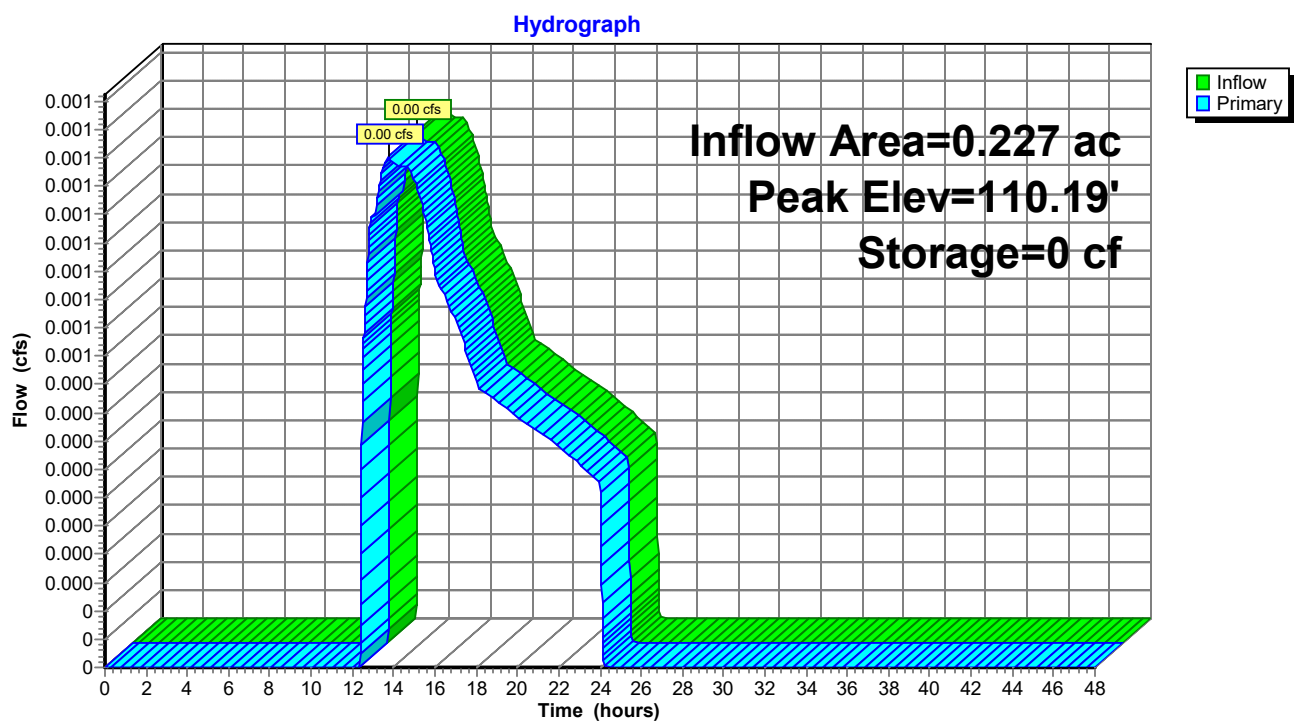
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Pond PP4: Porous Pavement 4



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Summary for Pond R1: Detention Pond 1

Inflow Area = 0.734 ac, 100.00% Impervious, Inflow Depth = 0.74" for Focal Point event
 Inflow = 0.62 cfs @ 12.08 hrs, Volume= 0.045 af
 Outflow = 0.05 cfs @ 13.00 hrs, Volume= 0.040 af, Atten= 91%, Lag= 55.0 min
 Primary = 0.05 cfs @ 13.00 hrs, Volume= 0.040 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 110.96' @ 13.00 hrs Surf.Area= 1,156 sf Storage= 1,135 cf

Plug-Flow detention time= 309.1 min calculated for 0.040 af (88% of inflow)
 Center-of-Mass det. time= 255.1 min (1,044.7 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	110.06'	2,744 cf	ACF R-Tank HD 2 x 350 Inside #2 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 350 Chambers in 14 Rows 3,040 cf Overall x 95.0% Voids
#2	109.56'	555 cf	34.00'W x 34.00'L x 3.83'H Prismatic 4,427 cf Overall - 3,040 cf Embedded = 1,387 cf x 40.0% Voids
		3,299 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	110.06'	10.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.06' / 109.68' S= 0.0380 ' / Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	110.06'	1.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	112.90'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	111.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 13.00 hrs HW=110.96' (Free Discharge)

- 1=Culvert (Passes 0.05 cfs of 1.83 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.05 cfs @ 4.41 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Orifice/Grate (Controls 0.00 cfs)

Post-Development

Prepared by Gorrill Palmer

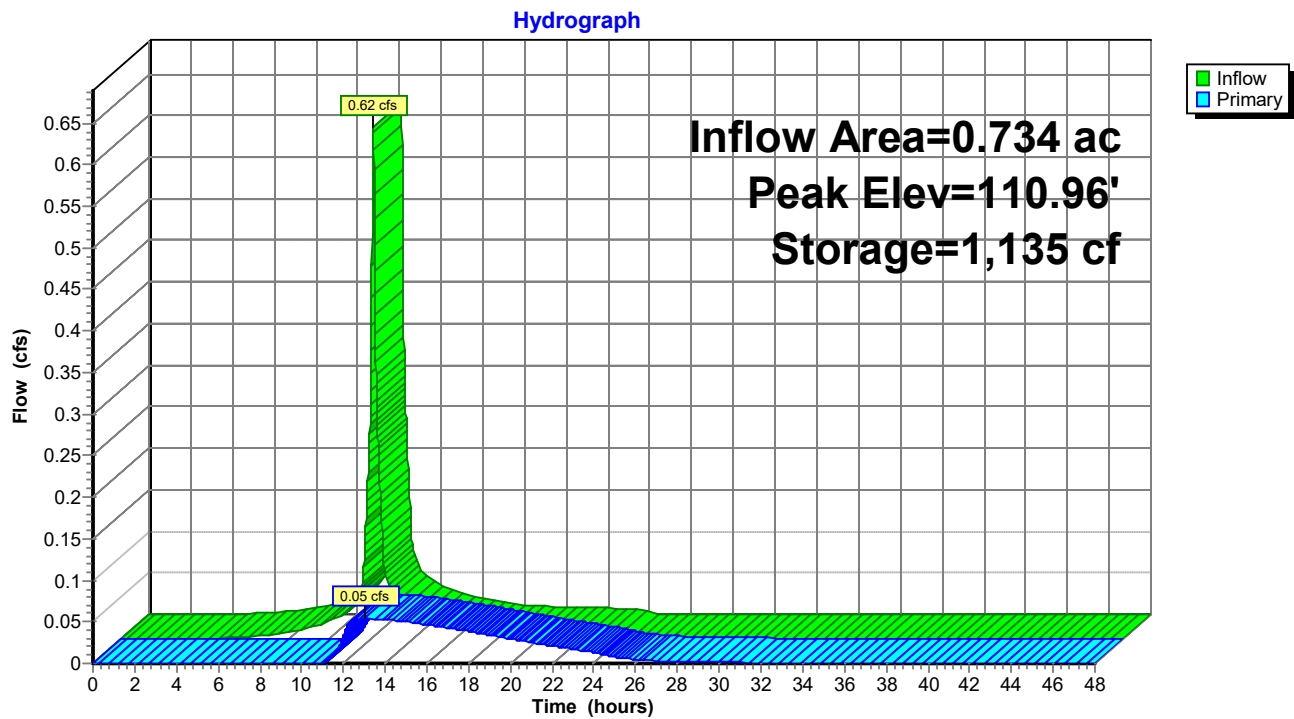
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Pond R1: Detention Pond 1



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Summary for Pond R2: Detention Pond 2

Inflow Area = 0.734 ac, 100.00% Impervious, Inflow Depth = 0.74" for Focal Point event
Inflow = 0.62 cfs @ 12.08 hrs, Volume= 0.045 af
Outflow = 0.03 cfs @ 14.04 hrs, Volume= 0.039 af, Atten= 95%, Lag= 117.2 min
Primary = 0.03 cfs @ 14.04 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 111.05' @ 14.04 hrs Surf.Area= 1,344 sf Storage= 1,302 cf

Plug-Flow detention time= 600.2 min calculated for 0.039 af (86% of inflow)
Center-of-Mass det. time= 538.7 min (1,328.3 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	110.06'	2,587 cf	ACF R-Tank HD 2 x 330 Inside #2 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 330 Chambers in 15 Rows 2,866 cf Overall x 95.0% Voids
#2	109.56'	912 cf	24.00'W x 56.00'L x 3.83'H Prismatic 5,148 cf Overall - 2,866 cf Embedded = 2,281 cf x 40.0% Voids
			3,499 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	108.14'	12.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 108.14' / 108.10' S= 0.0040 ' S= 0.0040 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	110.06'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	112.70'	6.0' long x 0.7' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32
#4	Device 1	111.00'	7.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.03 cfs @ 14.04 hrs HW=111.05' (Free Discharge)

- 1=Culvert (Passes 0.03 cfs of 5.87 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.03 cfs @ 4.68 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Orifice/Grate (Orifice Controls 0.01 cfs @ 0.73 fps)

Post-Development

Prepared by Gorrill Palmer

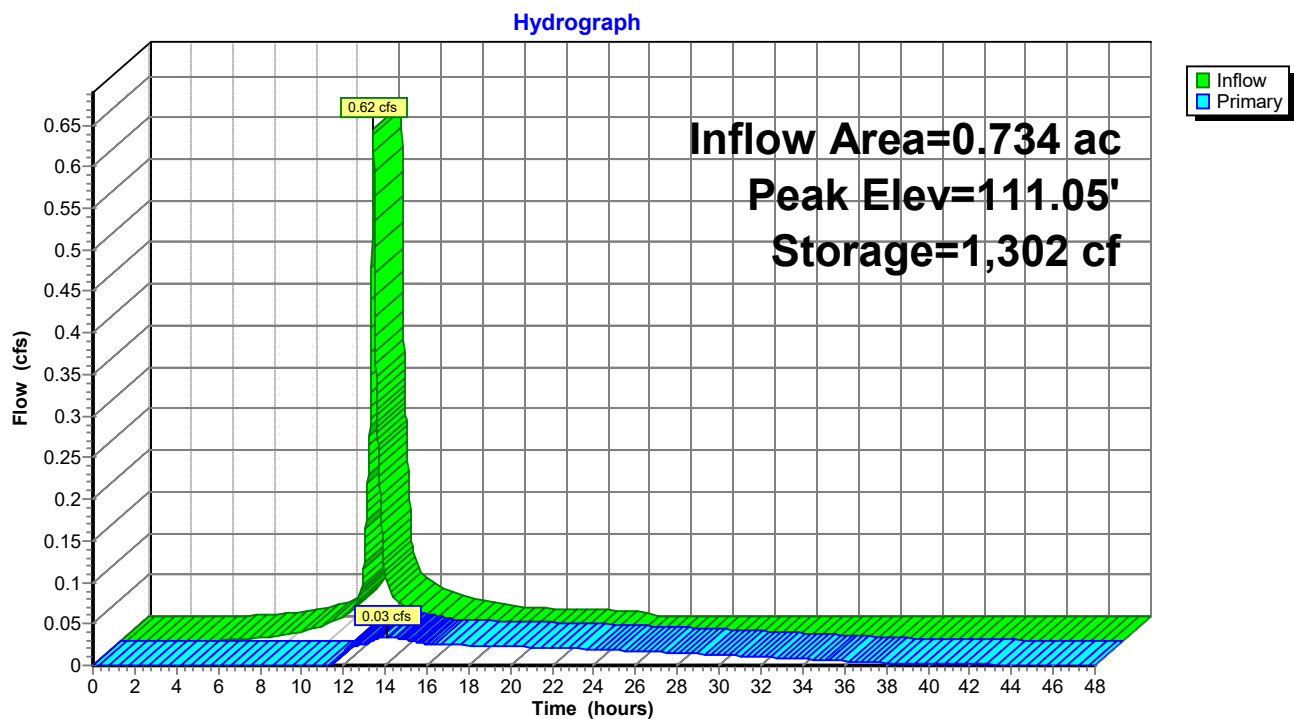
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Pond R2: Detention Pond 2



Post-Development

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Summary for Pond RG-1: Rain Garden

Inflow Area = 0.168 ac, 58.87% Impervious, Inflow Depth = 0.02" for Focal Point event
 Inflow = 0.00 cfs @ 15.10 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 15.14 hrs, Volume= 0.000 af, Atten= 0%, Lag= 2.6 min
 Discarded = 0.00 cfs @ 15.14 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 114.50' @ 15.14 hrs Surf.Area= 460 sf Storage= 0 cf

Plug-Flow detention time= 1.1 min calculated for 0.000 af (100% of inflow)

Center-of-Mass det. time= 1.1 min (1,088.1 - 1,086.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	114.50'	1,185 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
114.50	460	33.0	0	0
115.00	460	33.0	76	76
115.50	460	33.0	76	152
116.00	460	33.0	76	228
116.50	460	100.0	230	458
117.00	460	100.0	230	688
117.50	505	100.0	241	929
118.00	520	100.0	256	1,185

Device	Routing	Invert	Outlet Devices
#1	Discarded	114.50'	7.500 in/hr Exfiltration over Surface area
#2	Device 3	115.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	114.50'	8.0" Round Culvert L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 114.50' / 112.15' S= 0.0157 ' S= 0.0157 ' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#4	Device 3	117.50'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.08 cfs @ 15.14 hrs HW=114.50' (Free Discharge)↑ **1=Exfiltration** (Exfiltration Controls 0.08 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=114.50' (Free Discharge)↑ **3=Culvert** (Controls 0.00 cfs)↑ **2=Orifice/Grate** (Controls 0.00 cfs)↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Post-Development

Prepared by Gorrill Palmer

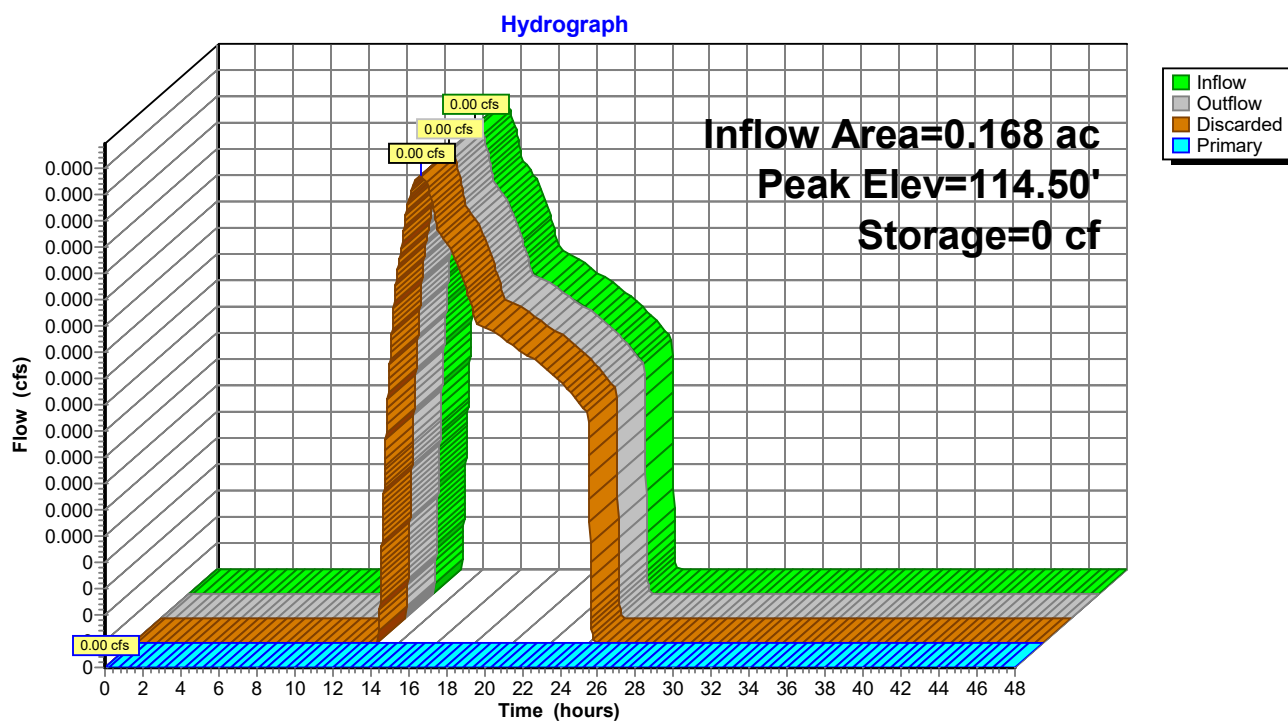
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Pond RG-1: Rain Garden



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Summary for Pond RG-2: Rain Garden

Inflow Area = 0.478 ac, 64.28% Impervious, Inflow Depth = 0.00" for Focal Point event
Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 114.49' @ 24.01 hrs Surf.Area= 960 sf Storage= 0 cf

Plug-Flow detention time= 0.3 min calculated for 0.000 af (100% of inflow)

Center-of-Mass det. time= 0.3 min (1,336.8 - 1,336.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	114.49'	2,177 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
114.49	960	0.0	0	0
114.50	960	33.0	3	3
115.00	960	33.0	158	162
115.50	960	33.0	158	320
116.00	960	33.0	158	478
116.50	960	33.0	158	637
117.00	960	100.0	480	1,117
117.50	1,040	100.0	500	1,617
118.00	1,200	100.0	560	2,177

Device	Routing	Invert	Outlet Devices
#1	Discarded	114.49'	7.500 in/hr Exfiltration over Surface area
#2	Device 3	115.00'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	114.50'	8.0" Round Culvert L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 114.50' / 113.00' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#4	Device 3	117.50'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.17 cfs @ 24.01 hrs HW=114.49' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.17 cfs)

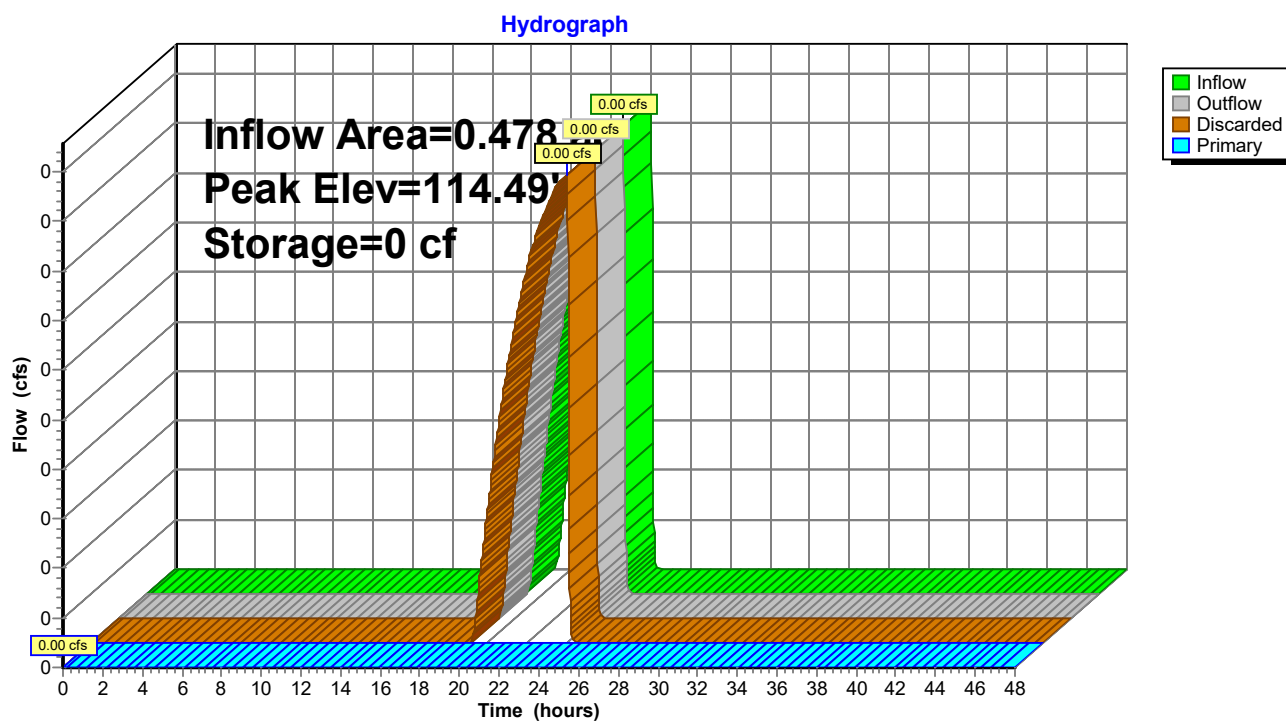
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=114.49' (Free Discharge)

↑ **3=Culvert** (Controls 0.00 cfs)

↑ **2=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Pond RG-2: Rain Garden



ATTACHMENT C

WATER QUALITY CALCULATIONS

STORMWATER QUALITY TREATMENT SUMMARY										
	IMPERVIOUS AREA					DEVELOPED AREA				TREATMENT BMP
SUBCATCHMENT	COVER TYPE	AREA (SF)	% TREATED	% AREA	% TREATED	AREA (SF)	% TREATED	% AREA	% TREATED	
20A	PAVEMENT	13,856	100%	11%	11%	19,180	100%	9%	9%	PERVIOUS PAVERS 1
20B	PAVEMENT	11,726	100%	9%	9%	15,935	100%	7%	7%	PERVIOUS PAVERS 2
21A, 21B	ROOFS	31,990	100%	25%	25%	31,990	100%	14%	14%	R-TANK SYSTEM 1
22A	PAVEMENT	8,175	100%	7%	7%	35,370	100%	16%	16%	FOCAL POINT 1
23A	PAVEMENT	12,134	100%	10%	10%	18,825	100%	9%	9%	PERVIOUS PAVERS 3
23B	PAVEMENT	6,230	100%	5%	5%	9,870	100%	4%	4%	PERVIOUS PAVERS 4
24A, 24B	ROOFS	31,990	100%	25%	25%	31,990	100%	14%	14%	R-TANK SYSTEM 2
25A	PAVEMENT	4,910	100%	4%	4%	22,380	100%	10%	10%	FOCAL POINT 2
UNTREATED	WALKWAYS	4,627	0%	4%	0%	35,130	0%	16%	0%	
TOTAL AREA		125,638		100%		220,670		100%		
TOTAL % TREATED					96%				84%	

Sizing Calculations

DETENTION POND 1

Area	Area (SF)	WQV (CF)
Buildings 4 & 5	31,990	2,666
Total	31,990	2,666
# "Double" R-Tank Chambers		350
Storage Provided		2,905

DETENTION POND 2

Area	Area (SF)	WQV (CF)
Buildings 2 & 3	31,990	2,666
Total	31,990	2,666
# "Double" R-Tank Chambers		330
Storage Provided		2,739

FOCAL POINT 1

Area	Area (SF)	WQV (CF)	Required Filter Area (SF)	Filter Area Provided (CF)	Ponding Volume Provided (CF)
Paved Areas	8175	681	33		
Landscaped areas	27195	907	4		
Total	35370	1588	37	100	50
# Chambers for Treatment Row		1			
# Chambers for Expanded Volume		200	Expanded Volume Provided		1,660

*Treatment row consists of R-Tank "single" HD chambers sized to handle 0.02 cfs per chamber in the 1 year 24-hour storm

*Expanded volume consists of R-Tank "double" chambers, with a storage capacity of 8.3 cf per chamber, sized to store the WQV

FOCAL POINT 2

Area	Area (SF)	WQV (CF)	Required Filter Area (SF)	Storage Provided (CF)	Ponding Volume Provided (CF)
Paved Areas	4910	409	20		
Landscaped areas	8175	273	1		
Total	22380	682	21	100	50
# Chambers for Treatment Row		4			
# Chambers for Expanded Volume		84	Expanded Volume Provided		697

*Treatment row consists of R-Tank "single" HD chambers sized to handle 0.02 cfs per chamber in the 1 year 24-hour storm

*Expanded volume consists of R-Tank "double" chambers, with a storage capacity of 8.3 cf per chamber, sized to store the WQV

POROUS PAVER AREA 1				
Area	Area (SF)	WQV (CF)	Storage Provided (CF)	Elevation
Pavement Areas	7,700	642	-	112.5
Paver Area	6,156	513		
Landscaped areas	5,324	177	1,527	113.5
Total	13,024	1,332	4,358	114.7
WQV Elevation				113.5
Pavement : Paver Ratio				80%
Filter Thickness (in.)				5
Reservoir Thickness (in.)				26

POROUS PAVER AREA 2				
Area	Area (SF)	WQV (CF)	Storage Provided (CF)	Elevation
Pavement Areas	6,380	532	-	112.7
Paver Area	5,346	446		
Landscaped areas	4,209	140	1,133	113.3
Total	10,589	1,117	2,138	113.8
WQV Elevation				113.3
Pavement : Paver Ratio				84%
Filter Thickness (in.)				5
Reservoir Thickness (in.)				13

POROUS PAVER AREA 3				
Area	Area (SF)	WQV (CF)	Storage Provided (CF)	Elevation
Pavement Areas	8,390	699	-	111.7
Paver Area	3,744	312		
Landscaped areas	6,691	223	1,393	112.7
Total	15,081	1,234	3,025	113.8
WQV Elevation				112.7
Pavement : Paver Ratio				45%
Filter Thickness (in.)				9
Reservoir Thickness (in.)				25

POROUS PAVER AREA 4				
Area	Area (SF)	WQV (CF)	Storage Provided (CF)	Elevation
Pavement Areas	4,610	384	-	111.8
Paver Area	1,620	135		
Landscaped areas	3,640	121	648	112.8
Total	8,250	641	1,166	113.6
WQV Elevation				112.8
Pavement : Paver Ratio				35%
Filter Thickness (in.)				12
Reservoir Thickness (in.)				22

Pavement: Paver Ratio	Required Filter Thickness (in.)
20%	18
30%	12
40%	9
50%	7
60%	6
70%	5
80%	5
90%	4
100%	4

Stevens Square - Drawdown Calcs

Drawdown Calculation - Porous Pavement Area 1

Orifice Diameter =0.625 in

Elev. (ft)	Depth (ft)	Surface Area (sq.ft)	Ave. End Area (sq.ft)	End Area Depth (ft)	Incremental Volume (cf)	Head, h (ft)	Orifice Flow (cfs)	Drawdown Time (secs)	Drawdown Time (hours)
113.45	0.65	6,156	6156.00	0.65	1600.56	2.48	0.0161	99115.12	27.532
112.80	0.00	6,156	0.00	0.00	0.00	1.83	0.0139	0.00	0.000

TOTAL 27.532

Orifice Formula $CA (2gh)^{1/2}$
 Orifice Diameter: 0.625 inch
 A: 0.002131 sq.ft
 Filter Thickness: 1.83 feet
 g: 32.174 ft/s²
 C: 0.6 Orifice/Grate

Drawdown Calculation - Porous Pavement Area 2

Orifice Diameter =0.5 in

Elev. (ft)	Depth (ft)	Surface Area (sq.ft)	Ave. End Area (sq.ft)	End Area Depth (ft)	Incremental Volume (cf)	Head, h (ft)	Orifice Flow (cfs)	Drawdown Time (secs)	Drawdown Time (hours)
113.30	0.60	5,346	5346.00	0.60	1283.04	2.43	0.0102	125415.40	34.838
112.70	0.00	5,346	0.00	0.00	0.00	1.83	0.0089	0.00	0.000

TOTAL 34.838

Orifice Formula $CA (2gh)^{1/2}$
 Orifice Diameter: 0.5 inch
 A: 0.001364 sq.ft
 Filter Thickness: 1.83 feet
 g: 32.174 ft/s²
 C: 0.6 Orifice/Grate

Drawdown Calculation - Porous Pavement Area 3

Orifice Diameter =0.5 in

Elev. (ft)	Depth (ft)	Surface Area (sq.ft)	Ave. End Area (sq.ft)	End Area Depth (ft)	Incremental Volume (cf)	Head, h (ft)	Orifice Flow (cfs)	Drawdown Time (secs)	Drawdown Time (hours)
112.65	0.95	3,744	3744.00	0.95	1422.72	2.78	0.0109	130020.21	36.117
111.70	0.00	3,744	0.00	0.00	0.00	1.83	0.0089	0.00	0.000
								TOTAL	36.117

Orifice Formula $CA (2gh)^{1/2}$

Orifice Diameter: 0.5 inch

A: 0.001364 sq.ft

Filter Thickness: 1.83 feet

g: 32.174 ft/s²

C: 0.6 Orifice/Grate

Drawdown Calculation - Porous Pavement Area 4

Orifice Diameter =0.375 in

Elev. (ft)	Depth (ft)	Surface Area (sq.ft)	Ave. End Area (sq.ft)	End Area Depth (ft)	Incremental Volume (cf)	Head, h (ft)	Orifice Flow (cfs)	Drawdown Time (secs)	Drawdown Time (hours)
112.80	1.00	1,620	1620.00	1.00	648.00	2.83	0.0062	104345.35	28.985
111.80	0.00	1,620	0.00	0.00	0.00	1.83	0.0050	0.00	0.000
								TOTAL	28.985

Orifice Formula $CA (2gh)^{1/2}$

Orifice Diameter: 0.375 inch

A: 0.000767 sq.ft

Filter Thickness: 1.83 feet

g: 32.174 ft/s²

C: 0.6 Orifice/Grate

Drawdown Calculation - FocalPoint Filter 1

Orifice Diameter =0.5 in

Elev. (ft)	Depth (ft)	Surface Area (sq.ft)	Ave. End Area (sq.ft)	End Area Depth (ft)	Incremental Volume (cf)	Head, h (ft)	Orifice Flow (cfs)	Drawdown Time (secs)	Drawdown Time (hours)
111.80	0.50	615	615.00	0.50	123.00	1.00	0.0066	18742.13	5.206
111.30	2.84	615	615.00	2.84	1659.27	2.84	0.0111	149991.79	41.664
108.46	0.00	615	0.00	0.00	0.00	0.00	0.0002	0.00	0.000
								TOTAL	46.871

Orifice Formula $CA (2gh)^{1/2}$
Orifice Diameter: 0.5 inch
A: 0.001364 sq.ft
Filter Thickness: 0 feet
g: 32.174 ft/s²
C: 0.6 Orifice/Grate

Drawdown Calculation - FocalPoint Filter 2

Orifice Diameter =0.5 in

Elev. (ft)	Depth (ft)	Surface Area (sq.ft)	Ave. End Area (sq.ft)	End Area Depth (ft)	Incremental Volume (cf)	Head, h (ft)	Orifice Flow (cfs)	Drawdown Time (secs)	Drawdown Time (hours)
110.32	0.50	535	535.00	0.50	107.00	1.00	0.0066	16304.13	4.529
109.82	1.44	535	535.00	1.44	731.88	1.44	0.0079	92889.57	25.803
108.38	0.00	535	0.00	0.00	0.00	0.00	0.0002	0.00	0.000
								TOTAL	30.332

Orifice Formula $CA (2gh)^{1/2}$
Orifice Diameter: 0.5 inch
A: 0.001364 sq.ft
Filter Thickness: 0.83 feet
g: 32.174 ft/s²
C: 0.6 Orifice/Grate

ATTACHMENT D

OPERATION & MAINTENANCE MANUAL

**STEVENS SQUARE AT BAXTER WOODS PHASE 2
PORTLAND, MAINE**

**STORMWATER MANAGEMENT SYSTEM
OPERATION AND MAINTENANCE MANUAL FOR
STORMWATER FACILITIES**

PREPARED FOR

**DC BAXTER WOODS LLC
100 COMMERCIAL STREET, SUITE 414
PORTLAND, ME 04101**

PREPARED BY

**GORRILL PALMER
707 SABLE OAKS DRIVE – SUITE 30
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May 2021

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APPENDICES

Appendix A – Summary Checklist for Inspection and Maintenance

Appendix B – Inspection Logs

Appendix C –Permits for Project

Appendix D – Stormwater Maintenance Agreement (DRAFT)

I. INTRODUCTION

Runoff from developed areas may contain a number of contaminants especially when emanating from rooftops, paved or lawn areas. This runoff can contain a significant amount of non-point contaminants, which can have an adverse impact on the receiving waters. The installation of soil media filters can significantly reduce the non-point pollution discharge from the developed area.

The effectiveness of ponds and other components of the system are dependent on their upkeep and maintenance to assure they meet their design function over an extended period of years. It is critical that the stormwater management facilities are inspected on a regularly scheduled basis, and that maintenance is performed on an as needed basis. It must also be recognized that the effectiveness of these facilities, and their maintenance requirements, are related to the stormwater drainage facilities that transport the flow to the ponds or treatment measures. Thus, maintenance should be directed to the total system, not just the ponds.

The purpose of this document is to define in detail the inspection and maintenance requirements deemed necessary to assure that the stormwater management facilities function as intended on a long-term basis for Stevens Square, Lot 5. This Operations and Maintenance Manual is specific to the existing and proposed stormwater measures utilized to execute a successful stormwater management plan. Subsequent sections identify individual maintenance items; give a brief commentary of the function and need of the item, a description of the work required, and a suggested frequency of accomplishment. While the suggested programs and schedules must be adapted to specific projects, the material presented should provide guidance for a successful long-term program.

A. Guidelines Overview

A summary of the individual components of stormwater management facilities for this project has been prepared. The format used in the summary is as follows:

Preface: A general description of what function/benefit the element is intended to provide. This is a short summary and not intended to provide the design basis, which can be found in other sources.

Inspection: This section provides the inspection requirements for the individual component.

Maintenance: The section provides general information on the routine maintenance requirements of this element.

Frequency: This section outlines the best judgment of the designer on the system to the frequency of maintenance.

Comments: This section provides any particular comment on the site-specific features of this element. This is a summary only. The owner/operator should review the design drawings and documents carefully to understand the particular elements of the project. The end of this section should allow the owner/operator to make notes on the specific program. This may include the selected maintenance procedure, cross-references to applicable design drawings, etc.

A list of the individual inspection/maintenance elements is provided in the table of contents. The guidelines are proposed for initial use with adjustments made as appropriate based upon specific project experience.

This report includes the Operation and Maintenance requirements for any potential BMP identified in the Stormwater Management Report for this project.

B. Responsible Party

The responsible party for operation and maintenance of the stormwater and other site infrastructure will be the Applicant or their agents or assigns.

II. PROJECT OVERVIEW

Key permits issued (or applied for) on the project include:

- City of Portland Site Plan Approval
- Maine Construction General Permit Stormwater General Permit
- Stormwater Service Charge Program

A copy of the permits and Stormwater Management Report should be appended to this manual as Appendix C. The Owner/Operator of the stormwater management system should review these permits for a general description and background of the project, as well as any specific permit conditions or requirements of the project.

The applicant has retained Gorrill Palmer for civil engineering for the development project. Gorrill Palmer has prepared the design for the stormwater management facilities and may be contacted at:

Gorrill Palmer
707 Sable Oaks Drive – Suite 30
South Portland, Maine 04106
207.772.2515

The applicable plans and design documents which apply to the project are:

1. Civil Site Plans Prepared by Gorrill Palmer
2. The Erosion Control/Sedimentation Control Plan for the project
3. The Stormwater Management Plan for the project

A copy of these documents should be retained with this manual.

The proposed design includes inlets, stormwater conveyance lines, Focal Point filters, pervious pavers, detention ponds, and outlet control structures.

The key receiving water for this project is Back Cove that is located to the east of the project site.

The manual is intended for general guidance; however, any substituted deviations from the manual should be reviewed with respect to provisions of Appendix C.

III. **STANDARD INSPECTION/MAINTENANCE DESCRIPTIONS**

The following narratives describe the inspection/maintenance provisions for the Stormwater Management system. Proper O&M is necessary to make sure the system will provide its intended purpose of conveying runoff, removing a substantial amount of the suspended solids, and other contaminants in the stormwater runoff.

A. Stormwater Inlets

Preface: The success of any stormwater facility relies on the ability to intercept stormwater runoff at the design locations. Stormwater inlets include catch basins, open culverts, and field inlets. Field inlets exist to the south of Building 2 and Focal Points as overflow structures.

Inspection: The inspection of inlet points will need to be coordinated with other maintenance items, these include:

- Building maintenance areas
- Grounds maintenance

The key elements of the inspection are to assure the inlet entry point is clear of debris and will allow the intended water entry.

Maintenance: The key maintenance is the removal of any blockage which restricts the entry of stormwater to the inlet. The removed material should be taken out of the area of the inlet and placed where it will not reenter the runoff collection system. Snow should be removed from inlets on parking lots. Grass clippings and leaves should be bagged and removed particularly near the yard inlets near the buildings.

Frequency: All inlets should be inspected on a quarterly basis, and after/during significant storm events i.e. >1" rainfall).

Maintenance Personnel: The maintenance personnel will perform the normal maintenance/inspections of the inlets and tributary drainage system.

Comments: Maintenance of inlets is critical on this project.

B. Tributary Drainage System

Preface: Stormwater from most of the project will be directed through a conveyance (tributary) system which transports the flow to the Focal Point Filters, detention ponds and ultimately to the wetland to the east. This conveyance system will be principally overland flow discharging to piped drain systems. Most of the sediment carried by the drainage system is intended to be trapped in structures. Maintenance of this system can play a major role in the long-term maintenance costs and the effectiveness of the onsite systems. The primary pretreatment measure for the site will be through flow travel over vegetated buffers.

Inspection: The tributary drainage system should be periodically inspected to assure that it is operating as intended, and that the carrying capacity has not been diminished by accumulations of debris and sediment or other hydraulic impediments. On piped systems, the inlets must be

inspected to ensure the rims are set at the proper elevation to optimize flow entry and are not clogged with debris.

The level of sediment in the sumps should be checked to assure their effectiveness. Pipelines connecting the inlets should be checked to determine if siltation is occurring. This will be most critical on drain lines laid at minimal slopes. This can usually be accomplished by a light and mirror procedure.

Maintenance: Maintenance of the storm drainage system must assure that it continues to serve its design function on a long-term basis, and that its operation does not transport excessive sediments to any downstream treatment device or the receiving waters. Elevations on the rim of catch basins should be adjusted as needed to assure optimal water entry. Depending on the frost susceptibility of the soil, the rims may become elevated over time causing flow to circumvent the inlet. If a temporary filter bag has been designated for the inlet during construction, silt or other deleterious materials, can significantly reduce capacity and the bags should be removed with the sediment and replaced during construction. Catch basin cleaning would normally be accomplished with vacuum trucks contracted as a maintenance service for the Development. The removed material must be disposed of at an approved site for such materials.

If sediment in the pipeline is observed, it should be removed. This may be accomplished by hydraulic flushing, or by mechanical means. If hydraulic flushing is used the downstream conditions should be analyzed.

Frequency: The tributary drainage system should be inspected on an annual basis. Adjustment of inlet rim elevations should be on an as needed basis. Cleaning catch basin sumps and pipelines will depend on the rate of accumulation.

C. Pervious Pavers

Preface: The pervious pavers collect stormwater runoff from the surface before passing it through a treatment section and discharging into a closed drainage system.

Inspection/Monitoring: The pavers should be inspected regularly to ensure that the surface is not clogged, and that runoff can pass freely through the pervious section. The pervious pavers must be inspected for integrity and to ensure rutting or deformation of the surface is minimized.

Maintenance: Any debris should be removed from the paver surface. If the pervious paver area is holding water in excess of 48-72 hours, corrective action is needed. To correct a standing water problem, the following remedial actions are recommended.

1. Vacuum any sediment or debris from the paver surface on a semi-annual basis.
2. Ensure the underdrain system or outlet pipe orifice is not clogged with any silt or other materials.
3. Ensure that the pervious pavers can pass water freely or drain quickly while handling large amounts of water.

Frequency: The pervious pavers should be inspected and vacuumed semi-annually and maintained as necessary.

Maintenance/Inspection Responsibility: The Owner or an outside agent is responsible for inspection and maintenance of the pervious paver areas.

Comments: Proper maintenance is critical for the pervious pavers as it plays a large role in the overall stormwater management plan for the development. Limit salt use for deicing and do not use sand.

D. Proprietary Treatment Devices (FocalPoint®)

Preface: FocalPoint® systems will be used on site to treat surface runoff from impervious and landscaped areas.

Inspection: Inspection of the filter should be performed after each major rainfall event to ensure that stormwater runoff is able to pass through the filters. The vegetation should be inspected and maintained regularly similar to other landscape features on site. The underdrain outlet should be inspected regularly.

Maintenance: Clear inlets and pretreatment devices of debris and sediment. Maintain as instructed by manufacturer.

Frequency: The system should be inspected semi-annually and maintained as required by the manufacturer.

Comments: The manufacturer typically commits to the first year of maintenance if their strict guidelines are followed for installation, which is highly encouraged to achieve peak performance. It is recommended that an outside agent who is familiar with the product be retained for future maintenance.

E. Proprietary Device (R-Tanks)

Inspection of the outlet control structure should be performed after each major rainfall event to ensure that stormwater runoff is able to pass through the system. The system should be inspected semi-annually and maintained as required by the manufacturer.

F. Orifice Control Devices

Preface: Orifices of assorted sizes are commonly utilized to control discharge from stormwater management features. This project uses orifice controls to control discharge from the four pervious paver areas, detention ponds, and the Focal Point filters.

Inspection: Inspection of orifices should be performed after each major rainfall event to ensure that stormwater runoff is able to discharge through the orifice and that it is not clogged.

Maintenance: The orifice cap should be removed and all debris flushed from the pipe prior to reinstalling the orifice cap. An orifice in a weir wall should be cleared of debris by hand.

Frequency: The orifice control devices should be inspected semi-annually and maintained as needed.

Comments: None.

G. Proprietary Device (Filterra)

The first year of maintenance shall be performed by the Supplier or a supplier approved contractor. Subsequent maintenance shall be performed at least 2 times per year (preferably in Spring and Fall). At a minimum, the maintenance shall consist of the following:

1. Filterra Unit Inspection
2. Foreign debris, silt, mulch & trash removal
3. Filter media evaluation and recharge as necessary
4. Plant health evaluation and pruning or replacement as necessary
5. Replacement of mulch
6. Disposal of all maintenance refuse items

H. Ditches, Swales, and Other Open Stormwater Channels

Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or side slopes. The facilities shall be inspected after major storms and any identified deficiencies shall be corrected.

I. Roadways and Parking Surfaces

Clear accumulations of winter sand in parking lots and along roadways 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. Repair potholes and other roadway obstructions and hazards. Plowing and sanding of paved areas shall be performed as necessary to maintain vehicular traffic safety.

J. Litter

Litter should be removed as a matter of course by workers and as part of the ground's maintenance contract.

IV. PROGRAM ADMINISTRATION

A. General

A reliable administrative structure must be established to assure implementation of the maintenance programs described in the foregoing section. Key factors that must be considered in establishing a responsive administrative structure include:

1. Administrative body must be responsible for long-term operation and maintenance of the facilities. (Maintenance continues for the lifespan of the development in accordance with this document)
2. Administrative body must have the financial resources to accomplish the inspection and maintenance program over the life of the facility.
3. The administrative body must have a responsible administrator to manage the inspection and maintenance programs.
4. The administrative body must have the staff to accomplish the inspection and maintenance programs or must have authority to contract for the required services.
5. The administrative body must have a management information system sufficient to file, retain, and retrieve all inspection and maintenance records associated with the inspection and maintenance programs.
6. A qualified post construction inspector shall be retained by the Owner. His/her duties shall include preparing schedules for the Owner's maintenance, summarizing the results of this maintenance and preparing an annual report on the operation, maintenance, and repair of the stormwater system which must be copied to the City. (The Owner shall be responsible for retaining a separate entity to perform maintenance which cannot be performed by the management of building and property grounds.) This person shall also participate in troubleshooting of the stormwater management system if a problem develops.

If any of the above criteria cannot be met by the entity assigned inspection and maintenance responsibilities, it is likely that the system will fail to meet its water quality objectives at some point during its life. While each of the above criteria may be met by a variety of formats, it is critical to clearly establish the assigned administrative body in a responsible and sustainable manner.

B. Record Keeping

Records of all inspections and maintenance work accomplished must be kept and maintained to document facility operations. These records should be filed and retained in accordance with the City of Portland Code of Ordinances, Chapter 32. The filing system should be capable of ready retrieval of data for periodic reviews by appropriate regulatory bodies. Where possible, copies of such records should also be filed with the designated primary regulatory agency for their review for compliance with permit conditions. Typical inspection and maintenance record forms are attached hereto as Appendix B.

The owner will be required to hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs. In addition, the qualified post-construction stormwater inspector shall, on or by June 30 of each year, provide a completed and signed certification to DPW in a form provided by DPW certifying that the person has inspected the BMPs and they are adequately maintained and functioning as intended.

C. Contract Services

In some instances, or at specific times, the Maintenance Personnel may not have the staff to conduct the required inspection and/or maintenance programs as outlined in this document. In such cases, the work should be accomplished on a contractual basis with a firm or organization that has the staff and equipment to accomplish the required work.

The service contract for inspection and maintenance should be formal, well written legal document which clearly defines the services to be provided, the contractual conditions that will apply, and detailed payment schedules. Liability insurance should be required in all contracts.

APPENDIX A

SUMMARY CHECKLIST INSPECTION AND MAINTENANCE

Stormwater Management System Maintenance Program Summary Checklist						
Item	Commentary	Frequency				
		Monthly	Quarterly	Semi-Annual	Annual	Long Term
Stormwater Inlets	Stormwater inlets allow flow entry from a surface swale to a piped system. Inspect entry for debris accumulation. Remove debris to allow unimpeded entry. Lawn clippings and leaves should be removed from yard areas.		X		X Clearing	
Tributary Drainage System	Inspect to assure that the carrying capacity has not been diminished by debris, sediment or other hydraulic impediments.				X	
Pervious Pavers	Inspect after major storm events ensure the pavers are not plugged with debris. Vacuum semi-annually.			X		
Focal Point Filters	Filters should be inspected semi-annually and maintained as needed. Snow Storage within the filter should be prohibited by Maintenance Personnel.			X		X
Orifice Control Devices	Inspect after major storm events and clear debris from orifice. May require flushing of pipes.			X		
Ditches, Swales, and Other Open Stormwater Channels	Inspect twice annually (spring and fall), remove any obstructions to flow, repair any erosion			X		
Roadways and Parking Surfaces	Pavements should be swept at least twice annually, once in the spring.			X		
Filtrerra Module	Check for signs of clogging, remove trash, unwanted vegetation, and sediment as needed			X		
Litter	Litter should be removed daily.					

APPENDIX B

SAMPLE INSPECTION LOGS

**STEVENS SQUARE AT BAXTER WOODS, LOT 5
PORTLAND, MAINE**

**STORMWATER MANAGEMENT
SAMPLE STORMWATER INSPECTION & MAINTENANCE LOG**

This log is intended to accompany the Operation and Maintenance Manual for Stormwater Management and Related Facilities. All stormwater BMPs shall be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions of the City of Portland's Post Construction Stormwater Management Monitoring Ordinance, shall conduct inspections of the facilities as described in the O&M Manual and on this form, and identified deficiencies must be corrected. This log shall be kept on file for a minimum of five (5) years.

A. General Information			
Project Name:		Inspection Date:	
Parcel/Lot:		Current Weather:	
BMP Owner:		Date/Amount Last Precip.:	
Owner Mailing Address:		Inspection Company:	
Owner Phone #:		Inspection Co. Mailing Address:	
Owner Email:		Inspector Name:	
		Inspector Phone #:	
		Inspector Email:	
B. Stormwater Inlets (Catchbasins)		Observations	
Frequency: Annually in the spring			
Accumulated sediments from inflow channels and pipes between basins have been removed and legally disposed of		☐ Yes ☐ No ☐ NA	
Floating debris and large sediment particles have been removed from inlets.		☐ Yes ☐ No ☐ NA	
Stormwater Inlet Notes:			
C. Tributary Drainage System		Observations	
Frequency: Annually spring or late fall and after heavy rains			
Remove and legally dispose of sediments		☐ Yes ☐ No ☐ NA	
Remove floatables and other objects		☐ Yes ☐ No ☐ NA	
Check for overgrown vegetation impeding flow		☐ Yes ☐ No ☐ NA	
Check pipelines for siltation and clogging		☐ Yes ☐ No ☐ NA	
Repair any slumping side slopes or erosion		☐ Yes ☐ No ☐ NA	
Replace any riprap on areas where any underlying fabric or underlying gravel is exposed.		☐ Yes ☐ No ☐ NA	
Tributary Drainage System Notes:			

D. Pervious Pavers	Observations
Frequency: Semi-Annually	
Vacuum any sediment and debris from paver surface	☐ Yes ☐ No ☐ NA
Check that underdrain system is functioning properly	☐ Yes ☐ No ☐ NA
Check for pooling or signs that pavers are clogged and doesn't pass water	☐ Yes ☐ No ☐ NA
Pervious Paver Notes:	
E. Proprietary Device (FocalPoint®)	Observations
Frequency: Semi-annually	
Check for debris blocking orifice	☐ Yes ☐ No ☐ NA
Check overflow structure and clear debris	☐ Yes ☐ No ☐ NA
Check for signs of clogging, or water is not draining freely through filter media	☐ Yes ☐ No ☐ NA
If applicable, flush underdrain pipe	☐ Yes ☐ No ☐ NA
Proprietary Device Notes:	
F. Detention Pond	Observations
Frequency: Semi-Annually	
Inspect pond for unwanted vegetation.	☐ Yes ☐ No ☐ NA
Inspect pond for trash and debris. Dispose of properly.	☐ Yes ☐ No ☐ NA
Remove unwanted vegetation and dispose of properly.	☐ Yes ☐ No ☐ NA
Repair any eroded areas.	☐ Yes ☐ No ☐ NA
Remove and properly dispose of any accumulated sediment.	☐ Yes ☐ No ☐ NA
Reseed areas without 90% grass catch.	☐ Yes ☐ No ☐ NA
Detention Pond Notes:	

G. Orifice Control Devices	Observations
Frequency: Semi-Annually	
Check for debris blocking orifice	☐ Yes ☐ No ☐ NA
If applicable, flush underdrain pipe	☐ Yes ☐ No ☐ NA
Orifice Control Devices Notes:	
H. Ditches, Swales, and Other Open Stormwater Channels	Observations
Frequency: Semi Annually spring and late fall and after heavy rains	
Remove and legally dispose of sediments	☐ Yes ☐ No ☐ NA
Remove floatables and other objects	☐ Yes ☐ No ☐ NA
Check for overgrown vegetation impeding flow.	☐ Yes ☐ No ☐ NA
Mow to control growth and maintain flow capacity.	☐ Yes ☐ No ☐ NA
Repair any slumping side slopes or erosion	☐ Yes ☐ No ☐ NA
Replace any riprap on areas where any underlying fabric or underlying gravel is exposed.	☐ Yes ☐ No ☐ NA
Ditches Swales and Other Channel Notes:	
I. Roadways and Parking Surfaces	Observations
Frequency: Annually preferably in spring	
Remove and legally dispose of accumulated winter sand	☐ Yes ☐ No ☐ NA
Repair potholes and other roadway obstructions and hazards.	☐ Yes ☐ No ☐ NA
Roadways and Parking Surfaces Notes:	
J. Proprietary Device (Filterra Module)	Observations
Frequency: Semi-Annually	
Remove foreign debris, silt, mulch & trash	☐ Yes ☐ No ☐ NA
Evaluate filter media and recharge	☐ Yes ☐ No ☐ NA
Evaluate plant health and prune/replace as necessary	☐ Yes ☐ No ☐ NA
Replace mulch	☐ Yes ☐ No ☐ NA
Proprietary Device Notes:	

APPENDIX C

PERMITS FOR PROJECT (TO BE PROVIDED)

APPENDIX D

DRAFT STORMWATER MAINTENANCE AGREEMENT

**DRAFT - STORMWATER DRAINAGE SYSTEM
MAINTENANCE AGREEMENT**

**DC Baxter Woods, LLC
Stevens Square at Baxter Woods – Phase 2 at 605 Stevens Avenue**

IN CONSIDERATION OF the site plan and subdivision approval granted by the Planning Board of the City of Portland to the proposed **Stevens Square at Baxter Woods – Phase 2 Project ID _____** shown on the Subdivision Plat (Exhibit A) recorded in Cumberland Registry of Deeds in Plan Book __, Page __ submitted by _____ and associated Overall Site Layout Plan and Grading & Drainage Plan (Exhibits B and C) prepared by Gorrill Palmer Consulting Engineers of 707 Sable Oaks Drive, South Portland, Maine dated last revised _____ and pursuant to a condition thereof, DC Baxter Woods LLC, a Maine limited liability company with a principal place of business in Portland, Maine, and having a mailing address of 100 Commercial Street, Suite 414, Portland, ME 04101, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the “Owner”), as follows:

Maintenance Agreement

That it, its successors and assigns, will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the pervious pavement systems, Focal Point filter systems, R-Tank underground detention ponds, roof drains, Oil-Water Separator, **Filterra Module**, and related onsite drainage infrastructure, (hereinafter collectively referred to as the “stormwater system”), as shown on the Grading & Drainage Plan in Exhibit C and in strict compliance with the approved Stormwater Inspection and Maintenance Manual prepared for the Owner by Gorrill Palmer Consulting Engineers (copy attached in **Exhibit D**) and Chapter 32 of the Portland City Code.

Owner of the subject premises further agrees, at its own cost, to keep a Stormwater Maintenance Log. Such log shall be made available for inspection by the City of Portland upon reasonable notice and request.

Said agreement is for the benefit of the said City of Portland and all persons in lawful possession of said premises and abutters thereto; further, that the said City of Portland and said persons in lawful possession may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice and a stated time to perform, the said City of Portland, by its authorized agents or representatives, may, but is not obligated to, enter upon said premises to maintain, repair, or replace said stormwater system in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the Owner upon written demand. Any funds owed to the City under this paragraph shall be secured by a lien on the property.

This Agreement shall also not be construed to allow any change or deviation from the requirements of the subdivision and/or site plan most recently and formally approved by the Planning Board of the City of Portland.

This agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon the Owner’s successors and assigns as their interests may from time to time appear.

The Owner agrees to record a copy of this Agreement in the Cumberland County Registry of Deeds within thirty (30) days of final execution of this Agreement. The Owner further agrees to provide a copy of this

Agreement to any successor or assign and to forward to the City an Addendum signed by any successor or assign in which the successor or assign states that the successor or assign has read the Agreement, agrees to all its terms and conditions and the successor or assign will obtain and forward to the City's Department of Public Services and Department of Planning and Urban Development a similar Addendum from any other successor or assign.

For the purpose of this agreement and release "Owner" is any person or entity who is a successor or assign and has a legal interest in part, or all, of the real estate and any building. The real estate shown by chart, block and lot number in the records on file in the City Assessor's office shall constitute "the property" that may be entered by the City and lien if the City is not paid all of its costs and charges following the mailing of a written demand for payment to the owner pursuant to the process and with the same force and effect as that established by 36 M.R.S.A. §§ 942 and 943 for real estate tax liens.

Any written notices or demands required by the agreement shall be complete on the date the notice is attached to one or more doors providing entry to any buildings and mailed by certified mail, return receipt requested or ordinary mail or both to the owner of record as shown on the tax roles on file in the City Assessor's Office.

If the property has more than one owner on the tax rolls, service shall be complete by mailing it to only the first listed owner. The failure to receive any written notice required by this agreement shall not prevent the City from entering the property and performing maintenance or repairs on the stormwater system, or any component thereof, or lien it or create a cause of action against the City.

Dated at Portland, Maine this ____ day of _____, 2021.

(name of company)

(representative of owner, name and title)

STATE OF MAINE
CUMBERLAND, ss.

Date: _____

Personally appeared the above-named _____ (name and title), and acknowledged the foregoing instrument to be his free act and deed in his said capacity.

Before me,

Notary Public/Attorney at Law

Print name: _____

Exhibit A: Approved Subdivision Plat
Exhibit B: Approved Site Layout Plan
Exhibit C: Approved Grading & Drainage Plan
Exhibit D: Approved Stormwater Inspection and Maintenance Manual

EROSION AND SEDIMENTATION CONTROL BASIC STANDARDS

I.1 **OVERVIEW**

This Exhibit demonstrates the developer has made adequate provision for controlling erosion and sedimentation.

I.2 **INTRODUCTION**

Gorrill Palmer has been retained by DC Baxter Woods LLC to prepare an Erosion and Sedimentation Control Report for the construction of new buildings, new parking, and associated infrastructure at Stevens Square in Portland Maine. Figure I is a map showing the project location. Gorrill Palmer has prepared an Erosion and Sedimentation Control Plan for the proposed development. This narrative contains the general erosion and sedimentation control measures, which are appropriate for the construction of the project.

I.3 **NARRATIVE**

I.3.1 **Existing Conditions and Soil Types**

The proposed development includes the construction of approximately 63,980 sf of new roof area and new exterior parking areas consisting of 106 spaces in Portland, Maine. The site is currently developed as an athletic field. Abutting land uses include:

- North – Residential
- East – Residential
- South – Open Space/Baxter Woods
- West – Residential

Topography in the area of the proposed construction varies from moderately flat slopes of approximately 5% to steep slopes of 33%.

The NRCS medium intensity soil survey was utilized in identifying the on-site soils. The soils are shown on the predevelopment and post development watershed plans contained in the stormwater report for this project. The susceptibility of soils to erosion is indicated on a relative “K” scale of values over a range of 0.02 to 0.69. The higher values are indicative of the more erodible soils. The following table lists the soils found on site and their K values:

K VALUE		
Type	Subsurface	Substratum
Au Gres	0.15	0.25
Deerfield	0.17	0.17
Paxton	0.32	0.2
Windsor	0.17	0.17

Based on a review of the K Values, the on-site soils have low to medium susceptibility to erosion.

I.3.2 Existing Erosion Problems

Gorrill-Palmer Consulting Engineers, Inc. is not aware of any existing erosion problems on site.

I.3.3 Critical Areas

Critical areas that would require special attention during construction would be side slopes adjacent to wetlands.

I.3.4 Protected Natural Resources

Wetlands on-site have been delineated by Mark Hampton Associates, Inc., and are shown on project plans. The project will impact approximately 4,196 SF of wetlands.

Based upon the FEMA maps, the proposed development is not located within a Zone A 100-year floodplain.

I.3.5 Erosion Control Measures and Site Stabilization

The primary emphasis of the erosion/sedimentation control plan, which will be implemented for this project, is as follows:

- ◆ Development of a careful construction sequence.
- ◆ Rapid revegetation of denuded areas to minimize the period of soil exposure.
- ◆ Rapid stabilization of drainage paths to avoid rill and gully erosion.
- ◆ The use of on-site measures to capture sediment (hay bales/ stone check dams/silt fence, etc.)

The following temporary and permanent erosion and sediment control devices will be implemented as part of the site development. These devices shall be installed as indicated on the plans or as described within this report. For further reference, see the latest edition of the Maine Erosion and Sediment Control Practices Field Guide for Contractors.

A. Dewatering

Water from construction trench dewatering shall pass first through a filter bag or secondary containment structure (e.g. hay bale 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 50 feet of a protected natural resource. Dewatering discharge shall not be directed across adjacent properties in a concentrated manner.

B. 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 damages and/or unestablished spots. Established vegetative cover means a minimum of 90% of areas vegetated with vigorous growth.

The following standards must be met during construction.

(a) **Inspection and corrective action.** Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections.

(b) **Maintenance.** If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

(c) **Documentation.** Keep a log (report) summarizing the inspections and any corrective action taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log must be made accessible to City staff and a copy must be provided upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

C. Temporary Erosion Control Measures

Temporary erosion control measures shall be installed by the Contractor as required by this report and as shown on the plan set for the project. Additional erosion control measures shall be installed if deemed necessary by on-site inspections of the Owner, the City of Portland, or their representatives at no additional cost to the owner.

The following measures are planned as temporary erosion/sedimentation control measures during construction:

1. Crushed stone-stabilized construction entrance shall be placed at the entrance to each construction area.
2. Siltation fence or wood waste compost berms shall be installed downstream of any disturbed areas to trap runoff-borne sediments until grass areas are revegetated. The silt fence and/or wood waste compost berms shall be installed per the details provided in this package and inspected at least once a week and before and immediately after a storm event of 0.5 inches or greater, and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence or berm line. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam. Wood waste compost berms are not to be used adjacent to wetland areas that are not to be disturbed.

3. Straw or hay mulch including hydroseeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and October 15th on slopes of less than 15 percent shall be anchored by applying water; mulch placed on slopes of equal to or steeper than 15 percent shall be covered by a fabric netting and anchored with staples in accordance with manufacturer's recommendation. Fabric netting and staples shall be used on disturbed areas within 50' of lakes, streams, and wetlands regardless of the upstream slope. Mulch placed between October 15th and April 15th on slopes equal to or steeper than 8 percent shall be covered with a fabric netting and anchored with staples in accordance with the manufacturer's recommendations. Slopes steeper than 3:1 and equal to or flatter than 2:1, which are to be revegetated, shall receive curlex blankets by American Excelsior or equal. Slopes steeper than 2:1 shall receive riprap as noted on the plans. The mulch application rate for both temporary and permanent seeding is 75 lbs per 1000 sf as identified in Attachment A of this section. Mulch shall not be placed over snow.
4. Temporary stockpiles of stumps, grubblings, or common excavation will be protected as follows:
 - a) Temporary stockpiles shall not be located within 100 feet of any wetlands which will not be disturbed and shall be located away from drainage swales.
 - b) Stockpiles shall be stabilized within 7 days by either temporarily seeding the stockpile by a hydroseed method containing an emulsified mulch tackifier or by covering the stockpile with mulch, such as hay, straw, or erosion control mix.
 - c) Stockpiles shall be surrounded by sedimentation barrier at the time of formation.
5. All denuded areas that are within 100 feet of an undisturbed wetland, which have been rough graded and are not located within a building pad, parking area, or access drive subbase area, shall receive mulch or erosion control mesh fabric within 48 hours of initial disturbance of soil. All areas within 100 feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 48 hour window. In other areas, the time period may be extended to 7 days.
6. For work, which is conducted between October 15th and April 15th of any calendar year, all denuded areas, shall be covered with hay mulch or erosion control mix, applied at twice the normal application rate and anchored with a fabric netting. The time period for applying mulch shall be limited to 2 days for all areas.
7. McAuley Way shall be swept to control mud and dust as necessary. Additional stone shall be added to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.
8. During grubbing operations stone check dams shall be installed at any evident concentrated flow discharge points and as directed on the Erosion Control Plans.
9. Silt fencing with a minimum stake spacing of 6 feet shall be used, unless the fence is supported by wire fence reinforcement of minimum 14 gauge and with a maximum mesh spacing of 6 inches, in which case stakes may be spaced a maximum of 10 feet apart. The bottom of the fence shall be anchored. A double row of silt fence shall be used adjacent to wetlands.

10. Wood waste compost/bark berms may be used in lieu of siltation fencing. Berms shall be removed and spread in a layer not to exceed 3" thick once upstream areas are completed and a 90% catch of vegetation is attained.
11. Storm drain catch basin inlet protection shall be provided through the use of stone sediment barriers or approved sediment bags (such as Silt Sack). Installation details are provided in the plan set. The barriers shall be inspected after each rainfall and repairs made as necessary. Sediment shall be removed and the barrier restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the barrier. The barrier shall be removed when the tributary drainage area has been stabilized.
12. Water and/or calcium chloride shall be furnished and applied in accordance with MDOT specifications – Section 637 – Dust Control.
13. Loam and seed are intended to serve, as the primary permanent revegetative measure for all denuded areas not provided with other erosion control measures, such as riprap. Application rates are provided in Attachment A of this section. Seeding shall not occur over snow.

D. Permanent Erosion Control Measures

The following permanent erosion control measures have been designed as part of the Erosion/Sedimentation Control Plan:

1. All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized, mulched, and seeded. Fabric netting, anchored with staples, shall be placed over the mulch in areas as noted in **Temporary Erosion Control Measures** paragraph 3 of this report. All areas within 100 feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 48 hour window. Native topsoil shall be stockpiled and reused for final restoration when it is of sufficient quality.
2. All storm drain pipe outlets shall have riprap aprons at their outlet to protect the outlet and receiving channel from scour and deterioration. Installation details are provided in the plan set. The aprons shall be installed and stabilized to the extent practicable prior to directing runoff to the tributary pipe or culvert.

I.4 Implementation Schedule

The following construction sequence shall be required to ensure the effectiveness of the erosion and sedimentation control measures are optimized:

It is anticipated that construction of Buildings 2-5 and related infrastructure will commence in Fall of 2021.

Note: For all grading activities, the contractor shall exercise extreme caution not to overexpose the site, this shall be accomplished by limiting the disturbed area.

1. Install stabilized construction entrance at construction access points from paved roadways.
2. Install catch basin inlet protection, and perimeter silt fence/wood waste berms prior to grubbing respective areas.

3. Clear and grub area to be developed. Install stone check dams at any evident concentrated flow discharge points.
4. Foundation preparation area shall be excavated for installation of the building footings. Building work will be on going through the remainder of the project.
5. Commence installation of drainage appurtenances.
6. Commence construction of pervious paver filter/reservoir up to choker course, Focal Point filters and subsurface detention ponds.
7. Commence earthwork and grading to subgrade.
8. Commence installation of utilities.
9. Continue earthwork and grading to subgrade as necessary for construction.
10. Complete installation of underground utilities to within 5' of the buildings.
11. Install light pole foundations and light poles.
12. Complete remaining earthwork operations.
13. Complete installation of catch basins and appurtenances.
14. Install sub-base and base gravel within parking fields, walkways, and all driveways.
15. Install base course paving for access drive and parking area as well as concrete surfaces.
16. Install curbing in parking fields, driveways, and along the streets as needed.
17. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
18. Install pervious pavers and infill stone, surface course paving for access drive and parking areas. Stripe per plan.
19. Once the site is stabilized and a 90% catch of vegetation has been obtained, remove all temporary erosion control measures.
20. Touch up loam and seed.

Note: All denuded areas not subject to final paving, riprap, or gravel shall be revegetated.

Prior to construction of the project, the contractor shall submit to the owner a schedule for the completion of the work, which will satisfy the following criteria:

1. The above construction sequence should generally be completed in the specified order; however, several separate items may be constructed simultaneously. Work must also be scheduled or phased to reduce the extent of the exposed areas as specified below. The intent of this sequence is to provide for erosion control and to have structural measures such as silt fence and construction entrances in place before large areas of land are denuded.

2. The work shall be conducted in sections which shall:

- a) Limit the amount of exposed area to those areas in which work is expected to be undertaken during the proceeding 30 days.
- b) Revegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event; or temporarily stabilized within 48 hours of initial disturbance of soil for areas within 100 feet of an undisturbed wetland and 7 days for all other areas. Areas within 100 feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 48 hour window.
- c) Incorporate planned inlets and drainage system as early as possible into the construction phase. The ditches shall be immediately lined or revegetated as soon as their installation is complete.

I.5 Erosion, Sedimentation and Stabilization Control Plan

The Erosion Control Plan is included in the plan set.

I.6 Details and Specifications

The Erosion Control details and specifications are included in the plan set.

I.7 Winter Stabilization Plan

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 riprap 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, riprap or gravel base on a road.

Winter excavation and earthwork shall be completed such that any area left exposed can be controlled by the contractor. Limit the exposed area to those areas in which work is expected to be undertaken during the proceeding 15 days and that can be mulched in one day prior to any snow event.

All areas shall be considered to be denuded until the subbase gravel is installed in roadway/parking areas or the areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch rate shall be a minimum of 150 lbs./1,000 s.f. (3 tons/acre) and shall be properly anchored.

The contractor shall 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.

I. Soil Stockpiles

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or at 150 lbs/1,000 s.f. (3 tons per acre) or with a four-inch layer of woodwaste erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or

snowfall. Any soil stockpile shall not be placed (even covered with hay or straw) within 100 feet from any natural resources.

2. Natural Resource Protection

Any areas within 100 feet from any natural resources, if not stabilized with a minimum of 75% mature vegetation catch, shall be mulched by December 1 and anchored with plastic netting or protected with erosion control mats. During winter construction, a double line of sediment barriers (i.e. silt fence backed with hay bales or erosion control mix) shall be placed between any natural resource and the disturbed area. Projects crossing the natural resource shall be protected a minimum distance of 100 feet on either side from the resource. Existing projects not stabilized by December 1 shall be protected with the second line of sediment barrier to ensure functionality during the spring thaw and rains.

3. Sediment Barriers

During frozen conditions, sediment barriers shall consist of woodwaste filter berms as frozen soil prevents the proper installation of hay bales and sediment silt fences.

4. Mulching

An area shall be considered 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 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched with straw or hay at a rate of 150 lb. per 1,000 square feet (3 tons/acre) and adequately anchored that ground surface is not visible through the mulch.

Between the dates of November 1 and April 15, all mulch shall be anchored by peg line, mulch netting, asphalt emulsion chemical, or wood cellulose fiber. When ground surface is not visible through the mulch then cover is sufficient. After November 1st, mulch and anchoring of all bare soil shall occur at the end of each final grading workday.

5. Mulching on Slopes and Ditches

Slopes shall not be left exposed for any extended time of work suspension unless fully mulched and anchored with peg and netting or with erosion control blankets. Mulching shall be applied at a rate of 230 lbs/1,000 s.f. on all slopes greater than 8%.

Mulch netting shall be used to anchor mulch in all drainage ways with a slope greater than 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 slopes greater than 8%. Erosion control mix can be used to substitute erosion control blankets on all slopes except ditches.

6. Seeding

Between the dates of October 15 and April 1st, 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. If the date is after November 1st and if the exposed area has been loamed, 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 selected to 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 seed at an application rate of 5 lbs/1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

Standards for Timely Stabilization of Construction Sites During Winter

1. Standard for the timely stabilization of ditches and channels -- The applicant shall construct and stabilize all stone-lined ditches and channels on the site by November 15. The applicant shall construct and stabilize all grass-lined ditches and channels on the site by September 1. If the applicant fails to stabilize a ditch or channel to be grass-lined by September 1, then the applicant will take one of the following actions to stabilize the ditch for late fall and winter.

Install a sod lining in the ditch -- The applicant shall line the ditch with properly installed sod by October 1. Proper installation includes the applicant 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.

Install a stone lining in the ditch -- The applicant shall line the ditch with stone riprap by November 15. The applicant shall 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 applicant shall 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 for the timely stabilization of disturbed slopes -- The applicant shall construct and stabilize stone-covered slopes by November 15. The applicant shall seed and mulch all slopes to be vegetated by September 1. The department shall consider any area having a grade greater than 15% to be a slope. If the applicant fails to stabilize any slope to be vegetated by September 1, then the applicant shall take one of the following actions to stabilize the slope for late fall and winter.

Stabilize the soil with temporary vegetation and erosion control mats -- By September 1 the applicant shall 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 applicant shall 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 by November 1, then the applicant shall cover the slope with a layer of woodwaste compost as described in item iii of this standard or with stone riprap as described in item iv of this standard.

Stabilize the slope with sod -- The applicant shall stabilize the disturbed slope with properly installed sod by September 1. Proper installation includes the applicant pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The applicant shall not use late-season sod installation to stabilize slopes having a grade greater than 33% (3H:1V).

Stabilize the slope with woodwaste compost -- The applicant shall place a six-inch layer of woodwaste compost on the slope by November 15. Prior to placing the woodwaste compost, the applicant shall remove any snow accumulation on the disturbed slope. The applicant shall not use woodwaste compost to stabilize slopes having grades greater than 50% (2H:1V) or having groundwater seeps on the slope face.

Stabilize the slope with stone riprap -- The applicant shall place a layer of stone riprap on the slope by November 15. The applicant shall hire a registered professional engineer to determine the stone size needed for stability and to design a filter layer for underneath the riprap.

3. Standard for the timely stabilization of disturbed soils -- By September 15 the applicant shall seed and mulch all disturbed soils on areas having a slope less than 15%. If the applicant fails to stabilize these soils by this date, then the applicant shall take one of the following actions to stabilize the soil for late fall and winter.

Stabilize the soil with temporary vegetation -- By September 1 the applicant shall seed the disturbed soil with winter rye at a seeding rate of 3 pounds per 1000 square feet, lightly mulch the seeded soil with hay or straw at 75 pounds per 1000 square feet, and anchor the mulch with plastic netting. The applicant shall 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 applicant shall mulch the area for over-winter protection as described below.

Stabilize the soil with sod -- The applicant shall stabilize the disturbed soil with properly installed sod by September 15. Proper installation includes the applicant pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

Stabilize the soil with mulch -- By November 15 the applicant shall mulch the disturbed soil by spreading hay or straw at a rate of at least 150 pounds per 1000 square feet on the area so that no soil is visible through the mulch. Prior to applying the mulch, the applicant shall remove any snow accumulation on the disturbed area. Immediately after applying the mulch, the applicant will anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

1.8 Maintenance of facilities

The stormwater facilities will be maintained by the Applicant, DC Baxter Woods, LLC or their assigned heirs. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction as required by the Erosion Control Report. Long-term operation/maintenance recommended for the stormwater facilities is presented below.

The responsible party may contract with such professionals, as may be necessary in order to comply with this provision and may rely on the advice of such professionals in carrying out its duty hereunder, provided, that the following operation and maintenance procedures are hereby established as a minimum for compliance with this section. A maintenance log of the inspections shall be kept by the responsible party.

A construction inspection log is included in Attachment B. An Operation and Maintenance manual including an inspection log is attached to the Stormwater Report for this project.

Inspection and Maintenance Frequency and Corrective Measures:

The following areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris.

Catch Basins:

Inspect catch basins 2 times per year (preferably in Spring and Fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12" from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. At a minimum, remove floating debris and hydrocarbons at the time of the inspection.

Culverts:

Inspect culverts 2 times per year (preferably in Spring and Fall) to ensure that the culverts are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit and repair any erosion damage at the culvert's inlet and outlet.

Inlet/Outlet Control Structures:

Inspect structures and piping 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris within the structure.

Stormdrain Outlets:

Inspect outlets 2 times per year (preferably in Spring and Fall) to ensure that the outlets are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris at the outlet and within the conduit. Repair any erosion damage at the stormdrain outlet.

Proprietary Treatment Devices (FocalPoint®)

Inspect the filter after each major rainfall event to ensure that stormwater runoff is able to pass through the filters. The vegetation should be inspected and maintained regularly similar to other landscape features on site. The underdrain outlet should be inspected regularly. Clear inlets and pretreatment devices of debris and sediment. Maintain as instructed by manufacturer. The system should be inspected semi-annually and maintained as required by the manufacturer. The manufacturer typically commits to the first year of maintenance if their strict guidelines are followed for installation, which is highly encouraged to achieve peak performance. It is recommended that an outside agent who is familiar with the product be retained for future maintenance.

Vegetated Areas:

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

Ditches, Swales and other Open Stormwater Channels:

Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or sideslopes. The facilities shall be inspected after major storms and any identified deficiencies shall be corrected.

Filterra Unit:

The first year of maintenance shall be performed by the Supplier or a supplier approved contractor. Subsequent maintenance shall be performed at least 2 times per year (preferably in Spring and Fall). At a minimum, the maintenance shall consist of the following:

1. Filterra Unit Inspection
2. Foreign debris, silt, mulch & trash removal
3. Filter media evaluation and recharge as necessary
4. Plant health evaluation and pruning or replacement as necessary
5. Replacement of mulch
6. Disposal of all maintenance refuse items

Pervious Pavers:

Do not use sand on pervious pavers. Inspect the pervious pavers during a rainstorm during the first few months following construction to ensure that the pavers are draining. After initial inspections, inspect 2 times per year (preferably in Spring and Fall) after a significant storm, to ensure the pavers are working in their intended fashion and that they are free of sediment and debris. Remove leaves and organic debris regularly to maintain infiltration. Plowing, with the plow blade raised up to 1 inch to avoid damaging pavers, shall be performed as necessary to maintain vehicular traffic safety. Vacuuming of the pavers shall be performed if the infiltration is diminished. If vacuuming does not restore infiltration, remove pavers and clean or replace reservoir stone.

Roadways and Parking Surfaces:

Clear accumulations of winter sand in parking lots and along roadways 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. Repair potholes and other roadway obstructions and hazards. Plowing and sanding of paved areas shall be performed as necessary to maintain vehicular traffic safety.

Recertification

The owner will be required to hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs. In addition, the qualified post-construction stormwater inspector shall, on or by June 30 of each year, provide a completed and signed certification to DPW in a form provided by DPW certifying that the person has inspected the BMPs and they are adequately maintained and functioning as intended.

Records of all inspections and maintenance work accomplished must be kept and maintained to document facility operations. These records should be filed and retained in accordance with the City of Portland Code of Ordinances, Chapter 32. The filing system should be capable of ready retrieval of data for periodic reviews by appropriate regulatory bodies. Where possible, copies of such records should also be filed with the designated primary regulatory agency for their review for compliance with permit conditions.

Housekeeping

As part of the Stormwater Permit, the applicant is required to meet the standards in Appendix C of the Chapter 500 Rules. The following procedures are hereby established as a minimum for compliance

with this section. For further information on the procedures listed below, refer to Chapter 500 rules – Appendix C.

Spill Prevention:

Controls must be used to prevent pollutants from construction and waste materials stored on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.

Groundwater Protection:

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. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

Fugitive Sediment and Dust:

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, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.

Debris and Other Materials:

Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.

Trench or Foundation De-watering:

Excavation de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water removed from the ponded area, either through gravity or pumping, 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.

Authorized Non-stormwater Discharges:

Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:

- (a) Discharges from firefighting activity;

- (b) Fire hydrant flushings;
- (c) Vehicle wash water if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
- (d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);
- (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;
- (f) Pavement wash water (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
- (g) Uncontaminated air conditioning or compressor condensate;
- (h) Uncontaminated groundwater or spring water;
- (i) Foundation or footer drain-water where flows are not contaminated;
- (j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));
- (k) Potable water sources including waterline flushings; and
- (l) Landscape irrigation.

Unauthorized Non-stormwater Discharges:

Identify and prevent contamination by non-stormwater discharges. Specifically, the Department's approval does not authorize discharges of the following:

- (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;
- (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;
- (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and
- (d) Toxic or hazardous substances from a spill or other release.

Conclusion

The Applicant has provided temporary and permanent erosion control measures as well as specifying a sequence of construction as measures to minimize erosion and sedimentation.

Attachments

Attachment A – Seeding Plan

Attachment B – Inspection Report

SEEDING PLAN

Project: Stevens Square, Phase 2 – Lot 5

Site Location: Portland, ME

☐

Permanent Seeding

☒

Temporary Seeding

1. Instruction on preparation of soil: Prepare a good seed bed for planting method used.
2. Apply lime as follows: _____ # / acres, OR 138 # /M Sq. Ft.
3. Fertilize with _____ pounds of _____ N-P-K/ac. OR 13.8 pounds of 10-10-10 N-P-K/M Sq. Ft.
4. Method of applying lime and fertilizer: Spread and work into the soil before seeding.
5. Seed with the following mixture:
50% Winter Rye
50% Annual Rye
6. Mulching instructions: Apply at the rate of _____ per acre, OR 75 pounds per M. Sq. Ft.

Amount

Unit # Tons. Etc.

- | | | |
|--|-------|----------------|
| 7. TOTAL LIME | 138 | #/1000 sq. ft. |
| 8. TOTAL FERTILIZER | 13.8 | #/1000 sq. ft. |
| 9. TOTAL SEED | 1.03 | #/1000 sq. ft. |
| 10. TOTAL MULCH | 75 | #/1000 sq. ft. |
| 11. TOTAL other materials, seeds, etc. | <hr/> | |
| 12. REMARKS | | |

Spring seeding is recommended; however, late summer (prior to September 1) seeding can be made. Permanent seeding should be made prior to August 5 or as a dormant seeding after the first killing frost and before the first snowfall. If seeding cannot be done within these seeding dates, temporary seeding and mulching shall be used to protect the site. Permanent seeding shall be delayed until the next recommended seeding period.

SEEDING PLAN

Project: Stevens Square, Phase 2 – Lot 5

Site Location: Portland, ME



Permanent Seeding



Temporary Seeding

13. Instruction on preparation of soil: Prepare a good seed bed for planting method used.
14. Apply lime as follows: _____ # / acres, OR 138 # /M Sq. Ft.
15. Fertilize with _____ pounds of _____ N-P-K/ac. OR 18.4 pounds of 10-20-20 N-P-K/M Sq. Ft.
16. Method of applying lime and fertilizer: Spread and work into the soil before seeding.
17. Seed with the following mixture:
- 40% Creeping Red Fescue
 - 30% Charger II Perennial Ryegrass
 - 20% KenBlue Kentucky Bluegrass
 - 10% Tiffany Chewings Fescue
18. Mulching instructions: Apply at the rate of _____ per acre, OR 75 pounds per M. Sq. Ft.

Amount

Unit # Tons. Etc.

19. TOTAL LIME	138	#/1000 sq. ft.
20. TOTAL FERTILIZER	18.4	#/1000 sq. ft.
21. TOTAL SEED	1.03	#/1000 sq. ft.
22. TOTAL MULCH	75	#/1000 sq. ft.

23. TOTAL other materials, seeds, etc.

24. REMARKS

Spring seeding is recommended, however, late summer (prior to September 1) seeding can be made. Permanent seeding should be made prior to August 5 or as a dormant seeding after the first killing frost and before the first snowfall. If seeding cannot be done within these seeding dates, temporary seeding and mulching shall be used to protect the site. Permanent seeding shall be delayed until the next recommended seeding period.

STORMWATER POLLUTION PREVENTION PLAN

INSPECTION REPORT

PROJECT INFORMATION

Project Name: Stevens Square, Phase 2 – Lot 5

Address: 583 Stevens Avenue
Portland, Maine

CONTRACTOR/SUBCONTRACTOR INFORMATION

Inspector Name: _____

Firm: _____

Title: _____

Qualifications: _____

INSPECTION SUMMARY

Date of Inspection: _____

Major Observations: _____

THE FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION
PLAN WITH THE FOLLOWING EXCEPTIONS:

ACTIONS NECESSARY TO BRING FACILITY INTO COMPLIANCE:

REQUIRED MODIFICATIONS TO STORMWATER POLLUTION PREVENTION PLAN
(MUST BE IMPLEMENTED WITHIN 7 DAYS OF INSPECTION):

CERTIFICATION STATEMENT:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Signature

Typed Name

Title

Date

TAB 12 – CONSTRUCTION MANAGEMENT PLAN

A Draft Construction Management Plan has been prepared and is included with this section.

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY

The following statements are provided in accordance with the submission and Section 14.6.3 of the ordinance.

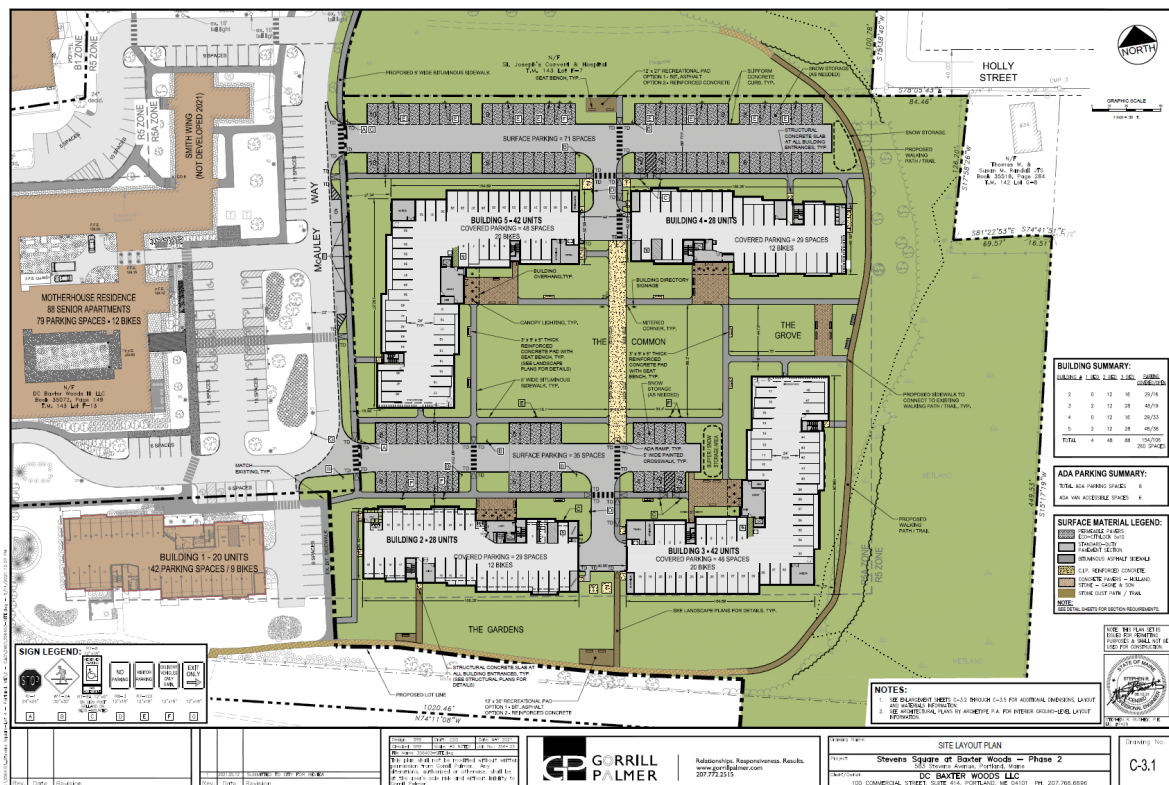
Public Infrastructure and Community Safety Standards

A. Consistency with City Master Plans 14.6.3.A

1. The proposed development is consistent with the previously approved Master Development Plan as shown below. There have been subtle adjustments to the layout that we believe improve the overall proposal. These include the reduction of parking in the central core of the development and increased open space to provide greater pedestrian/aesthetic opportunities on the site. As determined during the MDP process the site is ideally situated to benefit from public infrastructure for utilities, vehicular and pedestrian access as well as nearby public transit.



Fig 1. 2016 Approved Master Development Plan



2. The Applicant has coordinated with utility representatives for the maintenance of easements related to utility infrastructure crossing the site. A 50' wide access, utility and drainage easement crosses Lot 3 of the subdivision and this easement benefits Lot 4 and the proposed Lot 5. This easement will remain in place as will several others that will remain unchanged and in force. A 30' wide drainage easement through Lot 4 that benefits Lots 2 and 3 will be rerouted through Lot 5 as part of the updated drainage system on the site. Titcomb Associates is preparing the Second Amended Subdivision plan that will be uploaded to Eplan upon completion.

B. Public Safety and Fire Prevention 14-14.6.3(B)

- *Compliance with Crime Prevention through Environmental Design (CPTED) requirements (Technical Manual, Section 3)*
 - *Emergency vehicle access*
 - *Consistency with public safety standards (Technical Manual, Section 3)*
- a. The site has been designed to promote a safe and inviting visitor experience. All pedestrian paths and outside gathering spaces have been positioned to maintain visibility and consider safety for the users.
- b. The primary site access will be off Walton Street. One direction access is provided via single entry and exiting driveways off Stevens Avenue. Observations of current use patterns for Motherhouse occupants indicate that the primary access route is the Walton Street Driveway (McAuley Way) and not Stevens Avenue. This likely is due to the lesser traffic volumes on Walton Street compared to Stevens Avenue. Two full service driveways will allow access to the four

proposed buildings. These driveways will not be interconnected except for emergency vehicle access, thus reducing any proclivity for through traffic.

The site plan includes emergency vehicle access as evidenced by the AutoTURN diagram accompanying this section and shown below.

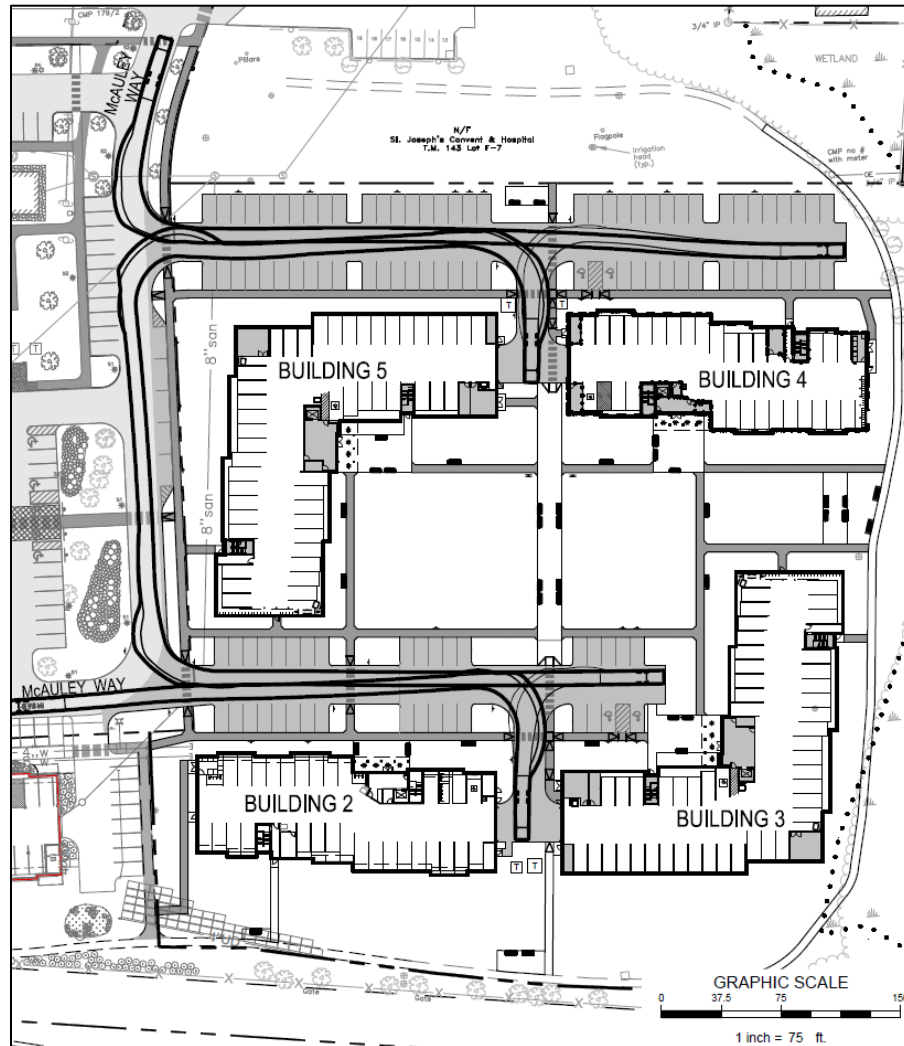
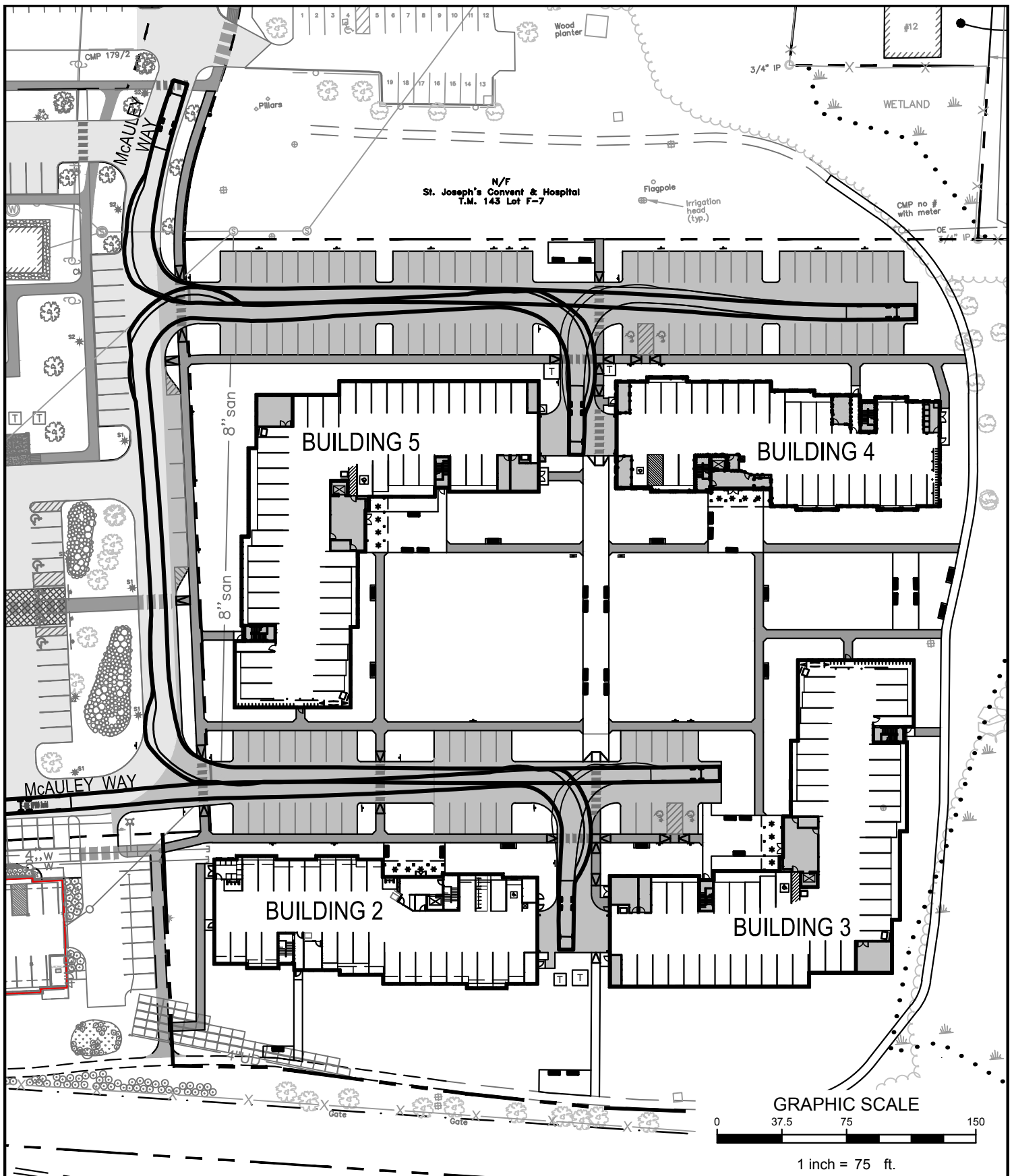


Fig. 3 AutoTURN Plan

C. Availability and Adequacy of Public Utilities 14.6.3(C) (Technical Manual, Sections 2 & 9 9)

- *Electrical services, including providing underground services*
 - *Identify existing and proposed connections for public utilities and required public utility upgrades*
 - *Sewer line connections are required, if there is a main within 200 feet*
- a. The Applicant is coordinating with the onsite utility providers and will forward capacity to serve letters upon receipt. All utilities were previously determined to have adequate capacity during the MDP process and no significant changes to the project's needs have occurred as part of the current design process.

- b. All electrical and communications feeds are underground on the property.
- c. A new sewer connection to the existing 8" main in Holly Street is proposed for the sanitary flows from Buildings 2-4. Building #5 will connect to an existing onsite sewer main that ultimately connects to the system in Walton Street. The wastewater collection system design has been prepared to comply with the City's technical standards.
- d. The buildings will contain trash rooms for the placement of collection totes for waste and recyclable materials. The buildings will have routine (weekly at a minimum) pickup by a contracted waste hauler. The totes will typically be wheeled from the interior trash room for disposal into the waste hauling vehicle. There will be no outside solid waste enclosures on Lot 4 or 5.



VEHICLE TURNING - HP-100 AERIAL FIRE TRUCK
STEVENS SQUARE AT BAXTER WOODS - PHASE 2
583 Stevens Avenue, Portland, Maine



Design: SRB	Date: MAY 2021
Draft: CDD	Job No.: 3564.03
Checked: SRB	Scale: AS NOTED
File Name: 356403-PBASE.dwg	



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Figure

1

SITE DESIGN

The following statements are provided in accordance with the submission and Section 14 of the ordinance.

Site Design Standards 14.6.4

A. *Massing, Ventilations and Wind Impact 14.14.6.4(A)*

- *Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable.*
- *Bulk, location or height impacts on adjoining structures*
 - a. The bulk, location, and height of the proposed buildings will not result in any impacts to adjacent sites or buildings. The proposed buildings are relatively modest in height and they are positioned away from nearby structures. The closest structures are the Motherhouse which is greater than 100 feet west of the site and the recently constructed Building #1 which is greater than 50' west of the site.
 - b. Based on the positioning of the four new buildings there is expected to be no diminution in value or utility of nearby properties. The proposal is consistent with the previously approved Master Development Plan.
 - c. HVAC venting will be directed through building roof top mounted units and does not impact any adjacent public spaces or residential properties.

B. *Shadows 14-14.6.4(B), if applicable*

- *Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)*
 - a. The proposed buildings will not cast significant shadows onto neighboring properties, or block access to direct sunlight for structures utilizing solar energy.

C. *Snow and Ice Loading 14-14.6.4.(C)*

- *Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways.*
 - a. The proposed buildings have been designed and located such that accumulated snow and ice will not fall onto adjacent properties or public ways. Snow will be removed from the parking lots and stockpiled within the site perimeter or if necessary, removed from the site.

D. *View Corridors 14-14.6.4(D), if applicable*

- *Protection of designated view corridors (Portland Design Manual, Appendix 1)*
 - a. The project site is located outside the Downtown Vision Corridor Protection Plan.

E. Historic Resources 14-14.6.4(E), if applicable

- *Identify developments within Historic Districts or affecting Designated Landmarks*
- *Certificate of Appropriateness or other evidence*
- *Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required*
- *Address preservation and documentation of Archaeological Resources*

During the Master Development and Building 1 Site Plan Review process the applicant proposed addition of and adjustments in various site pathways. Only one opening/gate at the Baxter Woods fence is now shown connecting to the historical Baxter Woods allée off the corner of Building 1.

F. Exterior Lighting (14-14.6.4(F))

- *Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12)*
- *Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)*

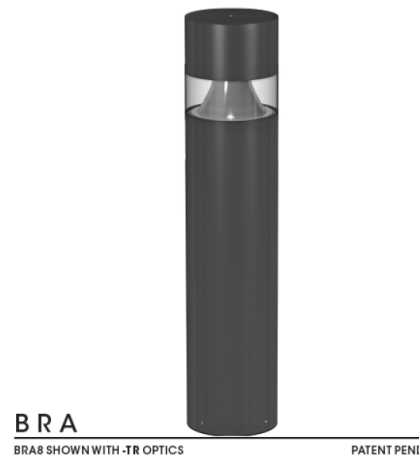
a. Site Lighting

The proposed site parking lot lighting will be consistent with the lighting provided for Building #1. This includes 12-foot residential scale LED fixtures, with 90 degree cutoff shields. (Mozart Series by US architectural Lighting & Sun Valley Lighting)



b. Architectural and Specialty Lighting

- (i) Architectural and specialty lighting may include Bollard lights along walkways. Main entrances will utilize recessed ceiling LED lights by Fail Safe®.
- (ii) The garage doors will be provided with down lot LED wall lights by Lumark®



c. Street Lighting

There are existing streetlights along Walton Street and Stevens Avenue. No new street lighting is proposed.

G. Noise and Vibration 14-14.6.4(G)

- *Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements*

All new HVAC equipment will be located greater than 100 feet from any nearby residential uses. No equipment will be located within 50 feet of a property line. All new equipment will meet the City standards for noise at the property lines.

H. Signage and Wayfinding 14-14.6.4(H), if applicable

- *Signage plan showing the location, dimensions, height and setback of all existing and proposed signs*
 - *Proposed commercial and directional signage on site*
1. All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

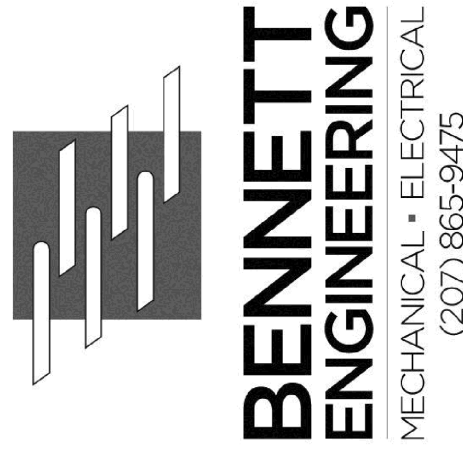
I. Design Standards 14-14.6.4(I)

- *Address any applicable design review standards by zone - Residential developments, shall integrate with and respect the character of surrounding residential development in terms of architectural form, landscaping and open space, façade materials, roof pitch, massing, and height.*

The site is located in the R5 & R5A Zoning District. The buildings are oriented to provide a primary entrance from Walton Street and secondary access from Stevens Avenue. The site has

been previously approved under a Master Development Plan and the current proposal is consistent with the original MDP.

- Building 1, now near completion, sets the overall tone and concept for the remaining buildings to be designed . As Building #1 was adjacent to the Motherhouse, and most prominent to Stevens Avenue, it came under the jurisdiction of review by the State Historical commission and the National Park Service. Portland planning staff and HP also had design input with one of the major changes was from sloped pitched roofs to flat roofs.
- The remaining buildings will generally follow through with the same design consensus.
- The exceptions being that the remaining Buildings will be 5 stories vs. 4 and some, not all, of the brick façade will be substituted with Clapboard.
- The colors the new buildings will remain all natural toned, brick, stone, metal shingle, and clapboard.
- The entry ways into each building are clearly defined with porch designs and large glass areas, yielding them a transparent and welcoming feel.
- Each unit will have its own private exterior deck.
- The majority of parking is located below the structures allowing more green space and a campus feel . The facades of the garage are enclosed and fenestrated to resemble the residential quality of the building.



STEVEN'S SQUARE AT
BAXTER WOODS - PHASE 2
583 STEVENS AVENUE, PORTLAND MAINE

Date Drawn - 05/21/21
Drawn By - MJM
Project #
Scale - AS NOTED
Revised -

SHEET TITLE

SITE LIGHTING
PLAN

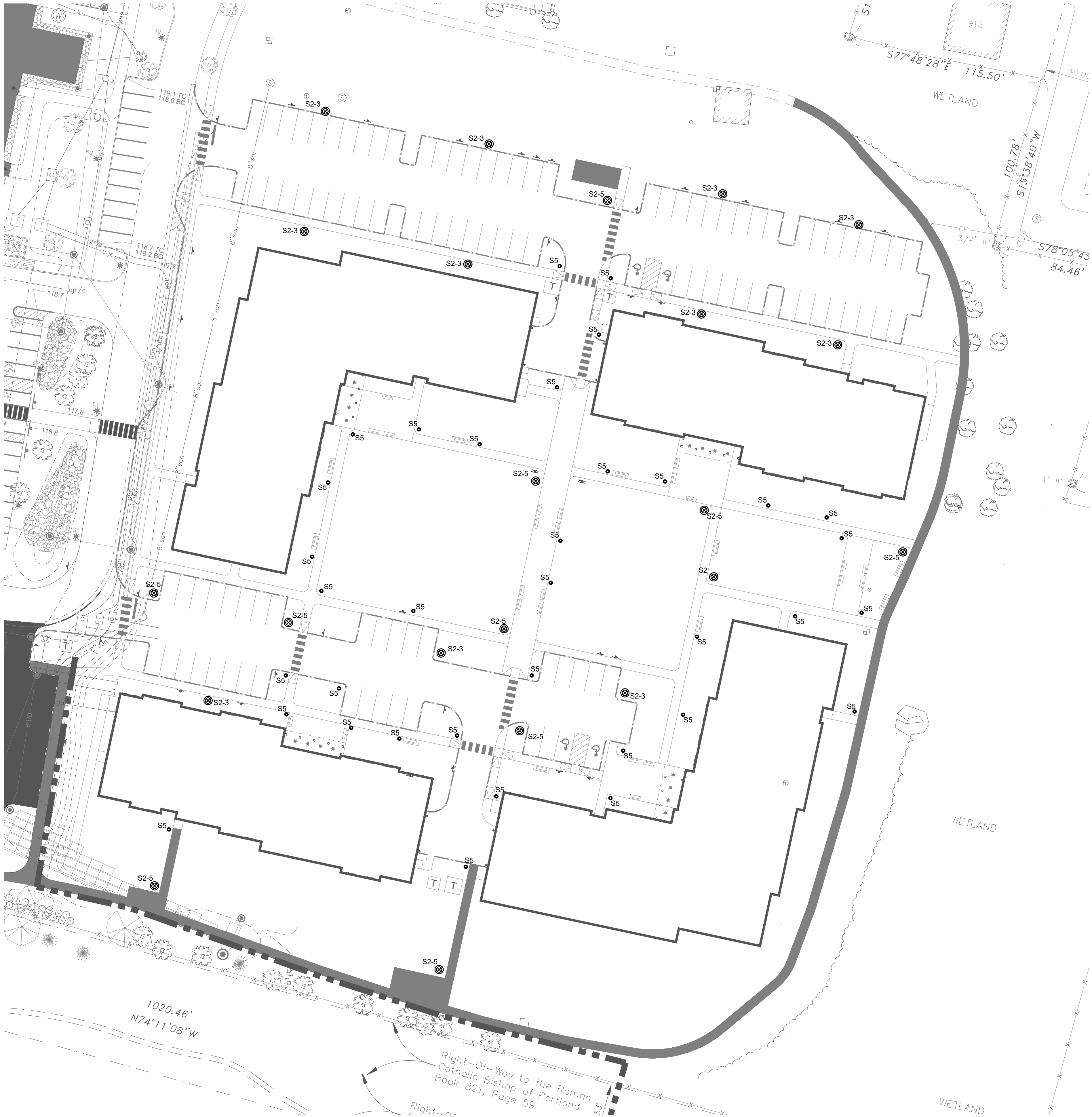
E1.0

GENERAL NOTES- SITE ELECTRICAL

1. THE COMPLETE INSTALLATION SHALL CONFORM WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES AND ORDINANCES, INCLUDED BUT NOT LIMITED TO APPROVED EDITIONS OF THE FOLLOWING: NATIONAL ELECTRICAL SAFETY CODE (ANSI C2); NATIONAL ELECTRICAL CODE (NFPA 70); OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) AND ALL AMENDMENTS THERETO. NOTHING CONTAINED IN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONSTRUED TO CONFLICT WITH THESE LAWS, CODES, AND ORDINANCES, AND THEY ARE THEREBY INCLUDED IN THESE SPECIFICATIONS. OBTAIN PERMITS AND REQUEST INSPECTIONS FROM ALL AUTHORITIES HAVING JURISDICTION. COMPLY WITH ALL POWER, TELEPHONE, CABLE TELEVISION PROVIDER REGULATIONS AND STANDARDS.
2. THE FOLLOWING ELECTRICAL WORK SHALL BE PERFORMED UNDER THIS CONTRACT: UNDERGROUND CONDUIT, FITTINGS, AND ALL DEVICES; PROVISION OF HAND HOLES, NEW LIGHTING FIXTURES, POLES WITH ALL ACCESSORIES INCLUDING ANCHOR BOLTS AND POLE BASES; PROVISION OF UNDERGROUND CONDUIT AND WIRE TO SERVE NEW LIGHTING EQUIPMENT AND RECEPTACLES; PROVISION OF SERVICE EQUIPMENT, INCLUDING OUTDOOR CABINETS, INGROUND SPLICE BOXES, GROUNDING, METER ENCLOSURES, AND WEATHERPROOF RECEPTACLES.
3. ELECTRICAL UTILITY SHALL PROVIDE ALL ASSOCIATED OVERHEAD AND UNDERGROUND PRIMARY WIRING, PRIMARY TERMINATIONS, TRANSFORMERS, AND CONNECTIONS TO EXISTING OVERHEAD LINES. CONTRACTOR SHALL PROVIDE UNDERGROUND CONDUIT.
4. PROVIDE UNDERGROUND ELECTRICAL WARNING TAPE: 6" WIDE PLASTIC TAPE, COLORED RED WITH SUITABLE LEGEND DESCRIBING BURIED ELECTRICAL LINES FOR ALL UNDERGROUND CONDUITS. LOCATE 6 INCHES BELOW FINISHED GRADE.
5. REFER TO CIVIL DRAWINGS FOR EXCAVATION AND BACKFILL OF ALL UNDERGROUND WORK.
6. EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED. CONTRACTORS SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATIONS.
7. FINAL LOCATION OF NEW UTILITIES MAY VARY FROM PLANS PENDING UTILITY COMPANY FIELD COORDINATION.
8. THE LOCAL TELEPHONE AND CABLE TELEVISION SERVICE PROVIDERS SHALL PROVIDE AND INSTALL ALL THE SITE UTILITY SERVICE CABLE TO NEW BACKBOARD IN THE CONDUITS PROVIDED BY THE CONTRACTOR AS PART OF THE SITE WORK.
9. UNDERGROUND CONDUIT SHALL BE SCHED 40 PVC, ABOVE GRADE CONDUIT SHALL BE RGS. ALL CONDUIT SWEEPS SHALL BE RGS LONG SWEEPS.
10. PROVIDE EXPANSION FITTINGS FOR ALL UNDERGROUND CONDUIT CONNECTED TO FIXED ABOVE GROUND STRUCTURES.
11. PROVIDE A LISTED INTERSYSTEM BONDING TERMINAL AT THE SERVICE ENTRANCE. INSTALL IN ACCORDANCE WITH NFPA 70,250.94

LEGEND

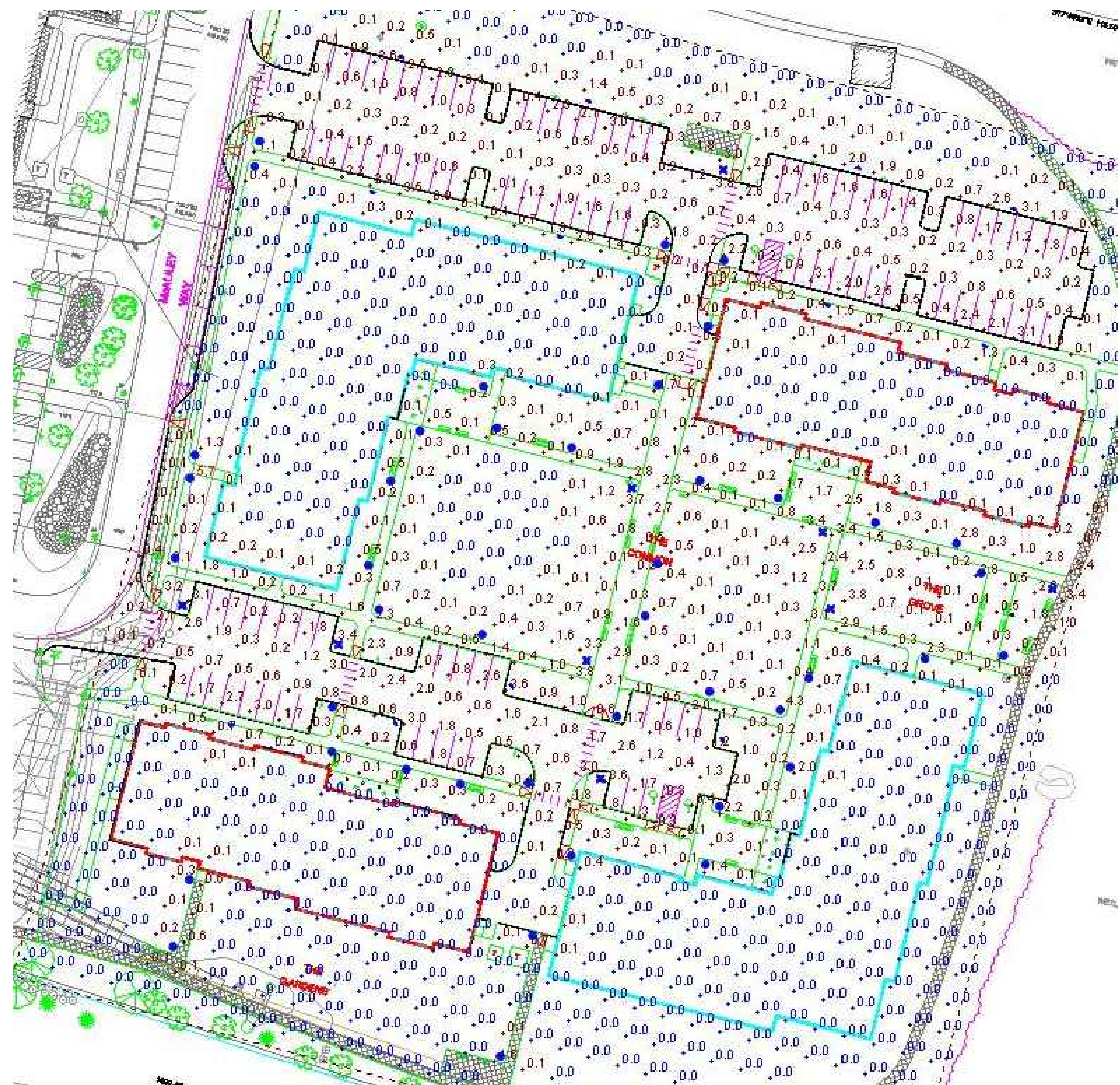
- S5 ● U.S ARCHITECTURAL LIGHTING
BRA6-LED-IL-24LED-350MAJ-NW-120-GI-RAL9005T-36IN OAH
- S2-3 ● SUN VALLEY LIGHTING
MO220LED-VLED-III-48LED-350MA-NW-120-PT-HS-VLED-RAL9005T
- S2-5 ● SUN VALLEY LIGHTING
MO220LED-VLED-V-SQ-48LED-350MA-NW-120-PT-HS-VLED-RAL9005T
- POLE LIGHTS MOUNTED AT 10'-0"



1
E1.1

STEVEN'S SQUARE SITE LIGHTING

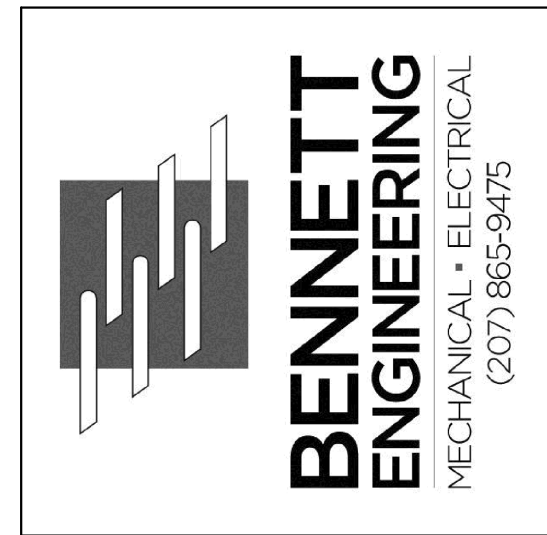
SCALE: 1/32" = 1'-0"



1
E1.1

STEVEN'S SQUARE PRELIMINARY PHOTOMETRICS

SCALE: 1/32" = 1'-0"



STEVEN'S SQUARE AT
BAXTER WOODS - PHASE 2

583 STEVENS AVENUE, PORTLAND MAINE

Date Drawn - 05/21/21

Drawn By - MJM

Project *

Scale - AS NOTED

Revised -

SHEET TITLE

SITE
PHOTOMETRICS
PLAN

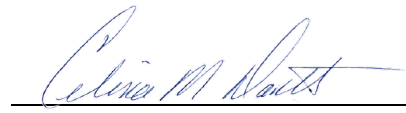
E1.1

I, Celina Daniell, of Gorrill Palmer, hereby certify that a Neighborhood Meeting was held on Monday, July 28, 2020 at 5:30 P.M. via Zoom Videoconference for the proposed Stevens Square Development located off McAuley Way to the east of the Mother House Senior Residential Building in Portland, ME.

I also certify that on July 12, 2021 (which is at least ten (10) days prior to the Neighborhood Meeting) invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 1,000 feet of a proposed industrial subdivision or industrial zone change.
2. Residents on the "interested parties" list.

Signed,



Celina M. Daniell, Sr. Technical Advisor

August 4, 2021

Date

Attached to this certification are:

1. Copy of the Invitation Sent
2. Meeting Minutes

NEIGHBORHOOD MEETING MINUTES

Project: Phase 2 Development of Lot 4 of the Master Development Plan
Sea Coast at Baxter Woods, LLC

Date: July 28, 2021 – 5:30 PM to 7:00 PM

Location: Zoom Video Conference

Attendees: Steve Bushey & Celina Daniell – Gorrill Palmer
Kevin Bunker – DC Predevelopment (Applicant)
Nick Aceto – ALA
Members of Public (see list below)

In accordance with the City of Portland Planning Board Requirements, a Neighborhood Meeting was held to discuss the proposed development of a Phase 2 of Lot 4 of the Stevens Square Campus at Stevens Square in Portland, ME. The meeting was held on Wednesday, July 28, 2021 at 5:30 PM via Zoom Conferencing. Steve Bushey, PE and Celina Daniell, representatives from Gorrill Palmer and Kevin Bunker, Applicant were available on via Zoom from 5:30 PM–6:30 PM.

Kevin Bunker started the meeting and gave a brief overview to discuss the Major Site Plan development and where the project is headed. Kevin gave a brief overview of the history of development and then introduced project slides which showed the existing Building 1 (occupied).

Kevin proceeded to describe the regulatory aspects of the permitting procedures and how it works with the City Planning Department. Also described the original Master Development Plan and what has changed since the original submission this included the parking shifted from south to north due to the requests of the City on the impacts on Baxter Woods; modified proposed parking in the center court to open space in the courtyard; created additional open space and gardens near Baxter Woods. The new buildings 2-5 will be similar floor plan/layout of existing Building 1 (4 floors over parking) 21 unit to 28 unit; less brick and more clapboards.

Questions from Public

Diane Caracci from the MH – concerned traffic only one entrance from McAuley Way. How will the traffic flow? There are some parking spaces for MH near the garden and concerned about backing out onto McAuley way and cause congestion.

Kevin responded that as part of MDP we will be looking closely at the traffic since the last development. There are requirements as part of the original COA from the City that Traffic and Analysis will need to be revisited. We are required to take a fresh look at traffic counts and movement.

Gail had the same question re: traffic; Asked if the road near Holly street could be opened up and not a dead. This could affect travel and plowing.

Kevin indicated that is not an option as that is a City street and the decisions were made by the City to keep the dead-end. Kevin mentioned that this 55 plus development which has a lot of retirees and have the flexibility when they come and go within the development. The new traffic will look at all these factors.

Margaret Munsch – Unit 206; Building 1 – Was excited about the dog park when they purchased their condo which the RE agent promoted – is that going to happen.

Kevin indicated that if demand dictates that residents want a park – he will provide a fenced in area; but no decisions as of yet. Would like to hear from others that this is important he will be responsive.

Dick – Dick would like notices given to residents that trucks, construction, etc. will be working on the site. Kevin indicated he will add this notation to the Construction Management Plan and that monthly/weekly notifications will be given for residents and neighbors.

Caroline Savage – Recent resident of MH. Will all the designed spaces, grove, etc. be accessible to all residents of the Campus.

Kevin indicated that residents have easement rights to the entire Campus so residents will have access to all amenities. He indicated this is set up as an integrated campus.

CS – What the distance between the edge of tree line and the front of MH. Why the buildings seem to be close to the MH and noticed the wetlands on the easterly side. Concerned about light quality will change.

Kevin – Campus was previously designed in 2016 Master Plan which potential residents were notified. This was done before the MH went under construction and then units were sold. There was community and City concern to stay away from Baxter Woods as much as possible. They are using the same building envelope.

CS – Concern with traffic access off Walton and the angle is a little tricky to maneuver and wanted a larger opening as Walton is busy. Kevin has no opposition to that but would need to defer to traffic engineer. Nick indicated that the tighter entrance offers slowing the traffic down.

Betty – Resident of Holly Street. Wanted to know the significance of the yellow line. Kevin indicated that it shows the zoning boundary.

Are you going to put in dark sky lighting? Steve B indicated that is correct and we will match what is in Building 1.

Katherine Bourque –

- 1) Considering installing electric car charging stations;
- 2) solar panels with flat roofs; and
- 3) potential of the soccer field.

Kevin addressed 20% of spaces will provide conduit for EV Chargers; possibly may add install an EV actual charger. The conduit is put in to give condo owners the option to have EV charging since. Kevin is open to installing a charging station at MH if the majority of residents feel it is needed.

Solar panels – During MDP process there was a to the visual effects on Baxter Woods. Which extensive studies were conducted that determined no panels due to glare, etc.?

No soccer field being proposed as a fixture. Kevin has been renting to the City and will continue until development of the area occurs.

Elizabeth – Building 1 in 301 has the EV charger and loves her unit. Appreciates hard work we are doing and dealing with the permitting process.

Holly – same issues with traffic as others. Concerned about footprint and decrease of the green and that the residents of MH are being blocked in on all sides. Feeling overwhelmed. They feel like a less important part of the community.

Kevin acknowledged her concerns. He indicated with this design there are more acres of green space but unfortunately not on the MH side. He also indicated that this was originally depicted on the Master Plan which was provided to all residents before purchase of their condos. He did acknowledge the importance of everyone at the MH as this project couldn't have happened without the residents at the MH. The residents are a key component at the MH as this is a community he wanted to create. Also was open for anyone to speak to him directly to address these concerns.

Dick – Will the chapel be reopened soon?

Kevin – reevaluating the opening of the chapel but due to covid will not be open as of right now

John Thibodeau – any interest in adding workforce and affordable housing to the project. Would Kevin entertain the idea if there were federal assistance were available.

Kevin indicated that he has built and worked on numerous affordable housing project throughout the area and understand the need for it. Kevin indicated that unfortunately this doesn't work with the programming for this site. He also indicated that during the MH development he actually built all of the affordable housing required by the City instead of paying the in lieu fee.

Kevin thanked everyone and adjourned the meeting at 7:00 p.m.

Attendees: List Above
Teresa Valliere
Betty Caton
Caroline Savage
David MacDonald
Diane Caracci
Dick Woodbury
Gail
Janie Freedman
John Thibodeau
Kate Walsh
Katherine Bourque
Kelley Craig
Margaret Munsch
Miriam Callnan
Ruth Conlogue
Susan MacDonald
Elizabeth
James Patefield

U:\3564.03_Stevens Square-Loc 4 - Portland, ME\G Abutters\min_meeting_homeless_07.28.2021.docx.docx

July 12, 2021

Dear Neighbor:

Please join us for a Neighborhood Meeting via Zoom to discuss the proposed Phase 2 development of Lot 4 of the previously approved Master Development Plan for Sea Coast at Baxter Woods, LLC located off Stevens Avenue in Portland, ME. The proposed development will include four multi-story structures containing a total of 140 Senior Adult housing units which includes parking and outdoor activity space. Pursuant to the City of Portland's COVID guidelines, this meeting is to be held by video conference.

Meeting Location: Join Zoom Meeting
<https://us02web.zoom.us/j/82488818000>
Meeting ID: 824 8881 8000
Dial by your location:
+1 312 626 6799; 82488818000# US (Chicago)
+1 929 205 6099; 82488818000# US (New York)

Meeting Date: July 28, 2021

Meeting Time: 5:30 PM – 6:15 PM

The City Code requires that property owners within 500 feet (except notices must be sent to property owners within 1,000 feet for industrial zoning map amendments and industrial subdivisions) of the proposed development and residents on an “interested parties list”, be invited to participate in a neighborhood meeting. We will take attendance and submit a sign-in sheet to the Planning Board. The meeting will last no more than 30 – 45 minutes.

If you have any questions, please feel free to contact Celina Daniell 207.772.2515 x294.

Sincerely,

GORRILL PALMER



Celina Daniell

Sr. Permitting

cdaniell@gorrillpalmer.com

Note: Under Section 14-32(C) and 14-525 of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within three weeks of submitting a preliminary application or two weeks of submitting a final site plan application, if a preliminary plan was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street, Portland, ME 04101.

COMPANY	FIRST NAME	LAST NAME	ADDRESS	CITY	STATE	ZIP
546 STEVENS AVE LLC			PO BOX 361	LYNNFIELD	MA	01940
835 FOREST LLC			460 BAXTER BLVD	PORTLAND	ME	04103
929 FOREST AVENUE LLC			21 LOWER FALLS RD	FALMOUTH	ME	04105
949 FOREST AVENUE LLC			782 FOREST AVE	PORTLAND	ME	04103
970 FOREST LLC			460 BAXTER BLVD	PORTLAND	ME	04103
973 FOREST AVENUE LLC			975 FOREST AVE	PORTLAND	ME	04103
	VAIKKO	ALLEN	1853 COUNTRY PL	OJAI	CA	93023
	ORIANNA	BAILEY	124 WALTON ST	PORTLAND	ME	04103
	REBECCA	BEAN	54 LOWER BEACH RD	WINDHAM	ME	04062
	LEROY	BICKFORD	130 WALTON ST	PORTLAND	ME	04103
	JOSHUA	BJERRUM	68 HADLOCK RD	FALMOUTH	ME	04105
BJFC LLC			915 FOREST AVE	PORTLAND	ME	04103
	MELISSA	BRENNAN	19 CROSBY ST	PORTLAND	ME	04103
	RETA	BROWN	26 VICTORY LN	HOLLIS CENTER	ME	04042
	BRIEN	CARLETON	9 DINGLEY CT	PORTLAND	ME	04103
	DONALD	CATON	14 HOLLY ST	PORTLAND	ME	04103
CHAN MANAGEMENT LLC			927 FOREST AVE	PORTLAND	ME	04103
	RUTH	CHARLESWORTH	210 WALTON ST	PORTLAND	ME	04103
	SINUON	CHAU	89 ARCADIA ST	PORTLAND	ME	04103
CHAYA LLC			24 WILDWOOD DR	CAPE ELIZABETH	ME	04107
	CHRISTOPHER	CODDING	1221 VENICE BLVD # 9	VENICE	CA	90291
	KATHERINE	COLEMAN	275 WALTON ST	PORTLAND	ME	04103
COMMUNITY HOUSING OF MAINE INC			ONE CITY CENTER 4TH FLOOR	PORTLAND	ME	04101
	JAMES	CRADOCK	219 WALTON ST	PORTLAND	ME	04103
	RICHARD	CROCKER	40 TREMAINE ST	PORTLAND	ME	04103
	BREANNA	CURRAN	5 DINGLEY CT	PORTLAND	ME	04103
	FRANCINE	D'ALFONSO	25 HURRICANE RD	FALMOUTH	ME	04105
DC BAXTER WOODS II LLC			100 COMMERCIAL ST STE 414	PORTLAND	ME	04101
	JOSHUA	DENNIS	542 STEVENS AVE	PORTLAND	ME	04103
DIOCESAN BUREAU OF HOUSING			880 FOREST AVE	PORTLAND	ME	04103
	RACHEL	DOE	187 MIDDLE RD	FALMOUTH	ME	04105
	JOHN	DOUGHERTY	285 WALTON ST	PORTLAND	ME	04103
	GLENN	DOYLE	146 COLLEGE AVE	WATERVILLE	ME	04901
	ELIZABETH	DUFFY	12 PERSHING ST	PORTLAND	ME	04103
	ELLA	DURAN	203 WALTON ST	PORTLAND	ME	04103
	AMY	EDEN	33 HOLLY ST	PORTLAND	ME	04103
	LAWRENCE	ESTEY	53 MCAULEY WAY # 302	PORTLAND	ME	04103
F IS IN LLC			16 STURBRIDGE LN	CUMBERLAND CENTER	ME	04021

FAGAN REAL ESTATE HOLDINGS LLC			13 INDIAN WOODS RD	SCARBOROUGH	ME	04074
	SEAN	FENNESSY	32 TREMAINE ST	PORTLAND	ME	04103
	TIMOTHY	FISHER	535 STEVENS AVE	PORTLAND	ME	04103
FIVE STAR PROPERTIES INC			PO BOX 3793	PORTLAND	ME	04104
	PATRICIA	FOLAN	11 CROSBY ST	PORTLAND	ME	04103
	RONALD	FOLEY	37 PLEASANT ST # 2	PORTLAND	ME	04101
FOREST AVENUE BUILDING LLC			849 FOREST AVE	PORTLAND	ME	04103
	LEEELLEN	FRIEDLAND	301 TINGEY ST SE 216	WASHINGTON	DC	20003
	THOMAS	GAUDET	213 WALTON ST	PORTLAND	ME	04103
	RICHARD	GEBHARDT	20 NEW ST	PORTLAND	ME	04103
	RONALD	GIROUX	20 MAYFIELD DR	WESTBROOK	ME	04092
	MERRITT	GOODING	12 TREMAINE ST	PORTLAND	ME	04103
	PATRICK	GRAVES	293 WALTON ST	PORTLAND	ME	04103
	BENJAMIN	GUERETTE	17 CROSBY ST	PORTLAND	ME	04103
	BRUCE	HAMILTON	14 MANOOGIAN CIR	MILFORD	MA	01757
	JOHN	HERRIGEL	47 WALLACE CIR	PHIPPSBURG	ME	04562
	JENNIFER	HIGGINS	209 WALTON ST	PORTLAND	ME	04103
	LINNEA	JOHNSON	250 BRONXVILLE RD # 5C	BRONXVILLE	NY	10708
	KENNETH	JONES	127 LELAND ST	PORTLAND	ME	04103
	MIROSLAW	KRYSINSKI	173 WALTON ST	PORTLAND	ME	04103
	KATHRYN	LAVOIE	17 MORGAN CT	PORTLAND	ME	04103
	THUY	LE	21 DEMEREST ST	PORTLAND	ME	04103
LMG PROPERTIES LLC			PO BOX 4182	PORTLAND	ME	04101
	TED	LOEFFLER	27 HASTINGS ST	PORTLAND	ME	04102
MAINE SAVINGS FEDERAL CREDIT UNION			PO BOX 347	HAMPDEN	ME	04444
	MICHAEL	MARCHETTA	1509 VONPHISTER ST	KEY WEST	FL	33040
	JOSEPH	MENDELL	16 PERSHING ST	PORTLAND	ME	04103
	TIMOTHY	MERRITT	6 MORGAN CT	PORTLAND	ME	04103
	MATTHEW	MONTGOMERY	259 WALTON ST	PORTLAND	ME	04103
MOTHERHOUSE ASSOCIATES LP			100 COMMERCIAL ST STE 414	PORTLAND	ME	04101
	JOHN	MUCCIARONE	16 NEW ST	PORTLAND	ME	04103
	JESSIE	MULLEN	18 TREMAINE ST	PORTLAND	ME	04103
	RAYMOND	MUNSCH	PO BOX 124	OXFORD	MD	21654
	ARTHUR	MURDOCK	253 WALTON ST	PORTLAND	ME	04103
	TONI	NAPPI	24 NEW ST	PORTLAND	ME	04103
	CHRISTOPHER	NELSON	23 ST JOSEPH ST	PORTLAND	ME	04103
			198 SACO AVE	OLD ORCHARD BEACH	ME	04064
NEW HERITAGE BUILDERS INC	KEVIN	NGUYEN	756 US RT 1	YARMOUTH	ME	04096
	DONNA	PALOMAKI	53 MCAULEY WAY # 303	PORTLAND	ME	04103

PAN HOLDINGS LLC			8 SUMMER BREEZE LN	KENNEBUNKPORT	ME	04046
	JAMES	PATEFIELD	54 TREMAINE ST	PORTLAND	ME	04103
	TOJI	PEARLMAN	53 HARTLEY ST	PORTLAND	ME	04103
	RICHARD	PERKINS	258 EMMONS RD	KENNEBUNK	ME	04043
	ELIZABETH	POPE	53 MCAULEY WAY # 301	PORTLAND	ME	04103
PORTLAND 930 LLC			29 IDLEWOOD DR	CUMBERLAND CENTER	ME	04021
	VANNY	POV	964 FOREST AVE	PORTLAND	ME	04103
	KATHLEEN	PRATT	241 WALTON ST	PORTLAND	ME	04103
	THOMAS	RANDALL	39 TYLER AVE	MEDFORD	MA	02155
	JASPER	RICE	8006 SYCAMORE ST	NEW ORLEANS	LA	70118
	DEBORAH	ROBB	48 TREMAINE ST	PORTLAND	ME	04103
	OSCAR	RODRIGUEZ	53 MCAULEY WAY # 205	PORTLAND	ME	04103
ROMAN CATHOLIC BISHOP OF PORTLAND			510 OCEAN AVE	PORTLAND	ME	04103
	VICTOR	ROSS	612 STEVENS AVE	PORTLAND	ME	04103
	ERNEST	ROULEAU	132 OCEAN AVE	PORTLAND	ME	04103
	JOSE	SALAZAR	17 DINGLEY CT	PORTLAND	ME	04103
	JOHN	SCHABERG	53 MCAULEY WAY # 204	PORTLAND	ME	04103
	WILLIAM	SCHOEN	16 TREMAINE ST	PORTLAND	ME	04103
	JOHN	SCHRECK	25 HOLLY ST	PORTLAND	ME	04103
	BRIAN	SEGAL	223 WALTON ST	PORTLAND	ME	04103
	KAREN	SMITH	19 HOLLY ST	PORTLAND	ME	04103
SPE-AD INC			PO BOX 1047	SCARBOROUGH	ME	04070
ST JOSEPH'S CONVENT & HOSPITAL			605 STEVENS AVE	PORTLAND	ME	04103
	SARAH	STARBIRD	198 WALTON ST	PORTLAND	ME	04103
SULLYS' REAL ESTATE LLC			887 FOREST AVE	PORTLAND	ME	04103
	STEPHEN	TIETJEN	16 US ROUTE 1	FALMOUTH	ME	04105
	JEREMY	URQUHART	166 WALTON ST	PORTLAND	ME	04103
	WILLIE	URQUHART	34 HERSEY ST	PORTLAND	ME	04103
	SETH	VIGUE	22 NEW ST	PORTLAND	ME	04103
	DEBORAH	VIOLA	205 SMITH RD	WINDHAM	ME	04062
WALTON 196 LLC			29 IDLEWOOD DR	CUMBERLAND CENTER	ME	04021
	DAVID	WARREN	53 MCAULEY WAY # 304	PORTLAND	ME	04103
	ERIN	WHEATON	28 TREMAINE ST	PORTLAND	ME	04103
	THOMAS	WILSBACH	227 WALTON ST	PORTLAND	ME	04103
	CARLETON	WINSLOW	51 A BURNHAM ST	PORTLAND	ME	04102
	JOSEPH	WOJCIK	211 FALMOUTH RD	FALMOUTH	ME	04105
	SANDRA	WYMAN	8 BAYSIDE LN	FALMOUTH	ME	04105
	ANTHONY	DONOVAN	27 RIVERVIEW STREET	PORTLAND	ME	04102
	BARBARA	WOOD	125 EMERY STREET	PORTLAND	ME	04102

	DAVID	NOWLIN	215 OXFORD STREET	PORTLAND	ME	04102
	DEB	KEENAN	28 DOROTHY STREET	PORTLAND	ME	04103
	DEVON	PLATTE	26 NORTH STREET, 33	PORTLAND	ME	04101
DISTRICT 3	EDWARD	SUSLOVIC	46 KENWOOD STREET	PORTLAND	ME	04103
	JANICE	CARPENTER	9 W. COMMONWEALTH DRIVE	PORTLAND	ME	04103
	JENNIFER	MUNSON	389 CONGRESS STREET, 4TH FLC	PORTLAND	ME	04101
KAPLAN THOMPSON ARCHITECTS	JESSE	THOMPSON	100 EXCHANGE STREET	PORTLAND	ME	04103
	LYNN	CLARKSON	145 MARLBOROUGH ROAD	PORTLAND	ME	04103
	MARY	GRIFFITY	6 E. PROM, UNIT 2	PORTLAND	ME	04103
	NANCY	BARTLETT	PO BOX 7965	PORTLAND	ME	04112
	PAM	BURNSIDE	64 LESTER DRIVE	PORTLAND	ME	04103
	PAUL	DUBOIS	1915 CONGRESS STREET	PORTLAND	ME	04102
	PEGGY	MORIN	66 FARNHAM STREET	PORTLAND	ME	04101
	PHILIP	HAUGHEY	1660 SOLDIERS FIELD ROAD	BOSTON	MA	02135
	PRISCILLA	LAVALLEE	190 US ROUTE 1, UNIT 2	FALMOUTH	ME	04105
WASTE MANAGEMENT OF MAINE	REBECCA	HALLA	2000 FOREST AVENUE	PORTLAND	ME	04103
DISTRICT 37	REP GLENN	CUMMINGS	24 NEVENS STREET	PORTLAND	ME	04103
	ROBERT	HAINS	250 HOLM AVENUE	PORTLAND	ME	04102-1208

From: [Tom Randall](#)
To: jrather@portlandmaine.gov
Subject: 65 McAuley Way
Date: Monday, July 26, 2021 1:54:19 PM

Hello Mr. Rather,

I received your letter as an abutter to the proposal at 65 McAuley Way. We are concerned about several aspects of the proposal. In truth, as I have only recently received this notification of potential changes, I have not managed to delve into all the details of the proposal yet, however some issues have jumped out already.

The proposal significantly moves the buildings further north and includes a new car park beyond that which obliterates the open space guaranteed in the earlier proposal. As one of the very few direct abutters this change is very significant to us. Our light and view will be significantly affected by this change. Moreover, especially considering the car park, what provision for rainwater runoff have been made? Holly Street is already a rather damp neighborhood. Where are the 2 small pipe discharges on the east side?

Another issue would be in regards to waste water which will run out through Holly Street's existing pipes. How do we know it can accommodate an increase of well over a hundred units? How many additional units would we expect it could handle?

Are the buildings to be taller than previously proposed?

How will the wooded hillside be affected?

I received this notice only very recently and the meeting is on Thursday. Is this a typical timeline for a project of this order?

Thank you for your thoughtful response!
Tom Randall

From: [Liz Duffy](#)
To: jrather@portlandmaine.gov
Subject: Baxter Woods Development Proposal
Date: Wednesday, July 21, 2021 8:09:53 PM

Hi James,

My name is Elizabeth Duffy and I live at 12 Pershing St. Our lot backs up directly to the old Mcaully school field that I believe the following development is building multi-family condos on - PL-001662-2021.

We have a very high water table on our property. We get standing water immediately in the yard and around the house. Is anything being addressed during this development to better that and ensure none of this major digging will impact this in an adverse way? Can anything be done during this major work to improve this situation? Where is the drainage from the new buildings going to go? We are down hill from this new development and are concerned about this impact.

Thank you for your time and I look forward to hearing from you.

Sincerely,
Elizabeth Duffy

TAX MAP-BLOCK-LOT NUMBER:

MAP 136 LOT E-6, MAP 143 LOT F-4, MAP 143 LOT F-12, MAP 144 LOT B-3
MAP 135 LOT X-2, MAP 135 LOT X-3, MAP 136 LOT X-1 (CONVEYANCE LOTS)

CURRENT LAND OWNER:

DC BAXTER WOODS IV LLC (ALL LOTS)
100 COMMERCIAL STREET, SUITE 414
PORTLAND, ME. 04101
BOOK 35072 / PAGE 145
SEE OVERALL SUBDIVISION PLAN
(CCRD BK. 216, PG. 433 - 10/28/2016)
FIRST AMENDED OVERALL SUBDIVISION PLAN
(CCRD BK. 217, PG. 151 - 05/04/2017)

DEVELOPER / APPLICANT:

DC BAXTER WOODS IV LLC
100 COMMERCIAL STREET, SUITE 414
PORTLAND, ME. 04101
CONTACT: KEVIN BUNKER
207.772.7673
bunker.kevin@gmail.com

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SITE DEVELOPMENT PLANS

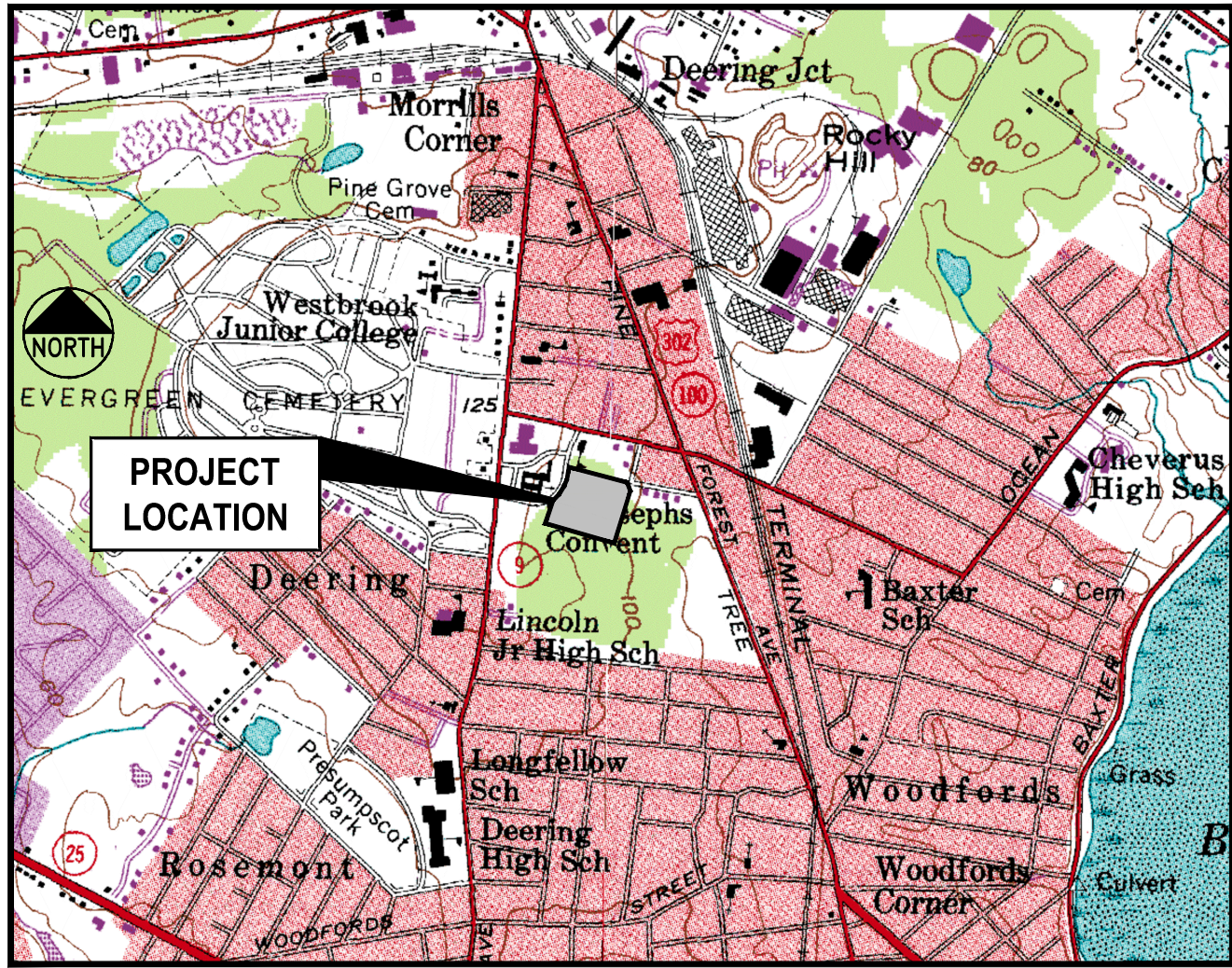
FOR

Stevens Square at Baxter Woods - Phase 2 *

583 STEVENS AVENUE, PORTLAND, MAINE

MAY 2021

PERMIT DOCUMENTS



LOCATION MAP
N.T.S.

UTILITIES

WATER:
PORTLAND WATER DISTRICT
225 DOUGLASS STREET
P.O. BOX 3553
PORTLAND, MAINE 04104
207.761.8310
CONTACT: ROBERT BARTELS
rbartels@pwd.org

SEWER:
CITY OF PORTLAND
PUBLIC SERVICES DIVISION
212 CANCO ROAD
PORTLAND, MAINE 04103
207.874.8840
CONTACT: KEITH GRAY / BRAD ROLAND

ELECTRIC:
CENTRAL MAINE POWER
162 CANCO ROAD
PORTLAND, MAINE 04103
207.842.2367
CONTACT: JAMIE COUGH

TELEPHONE:
CONSOLIDATED COMMUNICATIONS
5 DAVIS HILL FARM ROAD
PORTLAND, MAINE 04103
207.797.1866
CONTACT: PATRICK MORRISON

NATURAL GAS:
NORTHERN UTILITIES / UNITIL
1075 FOREST AVENUE
PORTLAND, MAINE 04103
207.797.8002, EXT. 6220
CONTACT: CRAIG CAMPBELL / SCOTT CARPENTER
207.650.6716

CABLE TV:
TIME WARNER CABLE / SPECTRUM
115 JOHNSON ROAD
PORTLAND, MAINE 04102
207.253.2324
CONTACT: MARK PELLETIER

DIG SAFE:
CALL BEFORE YOU DIG
DIAL 811 (AT LEAST 72 HRS IN ADVANCE)

PERMITS / APPROVALS

TYPE:

LOCAL

MAJOR SITE PLAN APPROVAL
AMENDED SUBDIVISION PLAN
APPROVAL/AMENDED MASTER
DEVELOPMENT PLAN APPROVAL:

GOVERNING BODY:

CITY OF PORTLAND PLANNING AUTHORITY
CITY HALL, CONGRESS STREET
PORTLAND, MAINE 04103
207.874.8608
CONTACT: KEVIN KRAFT

STATUS/DATE ISSUED:

MAJOR SITE PLAN APPLICATION
PRE APP - MARCH 24, 2021
APPLICATION MADE - MAY 12, 2021

BUILDING PERMIT:

CITY OF PORTLAND CODE ENFORCEMENT OFFICE
CITY HALL, CONGRESS STREET
PORTLAND, MAINE 04103
207.874.8900

BY OWNER/ARCHITECT

UTILITY OPENING PERMITS:

CITY OF PORTLAND PUBLIC SERVICES DIVISION
212 CANCO ROAD
PORTLAND, ME 04103

BY CONTRACTOR

* THE APPLICANT IS SEEKING APPROVALS FOR A TOTAL OF FOUR (4) NEW BUILDINGS TO CONTAIN 140 DWELLING UNITS. THE PLAN INCLUDES AN AMENDED SUBDIVISION PLAN TO DIVIDE THE EXISTING LOT 4 INTO TWO LOTS; ONE LOT TO CONTAIN THE EXISTING BUILDING #1 (NOW CONSTRUCTED) AND A SECOND LOT (LOT 5) TO CONTAIN THE FOUR NEW PROPOSED BUILDINGS. THE OWNER / APPLICANT / ASSIGNS RESERVE THE RIGHT TO COMPLETE THE FOUR BUILDINGS IN ONE OR MORE PHASES.

Stephen R. Bushey

I HEREBY ACKNOWLEDGE THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MAINE AND THAT I AM COMPETENT TO PREPARE THIS DOCUMENT.

CONSULTANT LIST

CIVIL ENGINEER:
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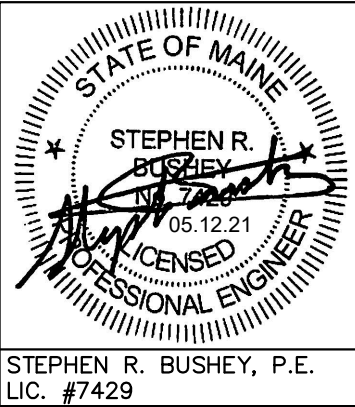
ARCHITECT:
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SURVEYOR (TOPOGRAPHY AND BOUNDARY):
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LEWISTON, MAINE 04240
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CONTACT: WILLIAM M. PETERLEIN, P.E.

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Aceto Landscape Architects.
565 CONGRESS STREET, SUITE 310
PORTLAND, MAINE 04101
207.221.3390
CONTACT: NICK ACETO / MARGO BARAJAS

NOTE: THIS PLAN SET IS
ISSUED FOR PERMITTING
PURPOSES & SHALL NOT BE
USED FOR CONSTRUCTION.



Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
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Drawing Name:	COVER SHEET
Project:	Stevens Square at Baxter Woods -- Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS IV LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-1.0

GENERAL NOTES:

1. THE CONTRACTOR SHALL REFER TO THE PROJECT MANUAL FOR CONSTRUCTION SPECIFICATIONS AND BIDDING PROCEDURES.
2. THIS PROJECT WILL BE SUBJECT TO THE TERMS AND CONDITIONS OF ALL PERMITS ISSUED BY LOCAL UTILITY COMPANIES AND THE CITY OF PORTLAND.
3. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF THE ENTRANCE, PAVING, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY ENTRANCE POINTS. ENTRANCES IN MOST LOCATIONS REQUIRE STRUCTURAL SLABS. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR INFORMATION ON THE STRUCTURAL SLAB ENTRANCES.
4. ALL REQUIRED AND NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSIONS AND THE FINAL SERVICE CONNECTIONS.
5. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR THE ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
6. MAINTENANCE OF EROSION CONTROL MEASURES IS OF PARAMOUNT IMPORTANCE TO THE APPLICANT AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR THE CITY, AT NO ADDITIONAL COST TO THE OWNER.
7. ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN MATERIAL SCHEDULES BASED UPON HIS PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.
8. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE PROJECT SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SHALL APPLY AT NO EXTRA COST TO THE OWNER.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS THROUGHOUT THE PROJECT AND PROVIDING THE OWNER WITH A SET OF THE FINAL RECORD DRAWINGS WHEN THE PROJECT IS COMPLETE.
10. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN SAFE VEHICLE AND PEDESTRIAN ACCESS THROUGH OUT THE LIFE OF THE PROJECT.

SITE LAYOUT NOTES:

1. ALL HANDICAP PARKING SPACES ARE TO RECEIVE HANDICAP SIGNS AND PAVEMENT MARKINGS AS ILLUSTRATED ON THE DETAIL SHEETS.
2. BITUMINOUS CONCRETE CURB AND GRANITE CURB SHALL MEET THE REQUIREMENTS OF MDOT 702.01, 703.07, AND 609.04.
3. ALL DIMENSIONING, UNLESS NOTED OTHERWISE, IS TO THE FACE OF CURB OR THE FACE OF THE BUILDING.
4. EXCEPT WHERE INDICATED OTHERWISE, THE PAVEMENT IS TO BE STANDARD DUTY PAVEMENT.
5. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS AND STANDARDS OF THE MAINE DEPARTMENT OF TRANSPORTATION, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITIONS AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS.
6. STRIPE PARKING AREAS, DRIVES AND ROADWAY AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, CROSSWALKS, HANDICAP SYMBOLS, PAINTED ISLANDS AND FIRE LANES. (ALL MARKINGS EXCEPT MEDIAN ISLANDS AND CENTERLINES TO BE CONSTRUCTED USING WHITE TRAFFIC PAINT.) ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE 'F'. MEDIAN ISLANDS AND CENTERLINES TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT.
7. SEE DETAILS FOR PARKING STALL DIMENSIONS, HANDICAP SYMBOLS, SIGNS AND SIGN POSTS.
8. STOP BARS SHALL BE 12" WIDE.
9. PAINTED ISLANDS SHALL BE 4" WIDE DIAGONAL LINES @ 3'-0" O.C. BORDERED BY 4" WIDE LINES.

GRADING & DRAINAGE NOTES:

1. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF n = 0.013 OR LESS.
2. PROVIDE TURF REINFORCEMENT IN AREAS INDICATED ON THE PLANS.
3. AN "AS-BUILT" CERTIFICATION OF THE STORMWATER DRAINAGE SYSTEM BY A REGISTERED ENGINEER IS REQUIRED PRIOR TO THE OWNER ACCEPTING THE BUILDING AND PROPERTY. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ANY DEVIATION FROM THE PLANS MAY DELAY THE ACCEPTANCE OF THE PROJECT.
4. A DETAILED O&M MANUAL FOR STORMWATER MANAGEMENT SYSTEMS IS (WILL BE) FILED WITH THE CITY OF PORTLAND DURING THE PERMIT REVIEW PROCESS. A SPECIFIC MANUAL HAS BEEN PREPARED FOR O&M OF THE DRAINAGE SYSTEM.
5. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
6. SEE GRADING, DRAINAGE AND EROSION/SEDIMENT CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
7. ALL DISTURBED AREAS NOT TO BE PAVED, SODDED OR OTHERWISE TREATED SHALL RECEIVE 4" LOAM, SEED, FERTILIZER AND MULCH.
8. **COMPACTION REQUIREMENTS:**

LOCATION	MINIMUM COMPACTION
SUBBASE AND BASE GRAVEL BELOW PAVED OR CONCRETE AREAS	95%
SUBGRADE FILL BELOW PAVED AREAS	90%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%
STRUCTURAL FILL WITHIN PROPOSED BUILDING AREA	95%
SELECT FILL ADJACENT BUILDING FOUNDATIONS, EXTERIOR FOUNDATIONS, AND WITHIN 8 INCHES OF THE SLAB-ON-GRADE	95%

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557.
9. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
10. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND EXIT RAMPS ADJACENT TO THE BUILDING AND ALONG NEW CURBED AREAS. ALL ADA COMPLIANT PARKING SPACES SHALL BE PAVED WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
11. PROVIDE STABILIZATION OR SEPARATION GEOTEXTILE FABRIC OVER UNSTABLE SOILS AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND IN ACCORDANCE WITH THE FINAL GEOTECHNICAL RECOMMENDATIONS.
12. NATIVE SOILS CONSIST OF TOPSOIL / PAVEMENT OVER FILL / REWORKED NATIVE SOIL OVERLYING MARINE FAN DEPOSIT OVERLYING BEDROCK. CARE MUST BE EXERCISED TO LIMIT DISTURBANCE OF THE BEARING SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, DISTURBED AREAS SHOULD BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO EXTRA EXPENSE TO THE OWNER.
13. FIVE (5.0) FEET OF CLEAN GRANULAR SOIL MEETING THE SELECT FILL GRADATION SPECIFICATIONS SHALL BE PROVIDED BELOW THE ENTRANCE SLABS AND ADJACENT SIDEWALKS. GRADUAL TRANSITION (3 HORIZONTAL TO 1 VERTICAL) OF SELECT FILL THICKNESS SHALL BE PROVIDED FROM THE 5.0 FOOT DEPTH TO THE GRAVEL BASE THICKNESS AT THE SIDEWALKS AND PAVED AREAS AWAY FROM THE BUILDINGS.

UTILITY NOTES:

1. ALL REQUIRED UTILITIES SERVING THE PROJECT SHALL BE COORDINATED AND CONSTRUCTED BY THE SITE WORK CONTRACTOR TO WITHIN 5 FEET OF THE BUILDINGS, AT A LOCATION COORDINATED WITH THE MEP CONTRACTOR AND THE BUILDING PLANS. SITE WORK WITHIN 5 FEET OF UNDERSLAB UTILITIES SHALL CONSIST OF TRENCHING AND BACKFILLING. ACTUAL UTILITY INSTALLATION SHALL BE BY THE MEP CONTRACTOR. ALL REQUIRED CONNECTION FEES SHALL BE PAID BY THE GENERAL CONTRACTOR.
2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF AND/OR RELOCATION OF OVERHEAD AND UNDERGROUND TELEPHONE WITH CONSOLIDATED COMMUNICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUITS, PULL WIRES, TRENCHING AND BACKFILLING NECESSARY TO COMPLETE THE WORK.
3. ALL SANITARY SEWER WORK SHALL MEET THE STANDARDS OF THE MAINE STATE PLUMBING CODE AND CITY OF PORTLAND PUBLIC WORKS DEPARTMENT.
4. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRIC SERVICE WITH CENTRAL MAINE POWER.
5. COORDINATE ALL UTILITY WORK WITH THE APPROPRIATE UTILITY COMPANY. ALL UTILITY WORK SHALL CONFORM TO THE STANDARDS OF THE UTILITY COMPANY AND PROJECT SPECIFICATIONS. IN CASE OF CONFLICT, THE MORE STRINGENT STANDARDS SHALL APPLY.
6. THE LOCATIONS OF THE NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE SERVICING UTILITY COMPANY.
7. UNDERGROUND ELECTRICAL, CONDUIT MATERIAL AND INSTALLATION SHALL CONFORM TO UTILITY COMPANY STANDARDS AND PROJECT SPECIFICATIONS, WHICH EVER IS MORE STRINGENT.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
10. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO COMPLETION OF THE PROJECT.
11. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL, AT NO EXTRA EXPENSE TO THE OWNER.
12. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18 INCH OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS.
13. THE CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION AND PROVIDE TEMPORARY SERVICES AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO THE JOBSITE. TEMPORARY SERVICES SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. COORDINATE ALL TEMPORARY SERVICES WITH UTILITY COMPANY, OWNER AND AFFECTED BUSINESSES.

LANDSCAPE NOTES:

(SUBJECT TO COORDINATION WITH LANDSCAPE DRAWINGS. IN CASE OF CONFLICT, THE LANDSCAPING DRAWINGS SHALL GOVERN.)

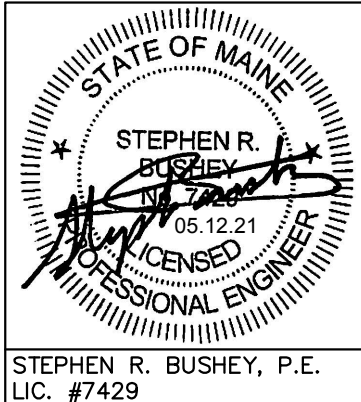
1. ALL PLANTS SHALL BE NURSERY GROWN AND WORKMANSHIP SHALL CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN, STANDARDS AND SHALL BE SUBJECT TO THE APPROVAL OF THE OWNERS REPRESENTATIVE BEFORE AND AFTER PLANTING.
2. PLANTS SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER INSPECTION AND ACCEPTANCE, AND SHALL HAVE AT LEAST 80% HEALTHY GROWTH AT THE END OF THE GUARANTEED PERIOD.
3. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 4" LOAM, SEED, FERTILIZER, AND MULCH.
4. THREE (3) INCH BARK MULCH IS TO BE USED AROUND THE TREE AND SHRUB PLANTING AS SPECIFIED IN THE DETAILS. WHERE BARK MULCH IS USED IN A CURBED ISLAND, THE BARK SHALL MEET THE TOP INSIDE EDGE OF THE CURB. ALL OTHER AREAS SHALL RECEIVE 4" LOAM, SEED, FERTILIZER AND MULCH.
5. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING AS SHOWN.
6. PARKING AREA PLANTED ISLANDS TO HAVE A MINIMUM OF 4" TOPSOIL. REMOVE ALL CONSTRUCTION DEBRIS BEFORE TOPSOILING. TOPSOIL SHALL BE PLACED TO TOP OF CURB.
7. ALL PLANT MATERIAL SHALL BE APPROVED BY THE OWNER OR THE OWNERS REPRESENTATIVE PRIOR TO ARRIVAL ON THE SITE.
8. PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE PRIOR TO DIGGING.
9. THE CONTRACTOR SHALL LOCATE, VERIFY, AND MARK ALL EXISTING AND NEWLY INSTALLED UNDERGROUND UTILITIES PRIOR TO ANY LAWN WORK OR PLANTING. ANY CONFLICTS WHICH MIGHT OCCUR BETWEEN PLANTINGS AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
10. NO SUBSTITUTION OF PLANT MATERIALS SHALL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTING AND LAWNS AGAINST DAMAGE FROM ONGOING CONSTRUCTION. THIS PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL THE FORMAL ACCEPTANCE OF ALL THE PLANTINGS.
12. SEE PLANTING DETAILS FOR WEED BARRIER INFORMATION.
13. ALL PLANTING LOCATED AT THE ENTRANCE TO THE PROJECT OR AT INTERSECTIONS WITHIN THE SITE WILL BE MAINTAINED AND WILL NOT EXCEED 3 FEET IN HEIGHT WITHIN A TRIANGLE FORMED 25' INTO THE DRIVEWAY AND 25' ALONG THE TRAVEL WAY.

EROSION CONTROL NOTES:

1. PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITIES, CLEARING AND GRADING LIMITS SHALL BE STAKED BY THE CONTRACTOR BASED ON THE LIMITS OF GRADING SHOWN ON THE DRAWINGS AND ACCEPTED BY THE OWNER'S REPRESENTATIVE IN THE FIELD. AFTER THE CLEARING AND GRADING LIMITS HAVE BEEN ACCEPTED, THE CONTRACTOR SHALL INSTALL THE PERIMETER SILT FENCES AND THE CONSTRUCTION ENTRANCES ASSOCIATED WITH THE PROJECT.
2. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCHED AS SOON AS POSSIBLE. TEMPORARY/PERMANENT SEED MIXTURES SHALL CONFORM TO THE SEEDING PLAN CONTAINED IN THE EROSION CONTROL PROJECT PREPARED FOR THIS PROJECT.
3. PRIOR TO PAVING, THE CONTRACTOR SHALL FLUSH SILT FROM ALL STORM LINES.
4. ALL STORM DRAIN INLETS AND OUTLETS NOT IN PAVED AREAS ARE TO RECEIVE RIPRAP PROTECTION APRONS DURING CONSTRUCTION.
5. SILT FENCES SHALL BE INSPECTED, REPAIRED AND CLEANED AS NOTED IN THE EROSION CONTROL NOTES SHOWN ON THE EROSION CONTROL DETAIL SHEET.
6. THE CONTRACTOR SHALL REPAIR AND ADD STONE TO THE CONSTRUCTION ENTRANCE AS IT BECOMES SATURATED WITH MUD TO ENSURE THAT IT FUNCTIONS TO CAPTURE MUD FROM THE TIRES OF CONSTRUCTION VEHICLES DURING CONSTRUCTION. THE PURPOSE OF THE CONSTRUCTION ENTRANCE IS TO KEEP ADJACENT STREETS CLEAR OF DIRT AND MUD, SWEEPING OF THE ROADWAYS SHALL BE PERFORMED BY THE CONTRACTOR.
7. SILT REMOVED FROM AROUND INLETS AND BEHIND THE SILT FENCES SHALL BE PLACED ON A TOPSOIL STOCKPILE AND MIXED INTO TOPSOIL FOR USE IN LANDSCAPING OPERATIONS.
8. LAND DISTURBING ACTIVITIES SHALL BE ACCOMPLISHED IN A MANNER AND SEQUENCE WHICH CAUSE THE LEAST PRACTICAL UNPROTECTED DENUDED AREAS ON THE SITE DURING CONSTRUCTION.
9. THE CONTRACTOR IS CAUTIONED THAT FAILURE TO COMPLY WITH THE SEQUENCE OF CONSTRUCTION, EROSION / SEDIMENT CONTROL PLAN, AND OTHER PERMIT REQUIREMENTS MAY RESULT IN MONETARY PENALTIES AS ENFORCED BY THE MEDEP OR LOCAL AGENCIES. THE CONTRACTOR SHALL BE ASSESSED ALL SUCH PENALTIES AT NO COST TO THE OWNER OR PERMITTEE.
10. A FULL EROSION/SEDIMENTATION CONTROL PLAN ACCOMPANIES THIS DRAWING SET AND IS ALSO CONTAINED IN THE SITE WORK SPECIFICATIONS.
11. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS AS SHOWN AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.
12. INSPECT EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS $\frac{1}{3}$ THE STRUCTURE HEIGHT.
13. INSTALL CURLEX EROSION CONTROL MAT OR EQUAL ON ALL SLOPES STEEPER THAN 3:1.
14. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION & SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES, CUMBERLAND COUNTY SOIL AND WATER CONVERSATION DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 1991"

EXISTING	LEGEND	PROPOSED
	ZONING LINE	
	EXISTING STRUCTURE	
	EDGE OF TRAVEL WAY, PAVEMENT, ROADS, DRIVES	
	CURBING	
	PROPERTY LINE	
	EASEMENT LINE	
	OVERHEAD ELECTRIC LINES / OVERHEAD WIRES	
	UNDERGROUND ELECTRIC LINE	
	UNDERGROUND TELEPHONE LINE	
	WATER LINE	
	WATER GATE VALVE	
	STORM DRAIN LINE	
	SANITARY SEWER LINE	
	ROADWAY PAVEMENT STRIPING	
	GAS	
	FENCE	
	EXISTING CONTOUR LINE	
	EXISTING WETLANDS	
	UTILITY POLE	
	SIGN	
	LIGHT POLE	
	CATCH BASIN	
	SEWER MANHOLE	
	ELECTRICAL/COMMUNICATIONS VAULT	
	ELECTRICAL/COMMUNICATIONS PULL BOX	
	HYDRANT	
	TREES, LANDSCAPING	
	TREE LINE / EDGE OF BRUSH	
	TELEPHONE MANHOLE	
	ELECTRICAL MANHOLE	
	TEST BORING	
	WETLANDS	

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.



Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-GEN NOTES.dwg		
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Drawing Name:	GENERAL NOTES & LEGEND
Project:	Stevens Square at Baxter Woods -- Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.

C-1.1

605 Stevens Avenue, Portland - Residential Density Computations Lots 3 & 4									
Parcel ID	Gross Acreage (Ac.)	RSA ESTIMATED NRA DEDUCTS per \$14-47 as AMENDED 06-15-15	LOT AREA IN RSA (APPLY)		LOT AREA IN RS (NO)				
(BASED ON 06-24)			Mother House Lot 3	Lot 4 (Fields)	Mother House Lot 3	Lot 4 (Fields)			
Lot 1 St. Catharines	2.36		2.65	7.35	1.73	1.90			
Lot 2 McAuley HS	3.18		115,538	311,533	75,528	82,577			
Lot 3 Motherhouse	4.39	A. Exist. watercourses	0	0	NA	NA	NA		
Lot 4 Fields/Stevens Ave.	9.05	B. Wetlands (as defined)	0	54,341	NA	NA	NA		
Total Acreage	18.98	C. 25% slopes	0	19,827	NA	NA	NA		
			Deducts Total:		0	74,168	NA		NA
			NET LAND AREA (Gross Ac. - Deducts) (sf)		115,538	237,365	75,528	82,577	
			(ac)		2.65	5.45	1.73	1.90	
			MULTI-PLEX UNITS PERMITTED		72	148	16	13	
			TOTAL LOT 3		88				
			TOTAL LOT 4		161				
			GRAND TOTAL LOTS 3 & 4		249				

Notes:

1. Lot 3 - RS density is 1 unit per 4,500 sf of Gross ac. with 250 ft frontage. (9/14.117)(a) 2.)

2. Lot 4 - RS density is 1 unit per 6,000 sf of Gross ac. with less than 250 feet frontage (9/14.117)(a) 2.)

3. RSA - Density = 1 unit/1600 sq of Net Area applying deducts.

4. No affordable housing multi-plex density bonuses per §14-48.8 applied to Motherhouse Lot 3

Notes:									
1. Lot 3 - RS density is 1 unit per 4,500 sf of Gross ac. with 250 ft frontage. (§ 14.117(a)(2))									
2. Lot 4 - RS density is 1 unit per 6,000 sf of Gross ac. with less than 250 feet frontage (§14.117 (a) 2.)									
3. RSA - Density = 1 unit/3,600 sf Net Area applying deducts.									
4. No affordable housing multiple density bonuses per §14-488 applied to Motherhouse Lot 3									

LEGEND									
○	Iron pin found								
□	Monument found								
---	Abutter's line								
---	Property line								
---	Easement line								
---	Right of way line								
▨	Existing building								

08-11-15 SUBDIVISION CONDITIONS OF APPROVAL:

- The applicant shall finalize and cross-reference the two subdivision plats and associated condominium documents for review and approval by Corporation Counsel, the Department of Public Services, and the Planning Authority prior to the release of the signed subdivision plat; and
- That the 73 parking spaces on Lot #3 (Motherhouse Lot) shall be solely for the residential tenants of the Motherhouse with no other lots having easement rights for parking on Lot #3. All of the easements as identified on the Plat, including those regarding the shared driveways and parking areas, shall be finalized to the satisfaction of the Corporation Counsel, Department of Public Services, Traffic Engineering Reviewer and the Planning Authority, and executed prior to the release of the signed subdivision plat; and
- That the recommendations of the City Arborist in comments dated 7.22.2015 regarding the protection of preserved trees and follow up tree care (particularly large heritage Red Oaks) shall be advised to all contractors and implemented during construction and after, to include no storage of materials within the drip line of trees and tree save measures as per ISA trees and construction recommendations as noted.

(also see note #9)

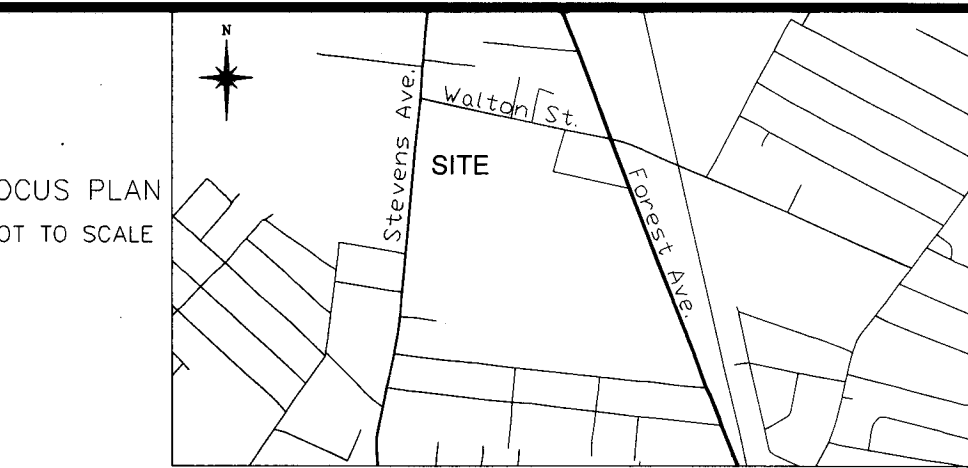
WAIVERS GRANTED BY THE PORTLAND PLANNING BOARD ON 08-11-15:

- Street Trees: The Planning Board finds that the applicant has demonstrated that site constraints prevent the planting of all required street trees and waived the standard (Section 14-526(b)(ii)) requiring one street tree per unit for multi-family development and concludes that the applicant shall make a financial contribution of \$5,600 for 28 trees to Portland's Tree Fund.
- Parking Aisle Width: The Planning Board waived the requirement of Section 1.14 of the City's Technical Manual that show a 24 ft. wide drive aisle required for perpendicular spaces to allow a reduction to 22 feet aisle width for the parking area in the north exit drive on Stevens Avenue to minimize the impact on the historic nature of the area.
- Number of Driveways: The Planning Board waived the requirement of Section 1.7.1.8, Number of Driveways, that does not permit more than 2 driveways per site to allow 3 driveways because 2 of the driveways are one-way and the third driveway functions as a shared driveway.

TOTAL AREA
826,755 sq. ft./18.98 acres

EASEMENT TABLE	
#1	Parking and Access Easement
#2	Access, Utility and Drainage Easement
#3	Access, Utility and Drainage Easement
#4	Access, Utility and Drainage Easement
#5	Access, Utility and Drainage Easement
#6	Utility and Drainage Easement
#7	Stormdrain Easement
#8	Access, Utility and Drainage Easement
#9	Utility Easement
#10	Utility Easement

OWNERS OF RECORD
Lots 2, 3 and 4
Sea Coast at Baxter Woods Associates, LLC
Book 33698, Page 187
Map Blocks and Lots: 136-E-6, 143-F-4, 144-B-1



NOTES

- Book and Page references are to the Cumberland County Registry of Deeds.
- Bearings are referenced to Grid North. See Plan Reference 1.
- This plan has been prepared and approved in accordance with the City of Portland Land Use Code, Article IV Subdivisions as a four (4)-lot subdivision. Development of Lots 1-4 shall be subject to Site Plan Review and approval by the Planning Board pursuant to Article V Site Plan Review standards. A sectional recording plat for individual or master planned development shall be prepared and approved for individual lot or section development in accordance with Article IV, § 14-495(h) requirements prior to construction on any lots.
- Notwithstanding any deeded rights granted to the City of Portland development shall occur within the 33-foot right of way easement located on the southerly property line (the Baxter Easement). Said easement shall forever remain natural, however allowing for tree and vegetation maintenance by a licensed arborist, creation and maintenance of trails for use by the public or other activities consistent with permitted uses within the adjacent Mayor Baxter Woods property.
- This four lot subdivision approval was granted by the City of Portland Planning Board 8/11/15.
- Reference is made to the Lot 3 Sectional Subdivision Plat Motherhouse-88 Units prepared by Titcomb Associates, last dated 6/24/15 and approved by the City of Portland on 8/11/15 for Lot 3 conditions of approval as recorded in Plan Book 216, Page 434 as modified by the First Amended Plan of Lot 3 Sectional Subdivision Plat Motherhouse-88 Units prepared by Titcomb Associates dated April 10, 2017, to be recorded.
- The easements are referenced and described by the corresponding number in the 605 Stevens Avenue, Declaration of Covenants and Easements to be recorded in the Cumberland County Registry of Deeds.
- Lots 3 and 4 are referenced to a City of Portland Master Development Plan approval dated 06-14-18 in conformance with City Code Section 14-524(a)(3c).
- This plan provides 76 parking spaces on lot 3 (3 spaces in excess of the 08-11-15 approved 73 spaces) - 73 spaces shall be assigned to the Motherhouse, Condominium Unit 1 and 3 spaces assigned to the Smith Wing, unit 2, refer to plan reference 11 for parking locations.

PLAN REFERENCES

- Site Plan done by SYTDesign Consultants, December 2000 and May 2001, not recorded.
- Standard Boundary Survey of "Mayor Baxter Woods" by Public Works Department of the City of Portland, Maine dated April 2001, not recorded.
- Plan of Land Attached to the Last Will and Testament of Annie E. Ewing by E.C. Jordan, dated April 25, 1892, recorded in Plan Book 10, Page 131.
- Plan of Topography in Portland, Maine for Mercy Hospital by E.C. Jordan, dated March 21, 1968, not recorded.
- Plan of Maple Grove, Portland, not signed, recorded October 20, 1868 in Plan Book 2, Page 52.
- Plan of Property made for St. Joseph's Convent and Hospital Corp. by H.I. & E.C. Jordan, dated June 28, 1877, not recorded.
- Standard Boundary Survey made for Amy Mukerlin by Titcomb Associates, dated July 14, 1987, not recorded.
- Standard Boundary Survey, Property of St. Joseph's Convent and Hospital, made for SYTDesign Consultants by Titcomb Associates, dated November 4, 2002.
- Plan of Property and Existing Conditions, Catherine McAuley High School & St. Joseph's Convent made for Land Use Consultants by Land Use Consultants dated September 26, 2006.
- Overall Subdivision Plan-605 Stevens Avenue made for Sea Coast at Baxter Woods Associates, LLC dated June 24, 2015 and revised through June 15, 2016 as recorded in Plan Book 216, Page 433.
- Plan of Lot 3 Sectional Subdivisional Plat Motherhouse-88 Units made for Motherhouse Associates LP by Titcomb Associates, dated June 24, 2015 recorded in the Cumberland County Registry of Deeds in Plan Book 216, Page 434 as modified by a plan entitled "First Amended Plan of Lot 3 Sectional Subdivision Plat Motherhouse-88 Units" made for Motherhouse Associates LP by Titcomb Associates dated April 10, 2017, to be recorded.

EASEMENTS and ENCUMBRANCES

- Lot 4 is subject to a right of way 33 feet wide as shown, reserved in deed of James P. Baxter to the Roman Catholic Bishop of Portland dated March 10, 1908 and recorded in Book 821, Page 59.
- Lot 4 benefits from a right of way 33 feet wide adjoining the southerly baseline as shown, described in deed of James P. Baxter to the Roman Catholic Bishop of Portland dated March 10, 1908 and recorded in Book 821, Page 59.
- No record evidence of an easement for utility poles on the property was found.
- Rights, covenants and easements set forth in the Stormwater Drainage System Maintenance Agreement from Sea Coast at Baxter Woods Associates, LLC to the City of Portland, dated December 23, 2016 and recorded in the Cumberland County Registry of Deeds, Book 33752, Page 170 as modified by an Addendum to Stormwater Drainage System Maintenance Agreement, to be recorded. Not plottable.
- Covenants, conditions, restrictions, reservations, easements, liens for assessments, and other matters set forth in the Declaration of Condominium of 605 Stevens Avenue Condominium, to be recorded.
- Rights, easements and covenants set forth in the Declaration of Covenants and Easements, to be recorded.

FIRST AMENDED OVERALL SUBDIVISION PLAN

605 Stevens Avenue

Stevens Avenue & Walton Street

Portland, Maine

MADE FOR

Sea Coast at Baxter Woods Associates, LLC

20 Blueberry Lane

Falmouth, Maine 04105

JOB# 202096.1

DATE: April 10, 2017

SCALE: 1" = 50'

BOOK# 525, 578

202096-2006.dwg

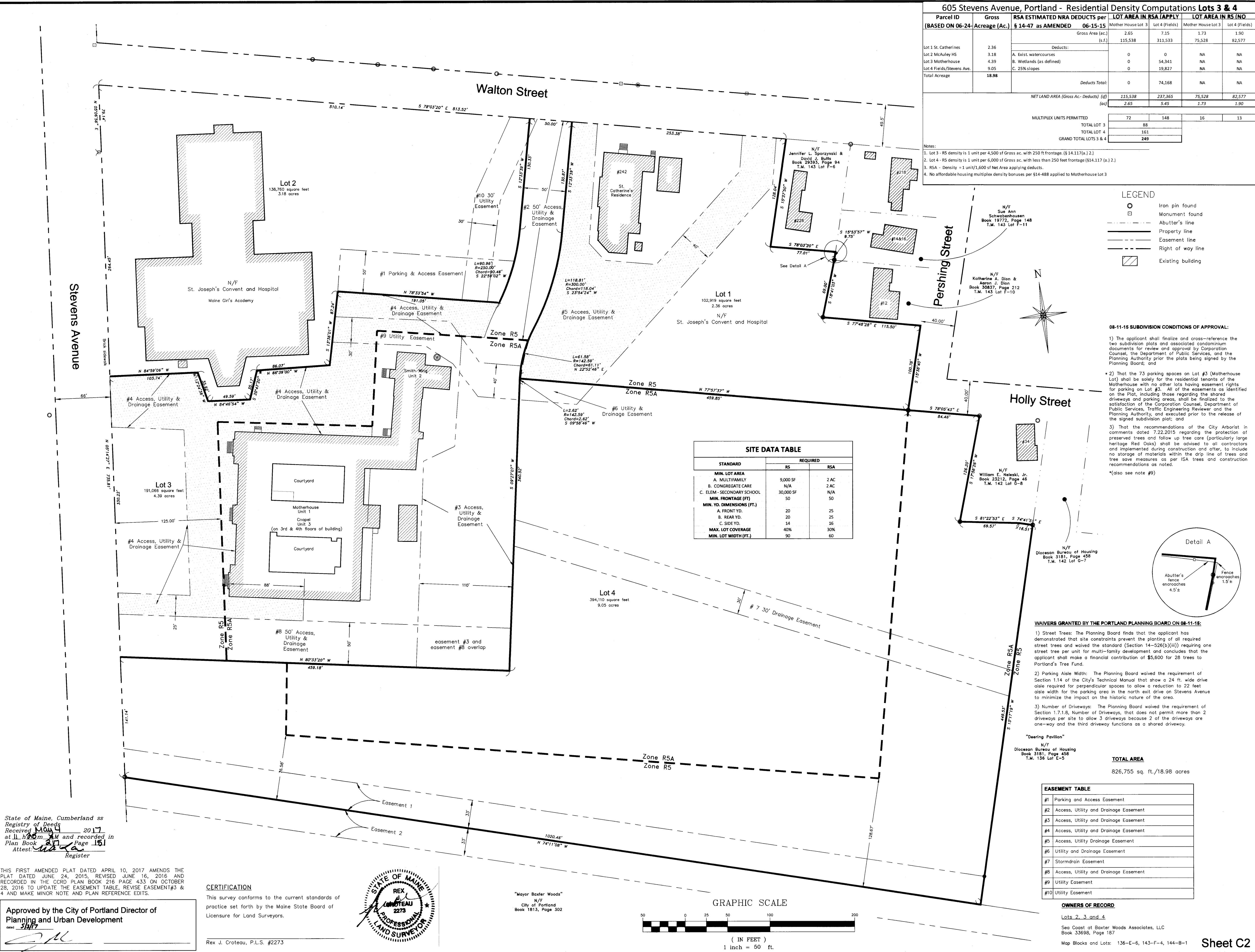
FILE# 8538

Titcomb Associates

133 Gray Road, Falmouth, Maine 04105

(207)797-9199 www.titcombsurvey.com

Sheet C2



State of Maine, Cumberland ss

Registry of Deeds

Received May 4 2017

at 11:20 AM and recorded in

Plan Book 33698 Page 187

Attest: [Signature] Register

THIS FIRST AMENDED PLAT DATED APRIL 10, 2017 AMENDS THE PLAT DATED JUNE 24, 2015, REVISED JUNE 16, 2016 AND RECORDED IN THE CORD PLAN BOOK 216 PAGE 433 ON OCTOBER 28, 2016 TO UPDATE THE EASEMENT TABLE, REVISE EASEMENT#3 & 4 AND MAKE MINOR NOTE AND PLAN REFERENCE EDITS.

Approved by the City of Portland Director of Planning and Urban Development

dated 5/16/17

[Signature]

CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

STATE OF MAINE

REX J. CROTEAU

PROFESSIONAL LAND SURVEYOR

2273

Rex J. Croteau, P.L.S. #2273

Mayor Baxter Woods

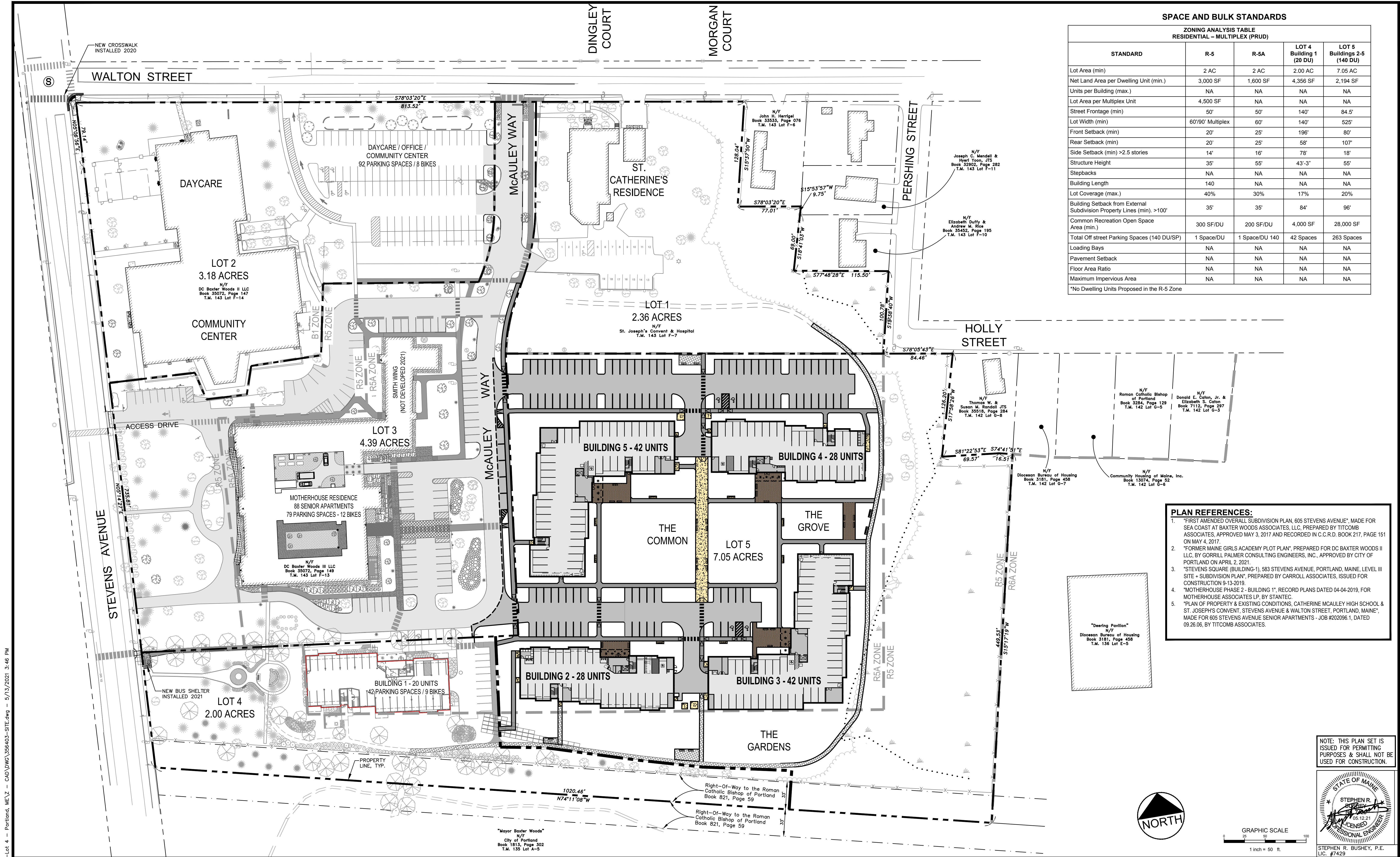
N/F

City of Portland

Book 1813, Page 302

Page 463

U:\3564.03 Stevens Square-Lot 4 - Portland, ME.Z - CAD\DWG\356403-SITE.dwg - 5/13/2021 3:46 PM



SPACE AND BULK STANDARDS

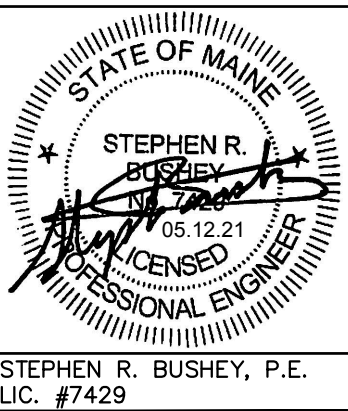
ZONING ANALYSIS TABLE RESIDENTIAL - MULTIPLEX (PRUD)				
STANDARD	R-5	R-5A	LOT 4 Building 1 (20 DU)	LOT 5 Buildings 2-5 (140 DU)
Lot Area (min)	2 AC	2 AC	2.00 AC	7.05 AC
Net Land Area per Dwelling Unit (min.)	3,000 SF	1,600 SF	4,356 SF	2,194 SF
Units per Building (max.)	NA	NA	NA	NA
Lot Area per Multiplex Unit	4,500 SF	NA	NA	NA
Street Frontage (min)	50'	50'	140'	84.5'
Lot Width (min)	60'/90' Multiplex	60'	140'	525'
Front Setback (min)	20'	25'	196'	80'
Rear Setback (min)	20'	25'	58'	107'
Side Setback (min) >2.5 stories	14'	16'	78'	18'
Structure Height	35'	55'	43'-3"	55'
Stepbacks	NA	NA	NA	NA
Building Length	140	NA	NA	NA
Lot Coverage (max.)	40%	30%	17%	20%
Building Setback from External Subdivision Property Lines (min.) >100'	35'	35'	84'	96'
Common Recreation Open Space Area (min.)	300 SF/DU	200 SF/DU	4,000 SF	28,000 SF
Total Off street Parking Spaces (140 DU/SP)	1 Space/DU	1 Space/DU 140	42 Spaces	263 Spaces
Loading Bays	NA	NA	NA	NA
Pavement Setback	NA	NA	NA	NA
Floor Area Ratio	NA	NA	NA	NA
Maximum Impervious Area	NA	NA	NA	NA

*No Dwelling Units Proposed in the R-5 Zone

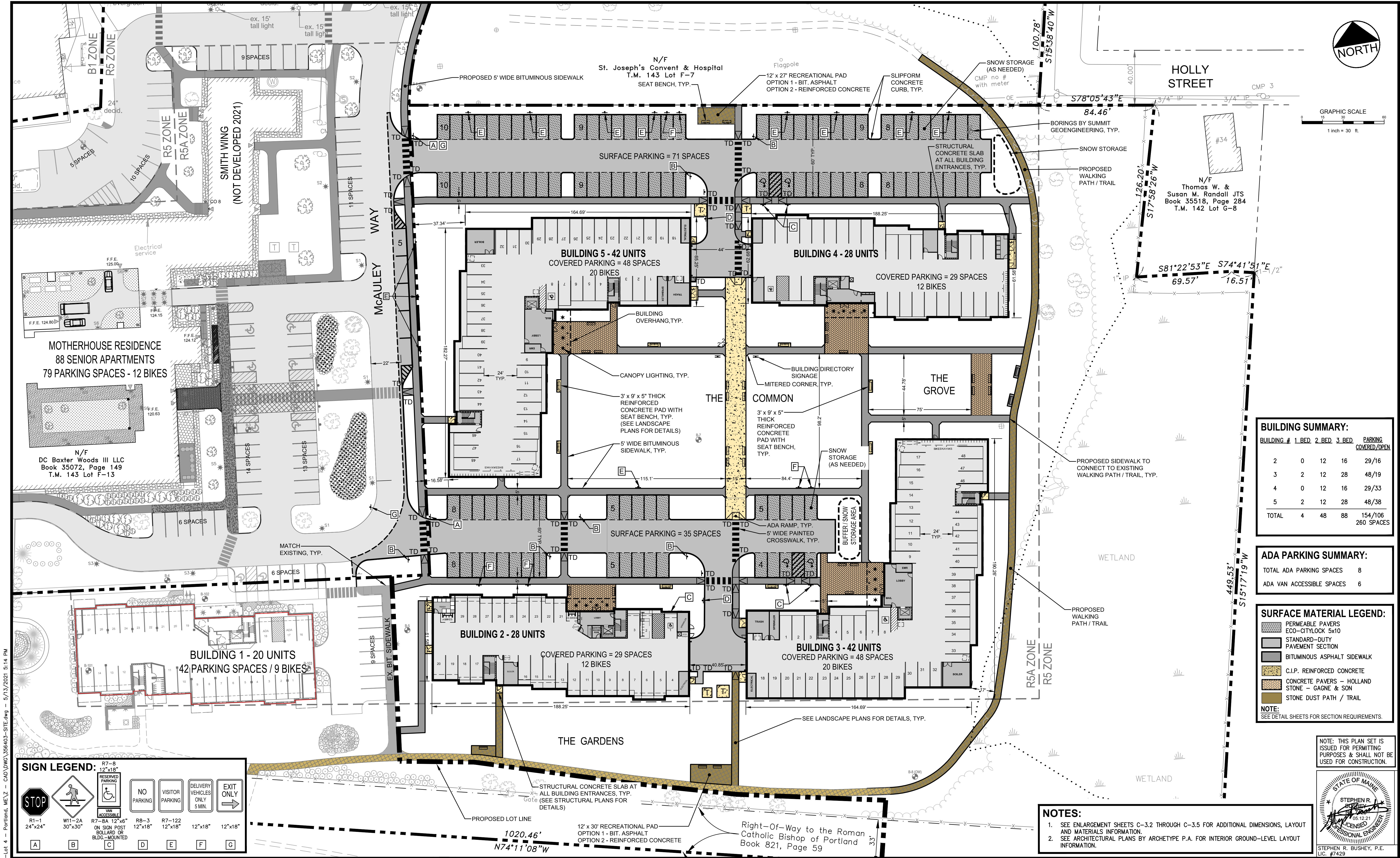
PLAN REFERENCES:

- "FIRST AMENDED OVERALL SUBDIVISION PLAN, 605 STEVENS AVENUE", MADE FOR SEA COAST AT BAXTER WOODS ASSOCIATES, LLC, PREPARED BY TITCOMB ASSOCIATES, APPROVED MAY 3, 2017 AND RECORDED IN C.C.R.D. BOOK 217, PAGE 151 ON MAY 4, 2017.
- "FORMER MAINE GIRLS ACADEMY PLOT PLAN", PREPARED FOR DC BAXTER WOODS II LLC, BY GORRILL PALMER CONSULTING ENGINEERS, INC., APPROVED BY CITY OF PORTLAND ON APRIL 2, 2021.
- "STEVENS SQUARE (BUILDING-1), 583 STEVENS AVENUE, PORTLAND, MAINE, LEVEL III SITE + SUBDIVISION PLAN", PREPARED BY CARROLL ASSOCIATES, ISSUED FOR CONSTRUCTION 9-13-2019.
- "MOTHERHOUSE PHASE 2 - BUILDING 1", RECORD PLANS DATED 04-04-2019, FOR MOTHERHOUSE ASSOCIATES L.P. BY STANTEC.
- "PLAN OF PROPERTY & EXISTING CONDITIONS, CATHERINE MCAULEY HIGH SCHOOL & ST. JOSEPH'S CONVENT, STEVENS AVENUE & WALTON STREET, PORTLAND, MAINE", MADE FOR 605 STEVENS AVENUE SENIOR APARTMENTS - JOB #202096.1, DATED 09.26.06, BY TITCOMB ASSOCIATES.

NOTE: THIS PLAN SET IS
ISSUED FOR PERMITTING
PURPOSES & SHALL NOT BE
USED FOR CONSTRUCTION.



						Design: SRB Draft: CDD Date: MAY 2021			 GORRILL PALMER Relationships. Responsiveness. Results. www.gorrillpalmer.com 207.772.2515			Drawing Name: OVERALL SITE LAYOUT PLAN			Drawing No. C-3.0		
						Checked: SRB Scale: AS NOTED Job No.: 3564.03						Project: Stevens Square at Baxter Woods – Phase 2 583 Stevens Avenue, Portland, Maine					
						File Name: 356403-SITE.dwg						Client/Owner: DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696					
			1 2021.05.12 SUBMITTED TO CITY FOR REVIEW			This plan shall not be modified without written permission from Gorrill Palmer. Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to Gorrill Palmer.											
Rev.	Date	Revision															



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SIGN LEGEND:

R1-1 24"x24"	W11-2A 30"x30"	R7-8 12"x18"	R7-8A 12"x6"	R8-3 12"x18"	R7-122 12"x18"	R7-122 12"x18"
STOP	WALKING	RESERVED PARKING	NO PARKING	VISITOR PARKING	DELIVERY VEHICLES ONLY 5 MIN.	EXIT ONLY
A	B	C	D	E	F	G

BUILDING SUMMARY:

BUILDING #	1 BED	2 BED	3 BED	PARKING COVERED/OPEN
2	0	12	16	29/16
3	2	12	28	48/19
4	0	12	16	29/33
5	2	12	28	48/38
TOTAL	4	48	88	154/106 260 SPACES

ADA PARKING SUMMARY:

TOTAL ADA PARKING SPACES	8
ADA VAN ACCESSIBLE SPACES	6

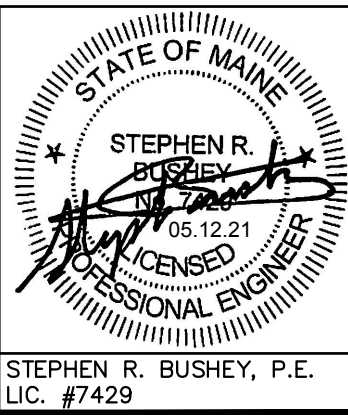
SURFACE MATERIAL LEGEND:

- PERMEABLE PAVERS
- ECO-CITYLOCK 5x10
- STANDARD-DUTY PAVEMENT SECTION
- BITUMINOUS ASPHALT SIDEWALK
- C.I.P. REINFORCED CONCRETE
- CONCRETE PAVERS - HOLLAND STONE - GAGNE & SON
- STONE DUST PATH / TRAIL

NOTE:
SEE DETAIL SHEETS FOR SECTION REQUIREMENTS.

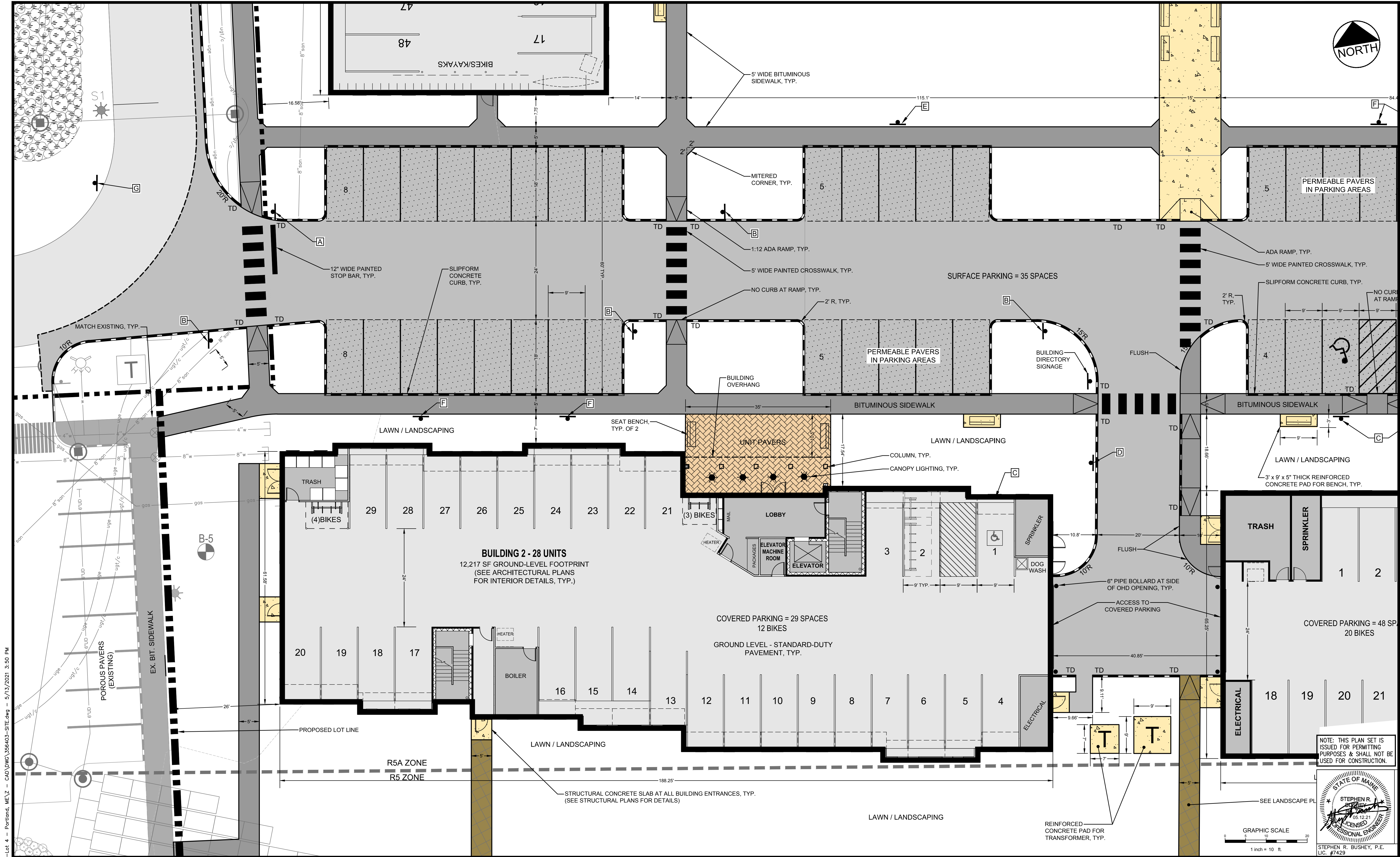
- NOTES:**
- SEE ENLARGEMENT SHEETS C-3.2 THROUGH C-3.5 FOR ADDITIONAL DIMENSIONS, LAYOUT AND MATERIALS INFORMATION.
 - SEE ARCHITECTURAL PLANS BY ARCHETYPE P.A. FOR INTERIOR GROUND-LEVEL LAYOUT INFORMATION.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.



Rev.		Date	Revision	Design: SRB Draft: CDD Date: MAY 2021			Relationships. Responsiveness. Results. www.gorrillpalmer.com 207.772.2515	Drawing Name: SITE LAYOUT PLAN		Drawing No. C-3.1
1		2021.05.12	SUBMITTED TO CITY FOR REVIEW	Checked: SRB Scale: AS NOTED Job No.: 3564.03				Project: Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine		
1		2021.05.12	SUBMITTED TO CITY FOR REVIEW	File Name: 356403-SITE.dwg				Client/Owner: DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696		

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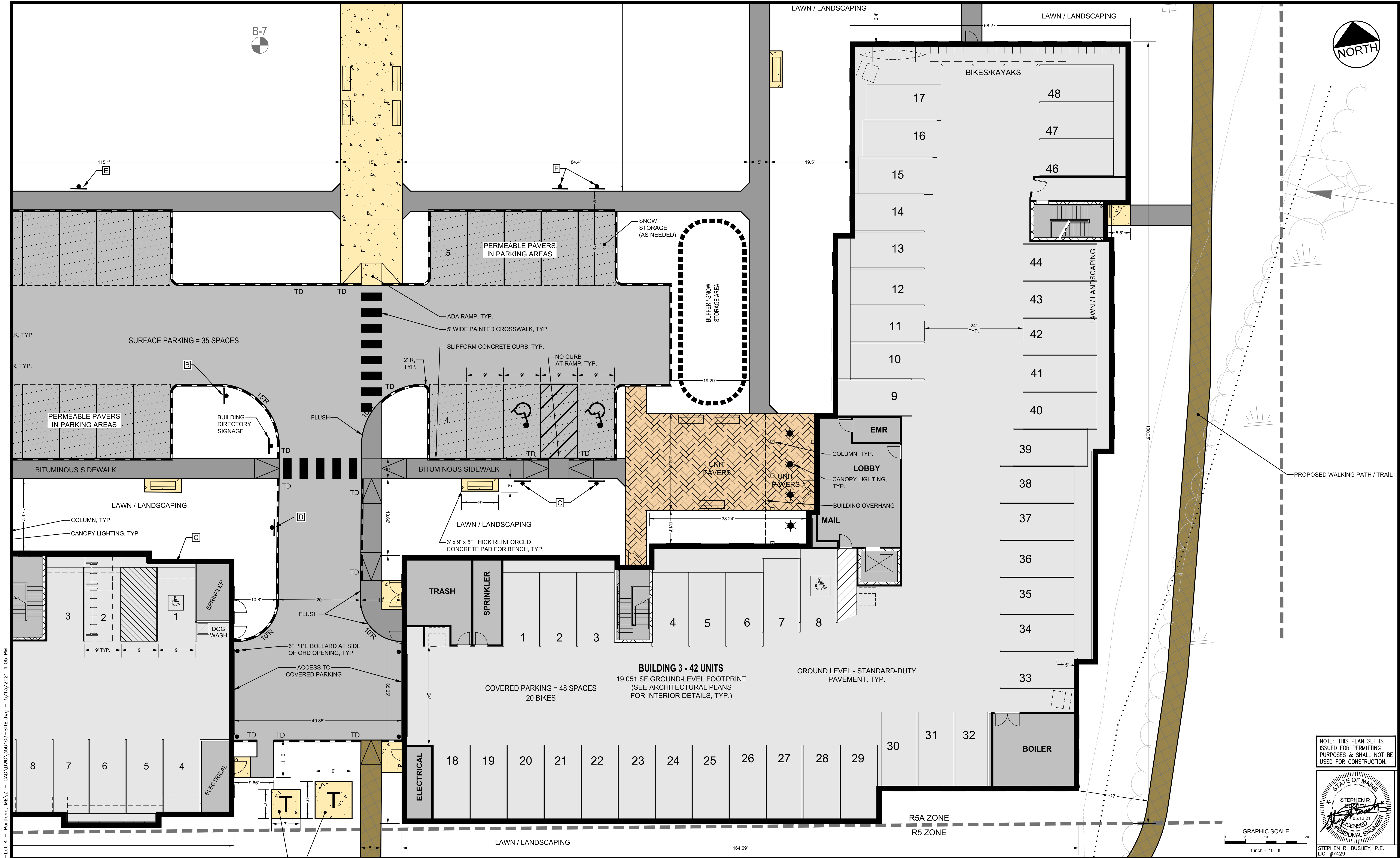


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Drawing Name:	BUILDING #2 LAYOUT PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-3.2



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Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

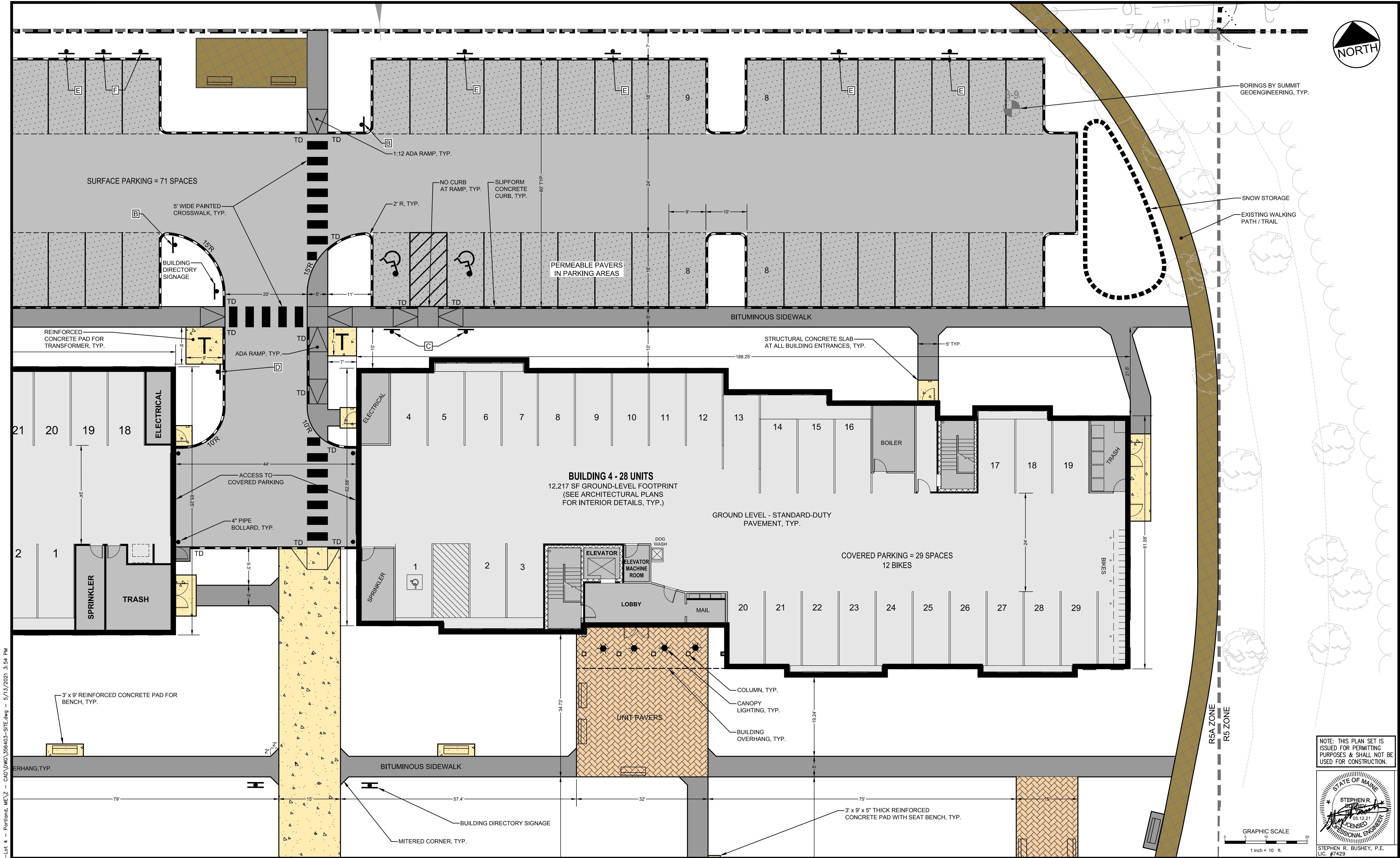
Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-SITE.dwg		
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Drawing Name:	BUILDING #3 LAYOUT PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.	C-3.3
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Rev.	Date	Revision

Rev.	Date	Revision
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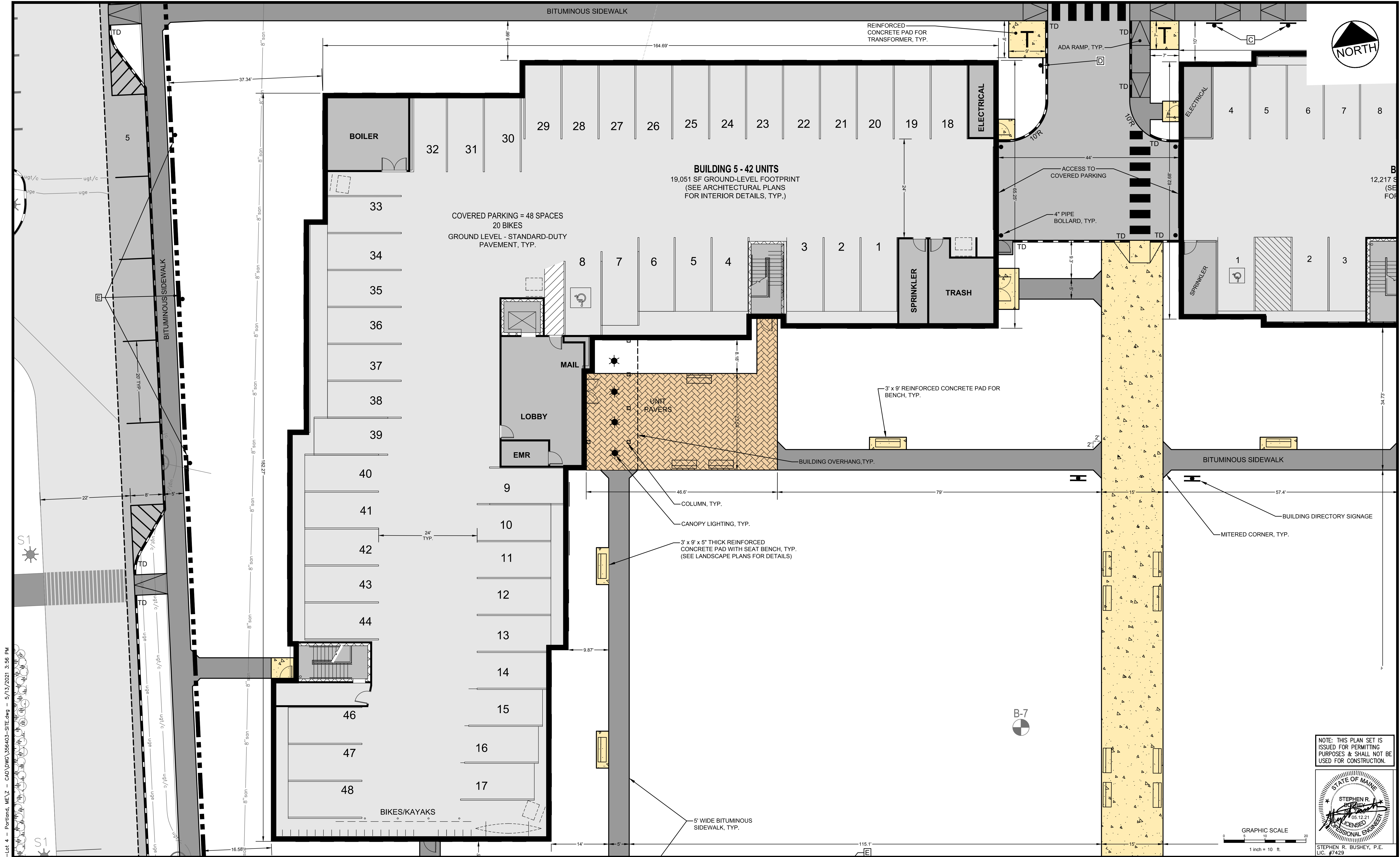
Design: SRB	Draft: CDD	Date: MAY 2021
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Drawing Name:	BUILDING #4 LAYOUT PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-3.4



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Rev.	Date	Revision

Rev.	Date	Revision
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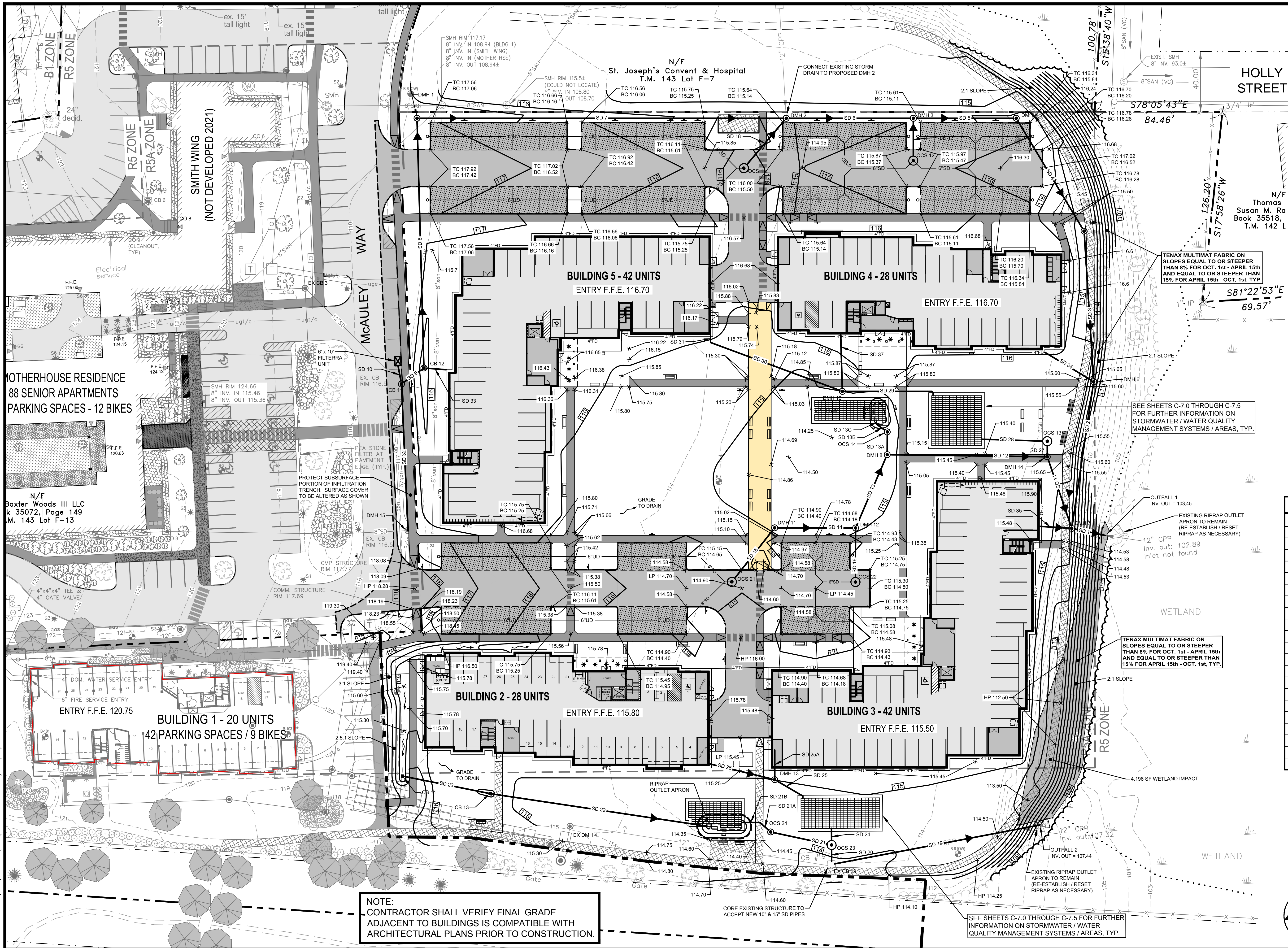


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Drawing Name:	BUILDING #5 LAYOUT PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-3.5



STORMDRAIN SCHEDULE				
STRUCTURE	SIZE	RM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)
CB 11	4"	116.50	112.25/8"(FILTRERA 1) 112.42/12"(DMH 15) 112.42/12"(EX CB 3)	112.15/15"(CB 12)
CB 12	4"	115.40	112.08/15"(CB 11) 112.08/4"(BLDG 5-FD)	111.98/15"(DMH 1)
CB 13	4"	114.75	112.72/12"(CB 14)	112.62/12"(FP 2)
CB 14	4"	115.25		113.05/12"(CB 13)
DMH 1	4"	117.50	110.53/15"(CB 12)	110.43/15"(DMH 2)
DMH 2	4"	115.75	108.27/15"(DMH 1) 110.84/8"(OCS 11) 108.27/12"(EX CB 13)	108.17/18"(DMH 3)
DMH 3	4"	115.85	107.45/18"(DMH 2) 110.81/8"(OCS 12)	107.35/18"(DMH 4)
DMH 4	4"	116.20	106.78/18"(DMH 3)	106.68/18"(DMH 5)
DMH 5	4"	114.50	105.93/18"(DMH 4)	105.83/18"(DMH 6)
DMH 6	4"	113.00	104.96/18"(DMH 5) 105.00/4"(BLDG 4-FD)	104.86/18"(DMH 7)
DMH 7	4"	114.00	106.64/15"(DMH 14) 104.02/15"(DMH 8) 106.64/4"(BLDG 3-FD)	103.92/24"(OUTFALL 1)
DMH 8	4"	114.75	108.50/12"(DMH 12) 108.31/12"(OCS 14)	108.21/15"(DMH 14)
DMH 10	4"	115.00	112.60/8"(BLDG 5) 112.60/8"(BLDG 4-RD)	112.50/12"(R 1)
DMH 11	4"	114.97	109.77/8"(OCS 21)	109.67/12"(DMH 12)
DMH 12	4"	114.98	109.08/12"(DMH 11) 109.81/8"(OCS 22)	108.98/12"(DMH 8)
DMH 13	4"	115.02	113.03/8"(BLDG 2-RD) 113.03/8"(BLDG 3-RD)	113.03/8"(R2)
DMH 14	4"	115.65	107.16/15"(DMH 8) 109.98/10"(OCS 13)	107.06/15"(DMH 7)
EX CB 19	4"	113.56	108.10/10"(OCS 23) 108.10/12"(EX DMH 4)	108.10/15"(OUTFALL 2)
OCS 11	6"	116.12	111.23/6"(UD-3)	111.23/8"(DMH 2)
OCS 12	6"	115.65	111.10/6"(UD-4) 111.10/6"(UD-5)	111.10/8"(DMH 3)
OCS 13	6"	115.25	110.06/12"(R-1)	110.06/10"(DMH 14)
OCS 14	4"	114.25	108.46/12"(FP 1)	108.46/12"(DMH 8)
OCS 21	6"	114.85	110.13/6"(UD-1)	110.13/8"(DMH 11)
OCS 22	6"	114.70	110.13/6"(UD-2)	110.13/8"(DMH 12)
OCS 23	6"	114.35	110.06/10"(R-2) 108.14/12"(OCS 24)	108.14/10"(EX CB 19)
OCS 24	2"	114.25	108.38/12"(FP-2)	108.38/12"(OCS 23)

PIPE SCHEDULE				PIPE SCHEDULE			
Pipe Name	Size	Length	Slope	Pipe Name	Size	Length	Slope
SD 1	24"	21'	2.1%	SD 19	15"	138'	0.5%
SD 2	18"	94'	0.9%	SD 20	10"	8'	0.3%
SD 3	18"	96'	0.9%	SD 21	12"	36'	0.6%
SD 4	18"	83'	0.9%	SD 21B	12"	12'	0.6%
SD 5	18"	64'	0.8%	SD 22	12"	143'	0.5%
SD 6	18"	80'	0.9%	SD 23	12"	56'	0.6%
SD 7	15"	240'	0.9%	SD 24	10"	8'	0.0%
SD 8	15"	161'	0.9%	SD 25	8"	20'	0.1%
SD 9	15"	14'	0.4%	SD 25A	8"	18'	1.0%
SD 10	8"	10'	2.0%	SD 26	8"	43'	1.6%
SD 11	15"	46'	0.8%	SD 27	10"	5'	0.8%
SD 12	15"	102'	1.0%	SD 28	12"	40'	1.0%
SD 13	12"	49'	0.9%	SD 29	12"	57'	-0.8%
SD 13A	12"	11'	1.0%	SD 30	8"	91'	1.2%
SD 13B	12"	7'	2.3%	SD 31	8"	5'	2.5%
SD 13C	12"	3'	2.3%	SD 32	12"	95'	0.6%
SD 14	12"	50'	1.1%	SD 33	4"	13'	2.9%
SD 15	8"	41'	0.8%	SD 34	4"	36'	5.3%
SD 16	8"	31'	0.9%	SD 35	4"	19'	4.0%
SD 17	8"	23'	1.0%	SD 37	8"	36'	2.1%
SD 18	8"	38'	0.9%				

KEY

PERVIOUS PAVERS

GRAPHIC SCALE
1 inch = 30 ft.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE
STEPHEN R. BUSHEY, P.E.
LICENSED PROFESSIONAL ENGINEER
LIC. #7429

U:\3564.03_Stevens Square-Lot 4 - Portland, ME\3 - CAD\DWG\356403-GRADING.dwg - 5/14/2021 3:23 PM

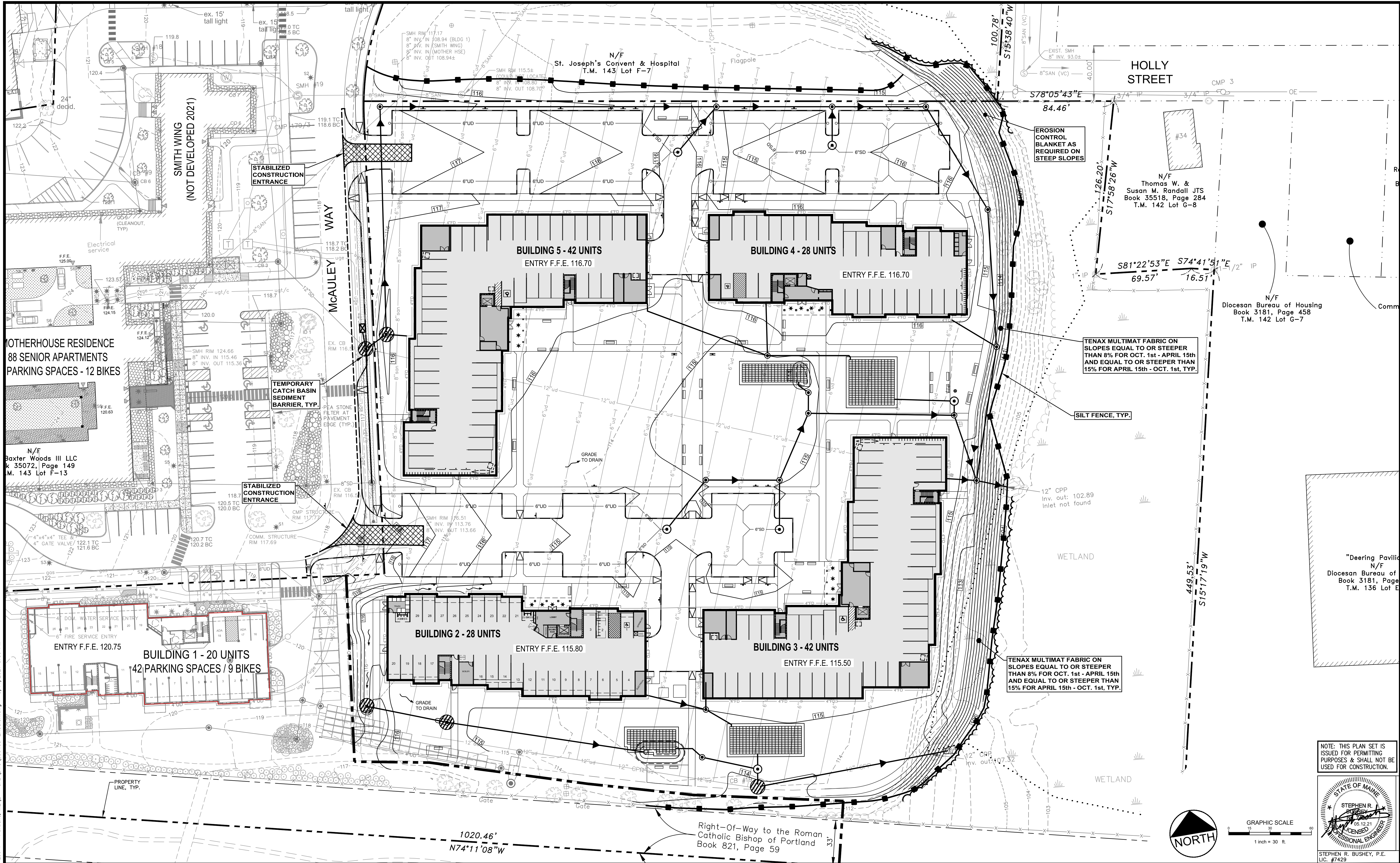
Design: SRB Checked: SRB File Name: 356403-GRADING.dwg	Draft: CDD Scale: AS NOTED Job No.: 3564.03	Date: MAY 2021
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1	2021.05.12	SUBMITTED TO CITY FOR REVIEW
Rev.	Date	Revision

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Drawing Name:	GRADING & DRAINAGE PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.	C-4.0
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U:\3564.03 Stevens Square-Lot 4 - Portland, ME.Z - CAD\DWG\356403-EROSION.dwg - 5/14/2021 5:59 PM

Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-EROSION.dwg		
This plan shall not be modified without written permission from Gorrell Palmer. Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to Gorrell Palmer.		

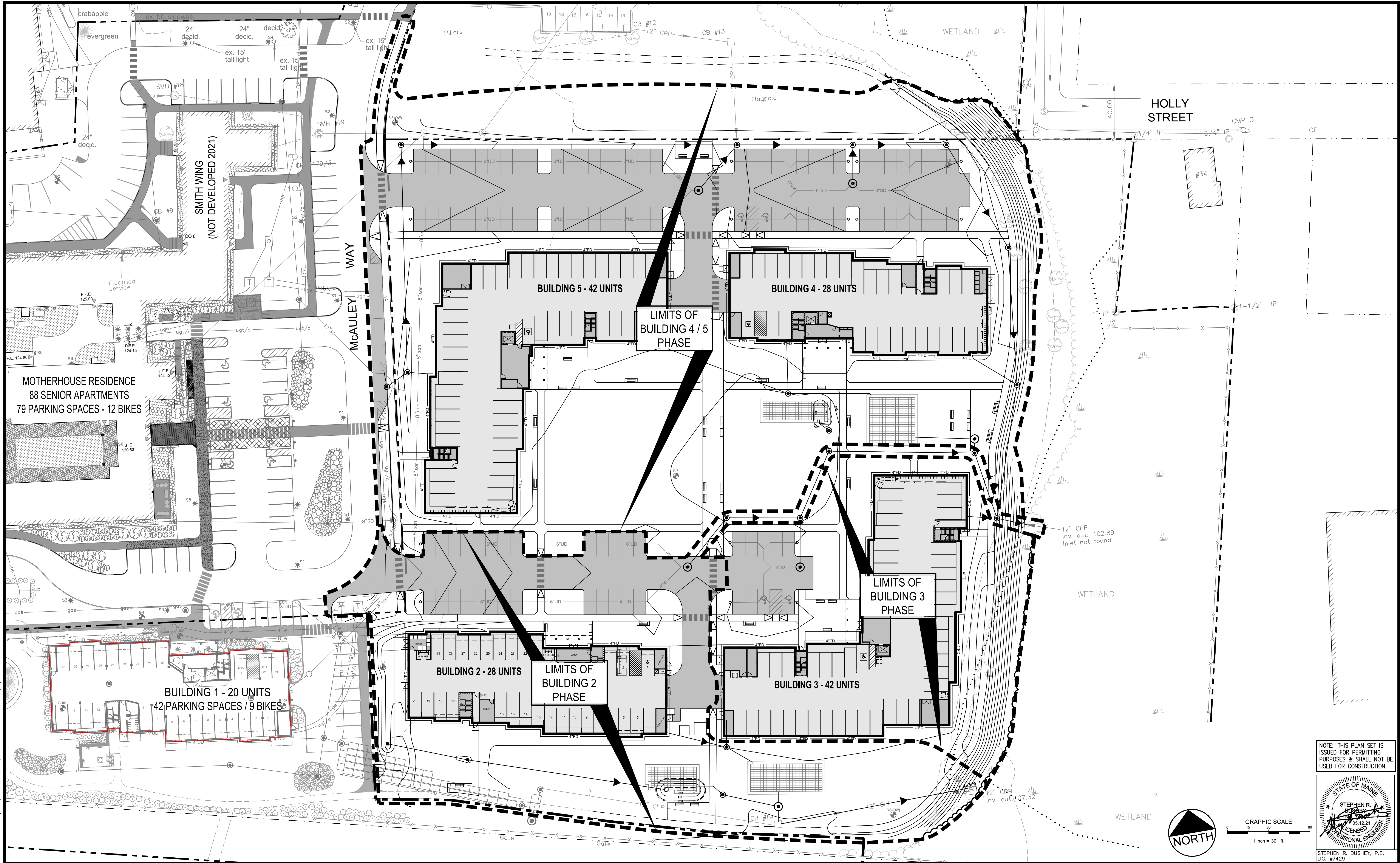


GORRELL PALMER

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207.772.2515

Drawing Name:	EROSION & SEDIMENT CONTROL PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-4.1



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Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB Draft: CDD Date: MAY 2021

Checked: SRB Scale: AS NOTED Job No.: 3564.03

File Name: 356403-GRADING.dwg

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 **GORRELL PALMER**

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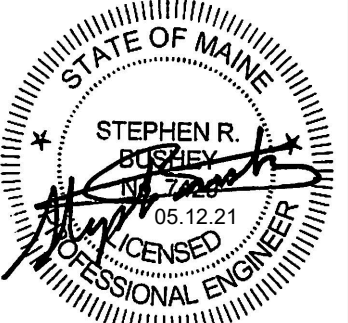
Drawing Name: PHASING PLAN

Project: **Stevens Square at Baxter Woods - Phase 2**
583 Stevens Avenue, Portland, Maine

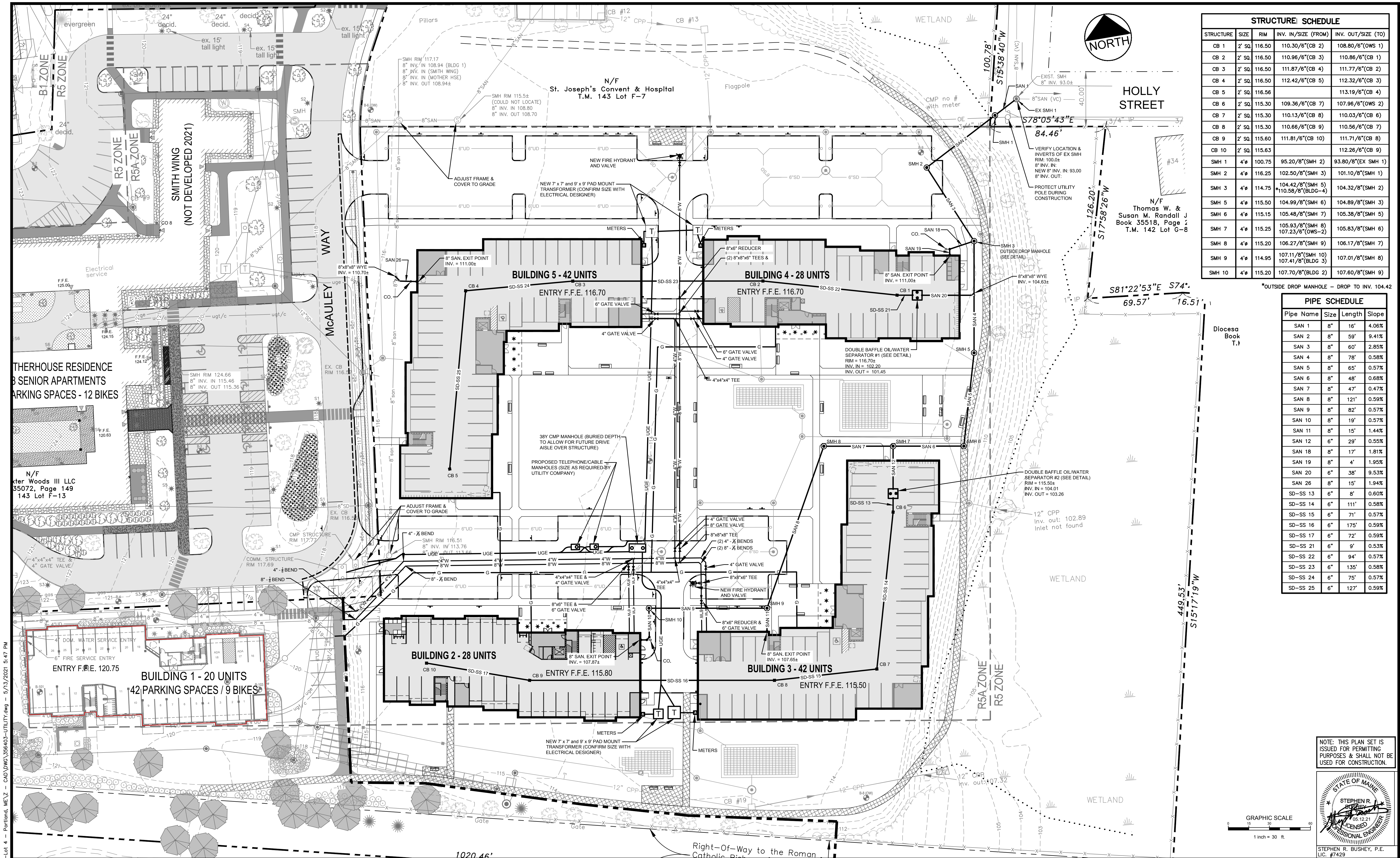
Client/Owner: **DC BAXTER WOODS IV LLC**
100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No. **C-4.2**

NOTE: THIS PLAN SET IS
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STEPHEN R. BUSHEY, P.E.
LIC. #7429

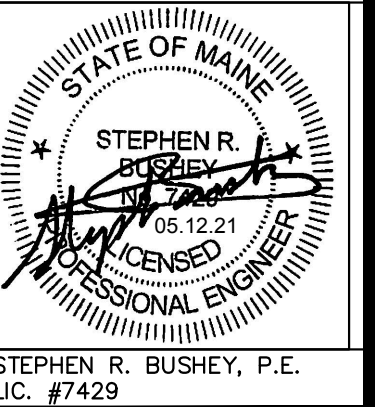


STRUCTURE SCHEDULE					
STRUCTURE	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	
CB 1	2' SQ.	116.50	110.30/6"(CB 2)	108.80/6"(OWS 1)	
CB 2	2' SQ.	116.50	110.96/6"(CB 3)	110.86/6"(CB 1)	
CB 3	2' SQ.	116.50	111.87/6"(CB 4)	111.77/6"(CB 2)	
CB 4	2' SQ.	116.50	112.42/6"(CB 5)	112.32/6"(CB 3)	
CB 5	2' SQ.	116.56		113.19/6"(CB 4)	
CB 6	2' SQ.	115.30	109.36/6"(CB 7)	107.96/6"(OWS 2)	
CB 7	2' SQ.	115.30	110.13/6"(CB 8)	110.03/6"(CB 6)	
CB 8	2' SQ.	115.30	110.66/6"(CB 9)	110.56/6"(CB 7)	
CB 9	2' SQ.	115.60	111.81/6"(CB 10)	111.71/6"(CB 8)	
CB 10	2' SQ.	115.63		112.26/6"(CB 9)	
SMH 1	4'x6'	100.75	95.20/8"(SMH 2)	93.80/8"(EX SMH 1)	
SMH 2	4'x6'	116.25	102.50/8"(SMH 5)	101.10/8"(SMH 1)	
SMH 3	4'x6'	114.75	104.42/8"(SMH 5)	104.32/8"(SMH 2)	
SMH 5	4'x6'	115.50	104.99/8"(SMH 6)	104.89/8"(SMH 3)	
SMH 6	4'x6'	115.15	105.48/8"(SMH 7)	105.38/8"(SMH 5)	
SMH 7	4'x6'	115.25	105.93/8"(SMH 8)	105.83/8"(SMH 6)	
SMH 8	4'x6'	115.20	106.27/8"(SMH 9)	106.17/8"(SMH 7)	
SMH 9	4'x6'	114.95	107.11/8"(SMH 10)	107.01/8"(SMH 8)	
SMH 10	4'x6'	115.20	107.70/8"(BLDG 2)	107.60/8"(SMH 9)	

*OUTSIDE DROP MANHOLE - DROP TO INV. 104.42

PIPE SCHEDULE			
Pipe Name	Size	Length	Slope
SAN 1	8"	16'	4.06%
SAN 2	8"	59'	9.41%
SAN 3	8"	60'	2.85%
SAN 4	8"	78'	0.58%
SAN 5	8"	65'	0.57%
SAN 6	8"	48'	0.68%
SAN 7	8"	47'	0.47%
SAN 8	8"	121'	0.59%
SAN 9	8"	82'	0.57%
SAN 10	8"	19'	0.57%
SAN 11	8"	15'	1.44%
SAN 12	6"	29'	0.55%
SAN 18	8"	17'	1.81%
SAN 19	8"	4'	1.95%
SAN 20	6"	38'	9.53%
SAN 26	8"	15'	1.94%
SD-SS 13	6"	8'	0.60%
SD-SS 14	6"	111'	0.58%
SD-SS 15	6"	71'	0.57%
SD-SS 16	6"	175'	0.59%
SD-SS 17	6"	72'	0.59%
SD-SS 21	6"	9'	0.53%
SD-SS 22	6"	94'	0.57%
SD-SS 23	6"	135'	0.58%
SD-SS 24	6"	75'	0.57%
SD-SS 25	6"	127'	0.59%

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.



U:\3564.03 Stevens Square-Lot 4 - Portland, ME\Z - CAD\DWG\356403-UTILITY.dwg - 5/13/2021 5:47 PM

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW
2		

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW
2		

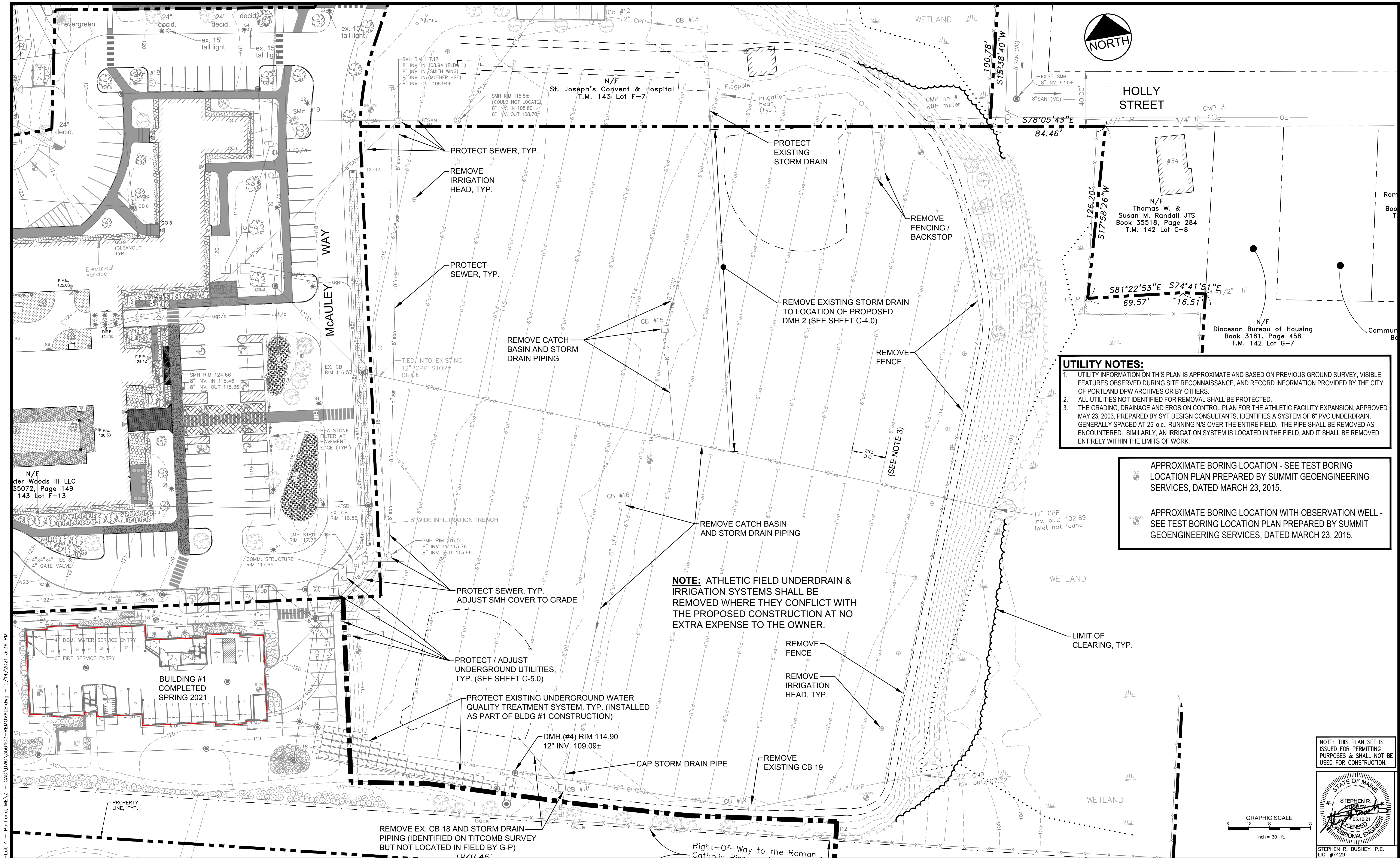
Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-UTILITY.dwg		
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Drawing Name:	UTILITY PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.	C-5.0
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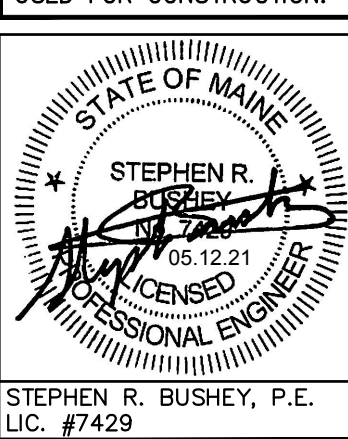
UTILITY NOTES:

- UTILITY INFORMATION ON THIS PLAN IS APPROXIMATE AND BASED ON PREVIOUS GROUND SURVEY, VISIBLE FEATURES OBSERVED DURING SITE RECONNAISSANCE, AND RECORD INFORMATION PROVIDED BY THE CITY OF PORTLAND DPW ARCHIVES OR BY OTHERS.
- ALL UTILITIES NOT IDENTIFIED FOR REMOVAL SHALL BE PROTECTED.
- THE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR THE ATHLETIC FACILITY EXPANSION, APPROVED MAY 23, 2003, PREPARED BY SYT DESIGN CONSULTANTS, IDENTIFIES A SYSTEM OF 6" PVC UNDERDRAIN, GENERALLY SPACED AT 25' o.c., RUNNING N/S OVER THE ENTIRE FIELD. THE PIPE SHALL BE REMOVED AS ENCOUNTERED. SIMILARLY, AN IRRIGATION SYSTEM IS LOCATED IN THE FIELD, AND IT SHALL BE REMOVED ENTIRELY WITHIN THE LIMITS OF WORK.

APPROXIMATE BORING LOCATION - SEE TEST BORING LOCATION PLAN PREPARED BY SUMMIT GEOENGINEERING SERVICES, DATED MARCH 23, 2015.

APPROXIMATE BORING LOCATION WITH OBSERVATION WELL - SEE TEST BORING LOCATION PLAN PREPARED BY SUMMIT GEOENGINEERING SERVICES, DATED MARCH 23, 2015.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.



U:\3564.03 Stevens Square-Lot 4 - Portland, ME\Z - CAD\DWG\356403-REMOVALS.dwg - 5/14/2021 3:36 PM

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-REMOVALS.dwg		
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Drawing Name:	EXISTING CONDITIONS & REMOVALS PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-2.0



1 | PARKING LEVEL
1/8" = 1'-0"

Stevens Square Building Two

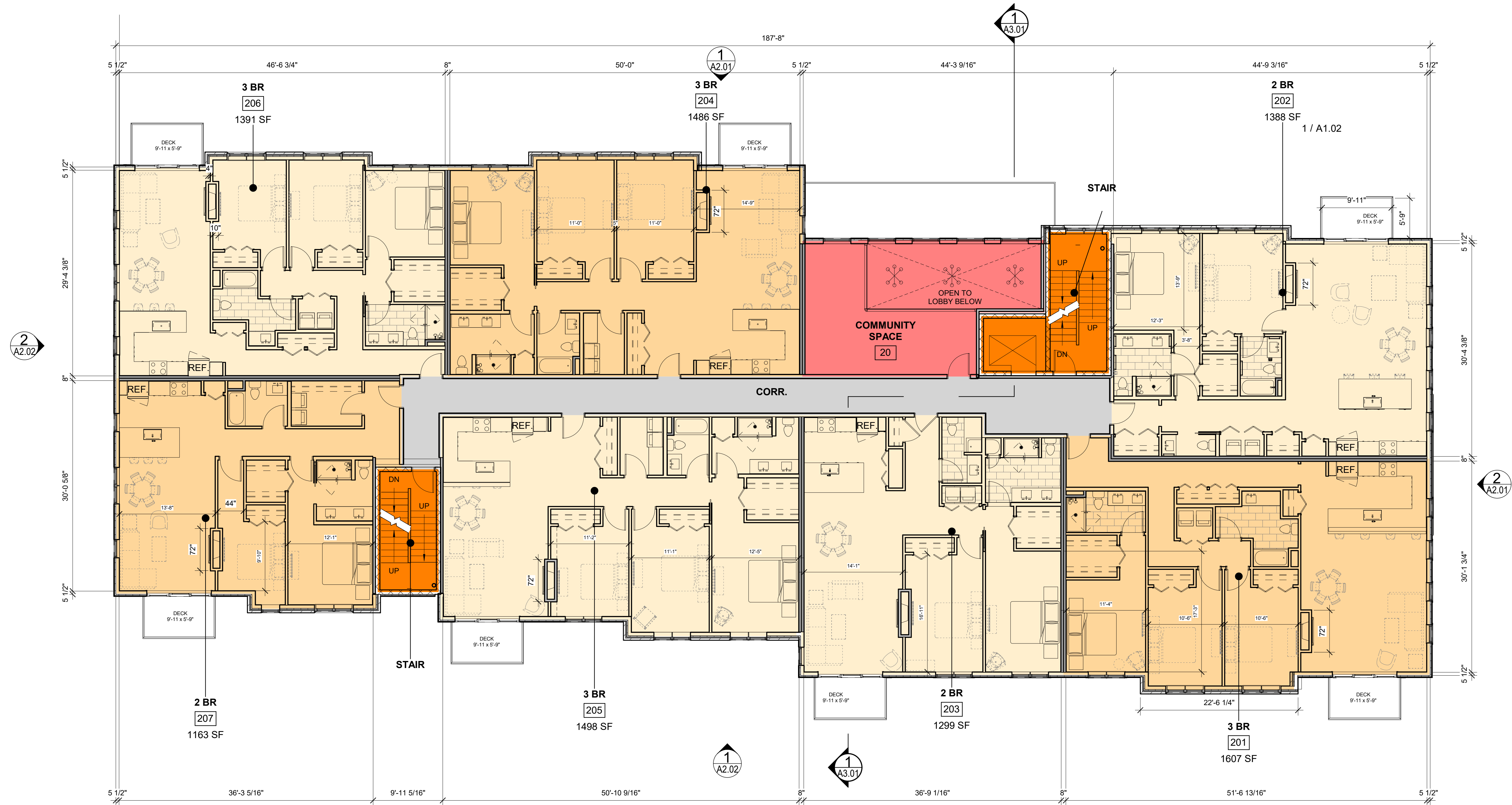
Portland, Maine

GROSS FLOOR AREA			
Level	FLOOR	# UNITS	GROSS AREA +/-
2ND FLOOR	SECOND FLOOR	7	12168 SF
3RD FLOOR	THIRD FLOOR	7	12168 SF
4TH FLOOR	FOURTH FLOOR	7	11593 SF
5TH FLOOR	FIFTH FLOOR	7	11435 SF

05/04/2021

A1.1

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ARCHITECTS**
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(207) 772-6022 WWW.ARCHETYPE-ARCHITECTS.COM



1 | SECOND FLOOR PLAN
1/8" = 1'-0"

GROSS FLOOR AREA			
Level	FLOOR	# UNITS	GROSS AREA +/-
2ND FLOOR	SECOND FLOOR	7	12168 SF
3RD FLOOR	THIRD FLOOR	7	12168 SF
4TH FLOOR	FOURTH FLOOR	7	11593 SF
5TH FLOOR	FIFTH FLOOR	7	11435 SF

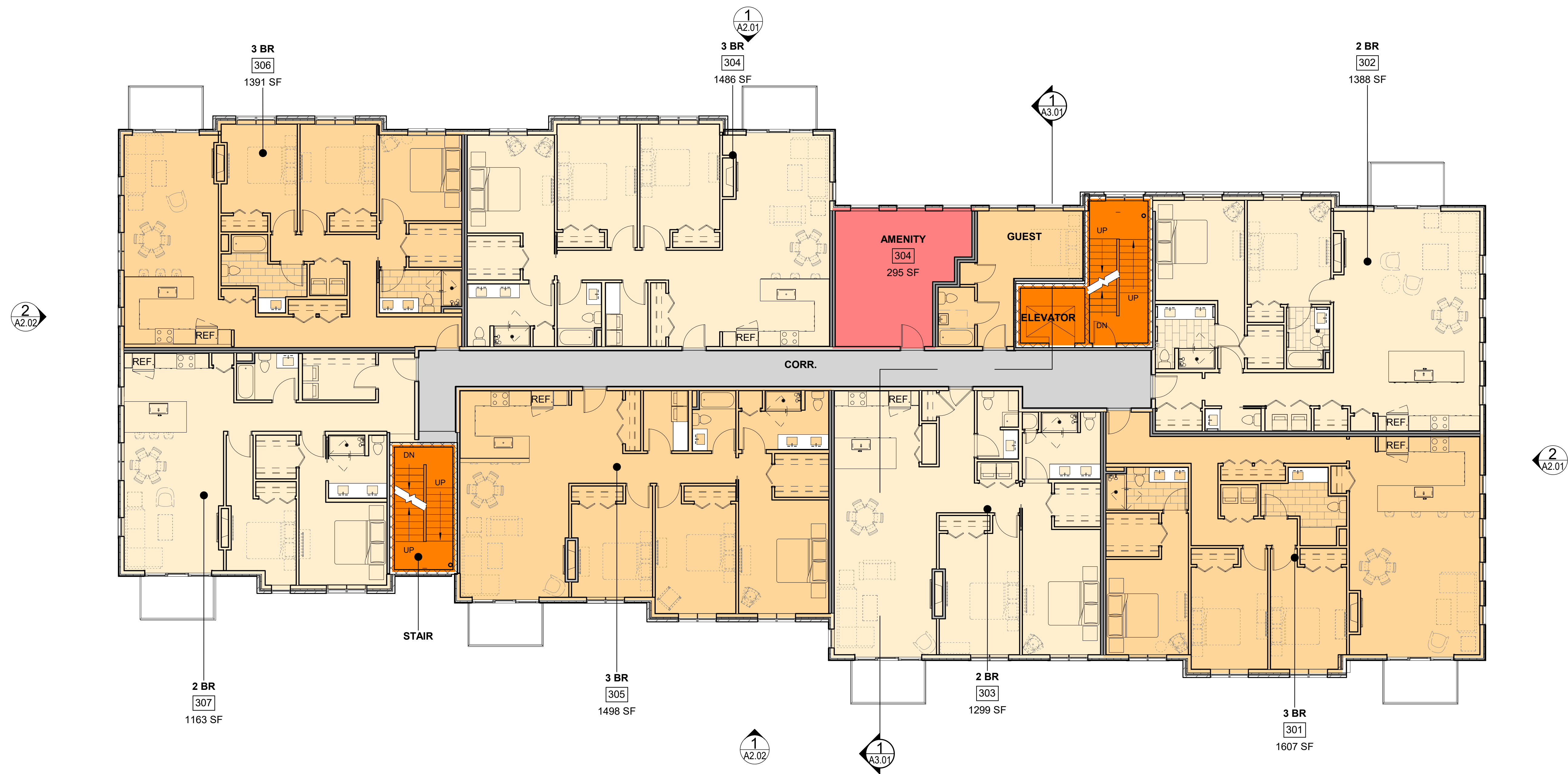
Stevens Square Building Two

Portland, Maine

05/04/2021

A1.2

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GROSS FLOOR AREA			
Level	FLOOR	# UNITS	GROSS AREA +/-
2ND FLOOR	SECOND FLOOR	7	12168 SF
3RD FLOOR	THIRD FLOOR	7	12168 SF
4TH FLOOR	FOURTH FLOOR	7	11593 SF
5TH FLOOR	FIFTH FLOOR	7	11435 SF

1 | 3RD FLOOR
1/8" = 1'-0"

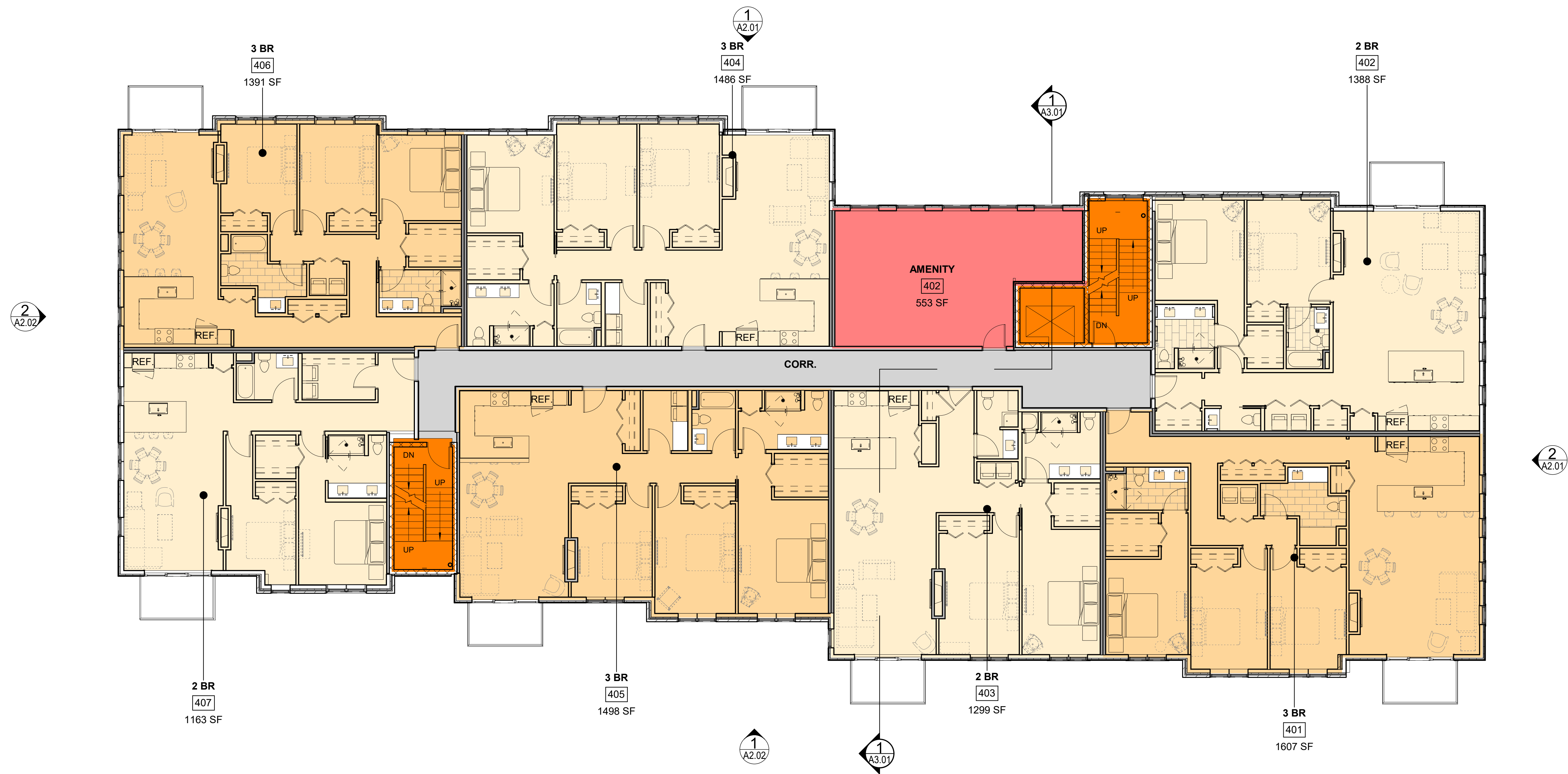
Stevens Square Building Two

Portland, Maine

05/04/2021

A1.3

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GROSS FLOOR AREA			
Level	FLOOR	# UNITS	GROSS AREA +/-
2ND FLOOR	SECOND FLOOR	7	12168 SF
3RD FLOOR	THIRD FLOOR	7	12168 SF
4TH FLOOR	FOURTH FLOOR	7	11593 SF
5TH FLOOR	FIFTH FLOOR	7	11435 SF

1 | 4TH FLOOR
1/8" = 1'-0"

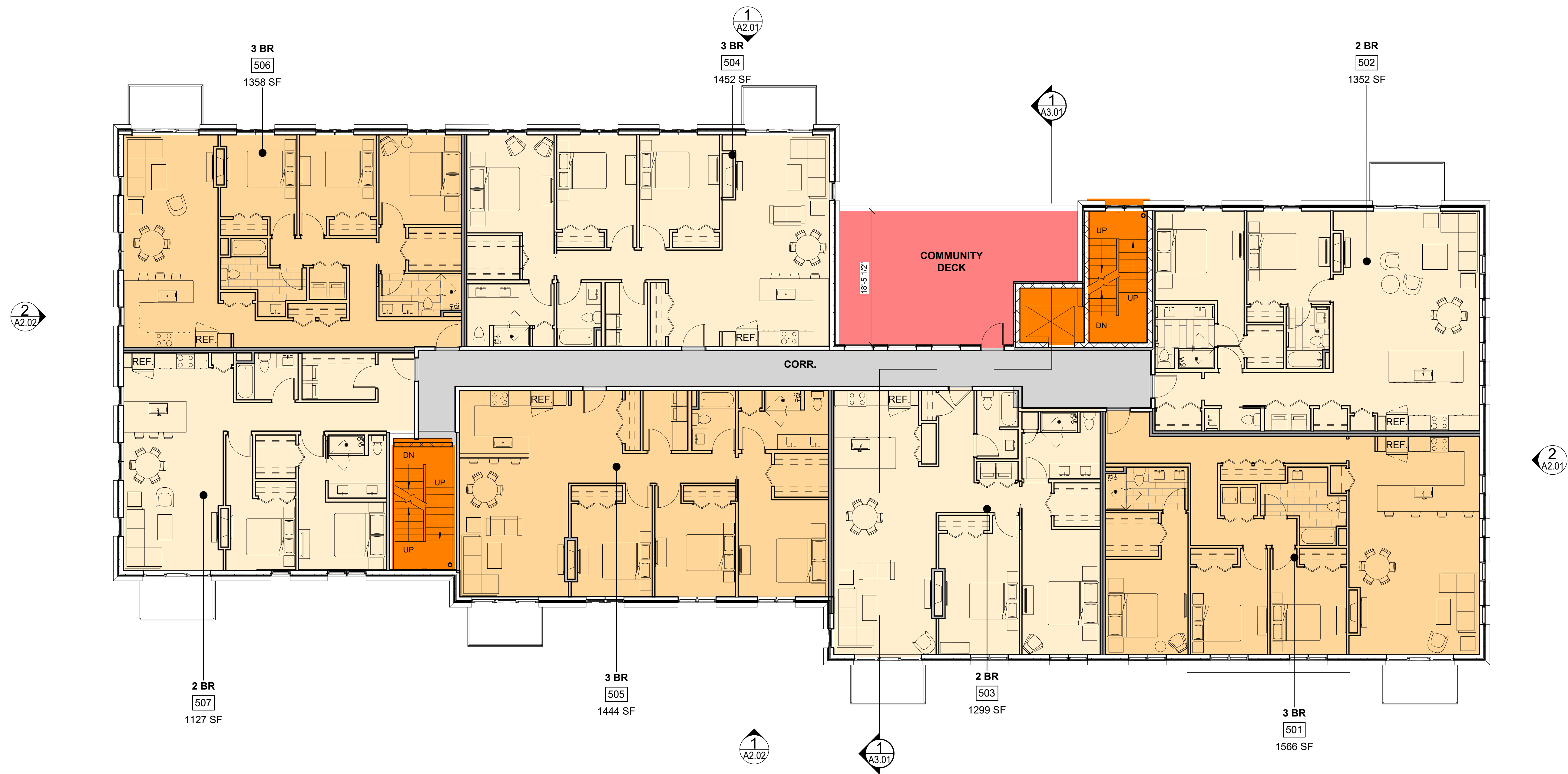
Stevens Square Building Two

Portland, Maine

05/04/2021

A1.4

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GROSS FLOOR AREA			
Level	FLOOR	# UNITS	GROSS AREA +/-
2ND FLOOR	SECOND FLOOR	7	12168 SF
3RD FLOOR	THIRD FLOOR	7	12168 SF
4TH FLOOR	FOURTH FLOOR	7	11593 SF
5TH FLOOR	FIFTH FLOOR	7	11435 SF

1 | 5TH FLOOR
1/8" = 1'-0"

Stevens Square Building Two

Portland, Maine

05/04/2021

A1.5

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2	LEFT ELEVATION.
	1/8" = 1'-0"



1	ENTRY ELEVATION - BUILDING 2
	1/8" = 1'-0"

- ### ELEVATION MATERIALS
1. BERRIDGE SHINGLE
 2. CLAPBOARD SIDING
 3. BRICK
 4. PRECAST SILLS
 5. PRECAST LINTELS
 6. PRECAST BAND
 7. STACKED STONE VENEER
 8. PREFABRICATED STEEL BALCONY
 9. 1X6 PVC HEAD TRIM
 10. PVC CORNICE
 11. VINYL DOUBLE-HUNG WINDOW
 12. ALUMINUM STREFTORNT
 13. 10x10 PVC COLUMN
 14. VINYL PATIO DOOR
 15. GLAZED ALUMINUM OVERHEAD DOOR
 16. INSULATED HM DOOR
 17. 1X4 PVC JAMB TRIM
 18. ALUMINUM RAILING

Prepared For:

Developers Collaborative

Consultant:

Architect: **ARCHETYPE
ARCHITECTS**
48 Union Wharf Portland, Maine 04101
207.772.6022 ARCHETYPE@ARCHETYPEPA.COM

Project: Stevens Square Building Two

Revisions:

Date:	05/04/2021
Scale:	As indicated

BUILDING ELEVATIONS

A2.01

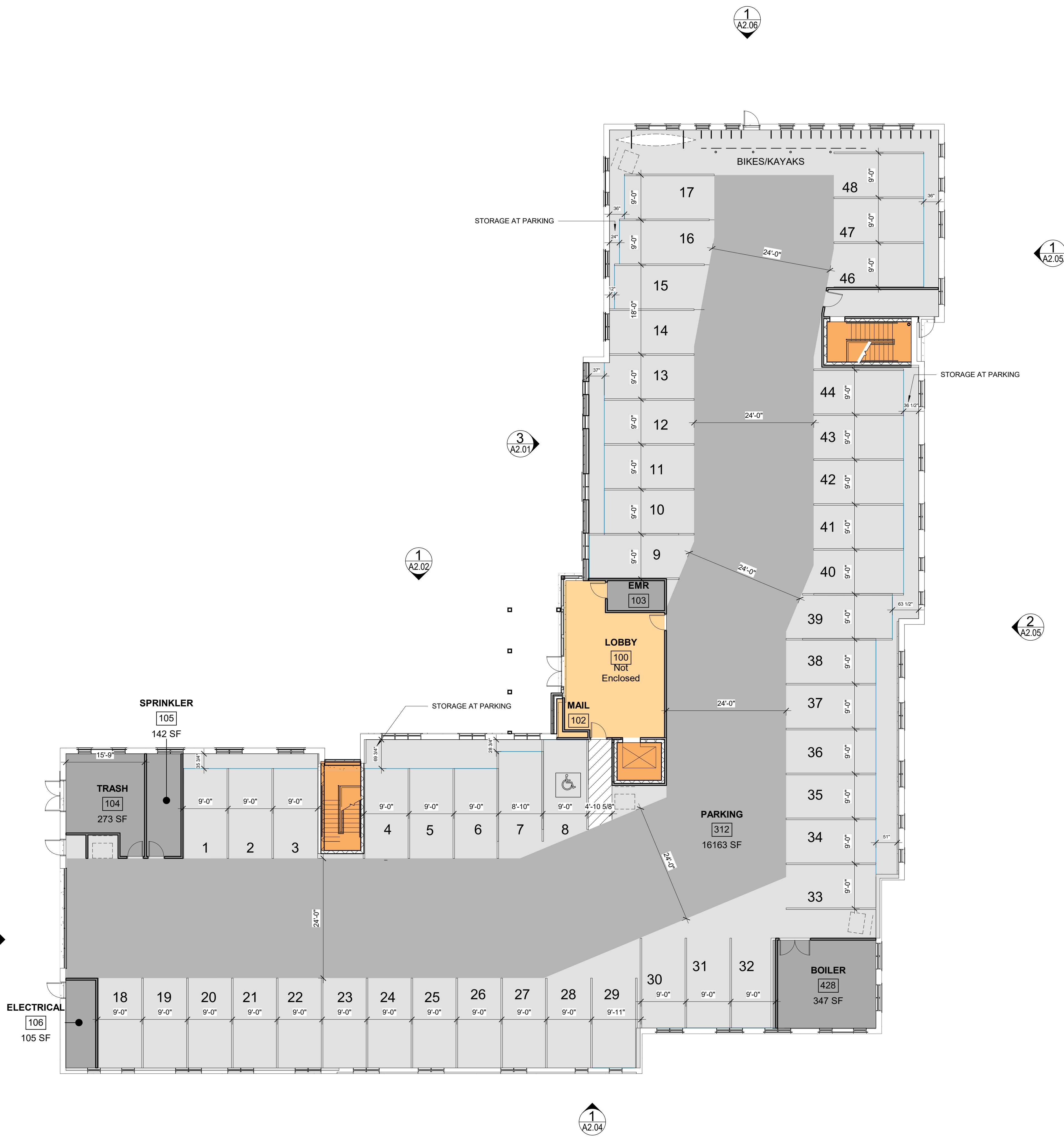


- | <u>ELEVATION MATERIALS</u> | |
|----------------------------|-------------------------------|
| 1. | BERRIDGE SHINGLE |
| 2. | CLAPBOARD SIDING |
| 3. | BRICK |
| 4. | PRECAST SILLS |
| 5. | PRECAST LINTELS |
| 6. | PRECAST BAND |
| 7. | STACKED STONE VENEER |
| 8. | PREFABRICATED STEEL BALCONY |
| 9. | 1X6 PVC HEAD TRIM |
| 10. | PVC CORNICE |
| 11. | VINYL DOUBLE-HUNG WINDOW |
| 12. | ALUMINUM STOREFRONT |
| 13. | 10X10 PVC COLUMN |
| 14. | VINYL PATIO DOOR |
| 15. | GLAZED ALUMINUM OVERHEAD DOOR |
| 16. | INSULATED HM DOOR |
| 17. | 1X4 PVC JAMB TRIM |
| 18. | ALUMINUM RAILING |

2	RIGHT ELEVATION.
	1/8" = 1'-0"



1	REAR ELEVATION - 5 STORY BUILDING
	1/8" = 1'-0"



LEGEND:

BUILDING SECTION	
WALL SECTION	
SECTION DETAIL	
PLAN DETAIL	
WALL TYPE	
FLOOR TYPE	

NEW WALL - STUD & GYP. BD.	
NEW CMU WALL	
NEW MASONRY INFILL	
EXISTING CMU WALL	
EXISTING STUD WALL OR FLOOR	
EXISTING MASONRY WALL	
DEMO AND REMOVE	
EXISTING BASEBOARD	
EXISTING WHITEBOARD & CHALKTRAY	
SEMI RECESSED FIRE EXTINGUISHER CABINET	
INTERNATIONAL SYMBOL OF ACCESSIBILITY	
INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS	
EXISTING DOOR	
NEW DOOR	
NEW FLOOR ON NEW FRAMING- SEE STRUCTURAL	
NEW CONCRETE FLOOR	

Prepared For:
DC BAXTER WOODS, LLC

Consultant:
ARCHETYPE ARCHITECTS
48 Union Wharf Portland, Maine 04101
207.772.6022 ARCHETYPE@ARCHETYPEPA.COM

Architect:
ARCHETYPE ARCHITECTS

Project:
STEVENS SQUARE 3

Date:
2020

Scale:
As indicated

Revisions:

First Floor

A1.01

- ELEVATION MATERIALS
- 1. BERRIDGE SHINGLE
 - 2. CLAPBOARD SIDING
 - 3. BRICK
 - 4. PRECAST SILLS
 - 5. PRECAST LINTELS
 - 6. PRECAST BAND
 - 7. STACKED STONE VENEER
 - 8. PREFABRICATED STEEL BALCONY
 - 9. 1X6 PVC HEAD TRIM
 - 10. PVC CORNICE/BAND
 - 11. VINYL DOUBLE-HUNG WINDOW
 - 12. ALUMINUM STOREFRONT
 - 13. 10x10 PVC COLUMN
 - 14. VINYL PATIO DOOR
 - 15. GLAZED ALUMINUM OVERHEAD DOOR
 - 16. INSULATED HM DOOR
 - 17. 1X4 PVC JAMB TRIM
 - 18. ALUMINUM RAILING

Prepared For:

DC BAXTER
WOODS, LLC

Address
City, State

Consultant:

Architect:
**ARCHETYPE
ARCHITECTS**
48 Union Wharf Portland, Maine 04101
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Project:

STEVENS SQUARE 3

PORTLAND, MAINE

Revisions:

Scale: As indicated

Date: 2020

BUILDING
ELEVATIONS

A2.01



3 ENTRY ELEVATION
3/16" = 1'-0"

- ELEVATION MATERIALS
- 1. BERRIDGE SHINGLE
 - 2. CLAPBOARD SIDING
 - 3. BRICK
 - 4. PRECAST SILLS
 - 5. PRECAST LINTELS
 - 6. PRECAST BAND
 - 7. STACKED STONE VENEER
 - 8. PREFABRICATED STEEL BALCONY
 - 9. 1X6 PVC HEAD TRIM
 - 10. PVC CORNICE/BAND
 - 11. VINYL DOUBLE-HUNG WINDOW
 - 12. ALUMINUM STOREFRONT
 - 13. 10x10 PVC COLUMN
 - 14. VINYL PATIO DOOR
 - 15. GLAZED ALUMINUM OVERHEAD DOOR
 - 16. INSULATED HM DOOR
 - 17. 1X4 PVC JAMB TRIM
 - 18. ALUMINUM RAILING



1 | NORTH ELEVATION - SOUTH ELL
3/16" = 1'-0"

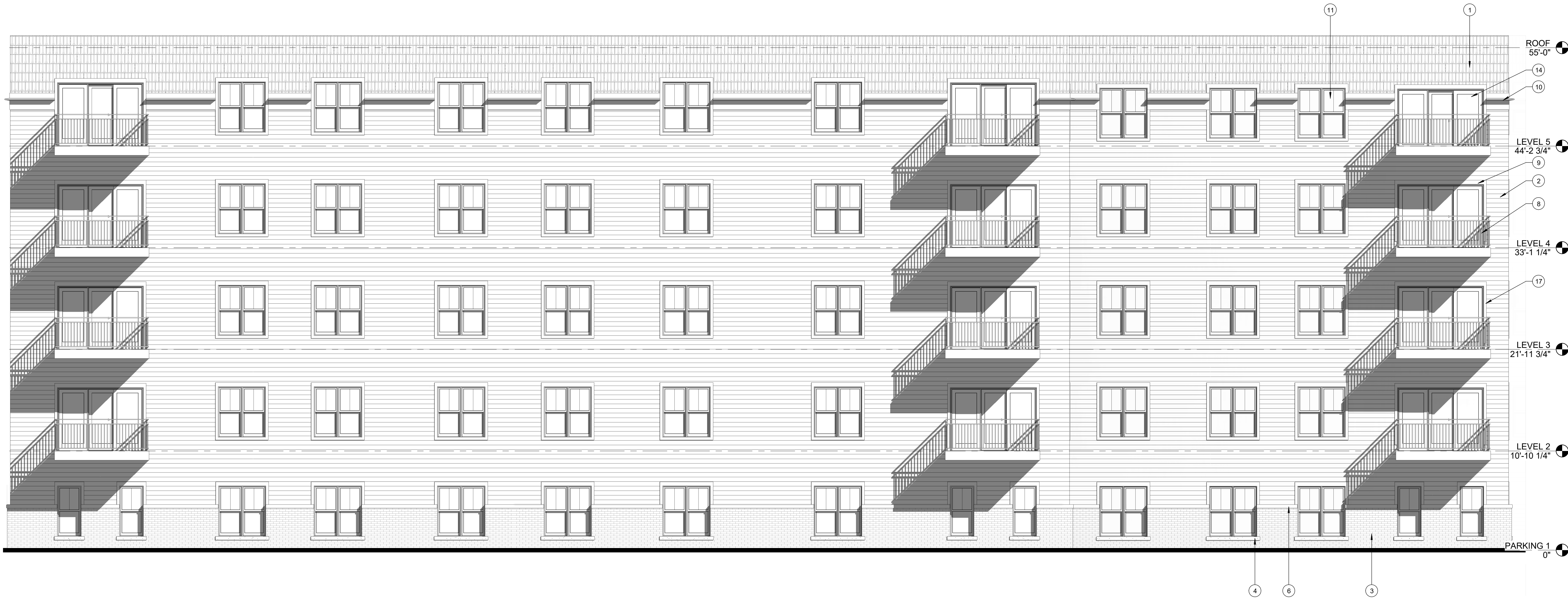
Prepared For:		DC BAXTER WOODS, LLC	
Consultant:		ARCHETYPE ARCHITECTS 48 Union Wharf Portland, Maine 04101 207.772.6022 ARCHETYPE@ARCHETYPEPA.COM	
Project:		STEVENS SQUARE 3 PORTLAND, MAINE	
Revisions:			
Date:	Scale:	BUILDING ELEVATIONS	
2020	As indicated		
A2.02			

- ELEVATION MATERIALS
- 1. BERRIDGE SHINGLE
 - 2. CLAPBOARD SIDING
 - 3. BRICK
 - 4. PRECAST SILLS
 - 5. PRECAST LINTELS
 - 6. PRECAST BAND
 - 7. STACKED STONE VENEER
 - 8. PREFABRICATED STEEL BALCONY
 - 9. 1X6 PVC HEAD TRIM
 - 10. PVC CORNICE/BAND
 - 11. VINYL DOUBLE-HUNG WINDOW
 - 12. ALUMINUM STOREFRONT
 - 13. 10x10 PVC COLUMN
 - 14. VINYL PATIO DOOR
 - 15. GLAZED ALUMINUM OVERHEAD DOOR
 - 16. INSULATED HM DOOR
 - 17. 1X4 PVC JAMB TRIM
 - 18. ALUMINUM RAILING



1 | GARAGE ENTRY ELEVATION
3/16" = 1'-0"

Prepared For:		DC BAXTER WOODS, LLC	
Consultant:		Architect: ARCHETYPE ARCHITECTS 48 Union Wharf Portland, Maine 04101 207.772.6022 ARCHETYPE@ARCHETYPEPA.COM	
Project:		STEVENS SQUARE 3 PORTLAND, MAINE	
Revisions:			
Date: 2020	Scale: As indicated	BUILDING ELEVATIONS	
A2.03			



- ELEVATION MATERIALS
1. BERRIDGE SHINGLE
 2. CLAPBOARD SIDING
 3. BRICK
 4. PRECAST SILLS
 5. PRECAST LINTELS
 6. PRECAST BAND
 7. STACKED STONE VENEER
 8. PREFABRICATED STEEL BALCONY
 9. 1X6 PVC HEAD TRIM
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 11. VINYL DOUBLE-HUNG WINDOW
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 14. VINYL PATIO DOOR
 15. GLAZED ALUMINUM OVERHEAD DOOR
 16. INSULATED HM DOOR
 17. 1X4 PVC JAMB TRIM
 18. ALUMINUM RAILING

Prepared For:	DC BAXTER WOODS, LLC
Consultant:	ARCHETYPE ARCHITECTS 48 Union Wharf Portland, Maine 04101 207.772.6022 ARCHETYPE@ARCHETYPEPA.COM
Project:	STEVENS SQUARE 3 PORTLAND, MAINE
Revisions:	
Date:	2020
Scale:	As indicated
BUILDING ELEVATIONS	
A2.04	



2 EAST ELEVATION - SOUTH END
3/16" = 1'-0"

- ELEVATION MATERIALS
1. BERRIDGE SHINGLE
 2. CLAPBOARD SIDING
 3. BRICK
 4. PRECAST SILLS
 5. PRECAST LINTELS
 6. PRECAST BAND
 7. STACKED STONE VENEER
 8. PREFABRICATED STEEL BALCONY
 9. 1X6 PVC HEAD TRIM
 10. PVC CORNICE/BAND
 11. VINYL DOUBLE-HUNG WINDOW
 12. ALUMINUM STOREFRONT
 13. 10x10 PVC COLUMN
 14. VINYL PATIO DOOR
 15. GLAZED ALUMINUM OVERHEAD DOOR
 16. INSULATED HM DOOR
 17. 1X4 PVC JAMB TRIM
 18. ALUMINUM RAILING



1 EAST ELEVATION - NORTH END
3/16" = 1'-0"

Prepared For:		DC BAXTER WOODS, LLC	
Consultant:		Architect: ARCHETYPE ARCHITECTS 48 Union Wharf Portland, Maine 04101 207.772.6022 ARCHETYPE@ARCHETYPEPA.COM	
Project:		STEVENS SQUARE 3 PORTLAND, MAINE	
Revisions:			
Date:	Scale:	BUILDING ELEVATIONS	
2020	As indicated		
		A2.05	

- ELEVATION MATERIALS
- 1. BERRIDGE SHINGLE
 - 2. CLAPBOARD SIDING
 - 3. BRICK
 - 4. PRECAST SILLS
 - 5. PRECAST LINTELS
 - 6. PRECAST BAND
 - 7. STACKED STONE VENEER
 - 8. PREFABRICATED STEEL BALCONY
 - 9. 1X6 PVC HEAD TRIM
 - 10. PVC CORNICE/BAND
 - 11. VINYL DOUBLE-HUNG WINDOW
 - 12. ALUMINUM STOREFRONT
 - 13. 10x10 PVC COLUMN
 - 14. VINYL PATIO DOOR
 - 15. GLAZED ALUMINUM OVERHEAD DOOR
 - 16. INSULATED HM DOOR
 - 17. 1X4 PVC JAMB TRIM
 - 18. ALUMINUM RAILING

Prepared For:

DC BAXTER
WOODS, LLC

Consultant:

Architect:
**ARCHETYPE
ARCHITECTS**
48 Union Wharf Portland, Maine 04101
207.772.6022 ARCHETYPE@ARCHETYPEPA.COM

Project:

STEVENS SQUARE 3

PORTLAND, MAINE

Revisions:

Scale: As indicated

Date:

2020

BUILDING ELEVATION

A2.06



1 | NORTH ELEVATION
3/16" = 1'-0"



1 | PARKING LEVEL - BUILDING 2
1/8" = 1'-0"

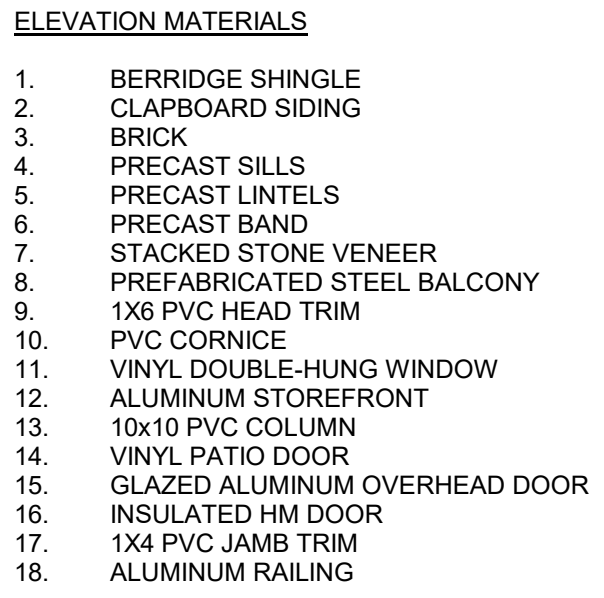
Developers
Collaborative

Architect:
**ARCHETYPE
ARCHITECTS**
48 Union Wharf Portland, Maine 04101
207.772.6022 ARCHETYPE@ARCHETYPEPA.COM

Project:
**STEVENS SQUARE
BUILDING 2**
PORTLAND, MAINE

Date:
09/10/2020
Scale:
1/8" = 1'-0"
PARKING LEVEL PLAN

A1.00



Architectural elevation drawing of a multi-story building facade. The drawing shows a symmetrical structure with a central entrance and multiple windows. Key features include:

- Roof: 80'-0"
- 5th Floor: 69'-2 3/4"
- 4th Floor: 58'-1 1/4"
- 3rd Floor: 46'-11 3/4"
- 2nd Floor: 35'-10 1/4"
- 1st Floor: 25'-0"

The drawing includes various window types, balconies, and a central entrance area. Callouts 1 through 14 are present, indicating specific architectural details and materials.

Page 491

Developers
Collaborative

Consultant.

ARCHETYPE
ARCHITECTS
48 Union Wharf Portland, Maine 04101
207.772.6022 ARCHETYPE@ARCHYPEPA.COM

ject.
STEVENS SQUARE
BUILDING 2

REVISIONS.

Date.	09/10/2020
scale.	As indicated

BUILDING
ELEVATIONS

A2.01

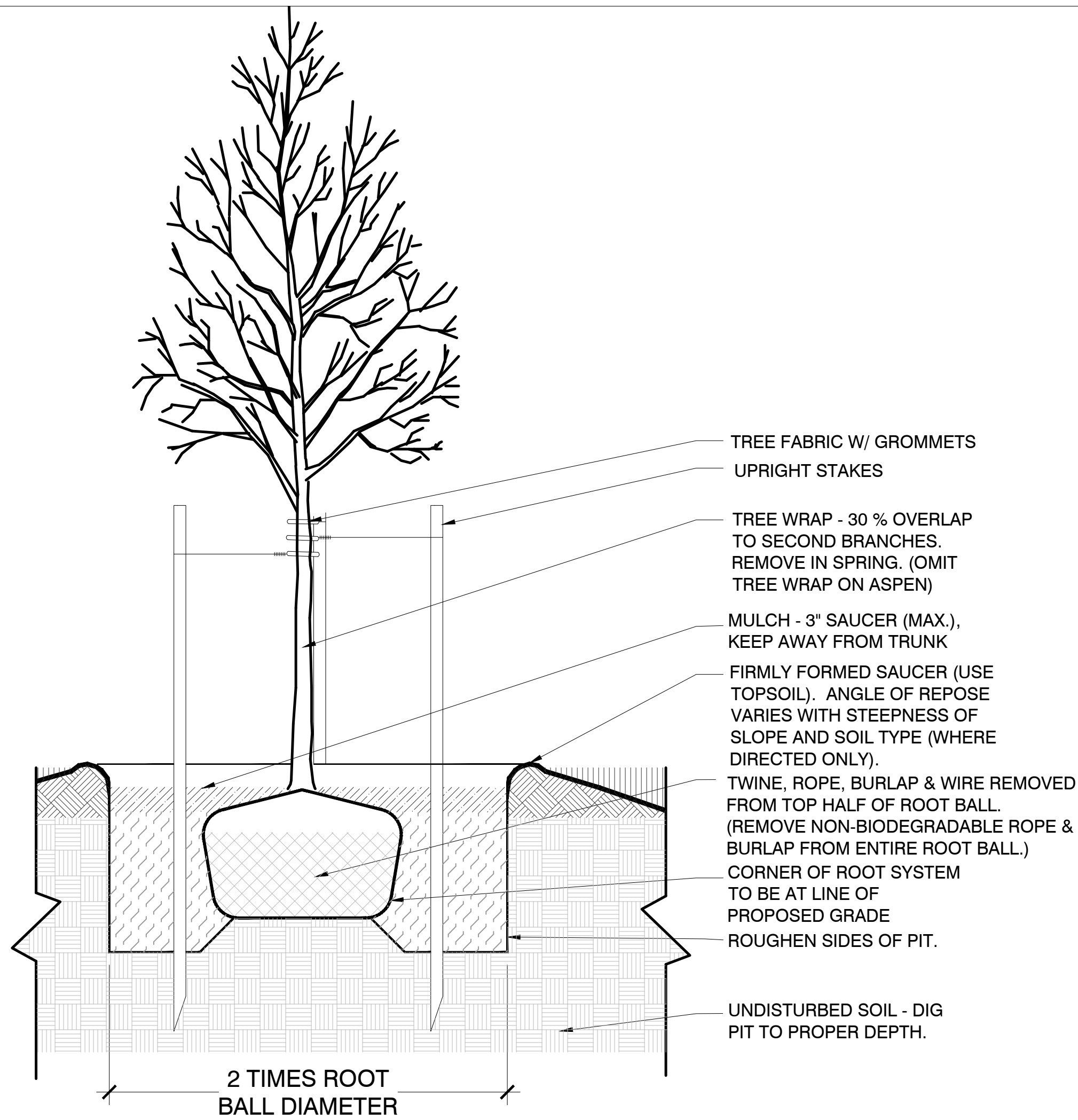


- | ELEVATION MATERIALS | |
|---------------------|-------------------------------|
| 1. | BERRIDGE SHINGLE |
| 2. | CLAPBOARD SIDING |
| 3. | BRICK |
| 4. | PRECAST SILLS |
| 5. | PRECAST LINTELS |
| 6. | PRECAST BAND |
| 7. | STOCKED STONE VENEER |
| 8. | PREFABRICATED STEEL BALCONY |
| 9. | 1X6 PVC CEAD TRIM |
| 10. | PVC CORNICE |
| 11. | VINYL DOUBLE-HUNG WINDOW |
| 12. | ALUMINUM STONEFRONT |
| 13. | 10X10 PVC COLUMN |
| 14. | VINYL PATIO DOOR |
| 15. | GLAZED ALUMINUM OVERHEAD DOOR |
| 16. | INSULATED HM DOOR |
| 17. | 1X4 PVC JAMB TRIM |
| 18. | ALUMINUM RAILING |

2	RIGHT ELEVATION.
	1/8" = 1'-0"

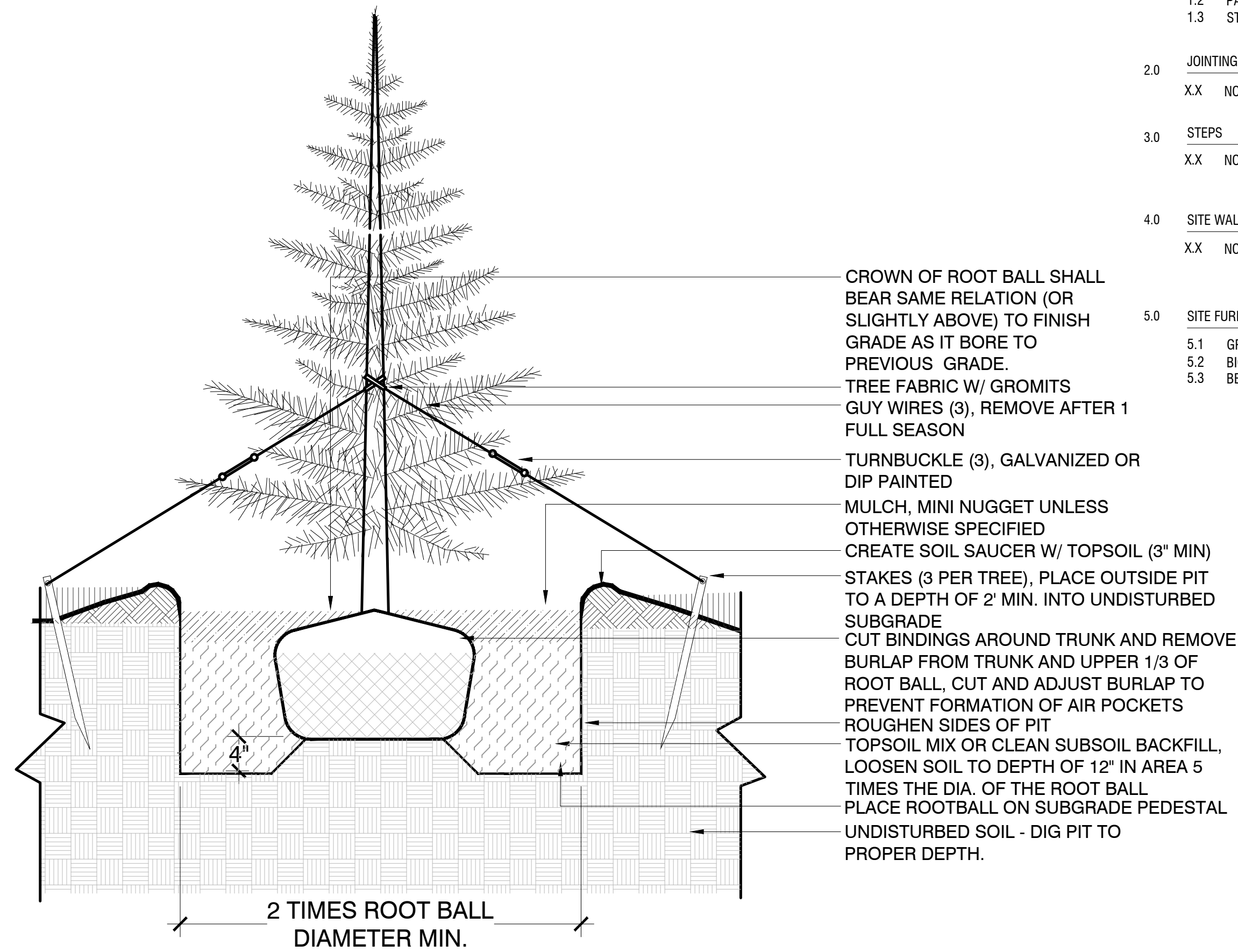


1 REAR ELEVATION - 5 STORY BUILDING



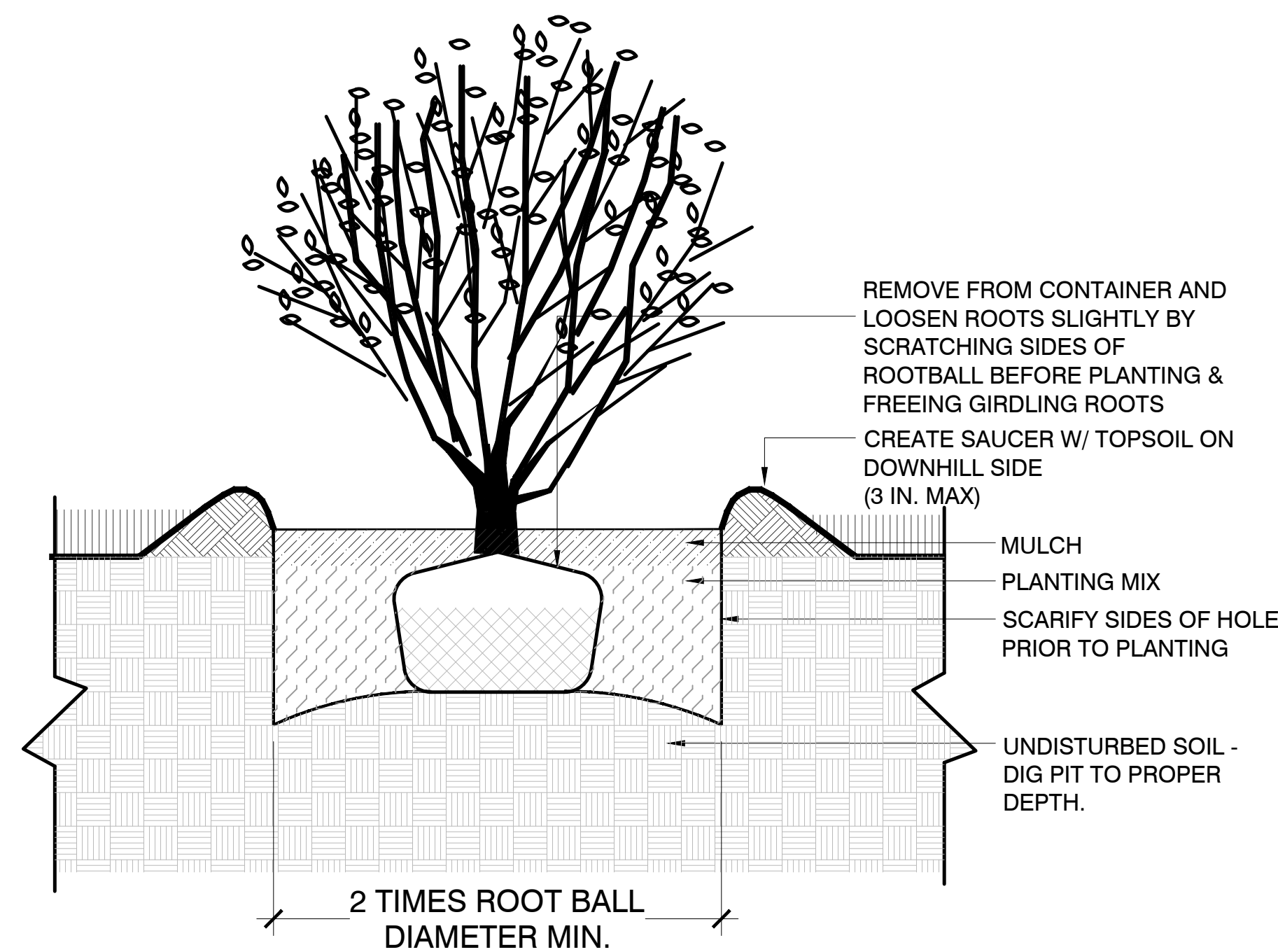
1 DECIDUOUS TREE PLANTING
1":1'-0"

9.1



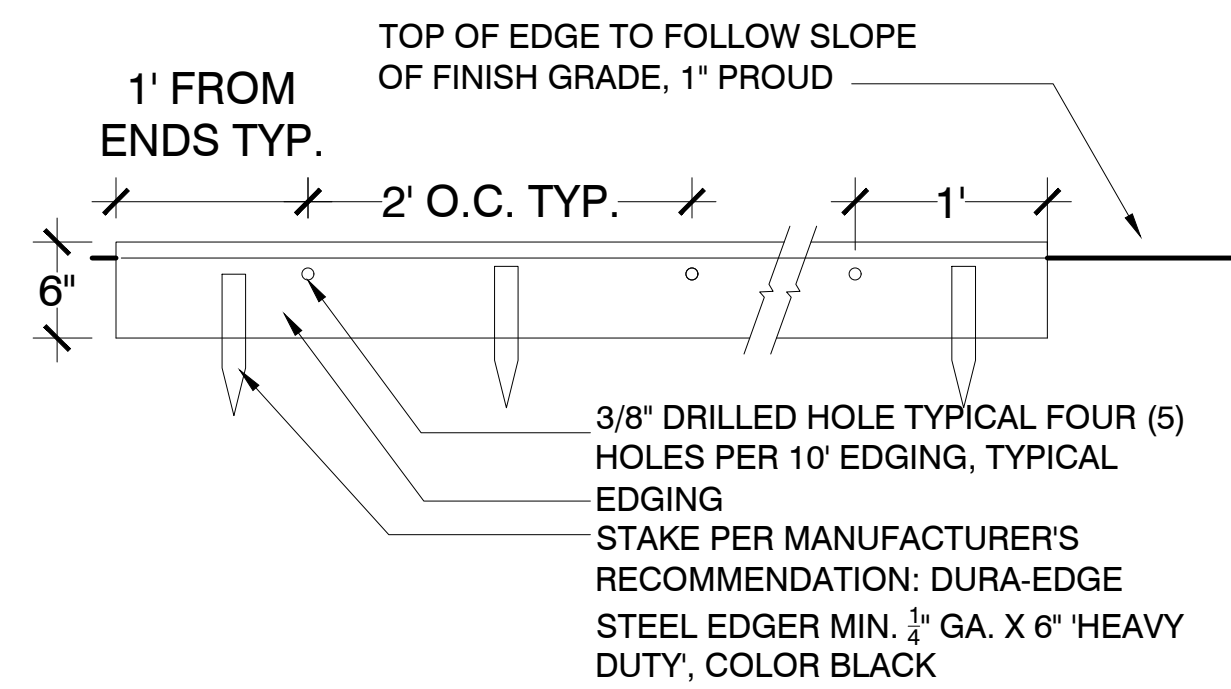
2 EVERGREEN TREE PLANTING
1":1'-0"

9.2



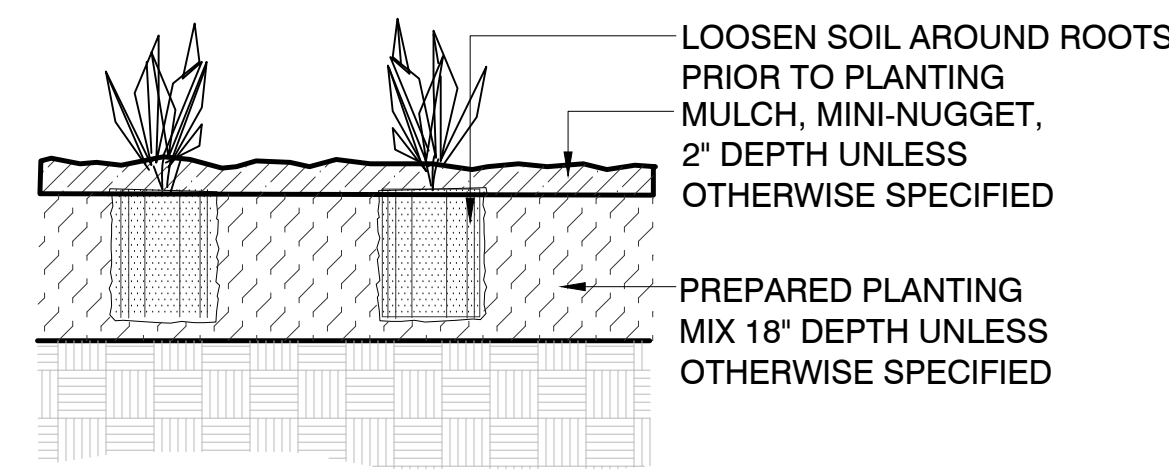
3 SHRUB PLANTING
1":1'-0"

9.3



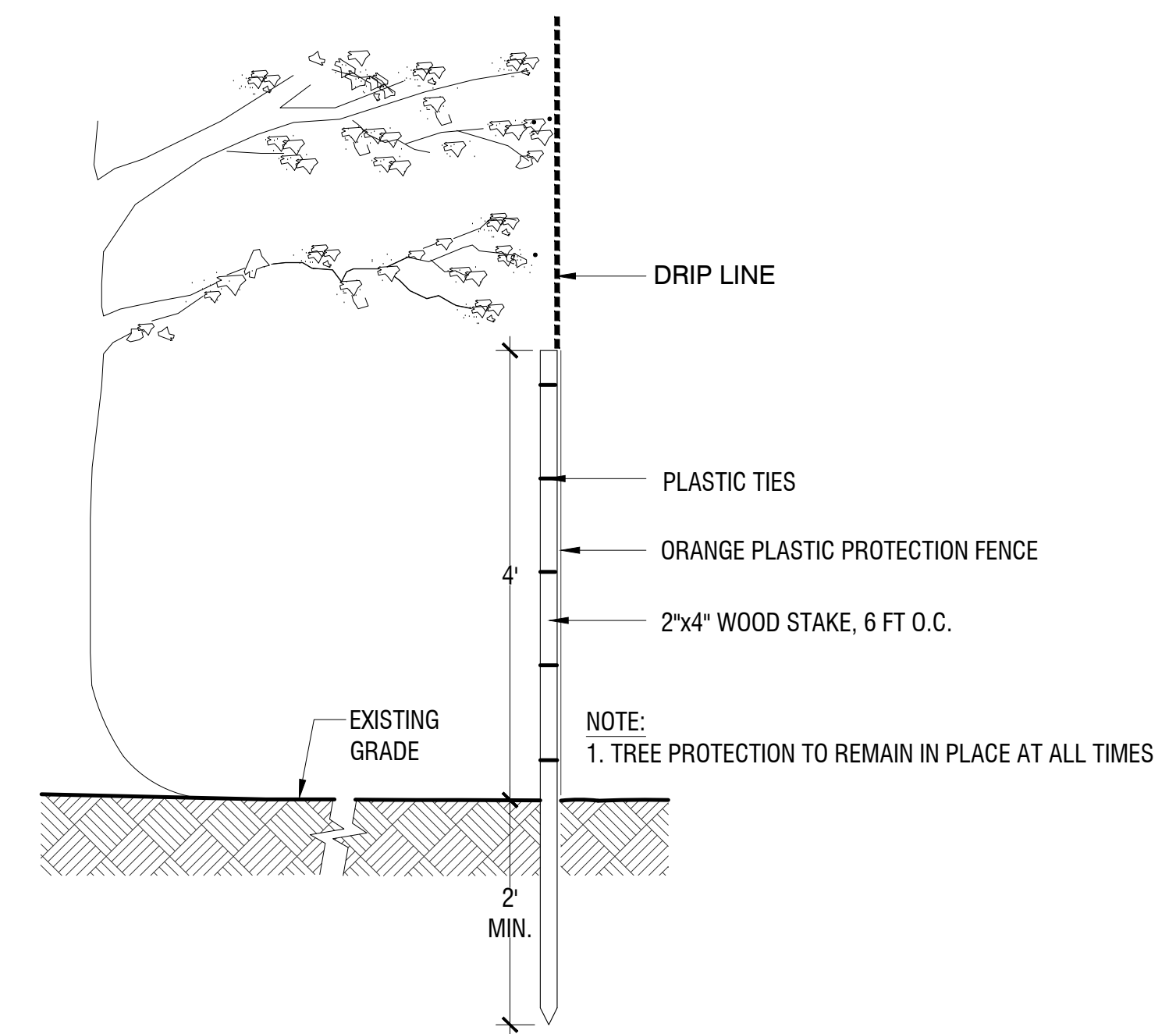
4 METAL EDGING
1":1'-0"

9.5



5 PERENNIAL & GRASS PLANTING
1":1'-0"

9.4



6 TREE PROTECTION
N.T.S.

9.6

SITE KEYNOTES:

	PAVEMENTS, RAMPS, CURBS	DETAIL / SHEET
1.0	1.1 PAVERS - PEDESTRIAN	1/L4-00
	1.2 PAVERS - VEHICULAR	2/L4-00
	1.3 STONE DUST PATH	3/L4-00
2.0	JOINTING	
	X.X NOT USED AT THIS TIME	X/XX-XX
3.0	STEPS	
	X.X NOT USED AT THIS TIME	X/XX-XX
4.0	SITE WALLS/ EMBANKMENTS	
	X.X NOT USED AT THIS TIME	X/XX-XX
5.0	SITE FURNITURE	
	5.1 GRANITE BENCH WOOD TOP	4/L4-00
	5.2 BICYCLE RACK	6/L4-00
	5.3 BENCH	1/L4-00

	RAILINGS, BARRIERS, FENCING	DETAIL / SHEET
6.0	X.X NOT USED AT THIS TIME	X/XX-XX
7.0	SITE LIGHTING	
	BY OTHERS	
8.0	DRAINAGE	
	X.X NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE	
	9.1 DECIDUOUS TREE PLANTING	1/L4-01
	9.2 EVERGREEN TREE PLANTING	2/L4-01
	9.3 SHRUB PLANTING	3/L4-01
	9.4 PERENNIAL PLANTING	5/L4-01
	9.5 STEEL EDGING	4/L4-01
	9.6 TREE PROTECTION	6/L4-01
10.0	MISCELLANEOUS ELEMENTS	
	X.X NOT USED AT THIS TIME	X/XX-XX



ACETO LANDSCAPE ARCHITECTS
207.221.3380 | ACETOLA.COM

SEAL

PROJECT TITLE

STEVEN'S SQUARE AT
BAXTER WOODS
LOT 4 / PHASE 2
583 STEVEN'S AVE
PORTLAND, ME

PREPARED FOR

OWNER:

DC BAXTER WOODS LLC
100 COMMERCIAL ST.
SUITE 400
PORTLAND, ME 04101

REVISIONS	DATE

ISSUE DATE

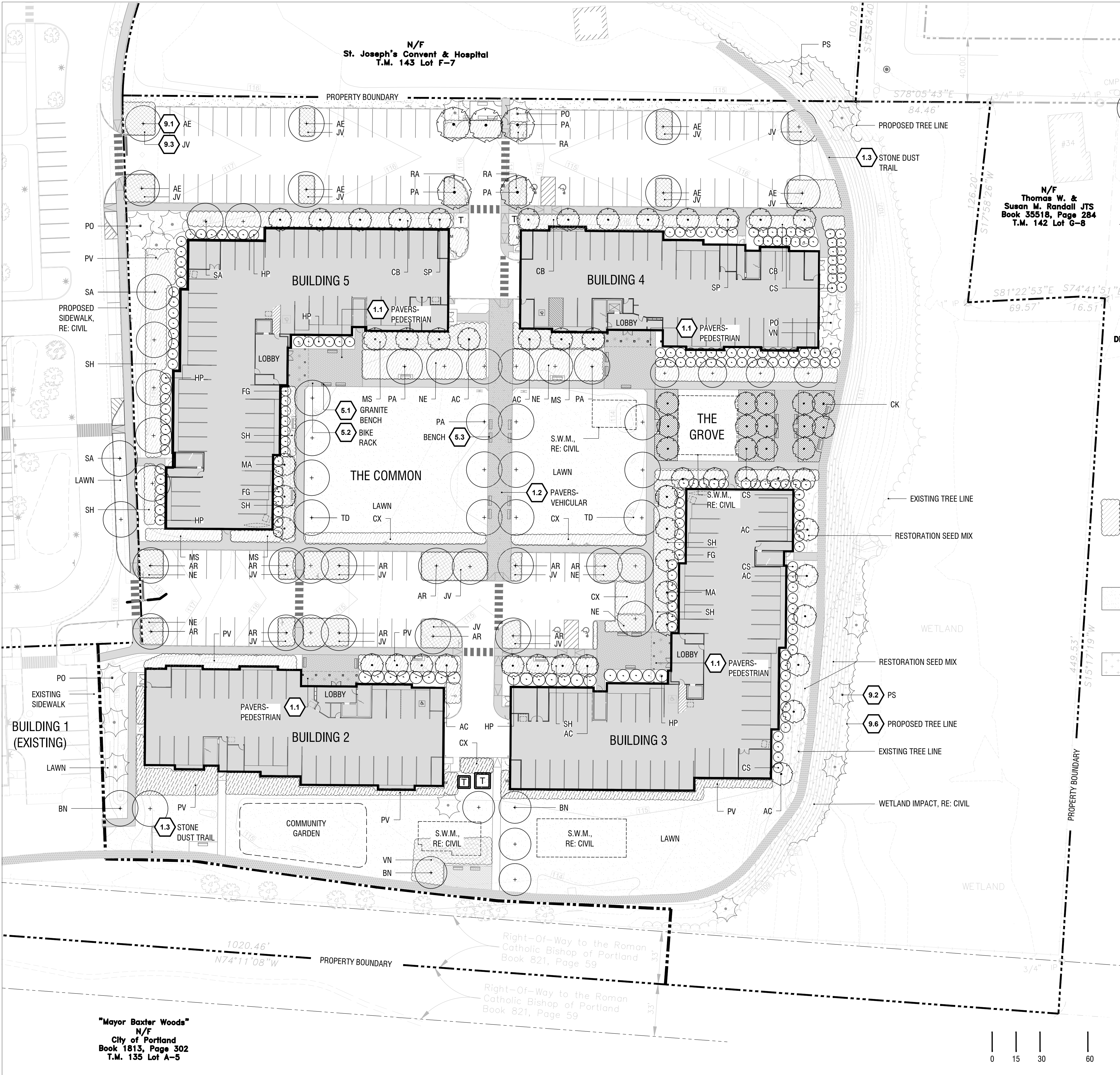
SITE PLAN REVIEW
MAY, 2021

SHEET TITLE

PLANTING DETAILS

SHEET INFORMATION

L 4-01



PLANT LIST

SYMB.	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING
TREES - DECIDUOUS					
AR	ACER RUBRUM	RED MAPLE	TBD	2" CAL.	PER PLAN
AE	AESCLUSUS X CARNEA 'FORT MCNAIR'	RED HORSECHESTNUT (SEEDLESS)	TBD	2" CAL.	PER PLAN
BN	BETULA NIGRA 'HERITAGE'	RIVER BIRCH	TBD	2" CAL.	PER PLAN
SA	SORBUS ALNIFOLIA	KOREAN MOUNTAIN ASH	TBD	2" CAL.	PER PLAN
TD	TAXODIUM DISTICHUM 'GREEN WHISPER'	BALD CYPRESS	TBD	2" CAL.	PER PLAN

TREES - EVERGREEN					
PO	PICEA OMORIKA	SERBIAN SPRUCE	TBD	7-8'	PER PLAN
PS	PINUS STROBUS	EASTERN WHITE PINE	TBD	7-8'	PER PLAN

TREES - ORNAMENTAL					
AC	AMELANCHIER CANADENSIS	SERVICEBERRY (MULTI-STEM)	TBD	7-8'	PER PLAN
CK	CORNUS KOUSA	KOUSA DOGWOOD	TBD	6-7'	PER PLAN
MA	MAGNOLIA X L. 'MERRILL'	MAGNOLIA	TBD	#5	PER PLAN
PA	PRUNUS ACCOLADE	ACCOLADE CHEERY	TBD	2" CAL.	PER PLAN
SP	STEWARTIA PSEUDOCAMELLIA	JAPANESE STEWARTIA	TBD	2" CAL.	PER PLAN

SHRUBS					
FG	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	TBD	#3	PER PLAN
HP	HYDRANGEA PANICULATA 'QUICK FIRE'	QUICK FIRE HYDRANGEA	TBD	#3	PER PLAN
JV	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL JUNIPER	TBD	#2	PER PLAN
VN	VIBURNUM NUDUM 'WINTERHUR'	SMOOTH WITHEROD	TBD	#5	PER PLAN
RP	RHODODENDRON CATAWBIENSE	CATAWBA RHODODENDRON	TBD	#5	PER PLAN
RA	RHUS AROMATICA	GRO-LOW SUMAC	TBD	#2	PER PLAN

PERENNIALS, GROUND COVERS, AND ORNAMENTAL GRASSES					
CX	CALAMAGROSIS X ACUTIFLORA	KARL FOERSTER GRASS	TBD	#1	PER PLAN
CB	CALAMAGROSIS BRACHYTRICHA	KOREAN FEATHERREED GRASS	TBD	#1	PER PLAN
MS	MISCANTHUS SINENSIS 'MORNING LIGHT'	CHINESE SILVER GRASS	TBD	#1	PER PLAN
NE	NEPETA 'WALKER'S LOW'	WALKER'S LOW CATMINT	TBD	#1	PER PLAN
PV	PANICUM VIRGATUM 'ROTSTRAHLBUSCH'	SWITCH GRASS	TBD	#1	PER PLAN
SH	SPOROBOLUS HETEROLEPIS	PRAIRIE DROP SEED	TBD	#1	PER PLAN

LAWN (SEED MIX) (WILDFLOWER FARM'S ECO-LAWN GRASS SEED)

TOTAL AREA 4,500 SF

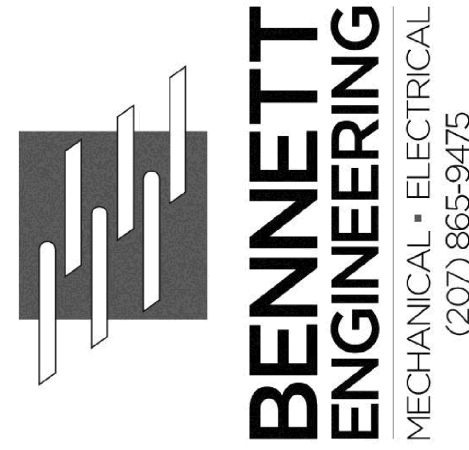
ECO-LAWN IS A DROUGHT-RESISTANT GRASS THAT REQUIRES MOWING ONLY ONCE PER MONTH. EACH 5 POUND BAG OF SEED COVERS 1,000 SQUARE FEET. A THICK HEALTHY LAWN IS THE BEST DEFENCE AGAINST WEEDS, DISEASE, DROUGHT AND INSECT DAMAGE.

RESTORATION MIX (SEED MIX)

NEW ENGLAND WETLAND PLANT, INC.
'NEW ENGLAND CONSERVATION/WILDLIFE MIX'
APPLICATION RATE: 25LBS/ACRE | 1750 SQ FT/LB

SITE KEYNOTES:					
1.0	PAVEMENTS, RAMPS, CURBS	DETAIL / SHEET	6.0	RAILINGS, BARRIERS, FENCING	DETAIL / SHEET
1.1	PAVERS - PEDESTRIAN	1/L4-00	X.X	NOT USED AT THIS TIME	XXX-XX
1.2	PAVERS - VEHICULAR	2/L4-00			
1.3	STONE DUST PATH	3/L4-00	7.0	SITE LIGHTING	
2.0	JOINTING			BY OTHERS	
X.X	NOT USED AT THIS TIME	X/XX-XX	8.0	DRAINAGE	
3.0	STEPS		X.X	NOT USED AT THIS TIME	XXX-XX
X.X	NOT USED AT THIS TIME	X/XX-XX	9.0	PLANTING AND LANDSCAPE	
4.0	SITE WALLS/ EMBANKMENTS		9.1	DECIDUOUS TREE PLANTING	1/L4-01
X.X	NOT USED AT THIS TIME	X/XX-XX	9.2	EVERGREEN TREE PLANTING	2/L4-01
			9.3	SHRUB PLANTING	3/L4-01
			9.4	PERENNIAL PLANTING	5/L4-01
			9.5	STEEL EDGING	4/L4-01
			9.6	TREE PROTECTION	6/L4-01
5.0	SITE FURNITURE		10.0	MISCELLANEOUS ELEMENTS	
5.1	GRANITE BENCH WOOD TOP	4/L4-00	X.X	NOT USED AT THIS TIME	XXX-XX
5.2	BICYCLE RACK	6/L4-00			
5.3	BENCH	1/L4-00			

REVISIONS	DATE



STEVEN'S SQUARE AT
BAXTER WOODS - PHASE 2
583 STEVENS AVENUE, PORTLAND MAINE

Date Drawn - 05/21/21

Drawn By - MJM

Project #

Scale - AS NOTED

Revised -

SHEET TITLE

SITE LIGHTING
PLAN

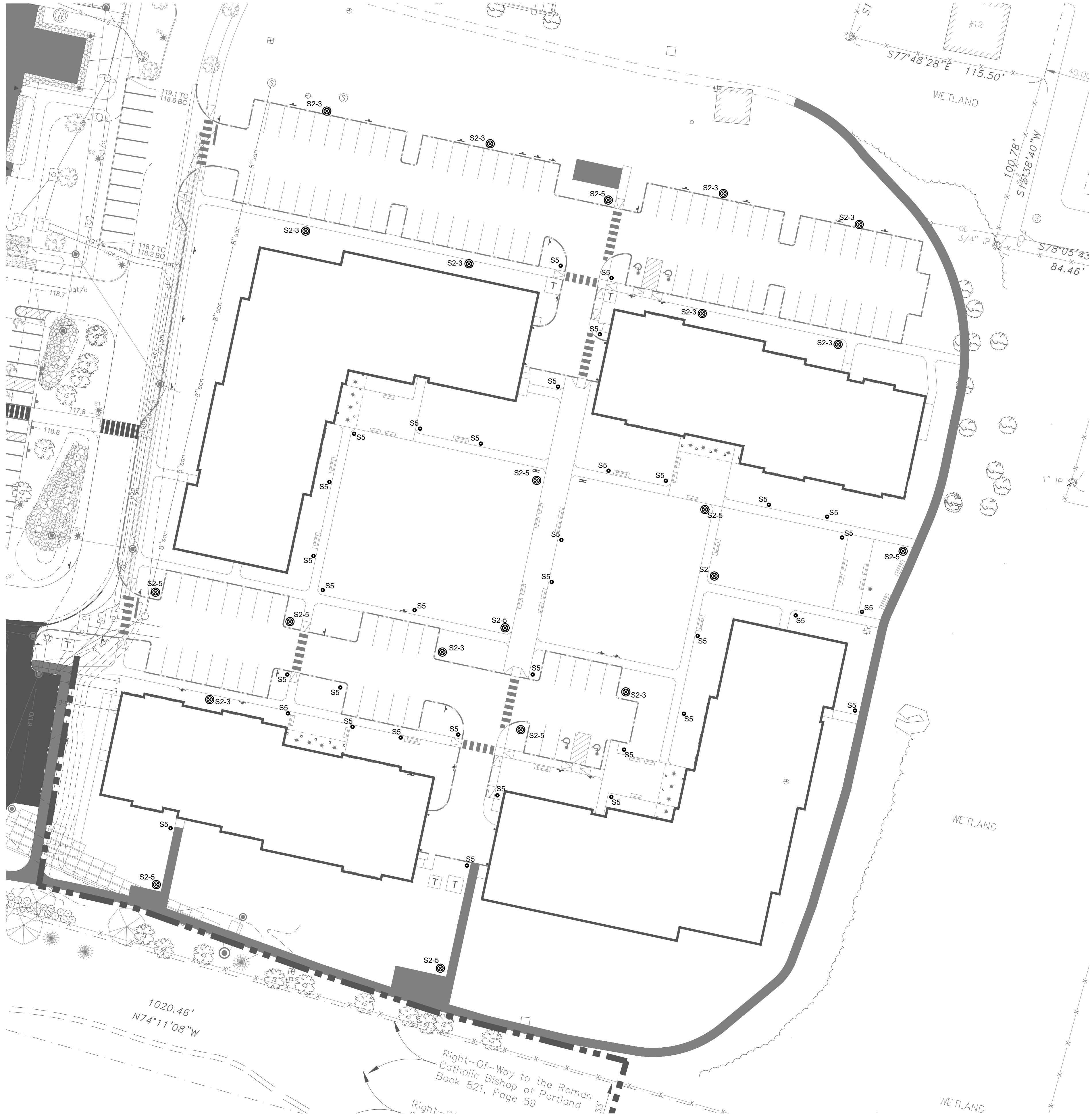
E1.0

GENERAL NOTES- SITE ELECTRICAL

1. THE COMPLETE INSTALLATION SHALL CONFORM WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES AND ORDINANCES, INCLUDED BUT NOT LIMITED TO APPROVED EDITIONS OF THE FOLLOWING: NATIONAL ELECTRICAL SAFETY CODE (ANSI C2); NATIONAL ELECTRICAL CODE (NFPA 70); OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) AND ALL AMENDMENTS THERETO. NOTHING CONTAINED IN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONSTRUED TO CONFLICT WITH THESE LAWS, CODES, AND ORDINANCES, AND THEY ARE THEREBY INCLUDED IN THESE SPECIFICATIONS. OBTAIN PERMITS AND REQUEST INSPECTIONS FROM ALL AUTHORITIES HAVING JURISDICTION. COMPLY WITH ALL POWER, TELEPHONE, CABLE TELEVISION PROVIDER REGULATIONS AND STANDARDS.
2. THE FOLLOWING ELECTRICAL WORK SHALL BE PERFORMED UNDER THIS CONTRACT: UNDERGROUND CONDUIT, FITTINGS, AND ALL DEVICES; PROVISION OF HAND HOLES, NEW LIGHTING FIXTURES, POLES WITH ALL ACCESSORIES INCLUDING ANCHOR BOLTS AND POLE BASES; PROVISION OF UNDERGROUND CONDUIT AND WIRE TO SERVE NEW LIGHTING EQUIPMENT AND RECEPTACLES; PROVISION OF SERVICE EQUIPMENT, INCLUDING OUTDOOR CABINETS, INGROUND SPLICE BOXES, GROUNDING, METER ENCLOSURES, AND WEATHERPROOF RECEPTACLES.
3. ELECTRICAL UTILITY SHALL PROVIDE ALL ASSOCIATED OVERHEAD AND UNDERGROUND PRIMARY WIRING, PRIMARY TERMINATIONS, TRANSFORMERS, AND CONNECTIONS TO EXISTING OVERHEAD LINES. CONTRACTOR SHALL PROVIDE UNDERGROUND CONDUIT.
4. PROVIDE UNDERGROUND ELECTRICAL WARNING TAPE: 6" WIDE PLASTIC TAPE, COLORED RED WITH SUITABLE LEGEND DESCRIBING BURIED ELECTRICAL LINES FOR ALL UNDERGROUND CONDUITS. LOCATE 6 INCHES BELOW FINISHED GRADE.
5. REFER TO CIVIL DRAWINGS FOR EXCAVATION AND BACKFILL OF ALL UNDERGROUND WORK.
6. EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED. CONTRACTORS SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATIONS.
7. FINAL LOCATION OF NEW UTILITIES MAY VARY FROM PLANS PENDING UTILITY COMPANY FIELD COORDINATION.
8. THE LOCAL TELEPHONE AND CABLE TELEVISION SERVICE PROVIDERS SHALL PROVIDE AND INSTALL ALL THE SITE UTILITY SERVICE CABLE TO NEW BACKBOARD IN THE CONDUITS PROVIDED BY THE CONTRACTOR AS PART OF THE SITE WORK.
9. UNDERGROUND CONDUIT SHALL BE SCHED 40 PVC, ABOVE GRADE CONDUIT SHALL BE RGS. ALL CONDUIT SWEEPS SHALL BE RGS LONG SWEEPS.
10. PROVIDE EXPANSION FITTINGS FOR ALL UNDERGROUND CONDUIT CONNECTED TO FIXED ABOVE GROUND STRUCTURES.
11. PROVIDE A LISTED INTERSYSTEM BONDING TERMINAL AT THE SERVICE ENTRANCE. INSTALL IN ACCORDANCE WITH NFPA 70,250.94

LEGEND

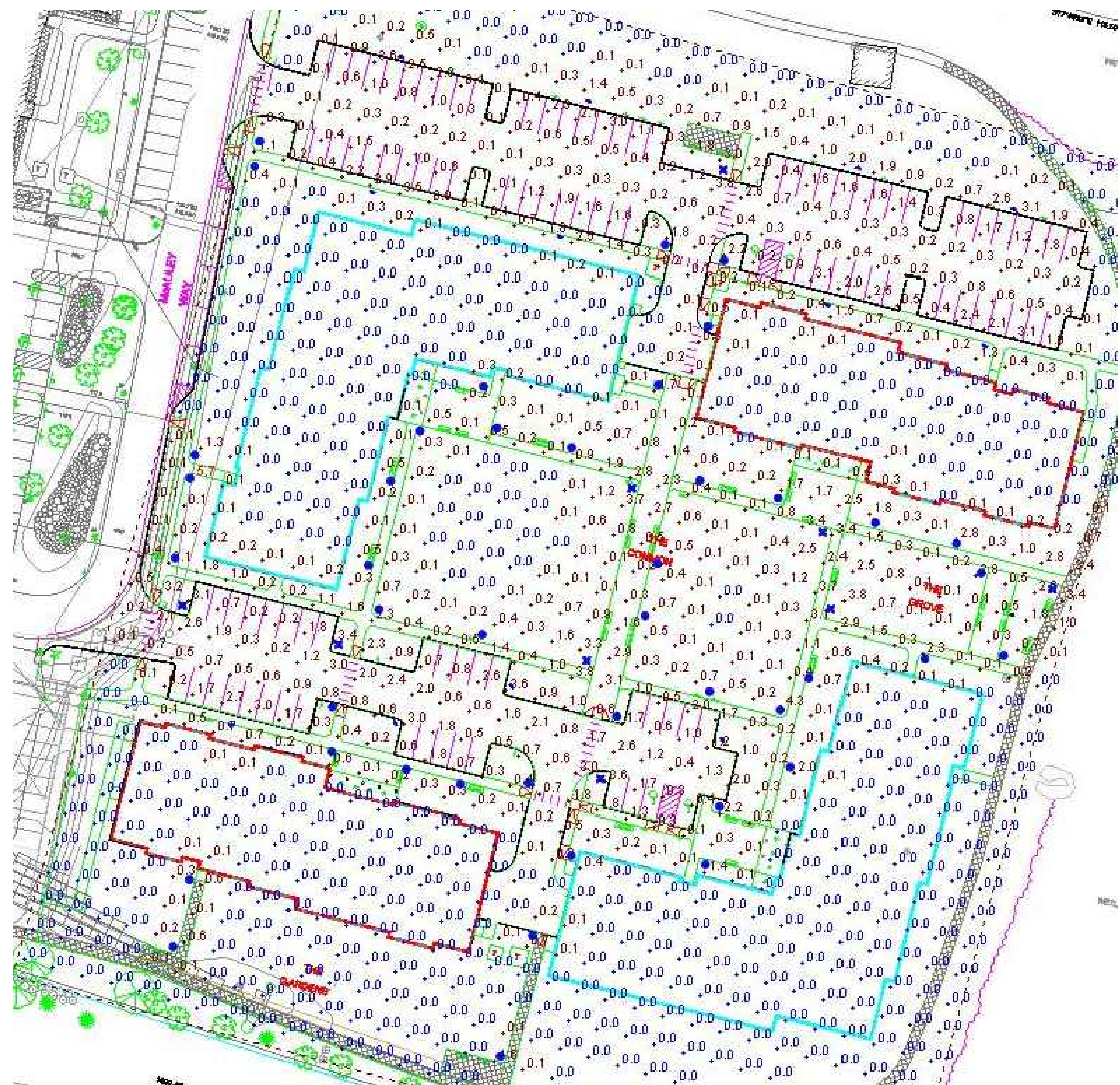
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- S2-3 ⊙ SUN VALLEY LIGHTING
MO220LED-VLED-III-48LED-350MA-NW-120-PT-HS-VLED-RAL9005T
- S2-5 ⊙ SUN VALLEY LIGHTING
MO220LED-VLED-V-SQ-48LED-350MA-NW-120-PT-HS-VLED-RAL9005T
- POLE LIGHTS MOUNTED AT 10'-0"



1
E1.1

STEVEN'S SQUARE SITE LIGHTING

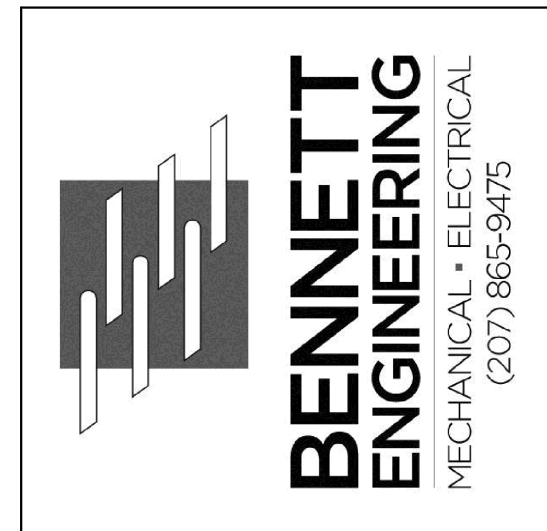
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E1.1

STEVEN'S SQUARE PRELIMINARY PHOTOMETRICS

SCALE: 1/32" = 1'-0"



STEVEN'S SQUARE AT
BAXTER WOODS - PHASE 2

583 STEVENS AVENUE, PORTLAND MAINE

Date Drawn - 05/21/21

Drawn By - MJM

Project *

Scale - AS NOTED

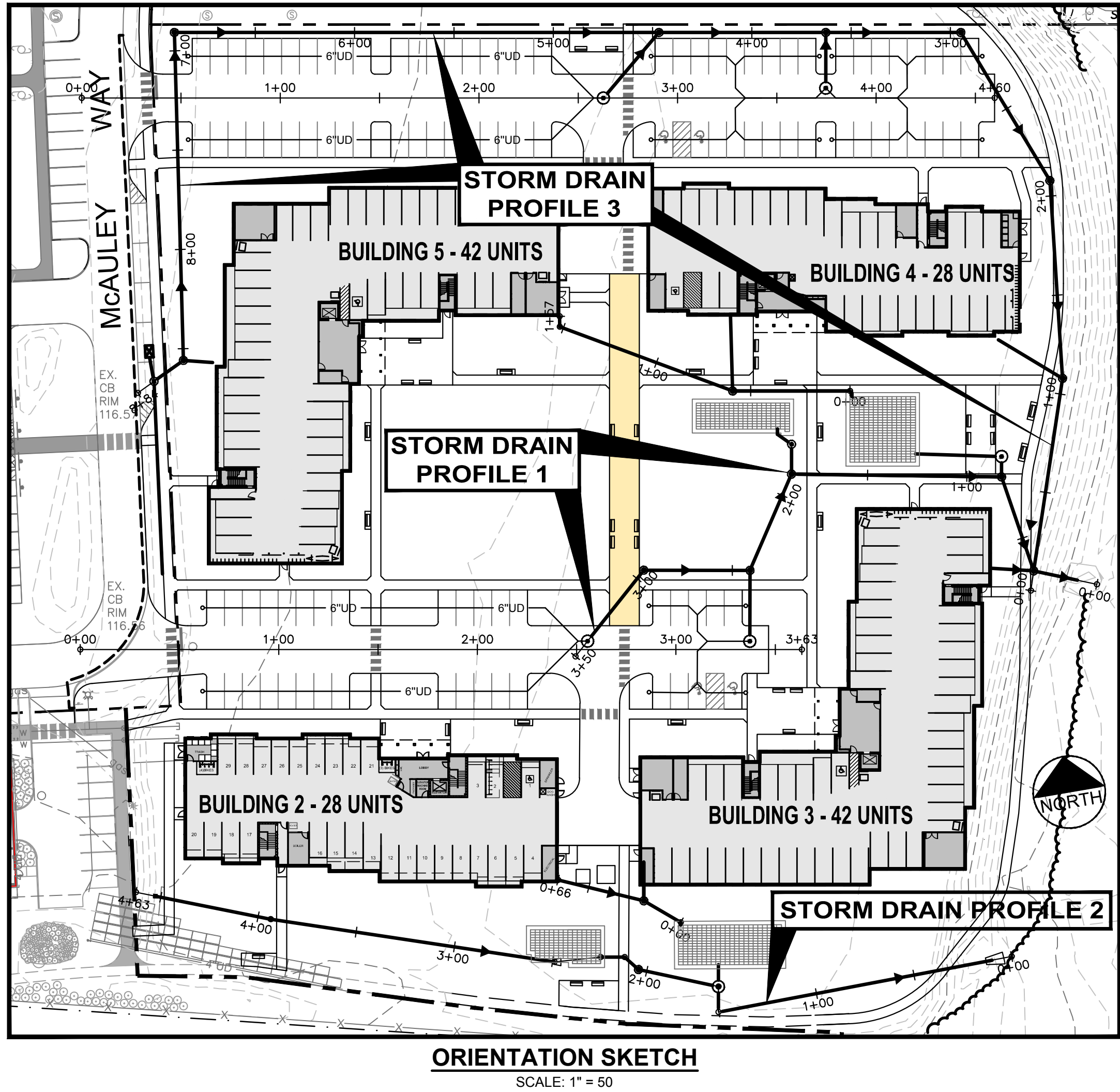
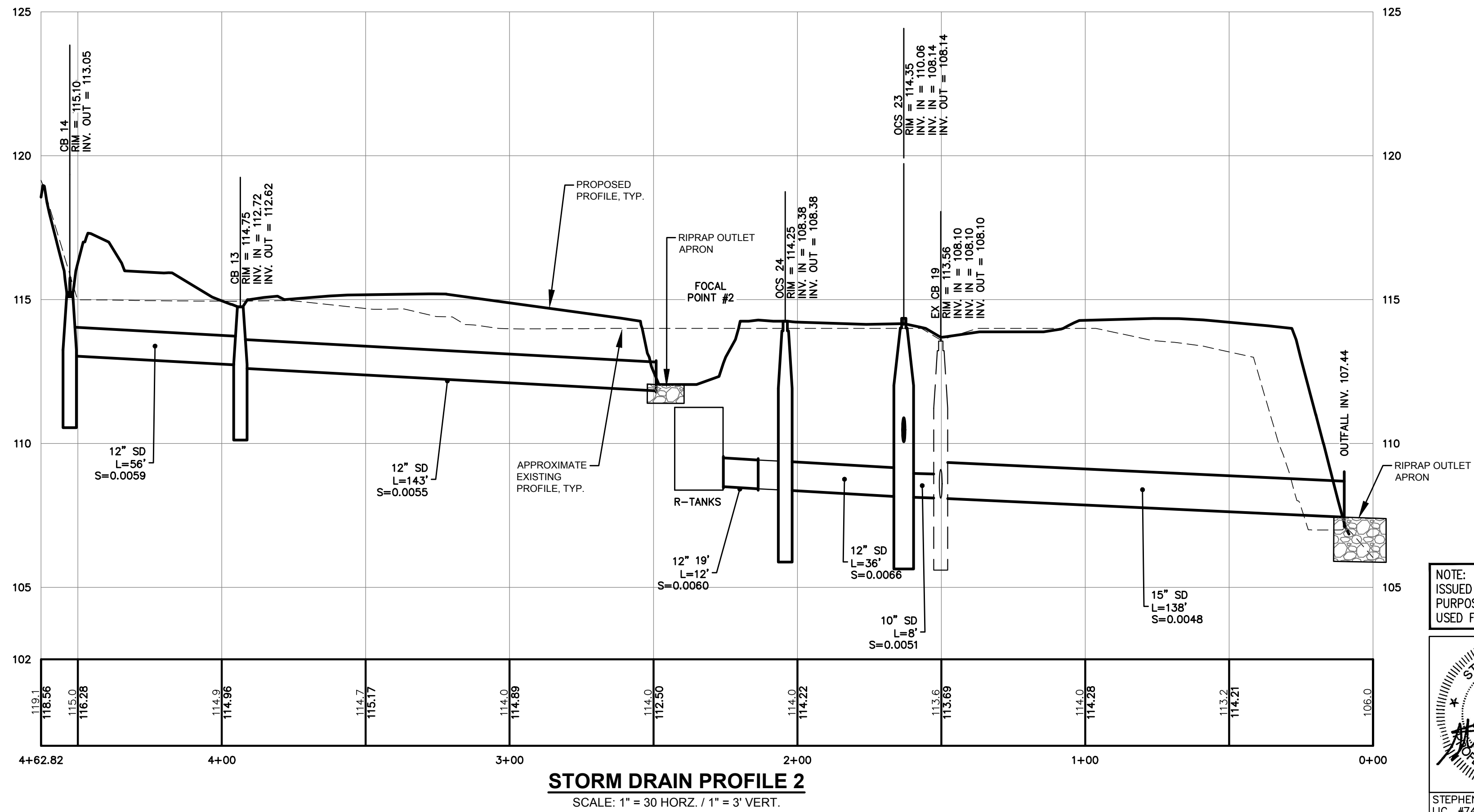
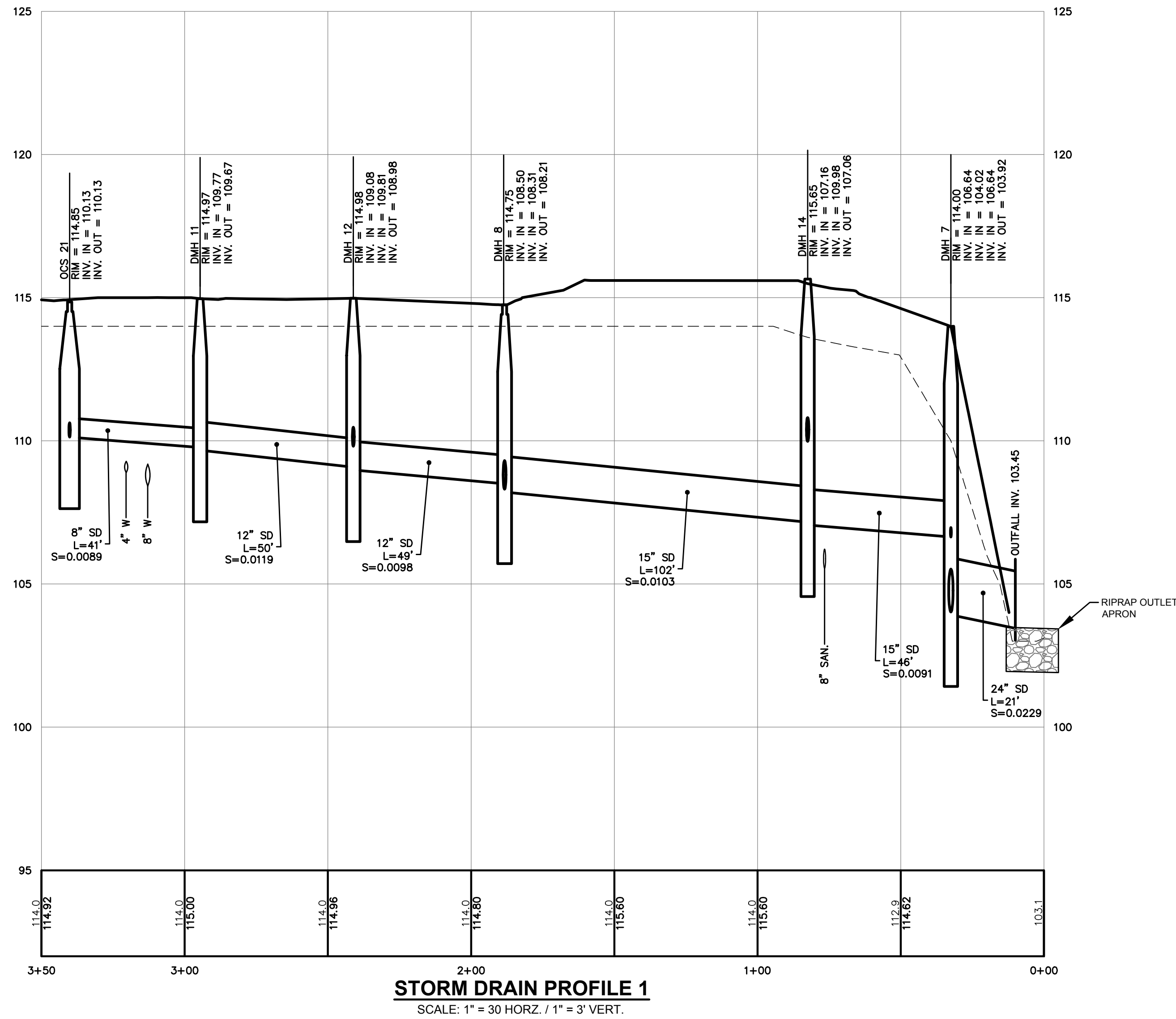
Revised -

SHEET TITLE

SITE
PHOTOMETRICS
PLAN

E1.1

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Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB Draft: CDD Date: MAY 2021
Checked: SRB Scale: AS NOTED Job No.: 3564.03
File Name: 356403-GRADING.dwg

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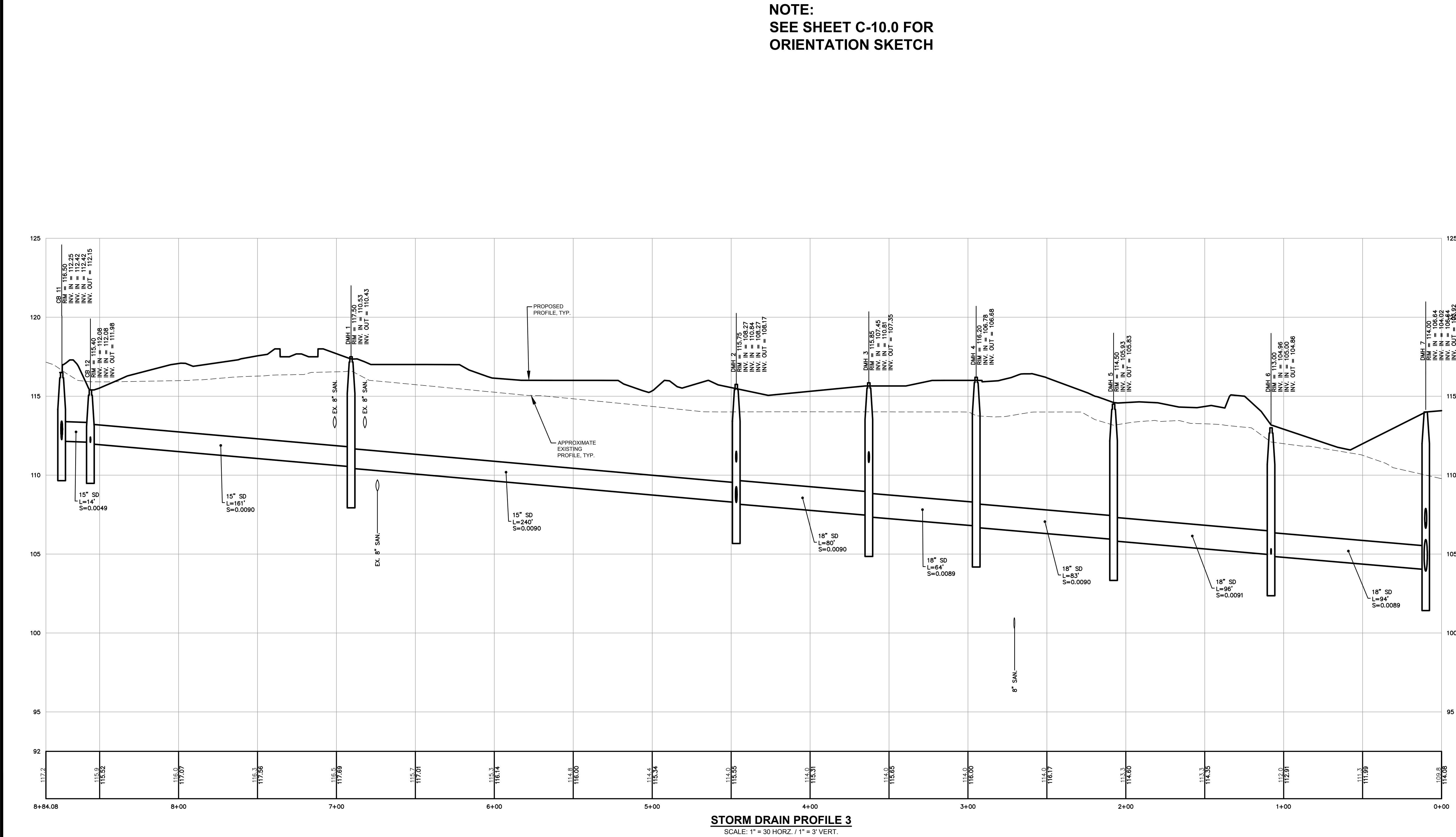
Drawing Name:	STORM DRAIN PROFILES
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

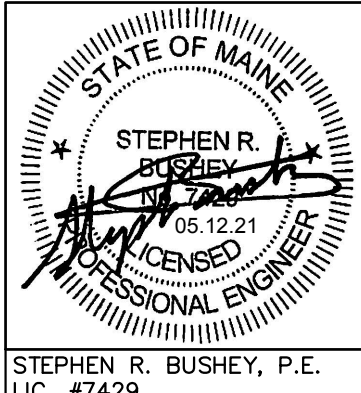
STATE OF MAINE
STEPHEN R. BUSHEY, P.E.
LICENSED PROFESSIONAL ENGINEER
05.12.21
LIC. #7429

Drawing No.
C-10.0

U:\3564.03-Stevens Square-Lot 4 - Portland, ME\Z - CAD\DWG\356403-GRADING.dwg - 5/14/2021 3:26 PM



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USED FOR CONSTRUCTION.



Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-GRADING.dwg		
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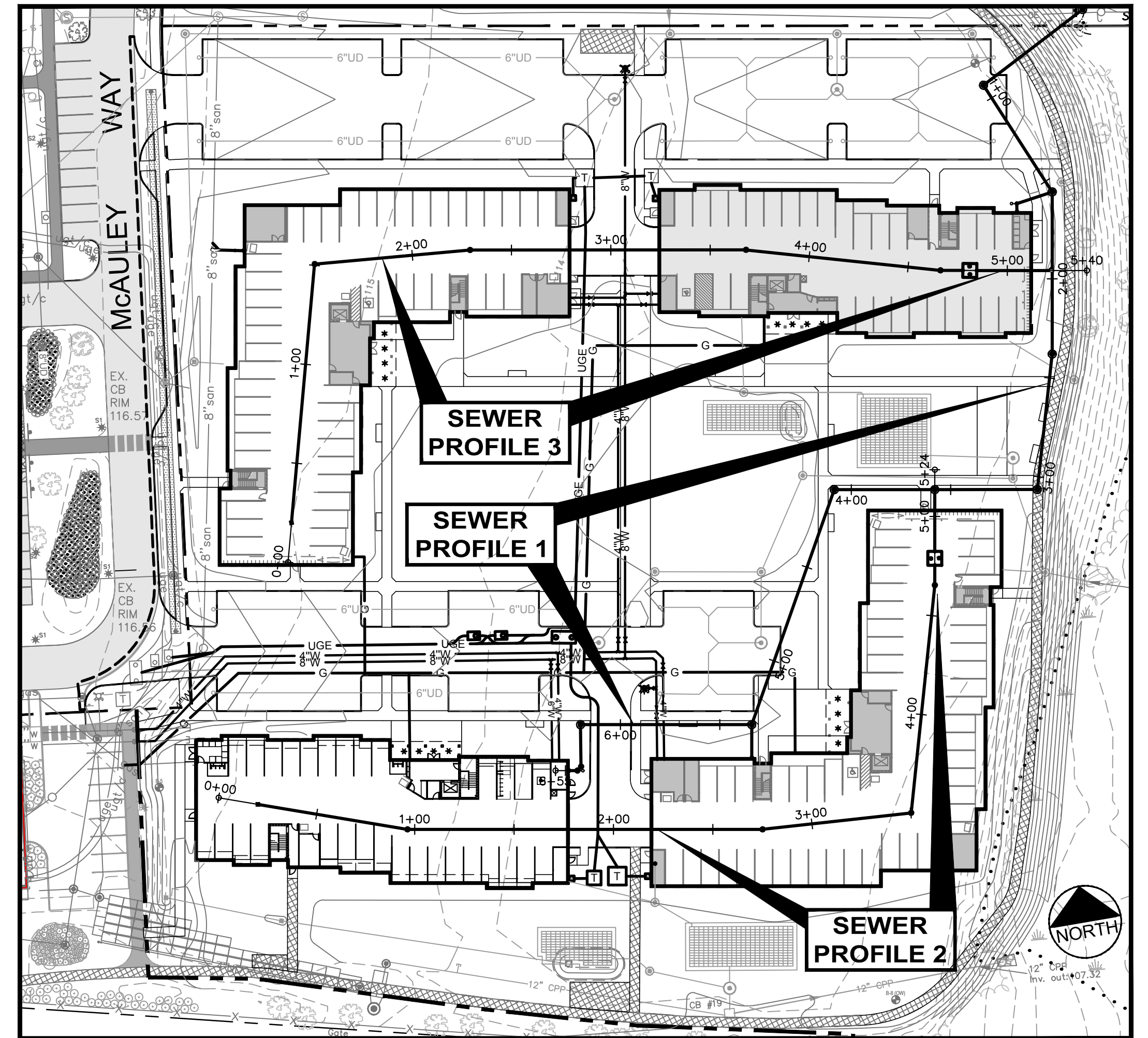
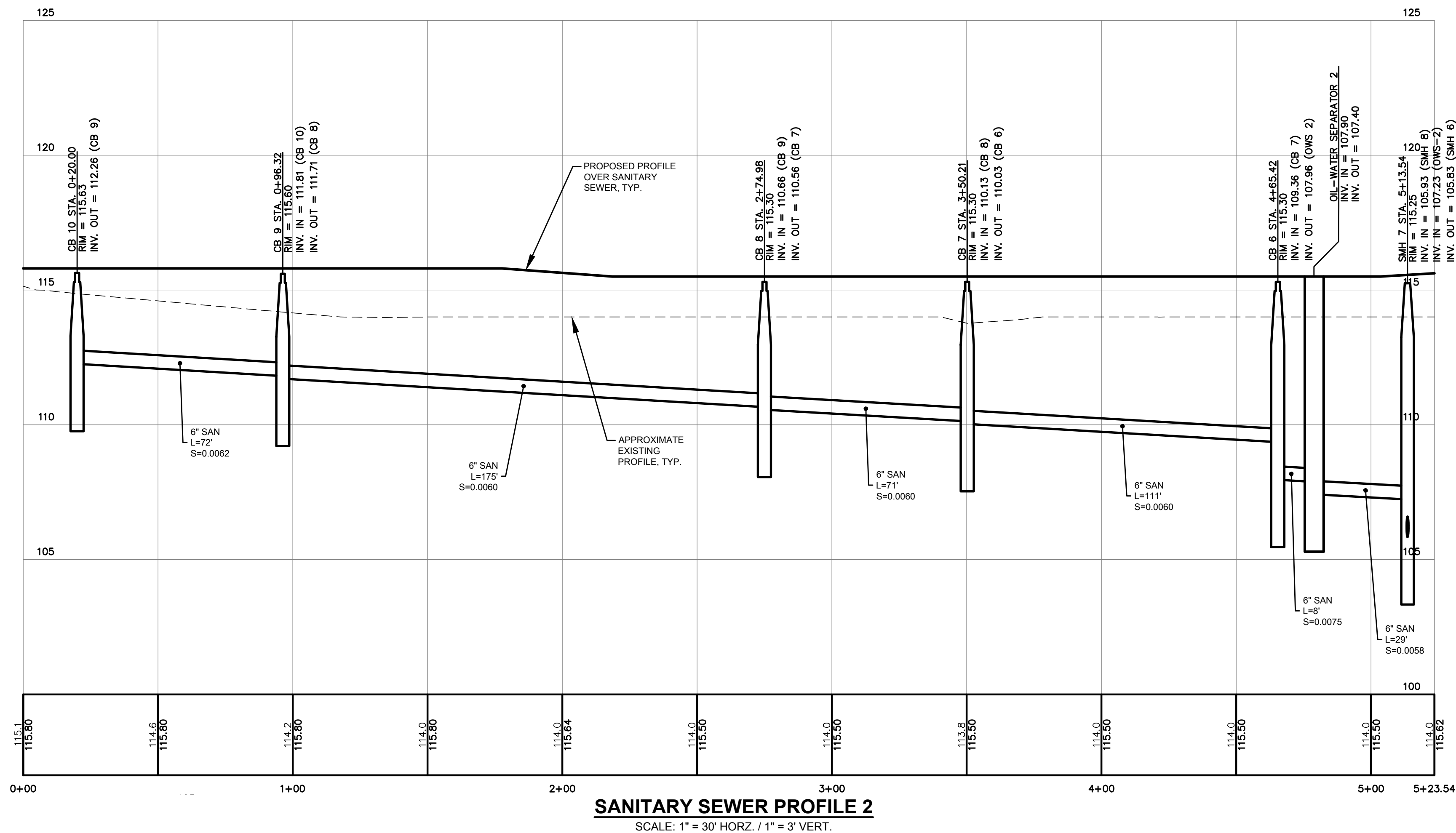
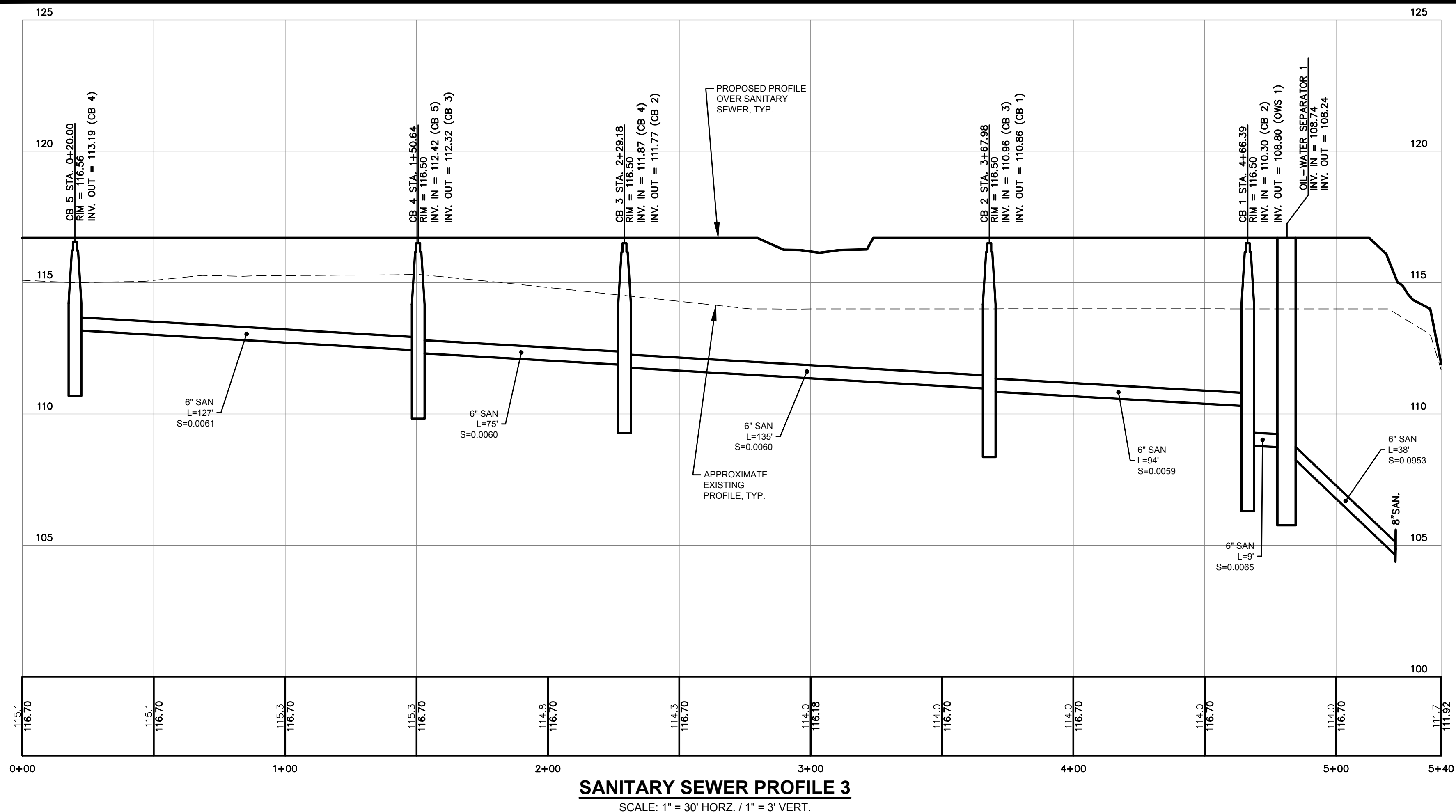


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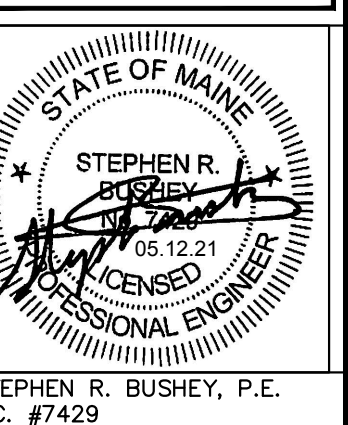
Drawing Name:	STORM DRAIN PROFILES
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-10.1

U:\3564.03-Stevens Square-Lot 4 - Portland, ME\Z - CAD\DWG\356403-UTILITY.dwg - 5/13/2021 6:04 PM



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Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-UTILITY.dwg		
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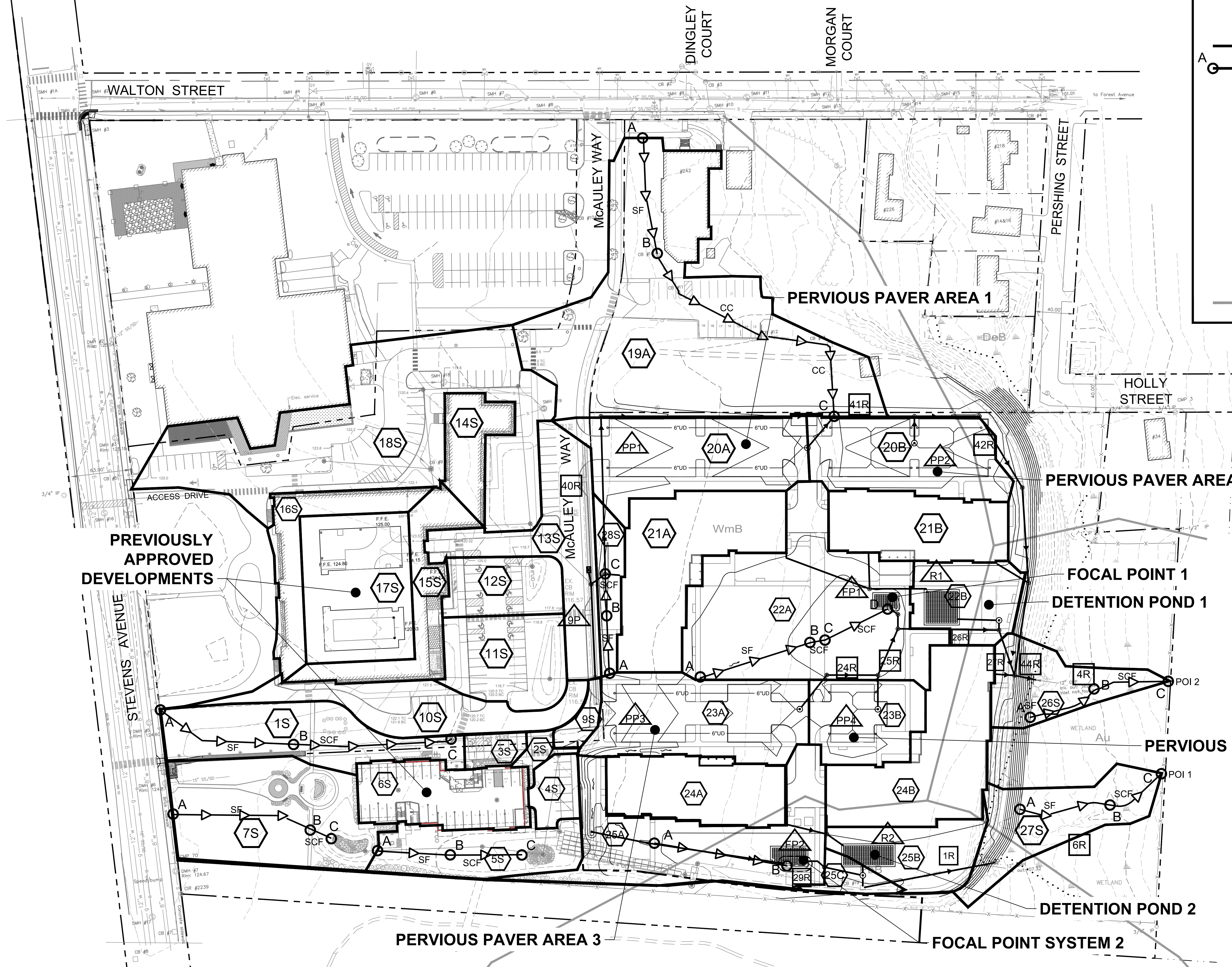


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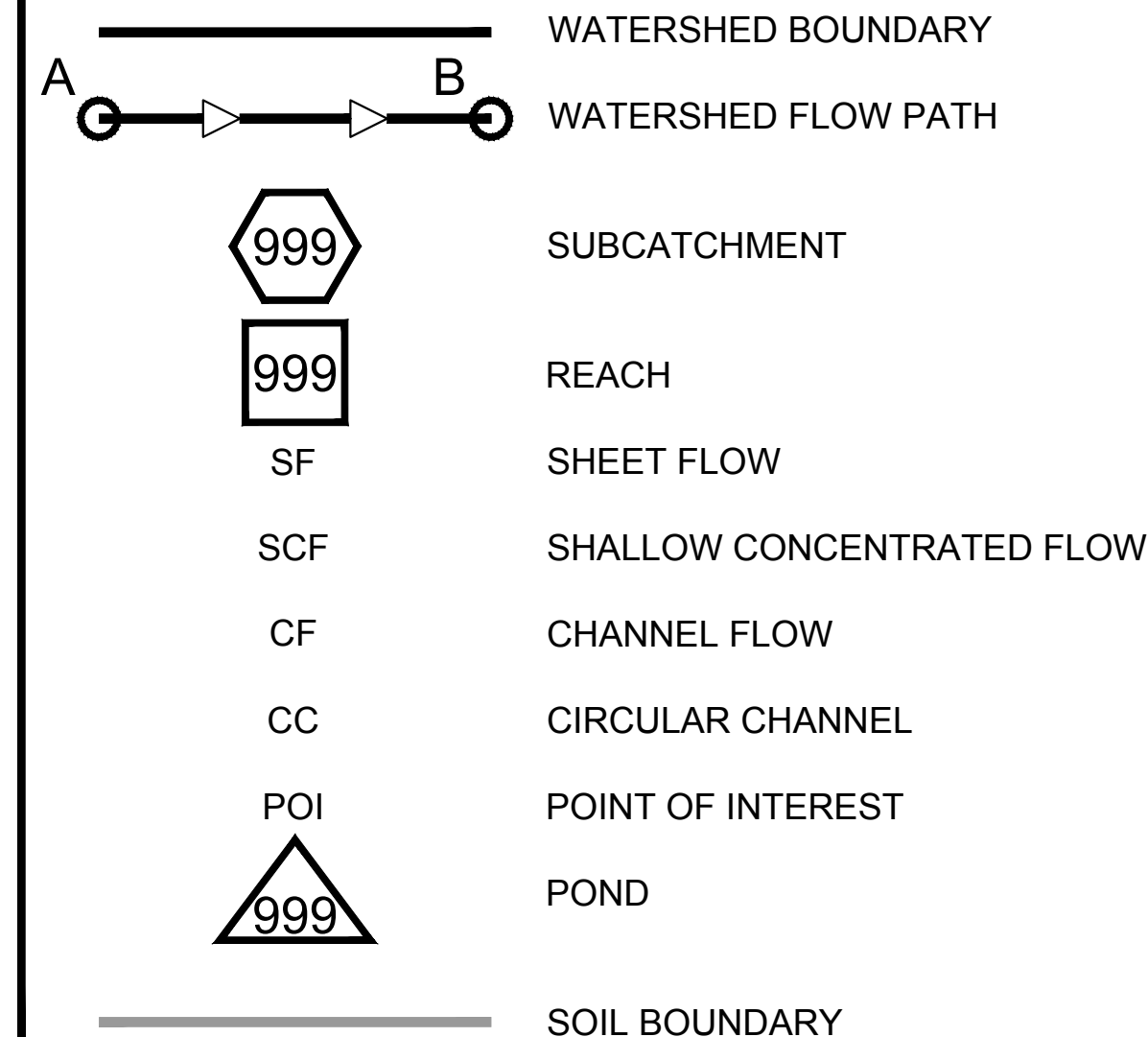
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Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-11.1

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WATERSHED LEGEND



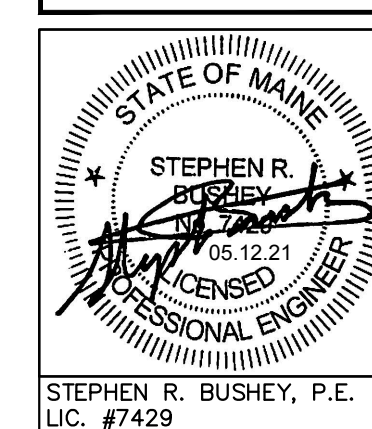
SYMBOL	SOIL NAME	HSG
AU	AU GRES LOAMY SAND	A/D
PB	PAXTON FINE SANDY LOAM	C
WmB	WINDSOR LOAMY SAND	A
DeB	DEERFIELD LOAMY SAND	A

- NOTE:
- ATHLETIC FIELD IS UNDERDRAINED AND ASSUMED HSG C
 - WETLANDS ASSUMED HSG D
 - THE FOLLOWING SUBCATCHMENTS HAVE AN ASSUMED TC OF 6 MINUTES:
 - 2S, 3S, 4S, 6S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 20A, 20B, 21A, 21B, 22B, 23A, 23B, 24A, 24B, 25B



GRAPHIC SCALE
1 inch = 50 ft.

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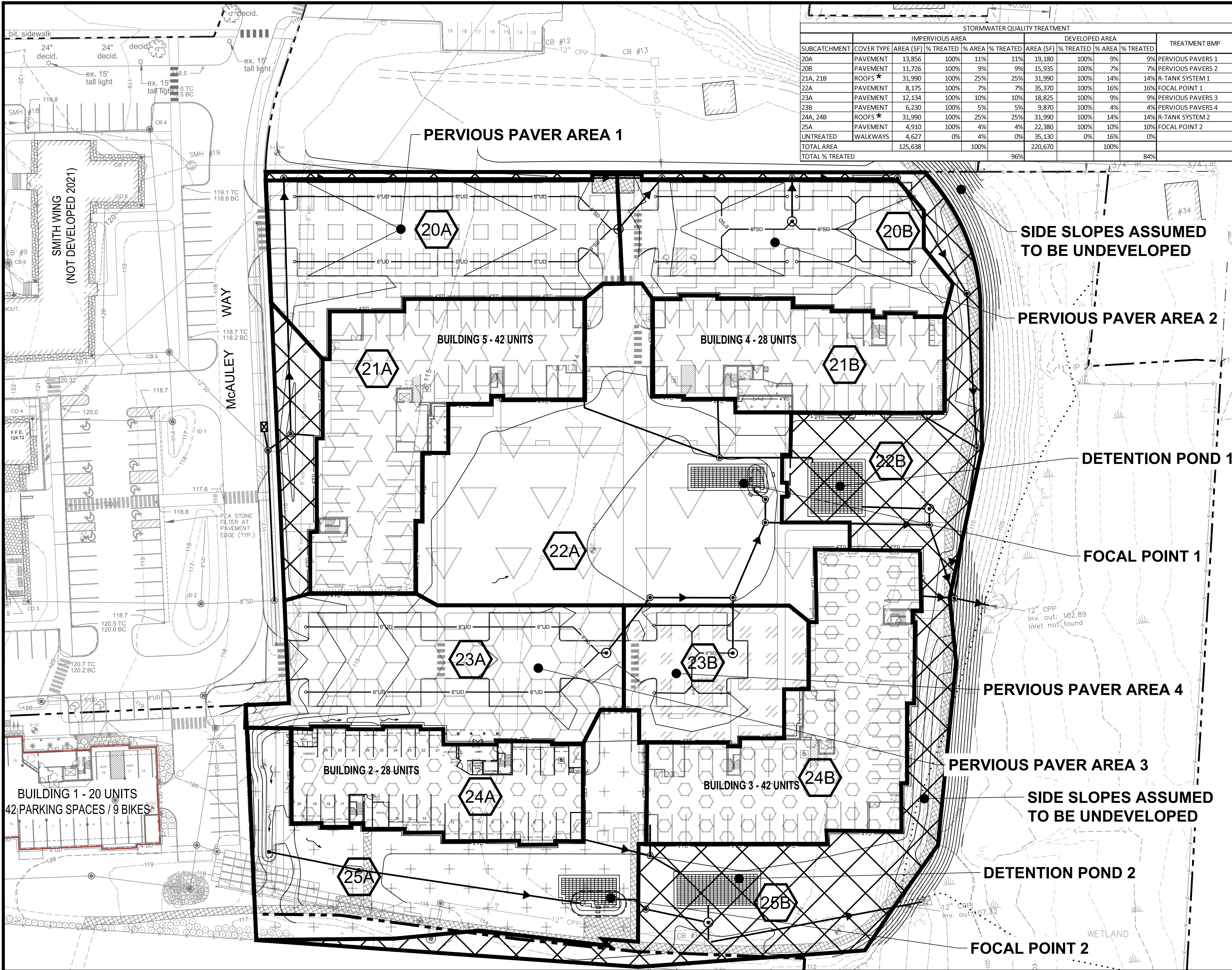
Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-WSHED.dwg		
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Drawing Name:	POSTDEVELOPMENT WATERSHED PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.	WS2
-------------	-----



WATERSHED LEGEND

DEVELOPED AREA BOUNDARY

SUBCATCHMENT

AREA TREATED BY PERVIOUS PAVER AREA 1

AREA TREATED BY PERVIOUS PAVER AREA 2

AREA TREATED BY PERVIOUS PAVER AREA 3

AREA TREATED BY PERVIOUS PAVER AREA 4

AREA TREATED BY FOCAL POINT 1

AREA TREATED BY FOCAL POINT 2

AREA TREATED BY DETENTION POND 1

AREA TREATED BY DETENTION POND 2

UNTREATED

*ROOF AREA TREATED FOR THERMAL IMPACTS IN ACCORDANCE WITH CHAPTER 500 ROOF EXCEPTION FROM THE GENERAL STANDARDS.

U:\3564.03 Stevens Square-Lot 4 - Portland, ME\Z - CAD\DWG\356403-WSHED.dwg - 5/13/2021 5:44 PM

Rev.

Date

Revision

1

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File Name: 356403-WSHED.dwg

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Drawing Name:

WATER QUALITY PLAN

Project:

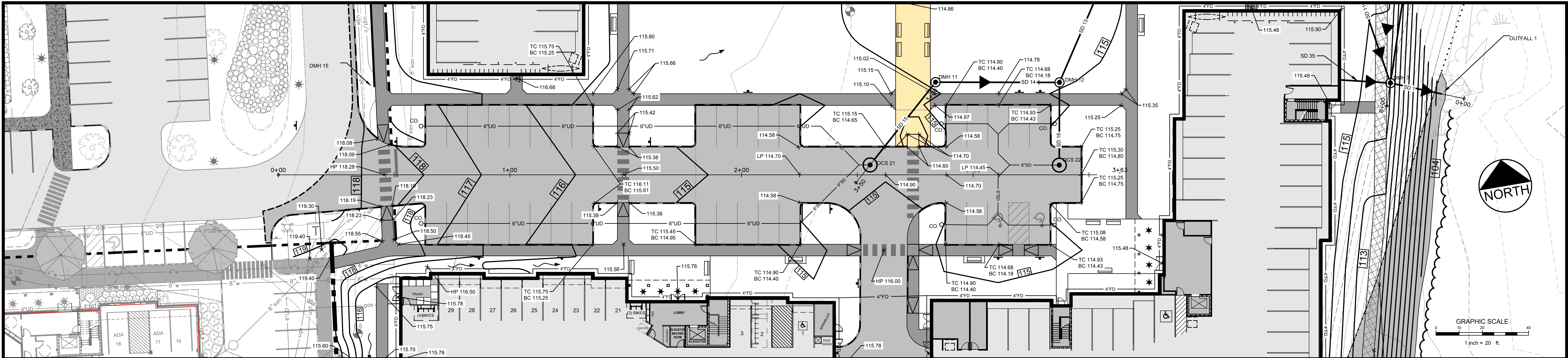
Stevens Square at Baxter Woods - Phase 2
583 Stevens Avenue, Portland, Maine

Client/Owner:

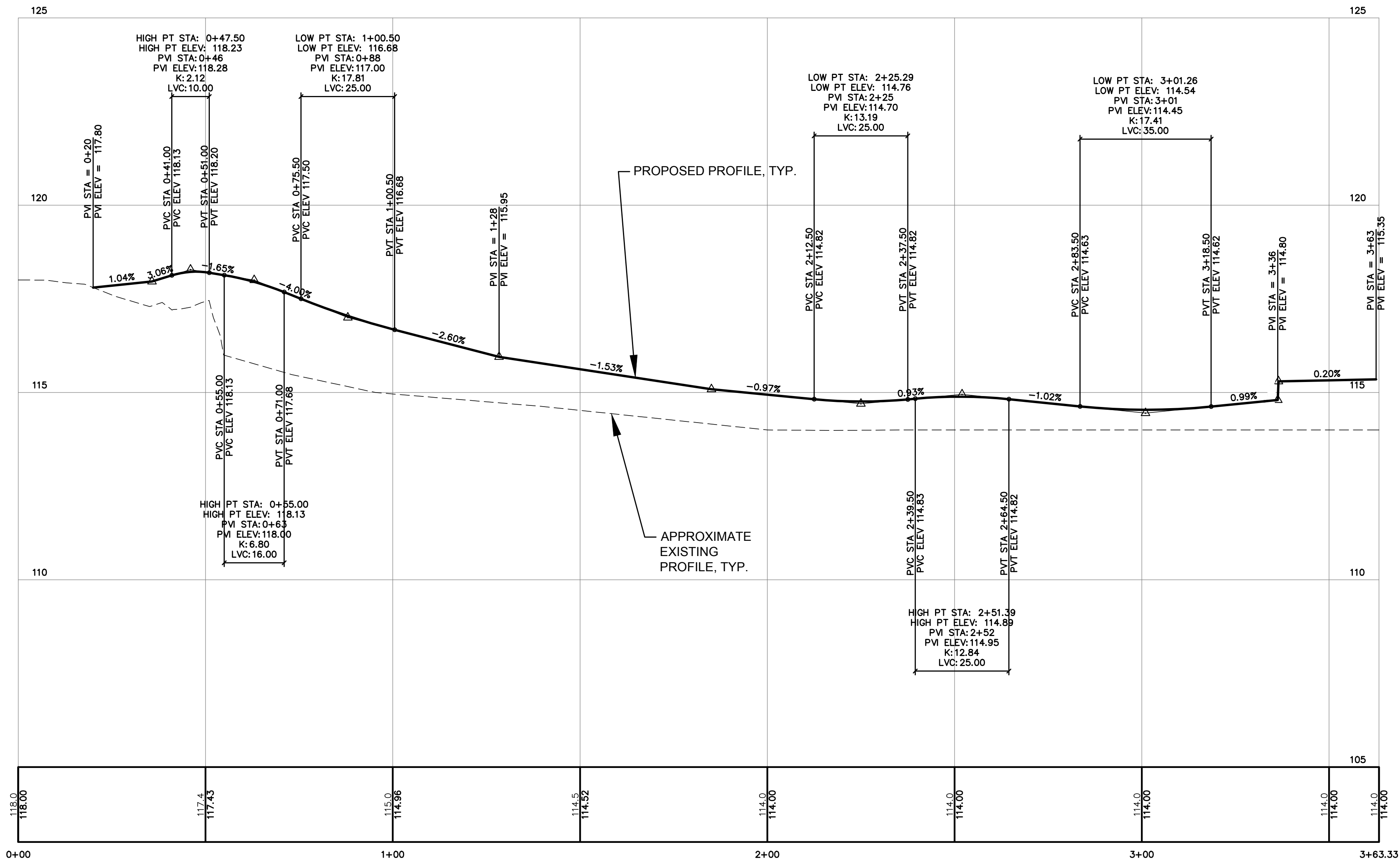
DC BAXTER WOODS LLC
100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.

C-7.0

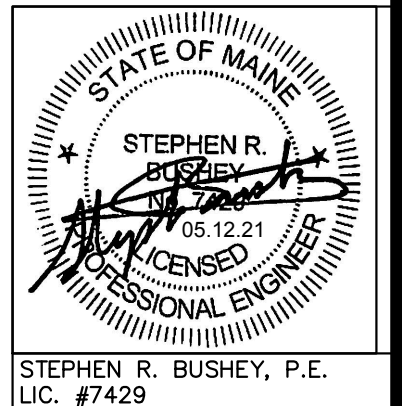


ACCESS DRIVE 1 PLAN
SCALE: 1" = 20'



ACCESS DRIVE 1 PROFILE
SCALE: 1" = 20' HORZ. / 1" = 2' VERT.

NOTE: THIS PLAN SET IS
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Rev.	Date	Revision

Rev.	Date	Revision
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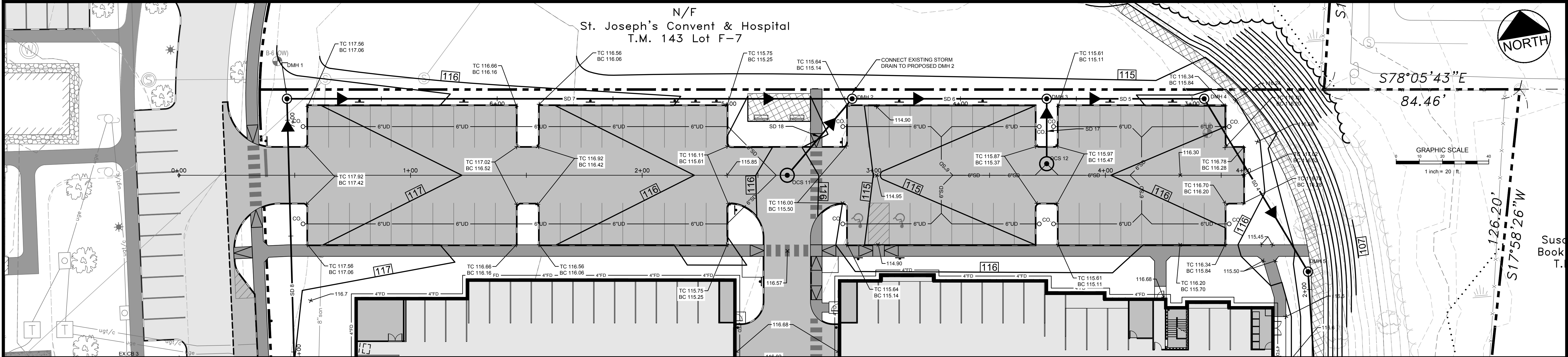
Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-GRADING.dwg		
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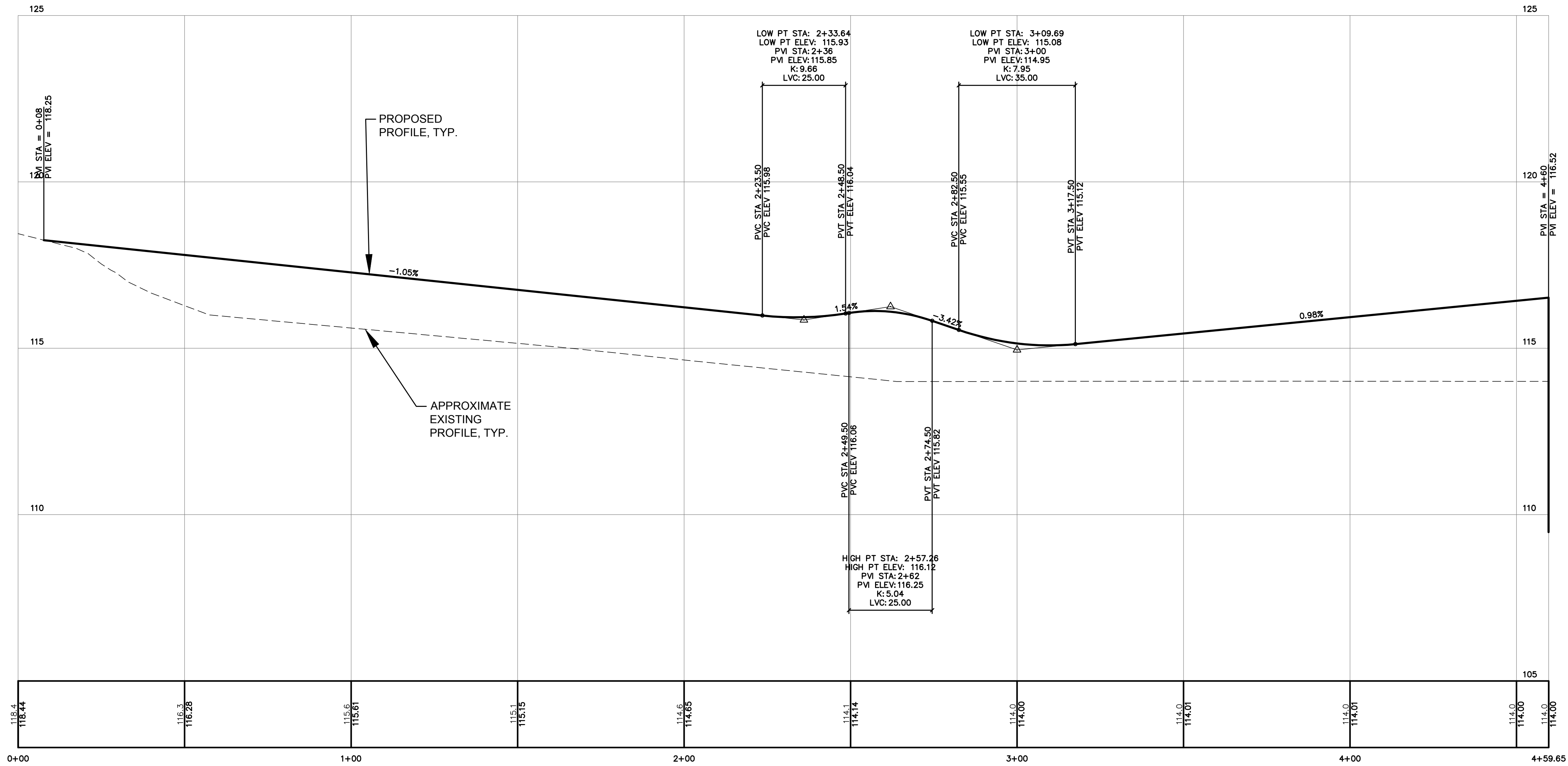
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Drawing Name:	ACCESS DRIVE 1 PLAN & PROFILE
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-9.0

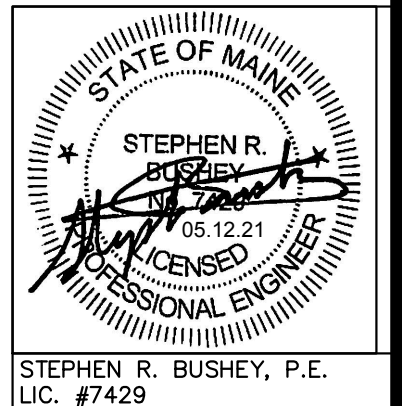


ACCESS DRIVE 2 PLAN
SCALE: 1" = 20'



ACCESS DRIVE 2 PROFILE
SCALE: 1" = 20 HORZ. / 1" = 2' VERT.

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File Name: 356403-GRADING.dwg		
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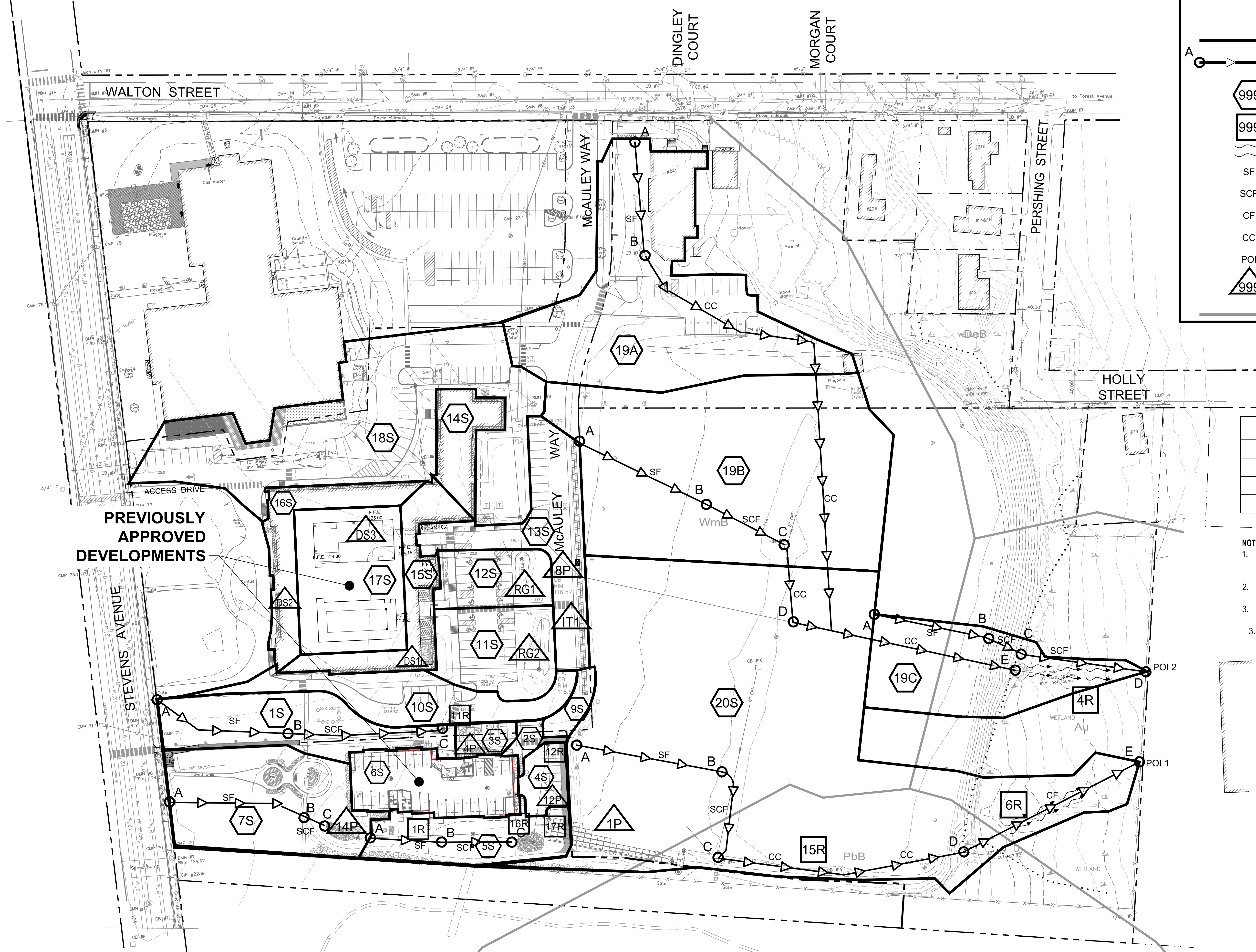


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Drawing Name:	ACCESS DRIVE 2 PLAN & PROFILE
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.	C-9.1
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U:\3564.03.Stevens Square-Lot 4 - Portland, ME\Z - CAD\DWG\356403-WSHED.dwg - 5/11/2021 4:08 PM



WATERSHED LEGEND

A

B

WATERSHED BOUNDARY

A

B

WATERSHED FLOW PATH

999

SUBCATCHMENT

999

REACH

SF

SHEET FLOW

SCF

SHALLOW CONCENTRATED FLOW

CF

CHANNEL FLOW

CC

CIRCULAR CHANNEL

POI

POINT OF INTEREST

999

POND

SOIL BOUNDARY

SYMBOL	SOIL NAME	HSG
AU	AU GRES LOAMY SAND	A/D
PB	PAXTON FINE SANDY LOAM	C
WmB	WINDSOR LOAMY SAND	A
DeB	DEERFIELD LOAMY SAND	A

NOTE:

1. ATHLETIC FIELD IS UNDERDRAINED AND ASSUMED HSG C

2. WETLANDS ASSUMED HSG D

3. THE FOLLOWING SUBCATCHMENTS HAVE AN ASSUMED TC OF 6 MINUTES:

3.1. 2S, 3S, 4S, 6S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S

NORTH

GRAPHIC SCALE

0 25 50 100

1 inch = 50 ft.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

STATE OF MAINE

STEPHEN R. BUSHEY, P.E.

PROFESSIONAL ENGINEER

U.C. #7429

Rev.

Date

Revision

1

2021.05.12

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Checked: SRB

Scale: AS NOTED

Job No.: 3564.03

File Name: 356403-WSHED.dwg

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Drawing Name: PREDEVELOPMENT WATERSHED PLAN

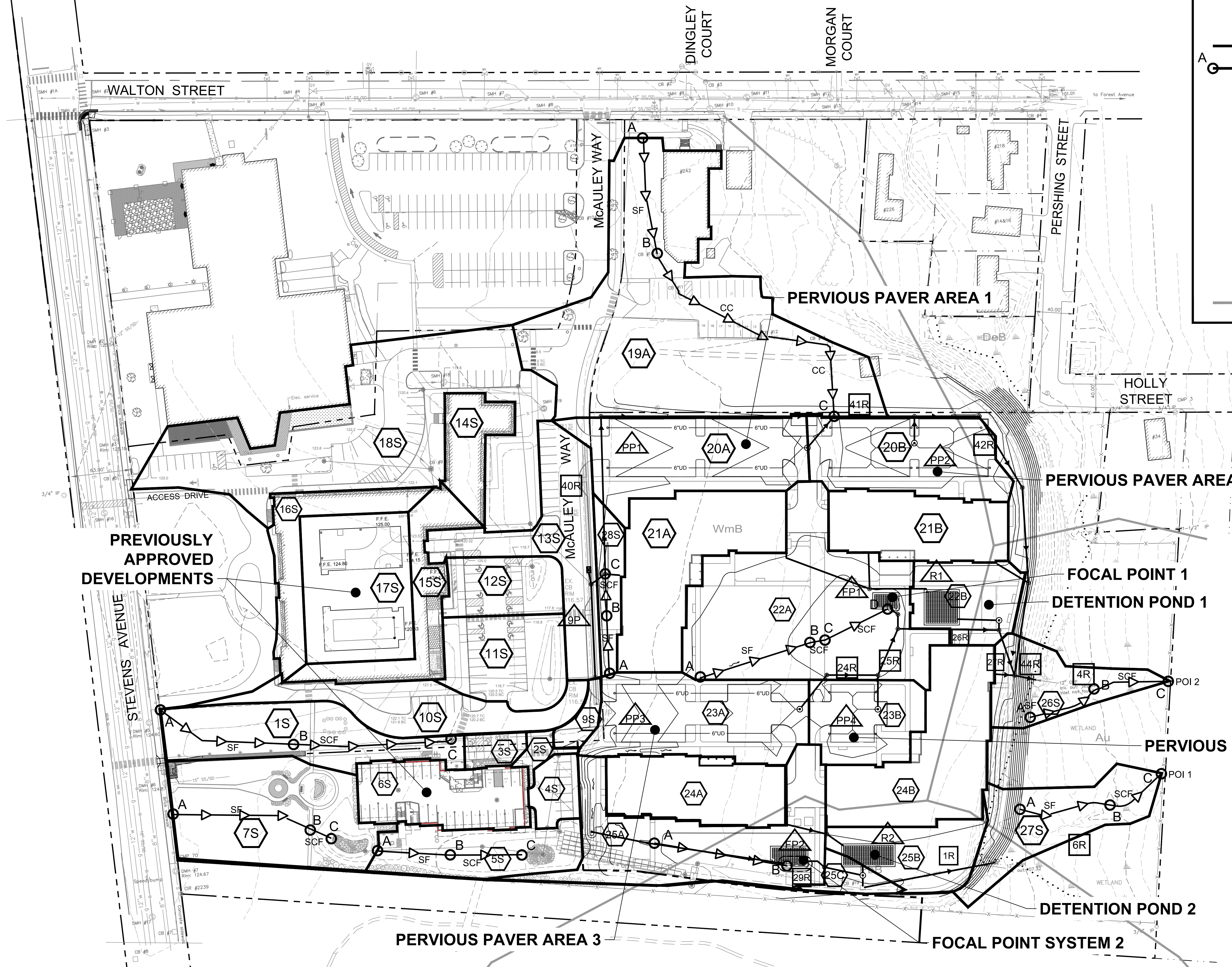
Project: Stevens Square at Baxter Woods - Phase 2
583 Stevens Avenue, Portland, Maine

Client/Owner: DC BAXTER WOODS LLC
100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

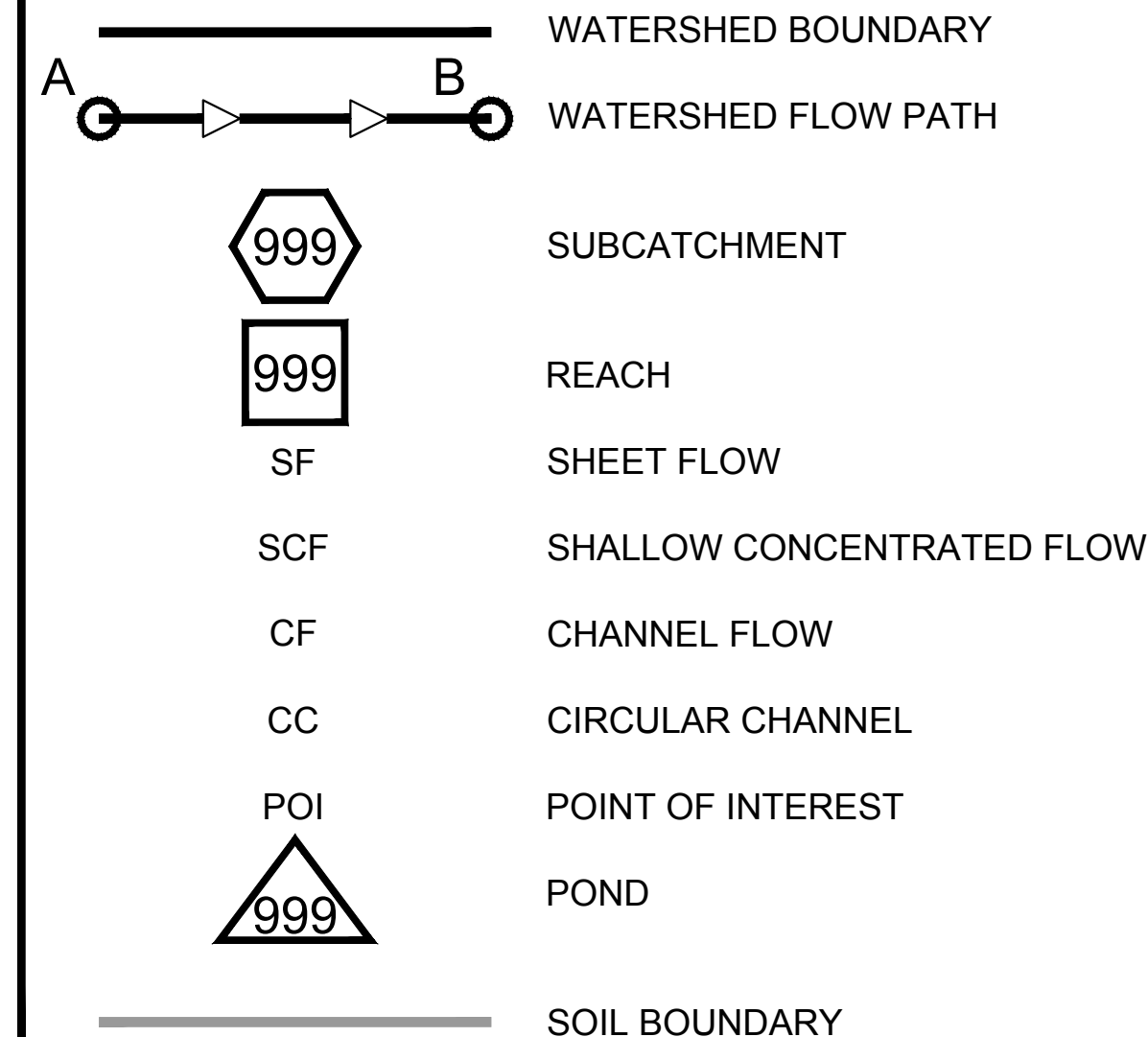
Drawing No. WS1

Page 505

U:\3564.03_Stevens Square-Lot 4 - Portland, ME\2 - CAD\DWG\356403-WSHED.dwg - 5/13/2021 8:37 AM



WATERSHED LEGEND



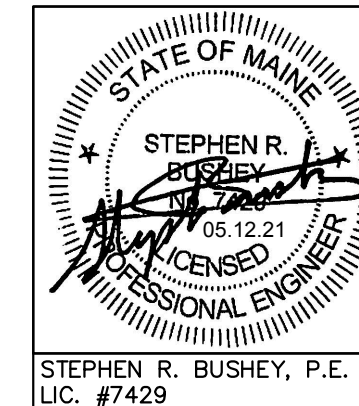
SYMBOL	SOIL NAME	HSG
AU	AU GRES LOAMY SAND	A/D
PB	PAXTON FINE SANDY LOAM	C
WmB	WINDSOR LOAMY SAND	A
DeB	DEERFIELD LOAMY SAND	A

- NOTE:
- ATHLETIC FIELD IS UNDERDRAINED AND ASSUMED HSG C
 - WETLANDS ASSUMED HSG D
 - THE FOLLOWING SUBCATCHMENTS HAVE AN ASSUMED TC OF 6 MINUTES:
 - 2S, 3S, 4S, 6S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 20A, 20B, 21A, 21B, 22B, 23A, 23B, 24A, 24B, 25B

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.



GRAPHIC SCALE
1 inch = 50 feet



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File Name: 356403-WSHED.dwg		
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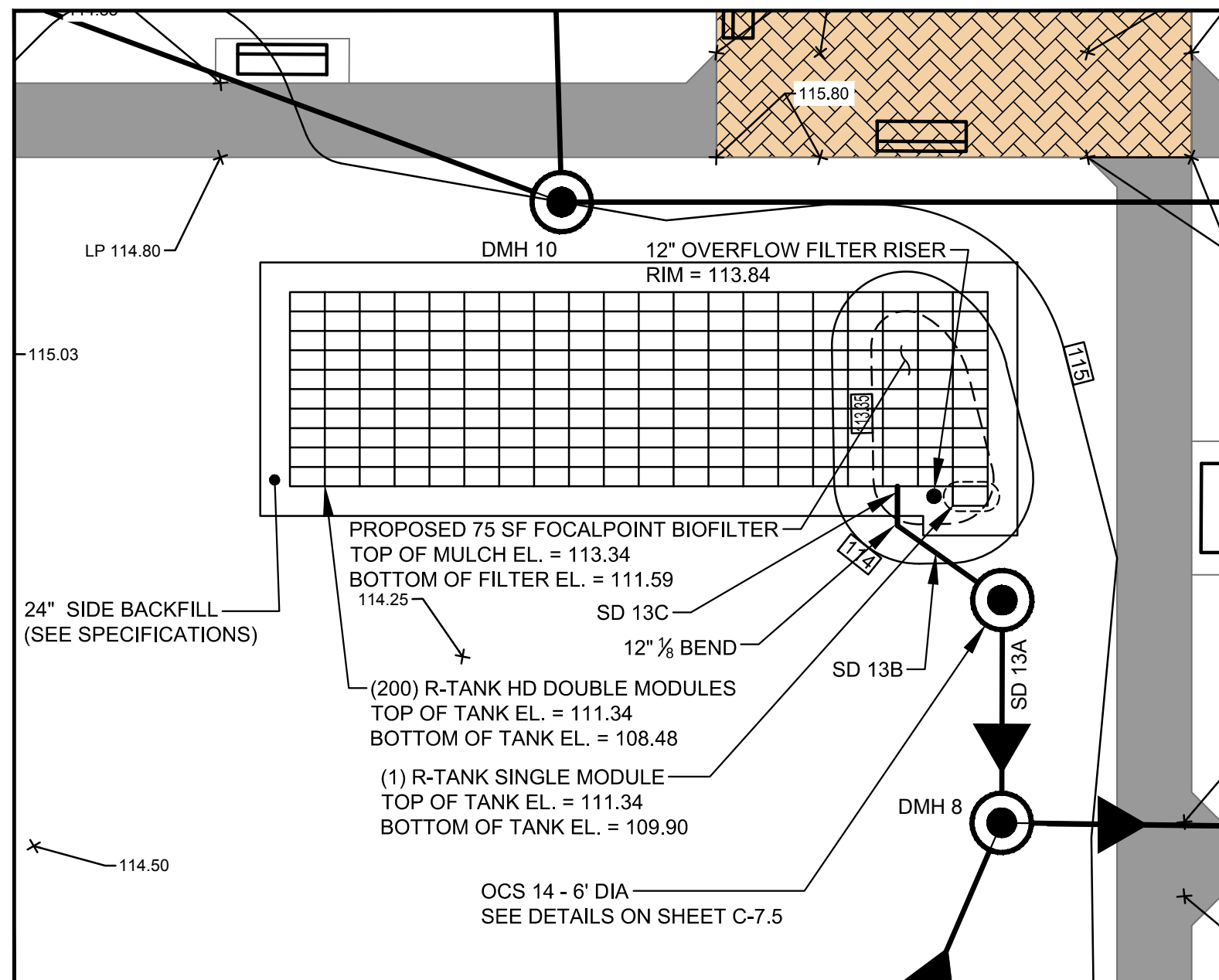


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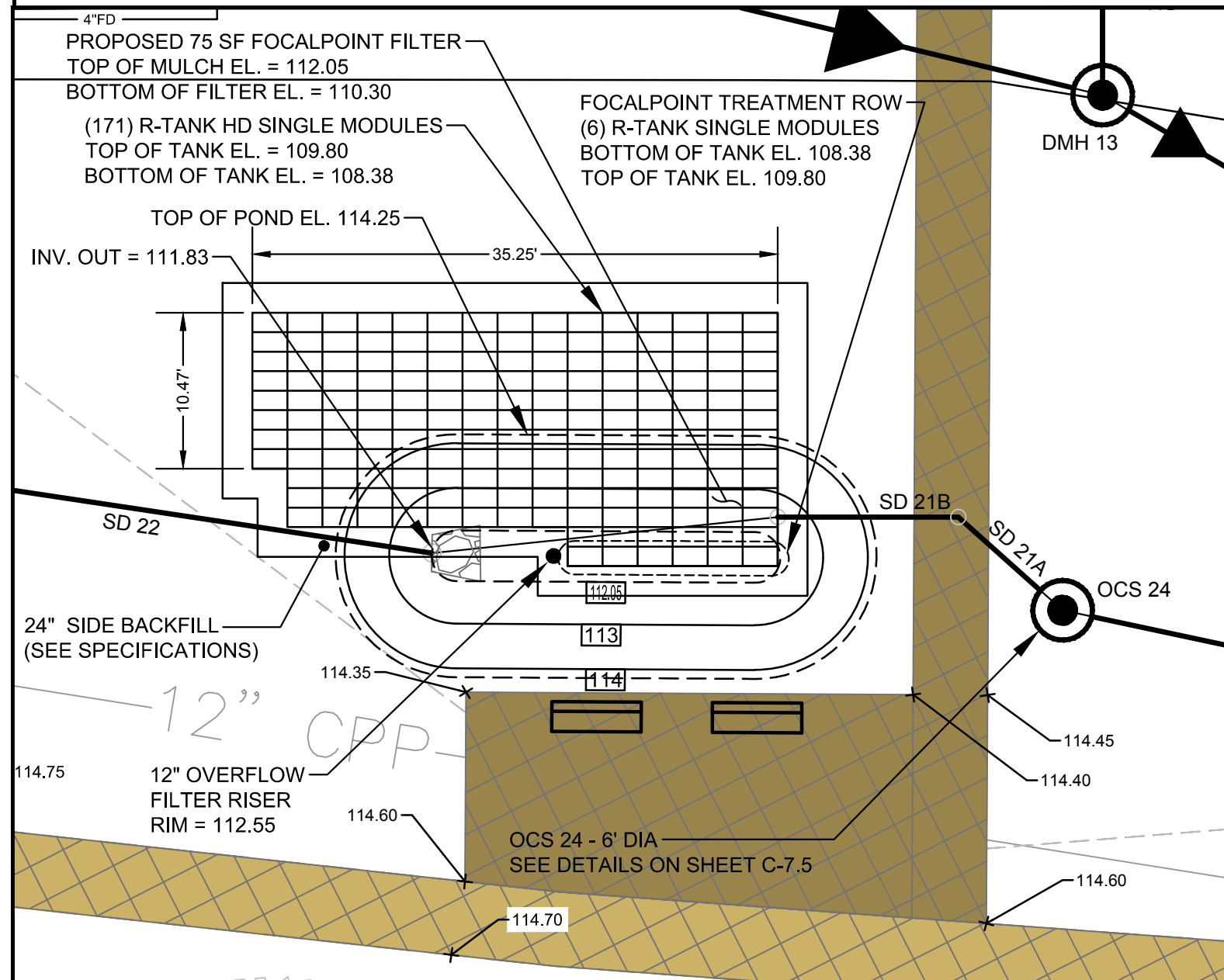
Drawing Name:	POSTDEVELOPMENT WATERSHED PLAN
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.	WS2
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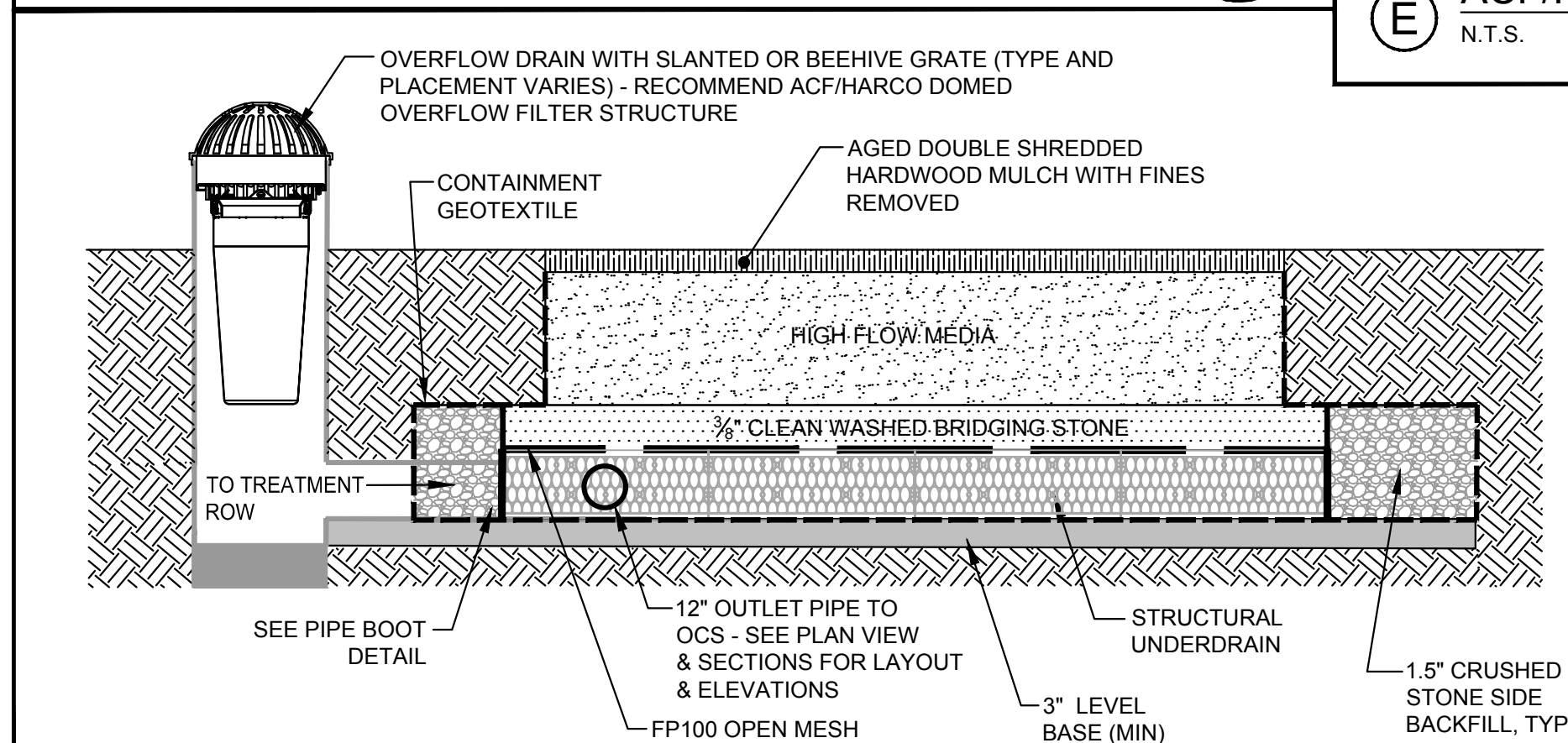
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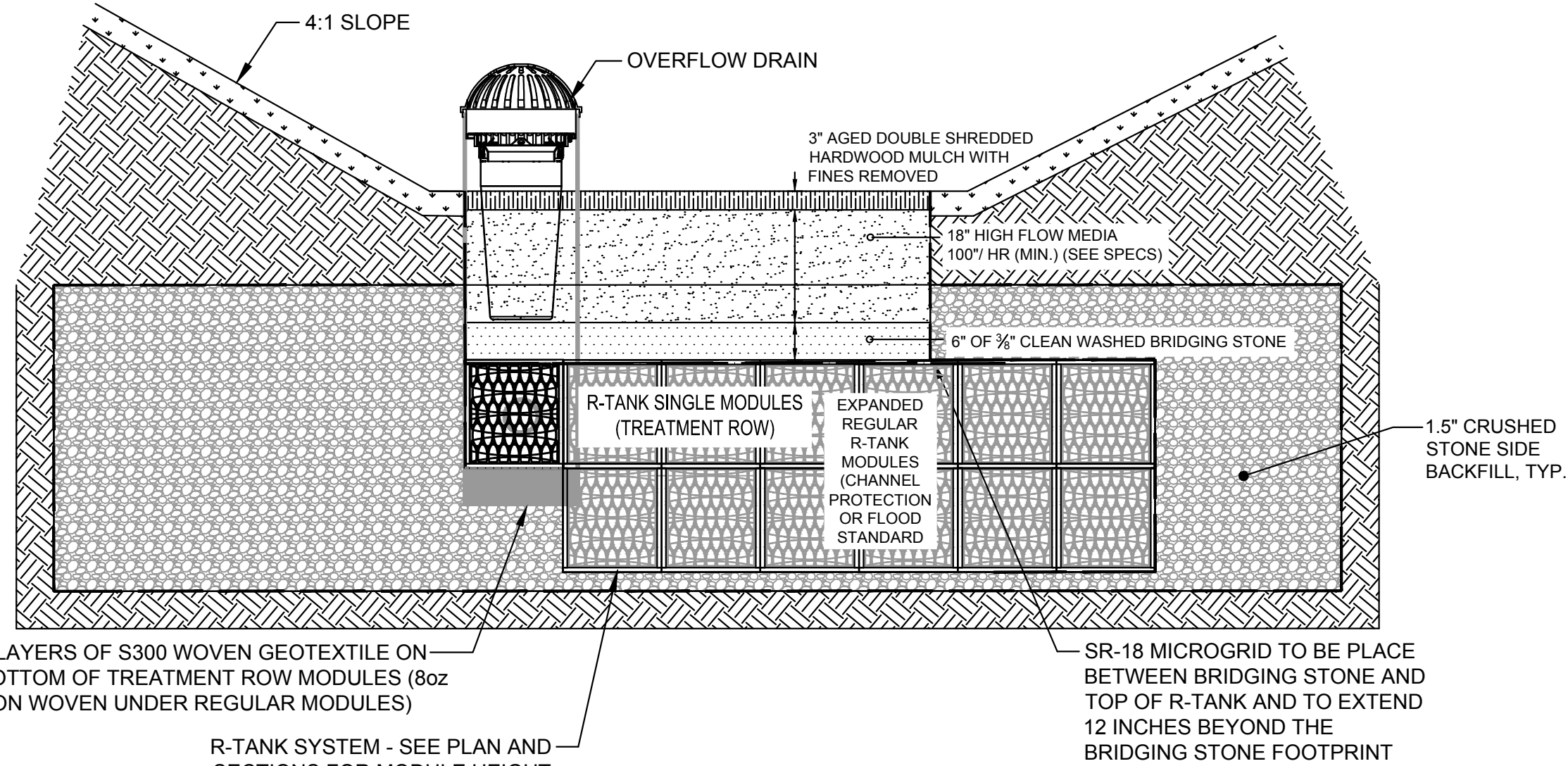
A FOCALPOINT #1 PLAN VIEW
1"=10'



B FOCALPOINT #2 PLAN VIEW
1"=10'



C FOCALPOINT SECTION X-X
N.T.S.

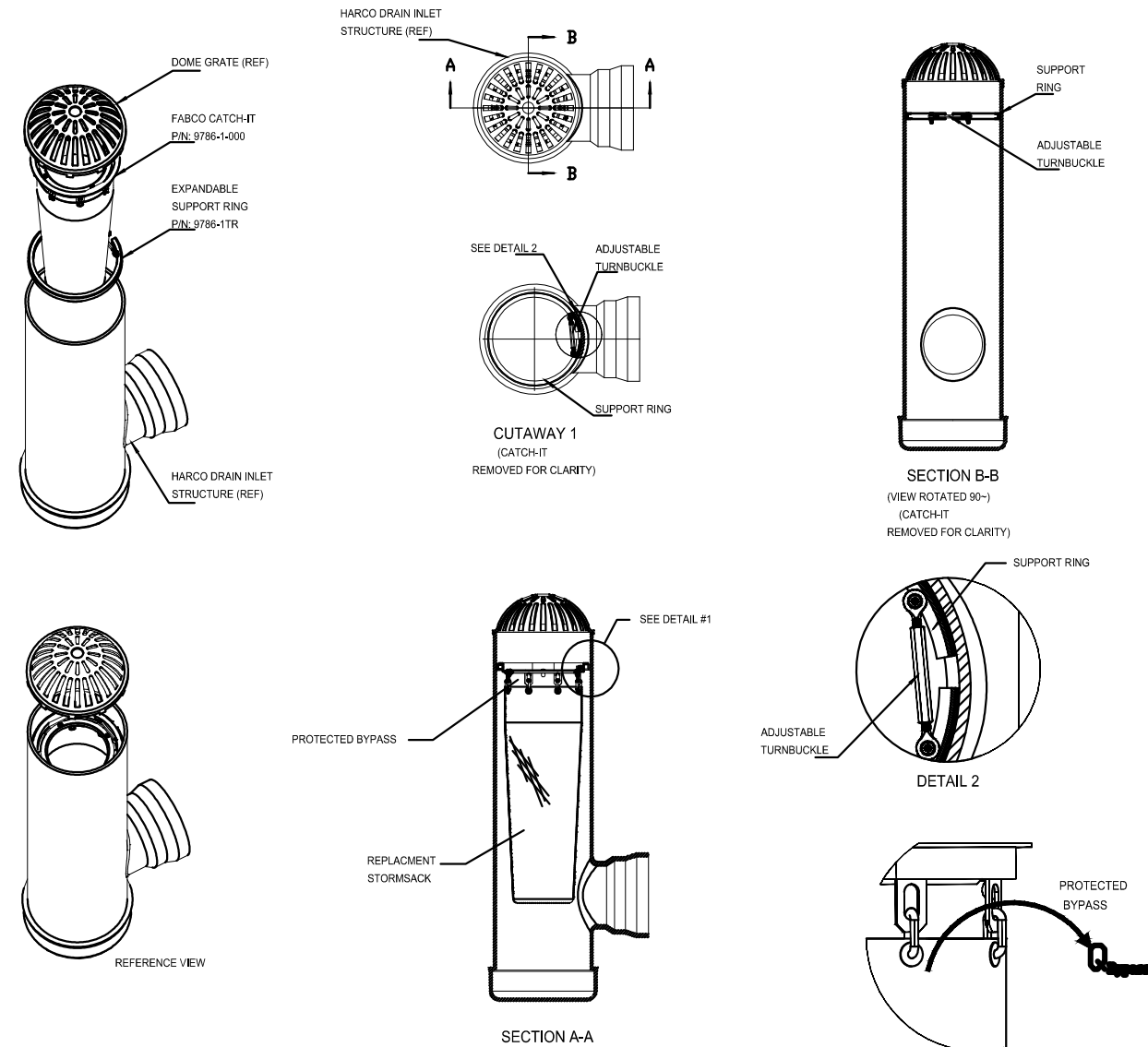


D FOCALPOINT WITH R-TANK TREATMENT ROW
N.T.S.

D FOCALPOINT DETAILED CROSS SECTION
N.T.S.

- NOTES:
1. STORMSACK WEIGHT (EMPTY): 12 LB MAX
 2. MATERIAL:
 - A) SHOULDER HIGH DENSITY POLYETHYLENE (TYPICAL WALL THICKNESS: .125")
 - B) SUPPORT HUB: CRS. POWDER COATED
 - C) STORMSACK: WOVEN POLYPROPYLENE GEOTEXTILE (GEOTEX 117F)
 - D) HARDWARE: ALUMINUM POP-RIEVETS
 - E) RECOMMENDED MINIMUM VAULT DEPTH: 24" BELOW CARTRIDGE
 - F) TYPICAL INSTALLATION: RAISE STORM GRATE, PUSH CATCHAT SHROUD DOWN ON FRAME SUPPORT LEDGE UNTIL LOCKING-CLIPS CLICK IN PLACE, LOWER STORM GRATE.
 - G) USE ONLY WITH FABCO REPLACEABLE STORMSACK.

STRUCTURE DIAMETER (INCHES)	DESIGN CAPACITY (CF)	FILTERED FLOWRATE (GPM)	BYPASS FLOWRATE (GPM)	TOTAL SYSTEM FLOWRATE (GPM)
12	0.77	2.2	1.2	3.4
18	1.85	2.0	1.0	3.5
24	3.65	4.9	2.4	7.3
30	6.20	4.9	2.4	7.3

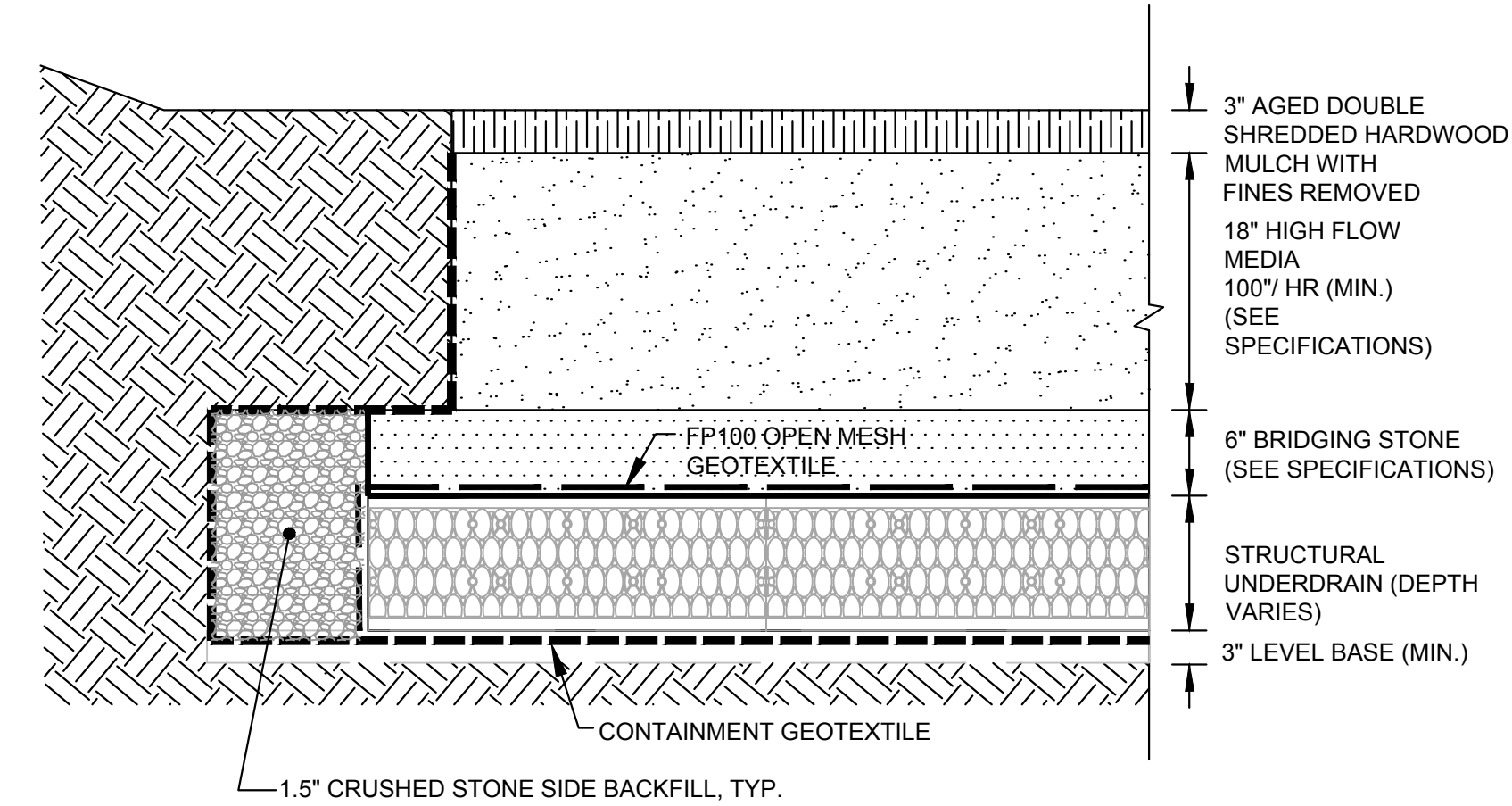


E ACF/HARCO DOMED OVERFLOW FILTER RISER
N.T.S.

FOCALPOINT & STRUCTURAL UNDERDRAIN KEY DIMENSIONAL DATA - SEE DETAIL H

FOCALPOINT ID		FP1	FP2
A	R-TANK LENGTH	23.5'	VARIES
B	# UNDERDRAIN LONG	10	VARIES
C	R-TANK WIDTH	14.4'	VARIES
D	# UNDERDRAIN WIDE	10	VARIES
E	FILTER AREA	75 SF	75 SF
F	OVERFLOW ELEVATION	113.84	113.75
G	OUTLET GRATE SIZE	12"	12"
H	TOP OF MULCH	113.34	112.05
J	TREATMENT ROW HEIGHT	SINGLE	SINGLE
K	EXPANDED STORAGE HEIGHT	DOUBLE	SINGLE
WQV	WATER QUALITY VOLUME	1588 CF	682 CF

F FOCALPOINT KEY DIMENSIONAL DATA
N.T.S.



FOCALPOINT HP PERFORMANCE SPECIFICATION:

HIGH PERFORMANCE MEDIA

HIGH PERFORMANCE MEDIA MUST MEET A MINIMUM OF 100' PER HOUR INFILTRATION RATE.

HIGH PERFORMANCE STRUCTURAL UNDERDRAIN

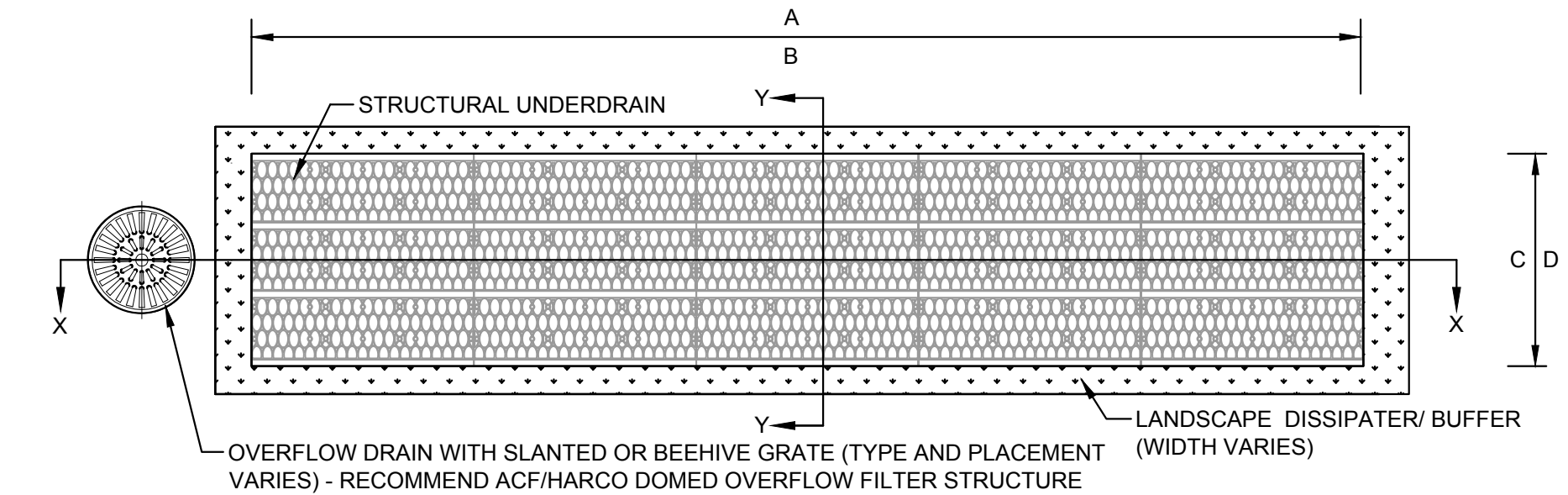
MUST HAVE A MINIMUM OF 19 SQUARE INCHES OF ORIFICE OPENING PER SQUARE FOOT.

MUST MEET H2O LOADING REQUIREMENTS.

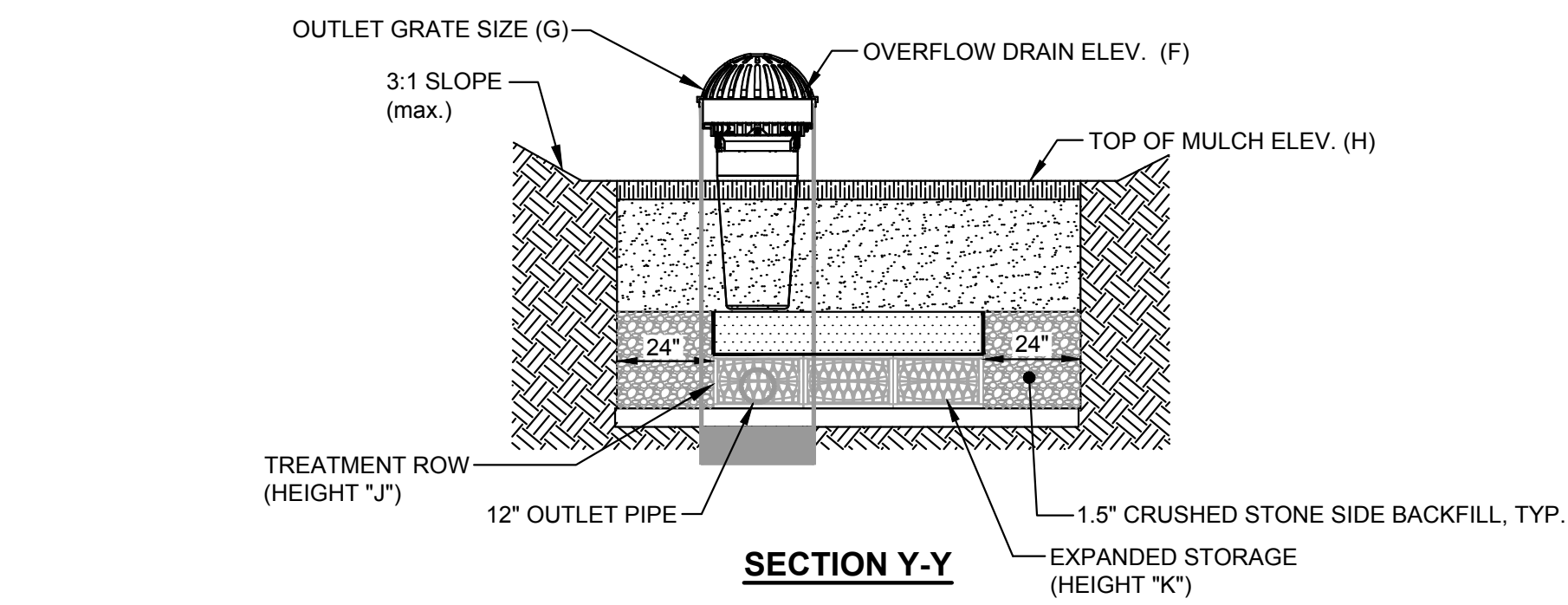
MUST BE MODULAR IN NATURE AND ASSEMBLED ON SITE.

MUST HAVE MINIMUM 90% INTERIOR VOID SPACE.

G FOCALPOINT DETAILED CROSS SECTION
N.T.S.



PLAN VIEW

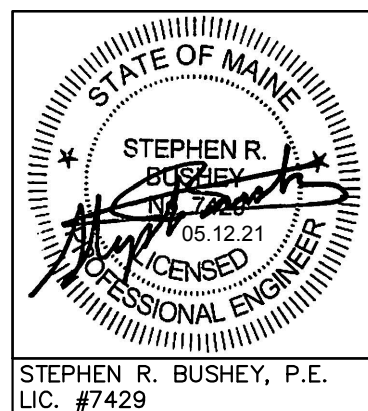


SECTION Y-Y

H FOCALPOINT CONSTRUCTION GUIDE
N.T.S.

NOTE:
SEE SHEET C-7.2 FOR PIPE CONNECTION DETAILS.

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File Name: 356403-WSHED.dwg

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Drawing Name: FOCAL POINT FILTER DETAILS

Project: **Stevens Square at Baxter Woods - Phase 2**
583 Stevens Avenue, Portland, Maine

Client/Owner: **DC BAXTER WOODS LLC**
100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.

C-7.1

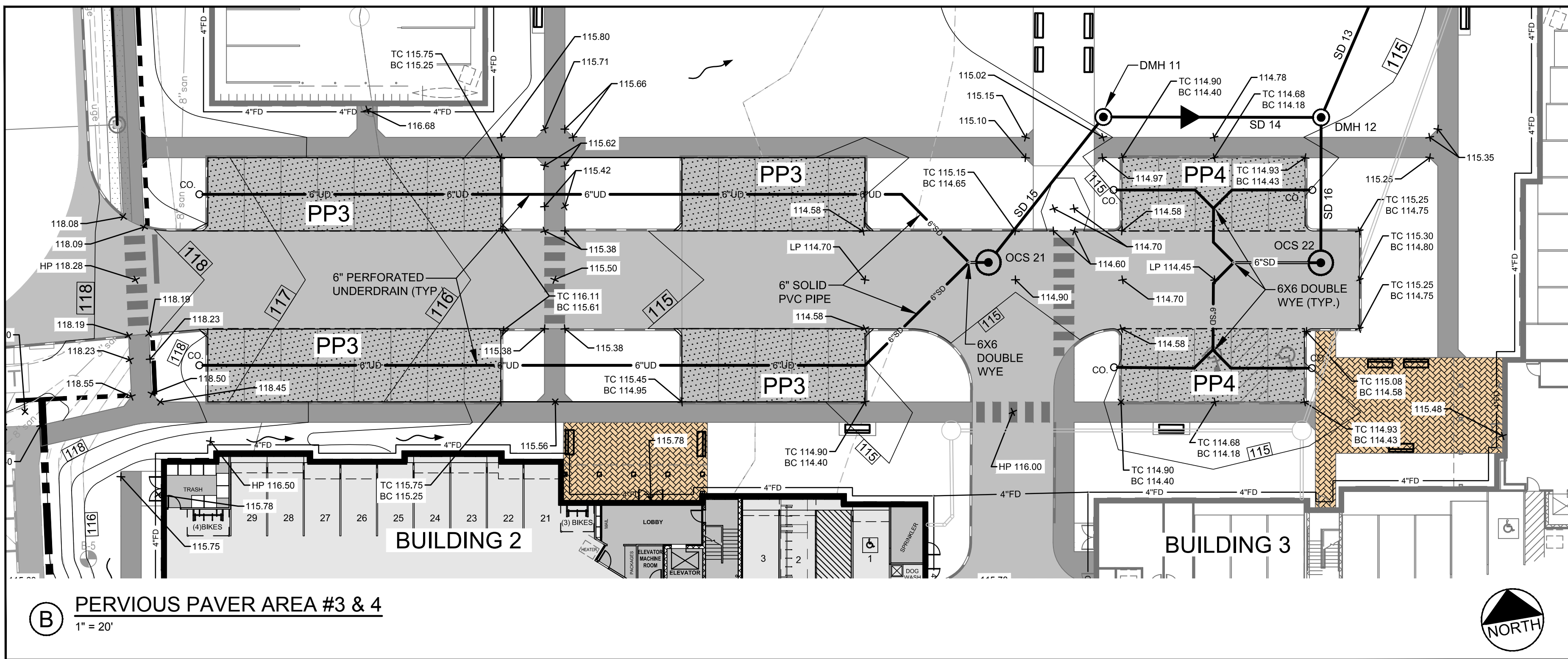
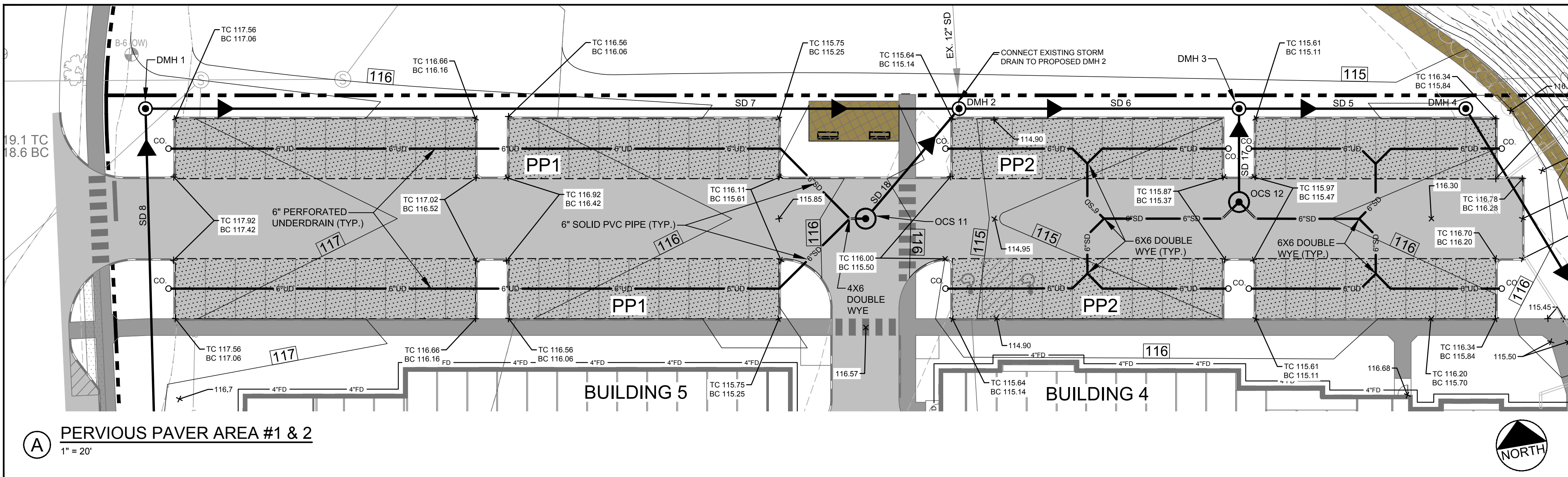


Table 1 MEDOT Specifications for Aggregate (MEDOT #703.01)

SIEVE SIZE	% PASSING BY WEIGHT
1"	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#60	10-30
#100	2-10
#200	0-5 (8-10% IS PREFERRED)

Table 2 MEDOT Specifications for Underdrain Type C (MEDOT #703.22)

SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90-100
#8	0-75
#40	0-25
#100	0-5

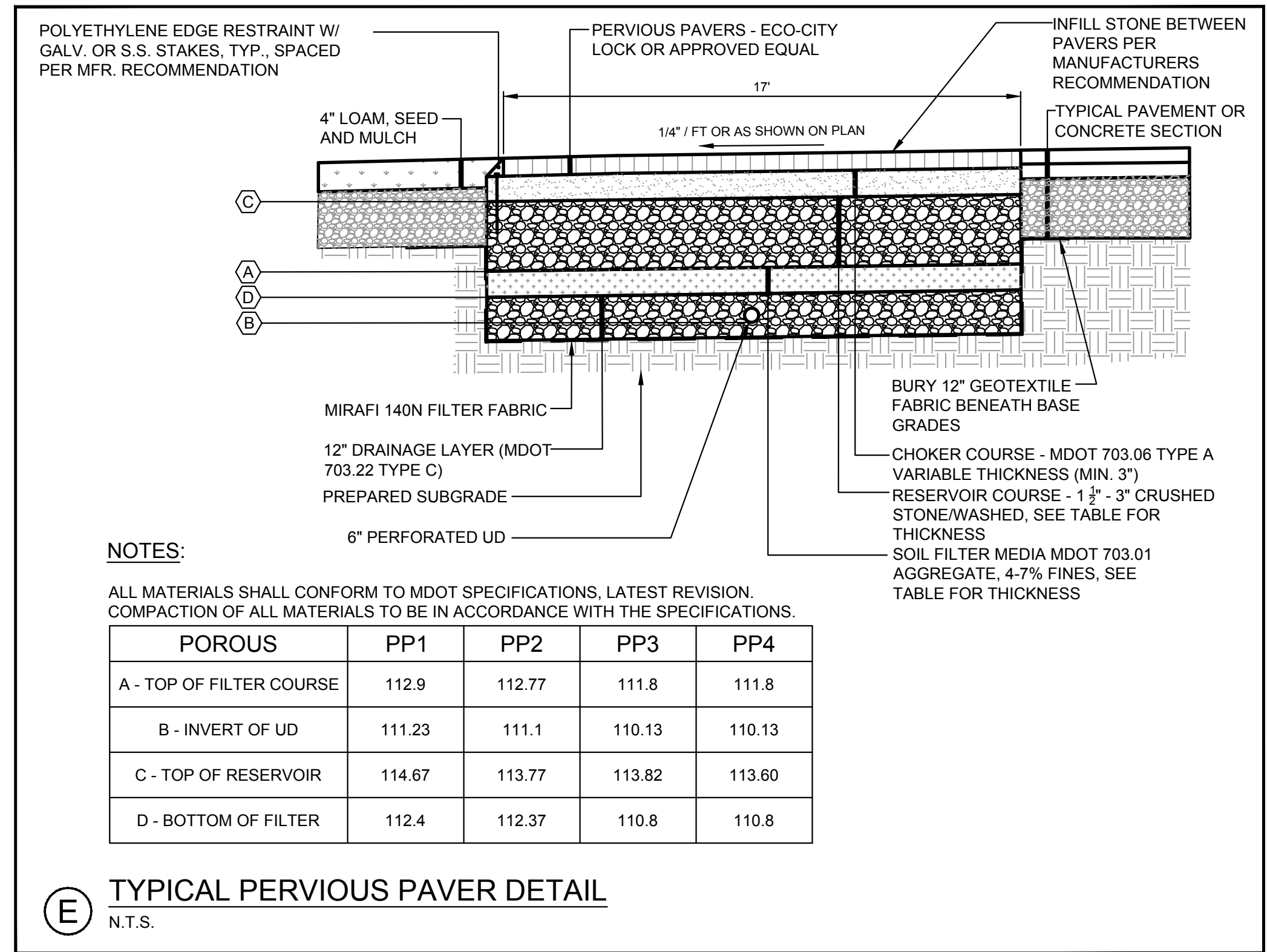
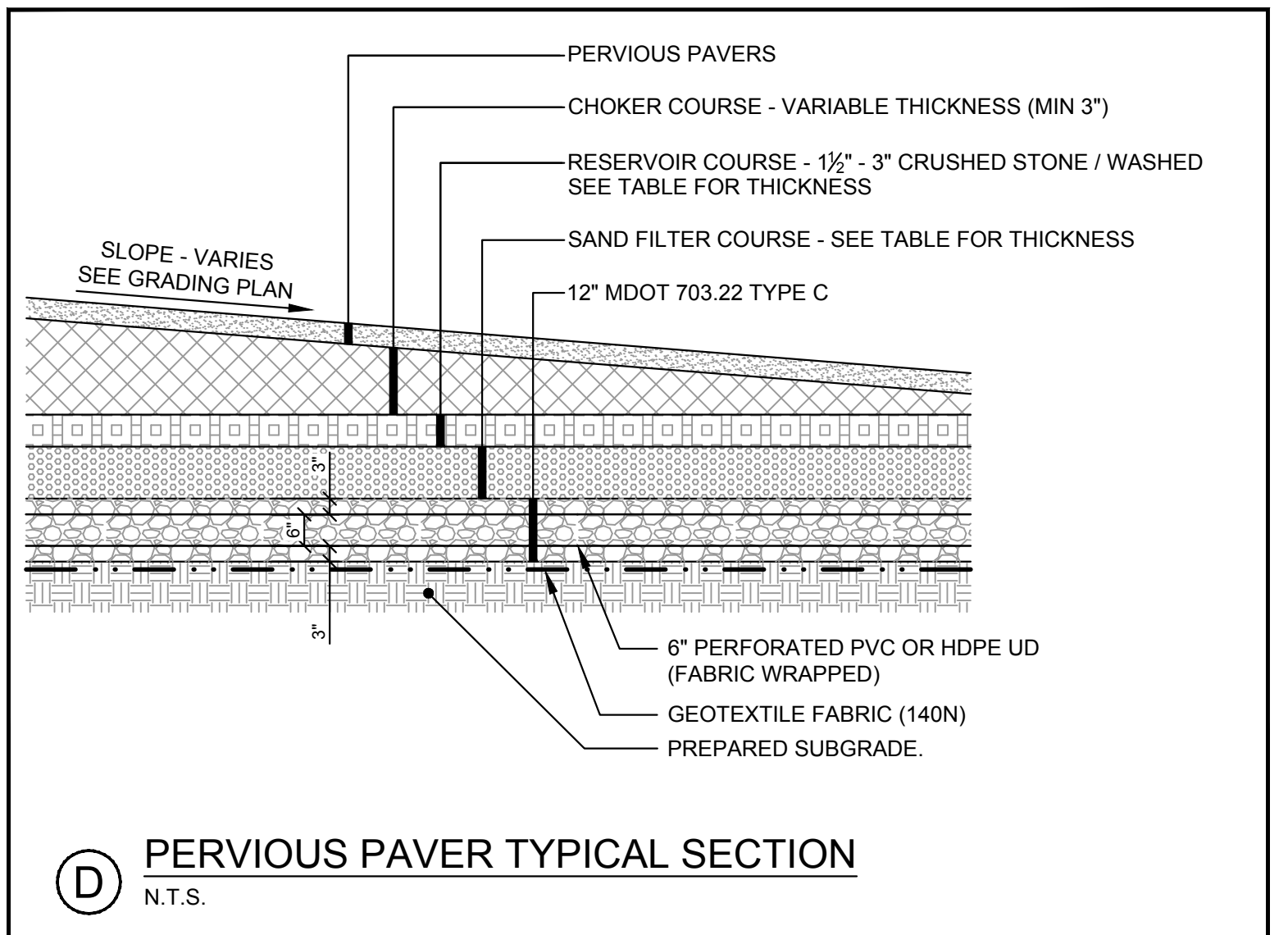
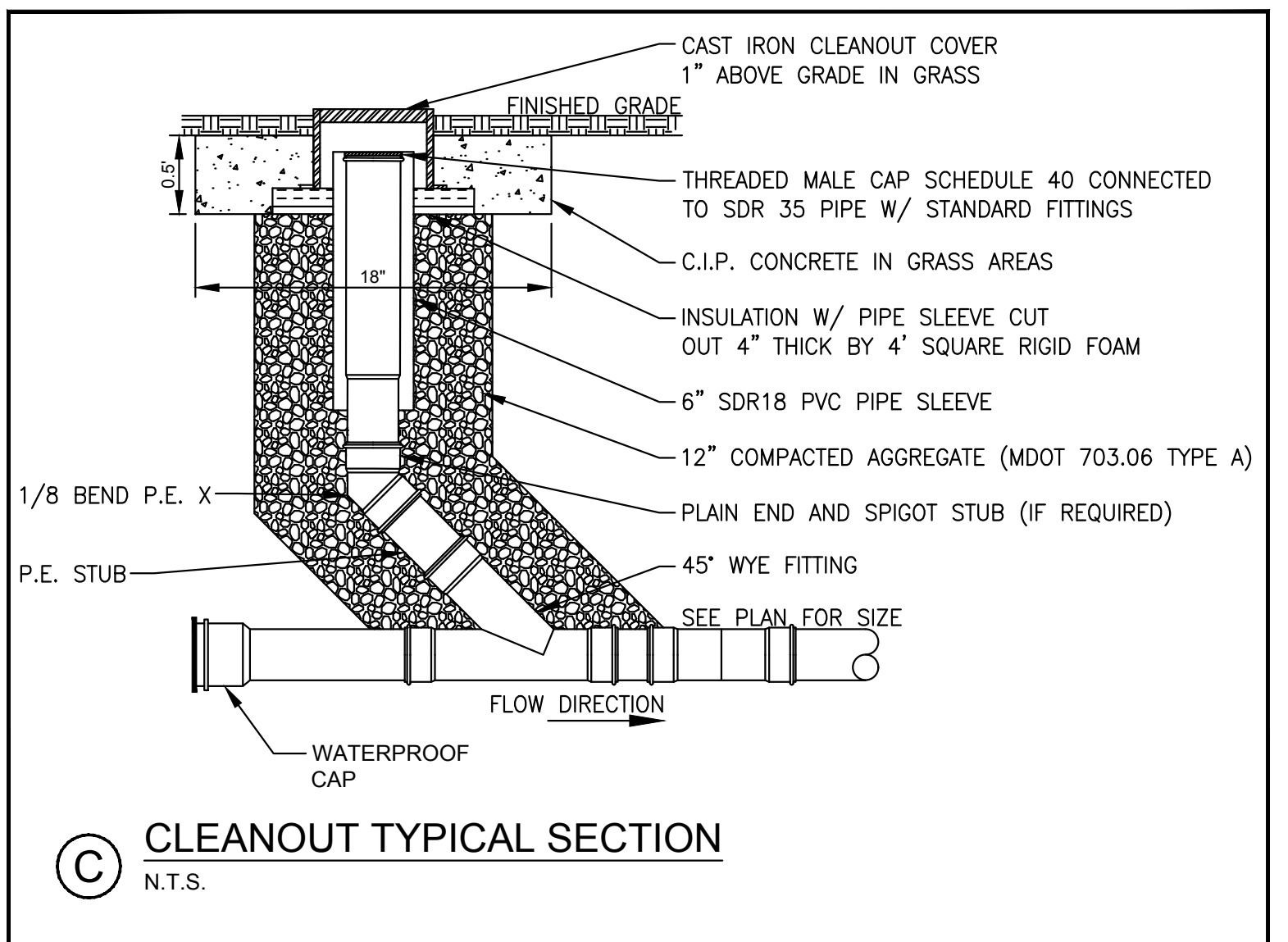
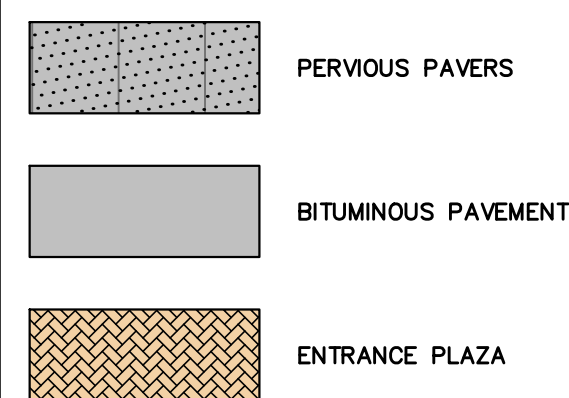
Table 3 MEDOT Specifications for Type A Base Gravel (MEDOT #703.06)

SIEVE SIZE	% PASSING BY WEIGHT
3/4"	45-70
3"	30-55
#40	0-20
#200	0-6

CONSTRUCTION OVERSIGHT

INSPECTION BY A PROFESSIONAL ENGINEER SHALL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT THE CONSTRUCTION AND STABILIZATION OF THE PROPOSED PERVIOUS PAVERS AND ITS FILTER COURSE MATERIAL TO BE BUILT ON SITE. INSPECTIONS SHALL CONSIST OF AN APPROPRIATE NUMBER OF VISITS TO THE SITE TO INSPECT THE FILTER BED MATERIAL PLACEMENT AND COMPACTION, STORAGE COURSE, PAVEMENT ALTERNATIVE PLACEMENT, FABRIC LAYMENT, AND STORMWATER OVERFLOW BYPASS CONSTRUCTION FROM INITIAL GROUND DISTURBANCE TO FINAL PAVEMENT COMPACTION.

LEGEND

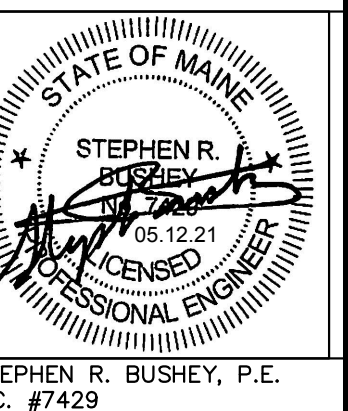


NOTES:

ALL MATERIALS SHALL CONFORM TO MDOT SPECIFICATIONS, LATEST REVISION. COMPACTION OF ALL MATERIALS TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

	POROUS	PP1	PP2	PP3	PP4
A - TOP OF FILTER COURSE	112.9	112.77	111.8	111.8	
B - INVERT OF UD	111.23	111.1	110.13	110.13	
C - TOP OF RESERVOIR	114.67	113.77	113.82	113.60	
D - BOTTOM OF FILTER	112.4	112.37	110.8	110.8	

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.



U:\3564.03_Stevens Square-Lot 4 - Portland, ME\Z - CAD\DWG\356403-WSHED.dwg - 5/13/2021 5:20 PM

Rev.	Date	Revision

Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Design: SRB	Draft: CDD	Date: MAY 2021
Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-WSHED.dwg		

This plan shall not be modified without written permission from Corril Palmer. Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to Corril Palmer.

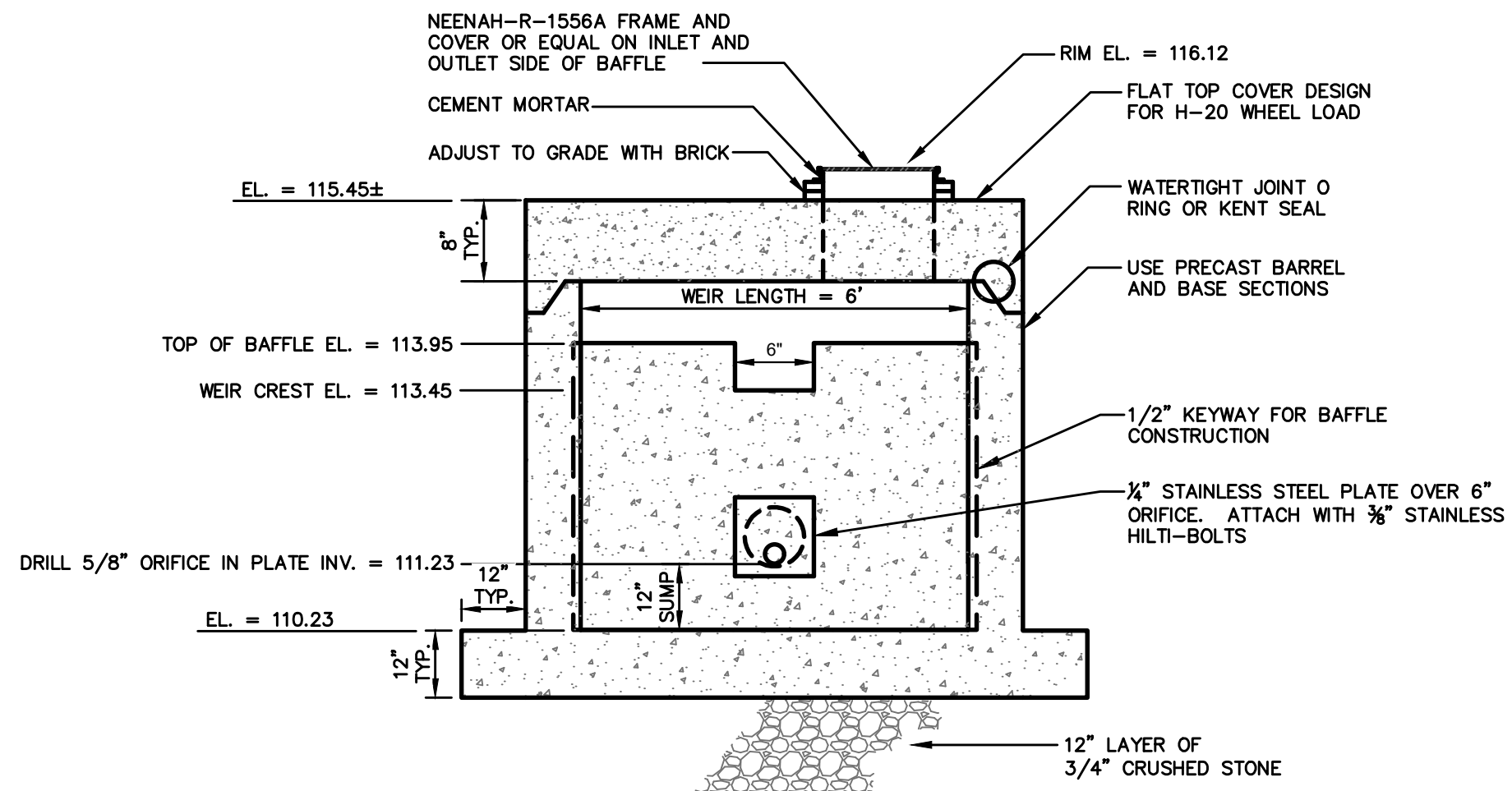
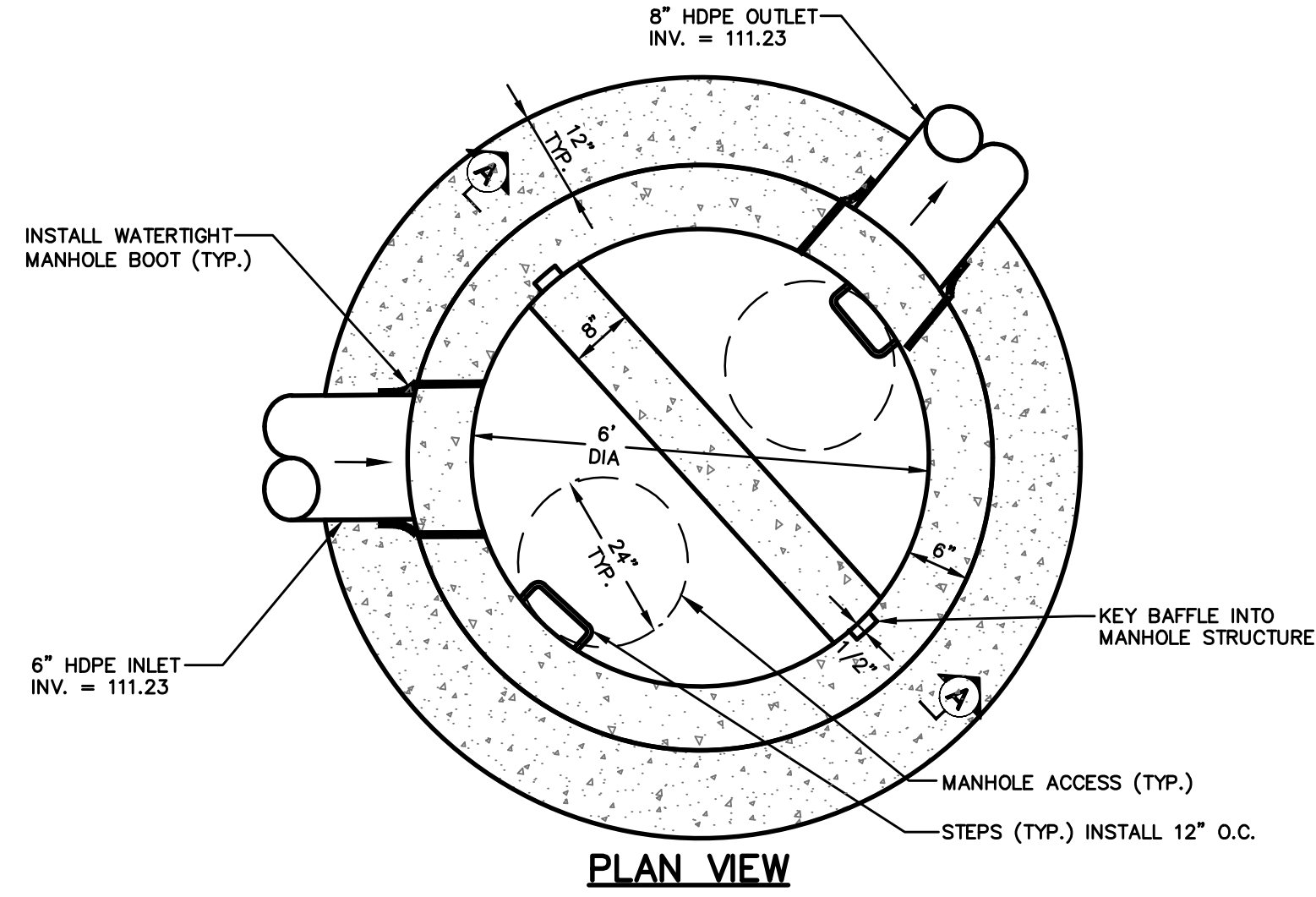


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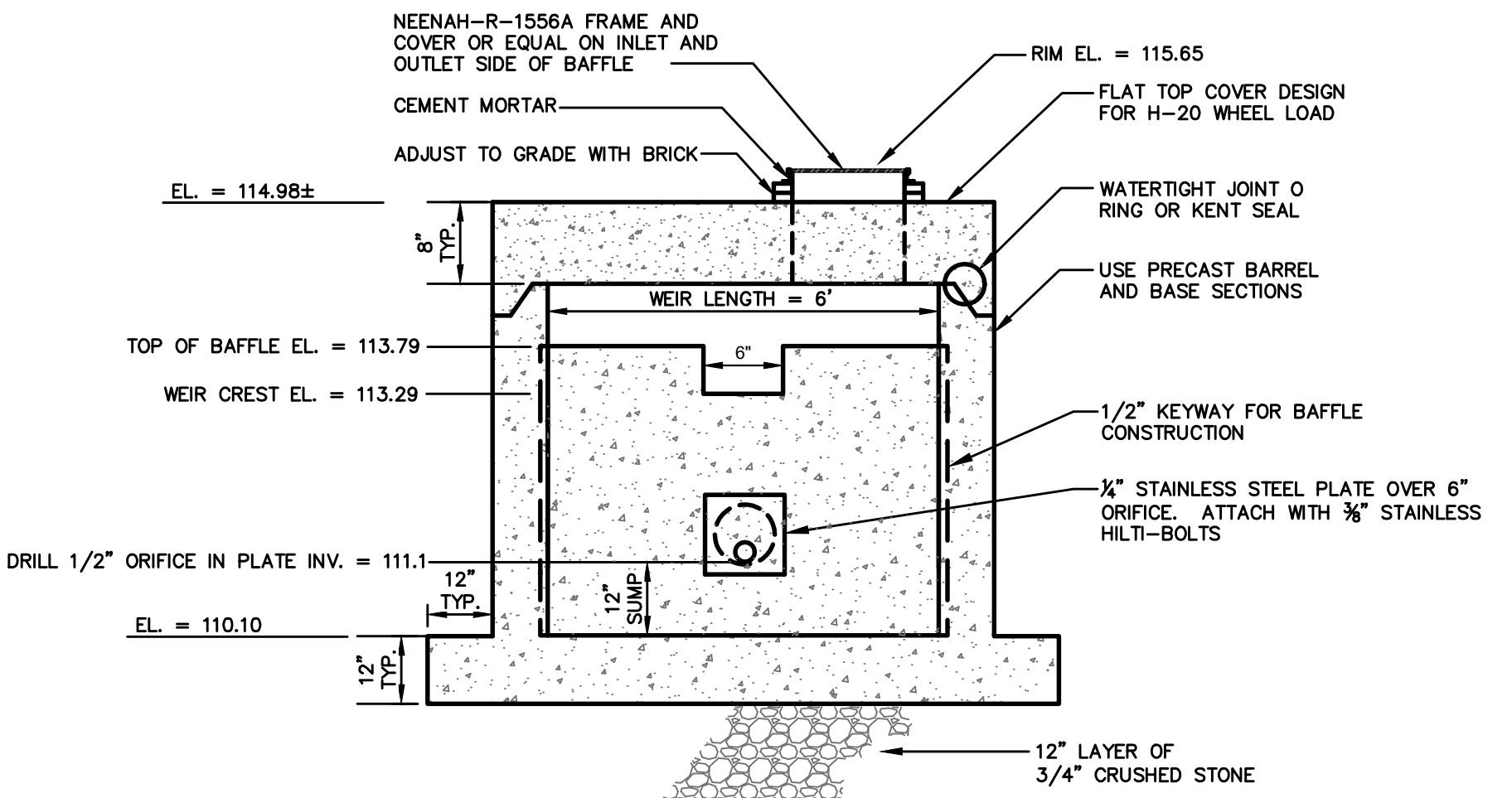
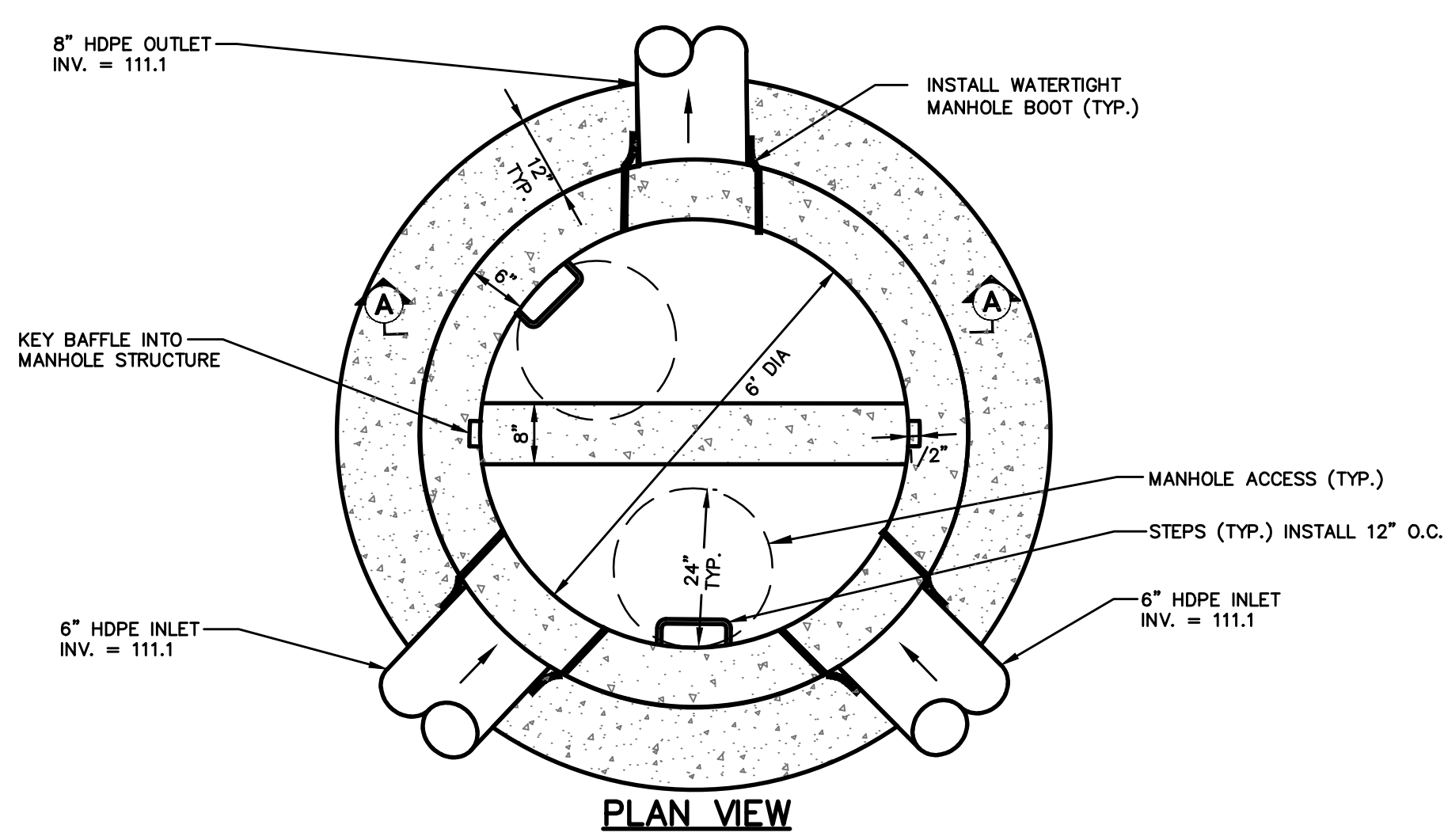
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Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.	C-7.3
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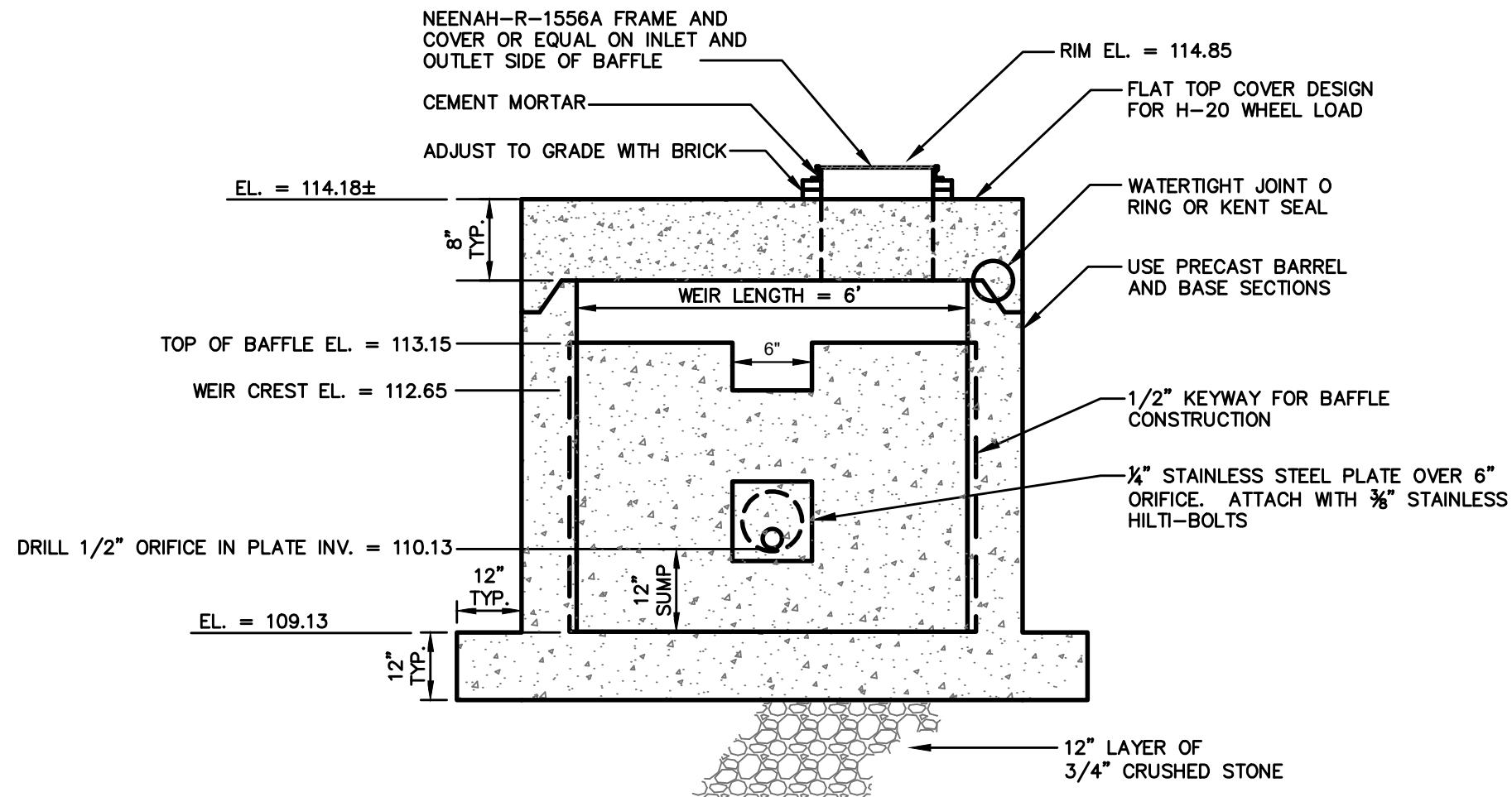
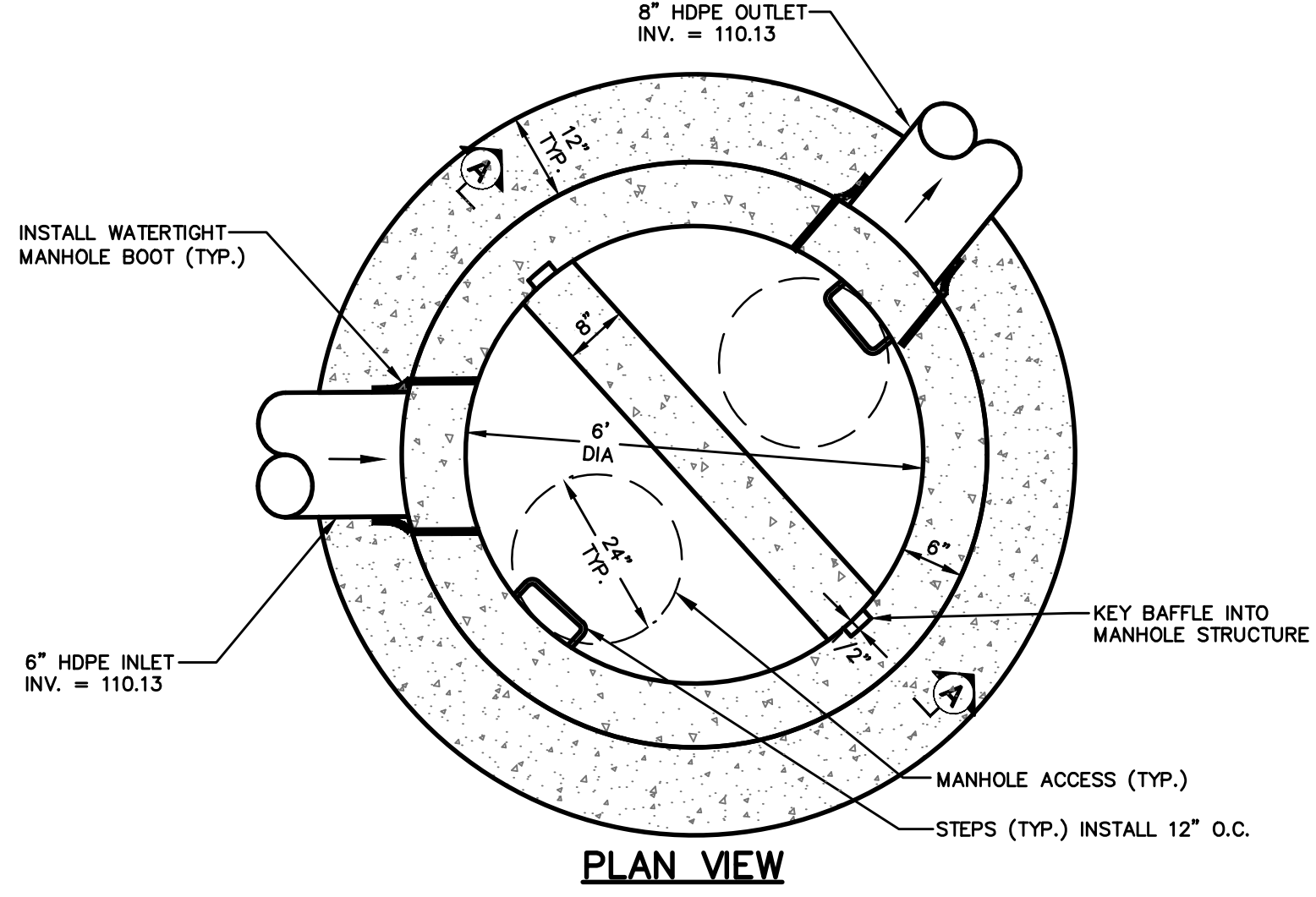
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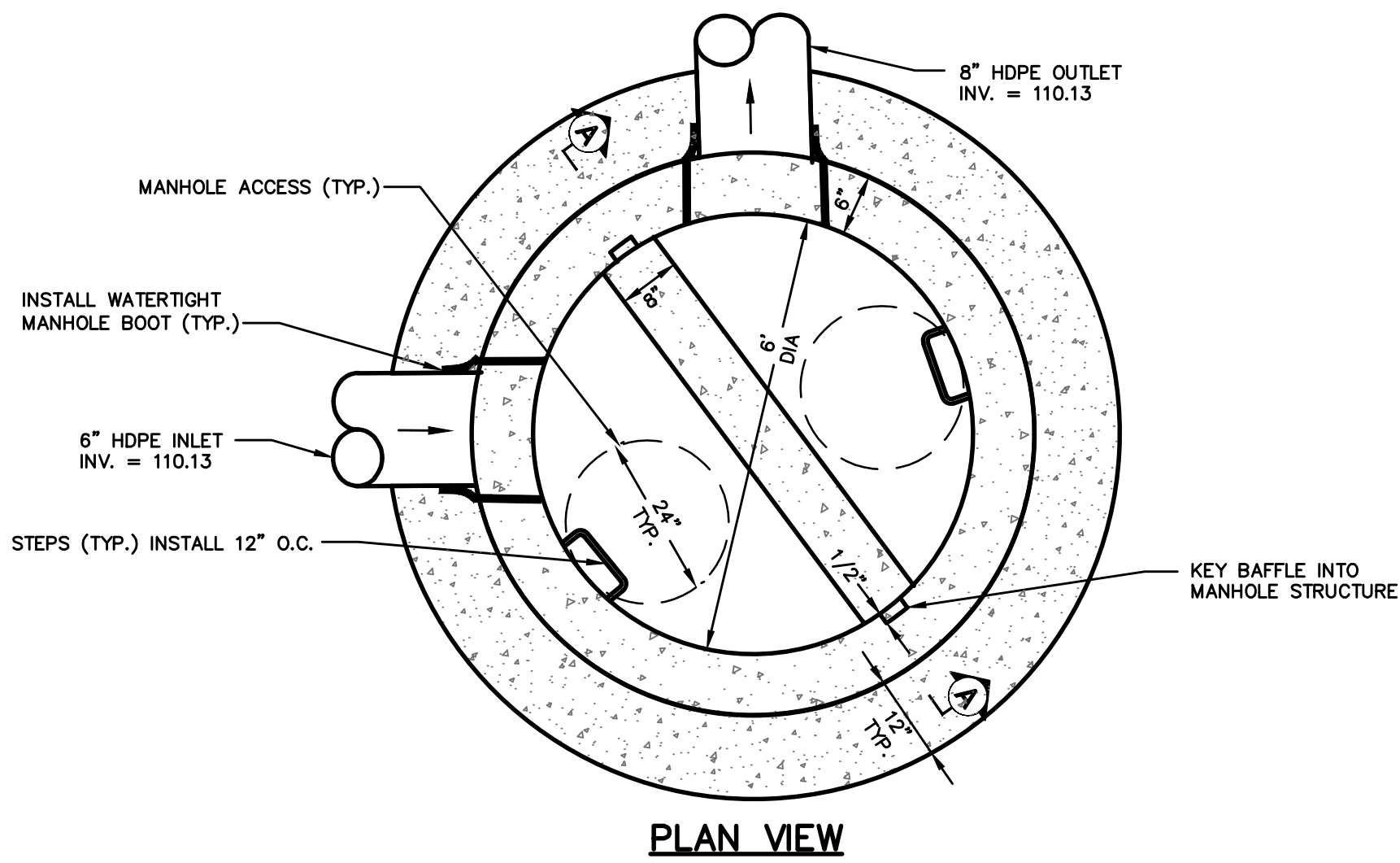
A OUTLET CONTROL STRUCTURE 11 (OCS 11) DETAILS
N.T.S.



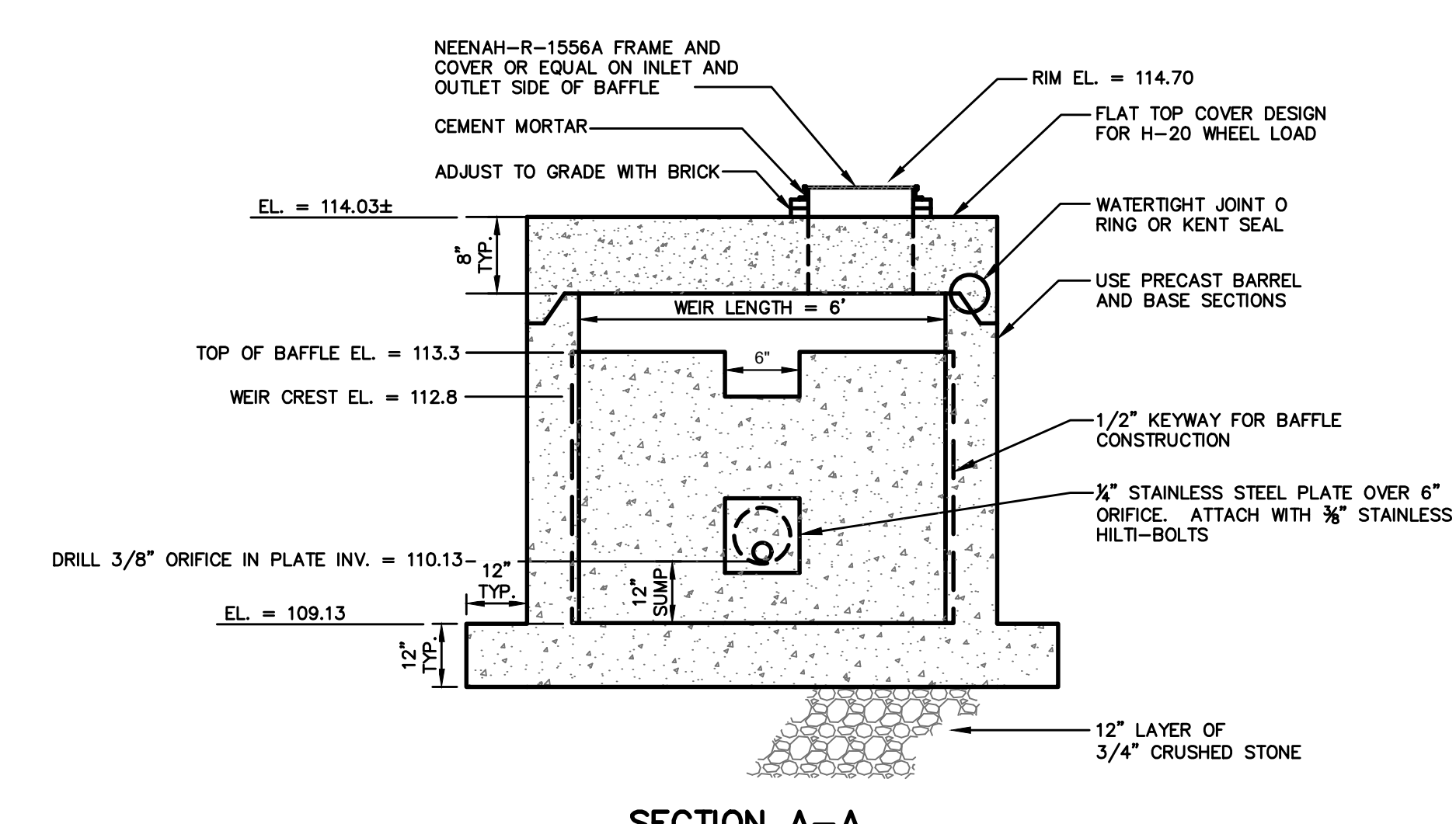
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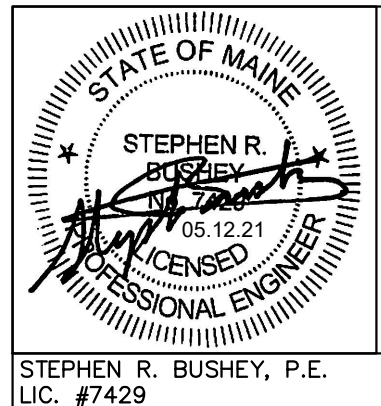
C OUTLET CONTROL STRUCTURE 21 (OCS 21) DETAILS
N.T.S.



D OUTLET CONTROL STRUCTURE 22 (OCS 22) DETAILS
N.T.S.



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File Name: 356403-WSHED.dwg		
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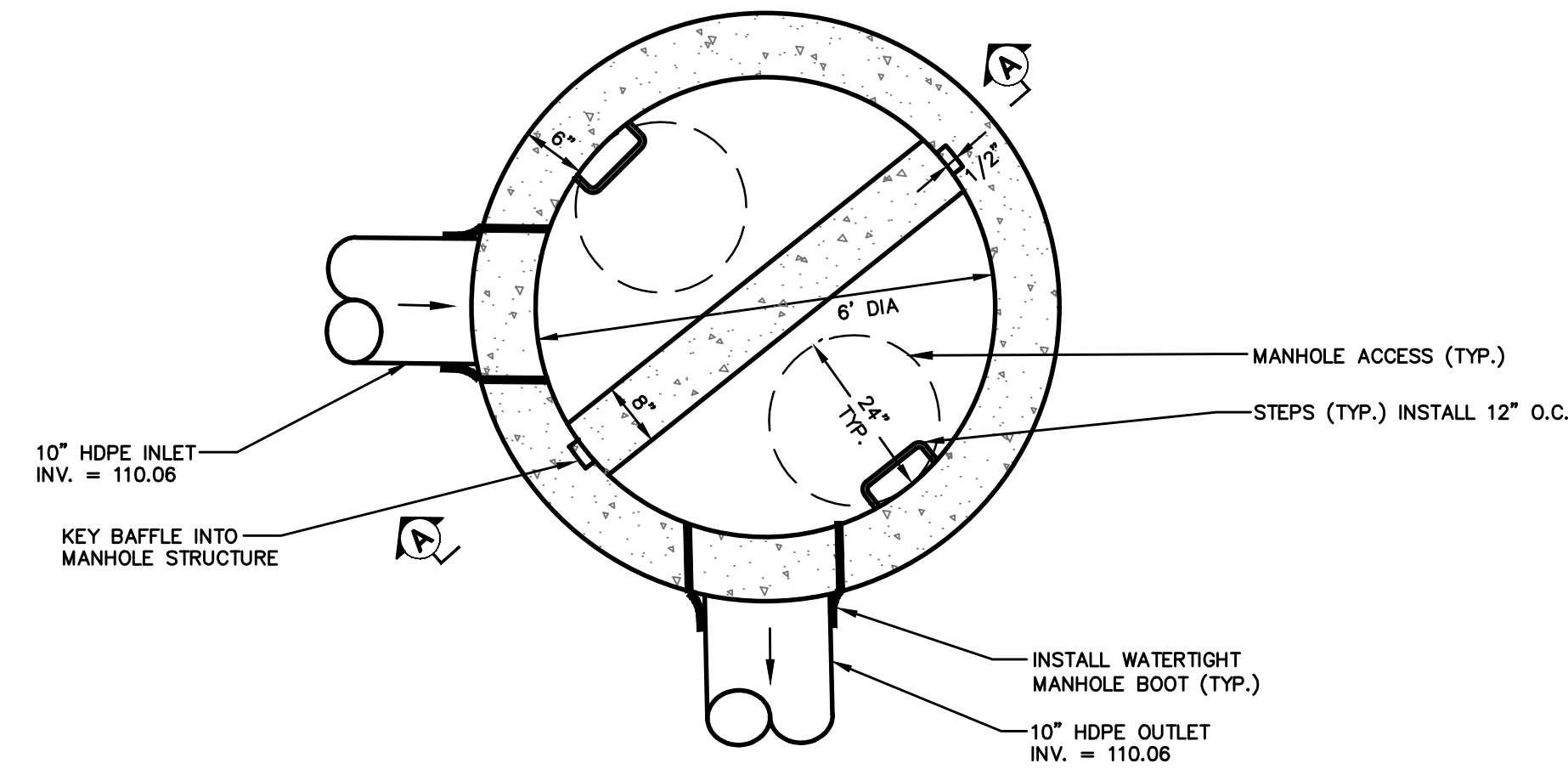


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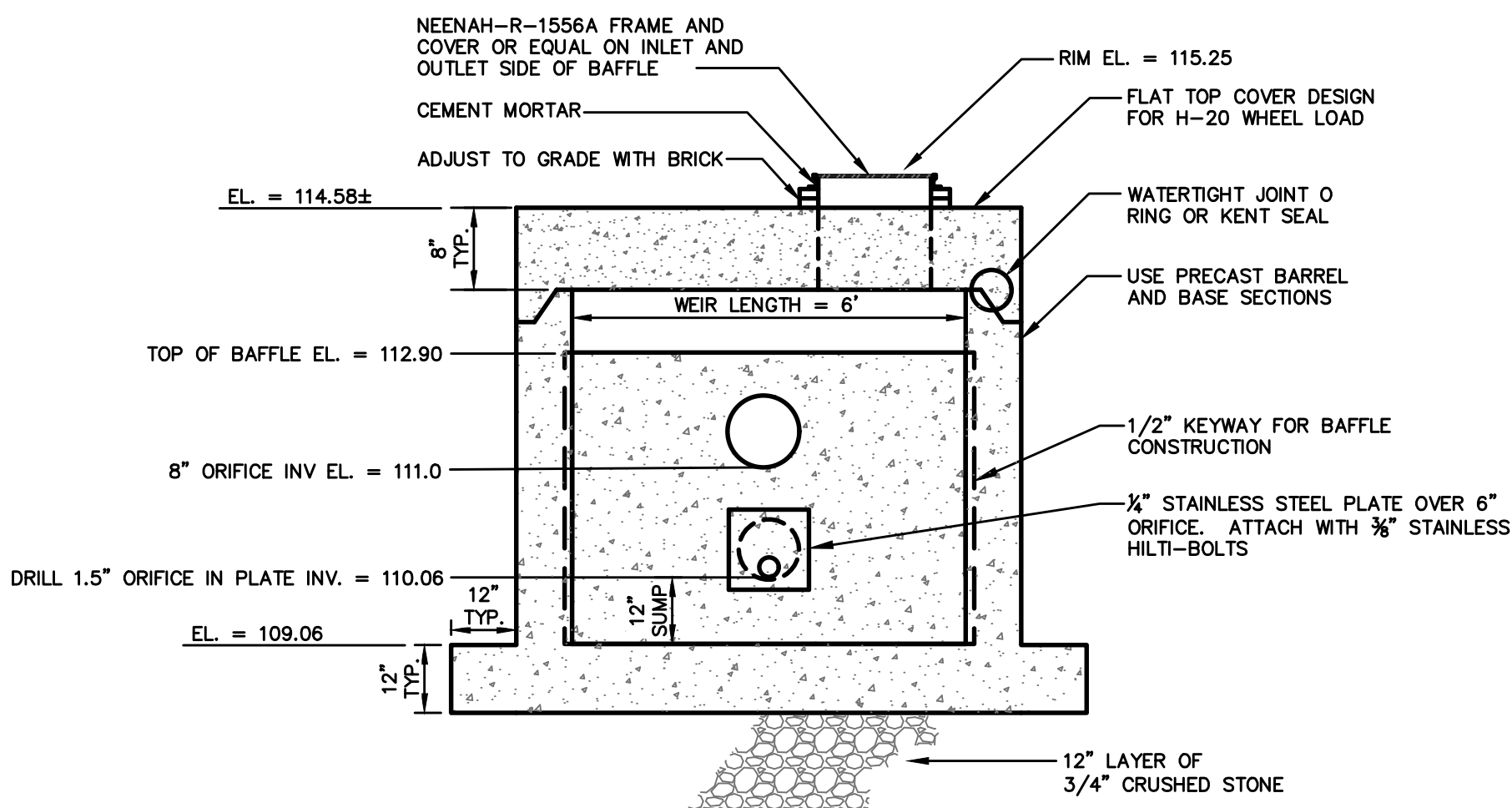
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Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-7.4

U:\3564.03_Stevens Square-Lot 4 - Portland, ME\Z - CAD\DWG\356403-WSHED.dwg - 5/13/2021 4:20 PM

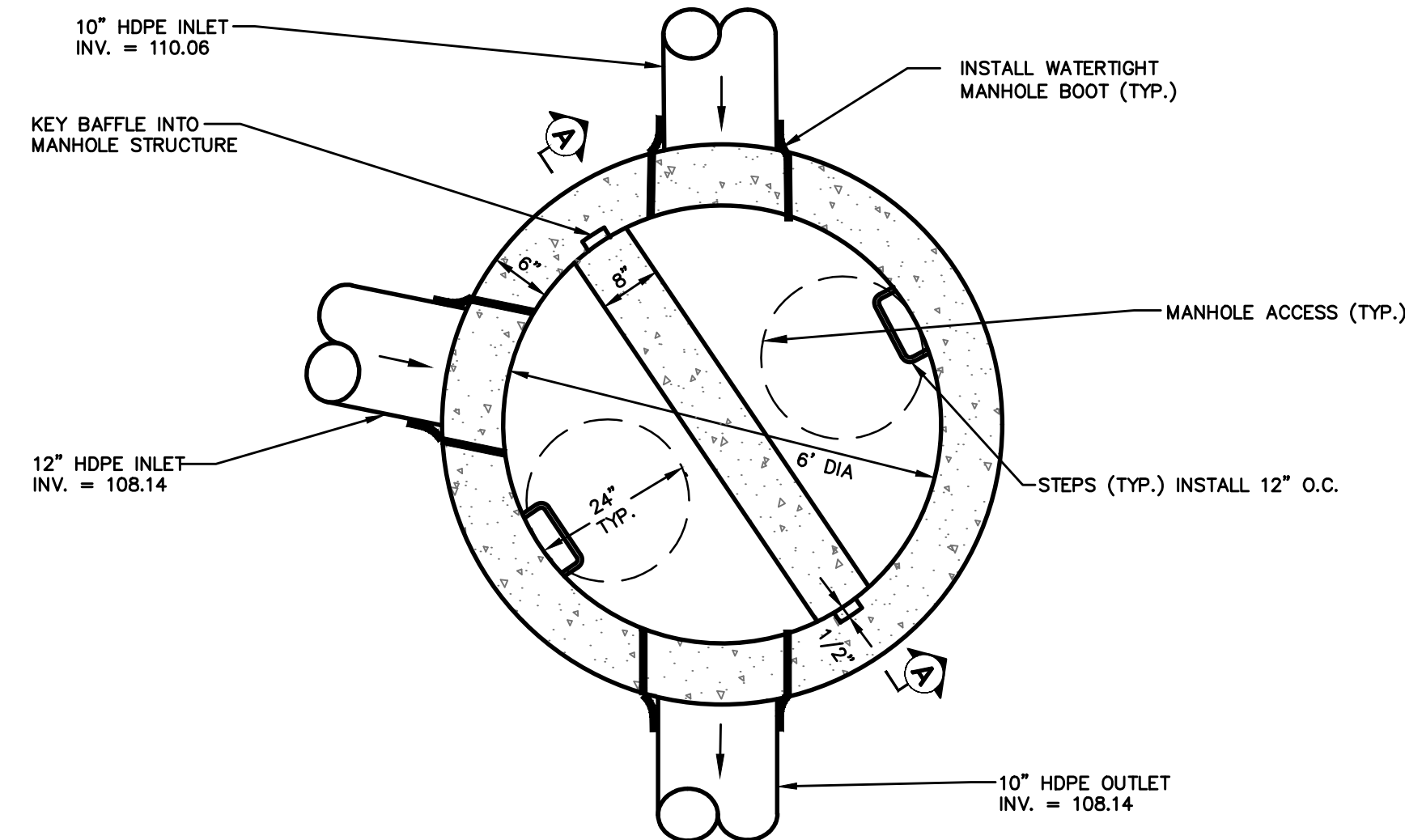


PLAN VIEW

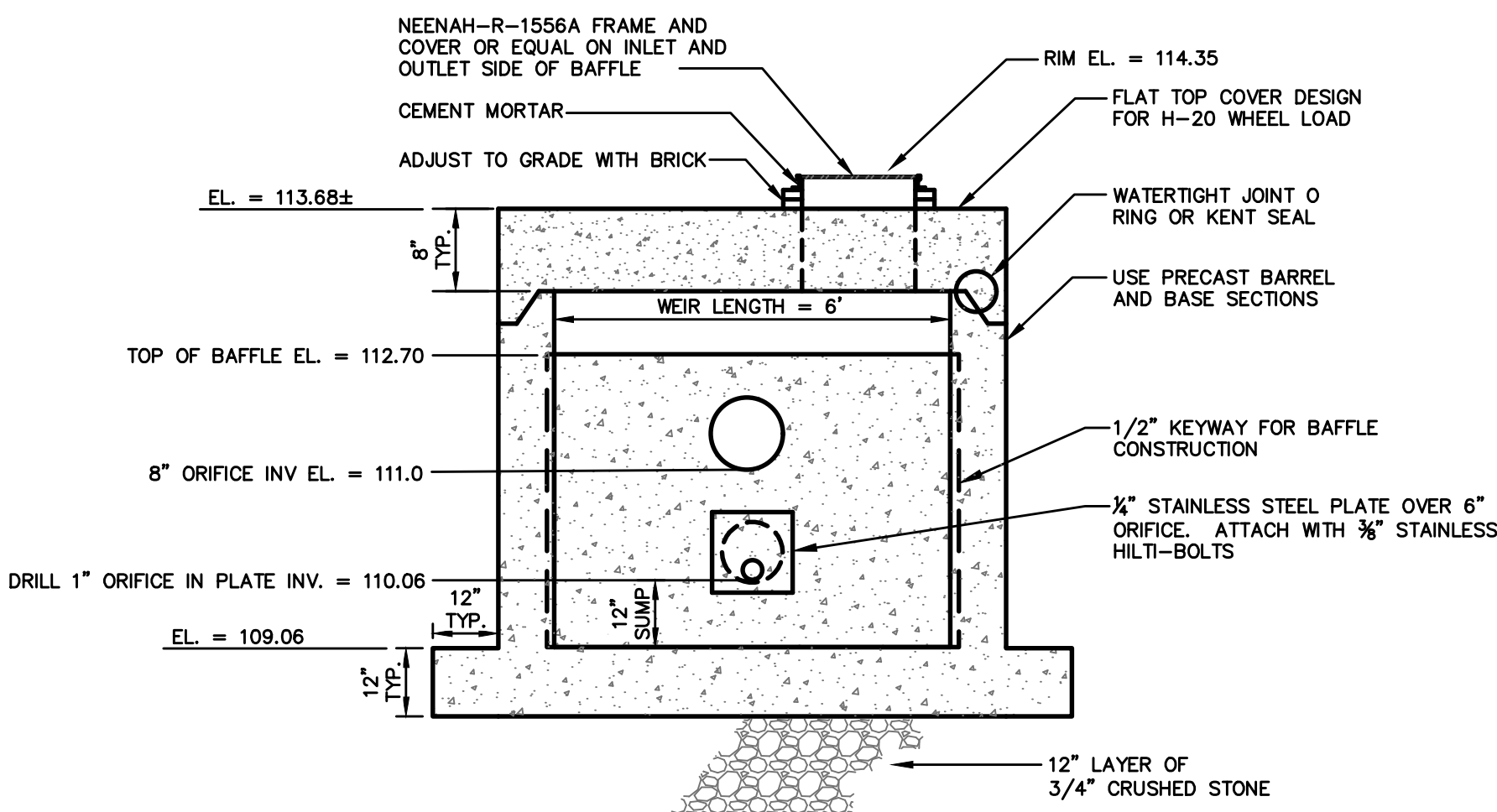


SECTION A-A

A OUTLET CONTROL STRUCTURE 13 (OCS 13) DETAILS
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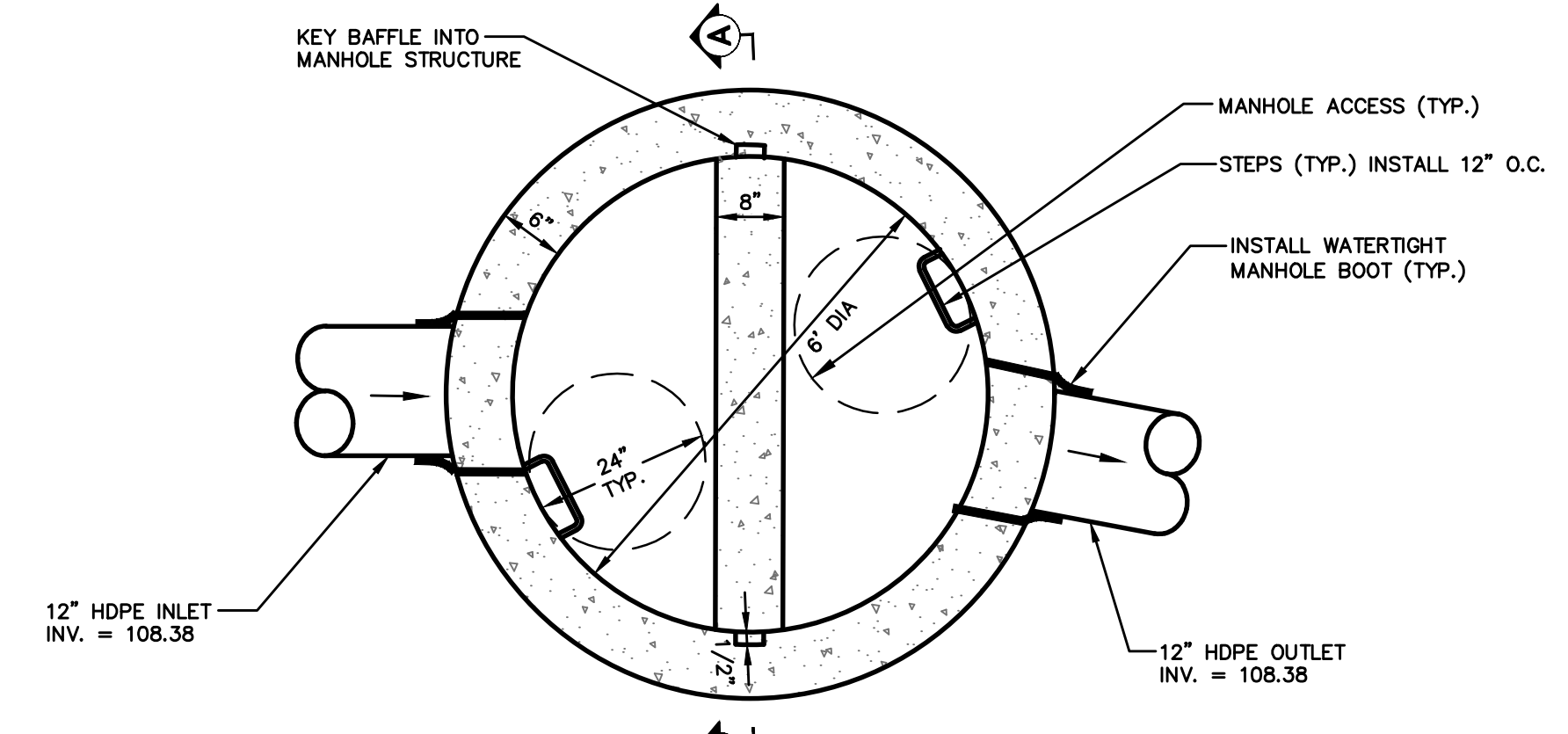


PLAN VIEW

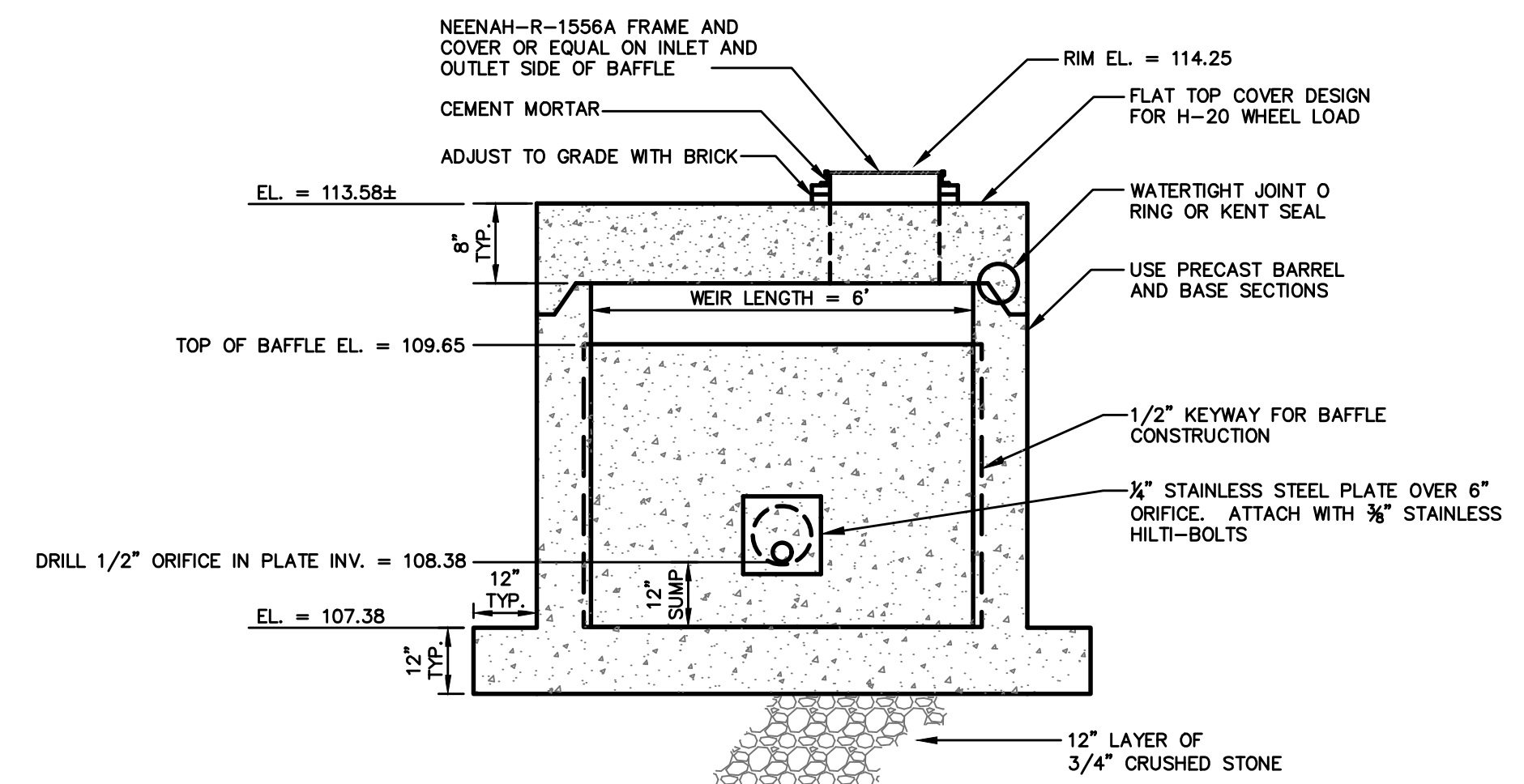


SECTION A-A

B OUTLET CONTROL STRUCTURE 23 (OCS 23) DETAILS
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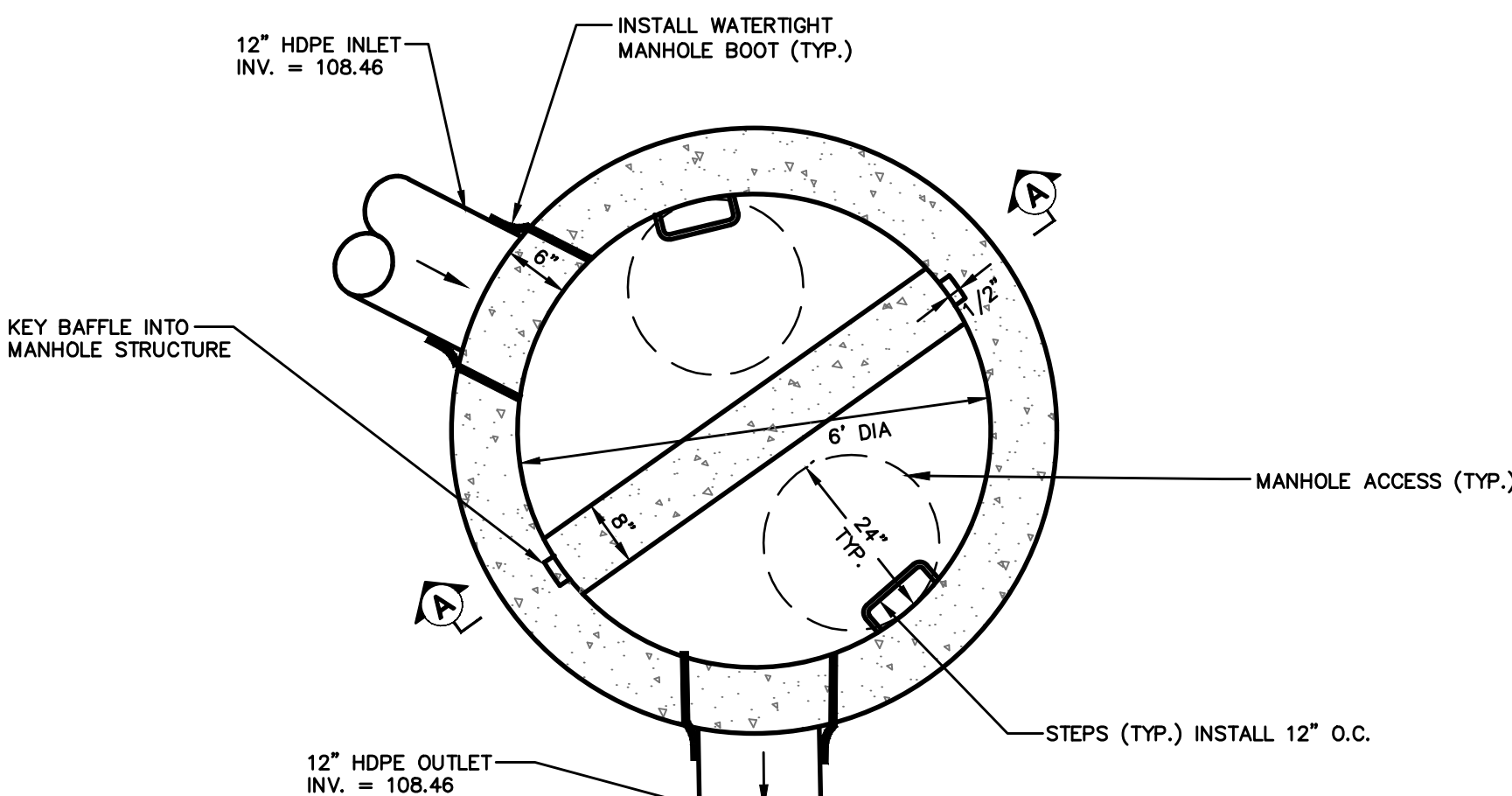


PLAN VIEW



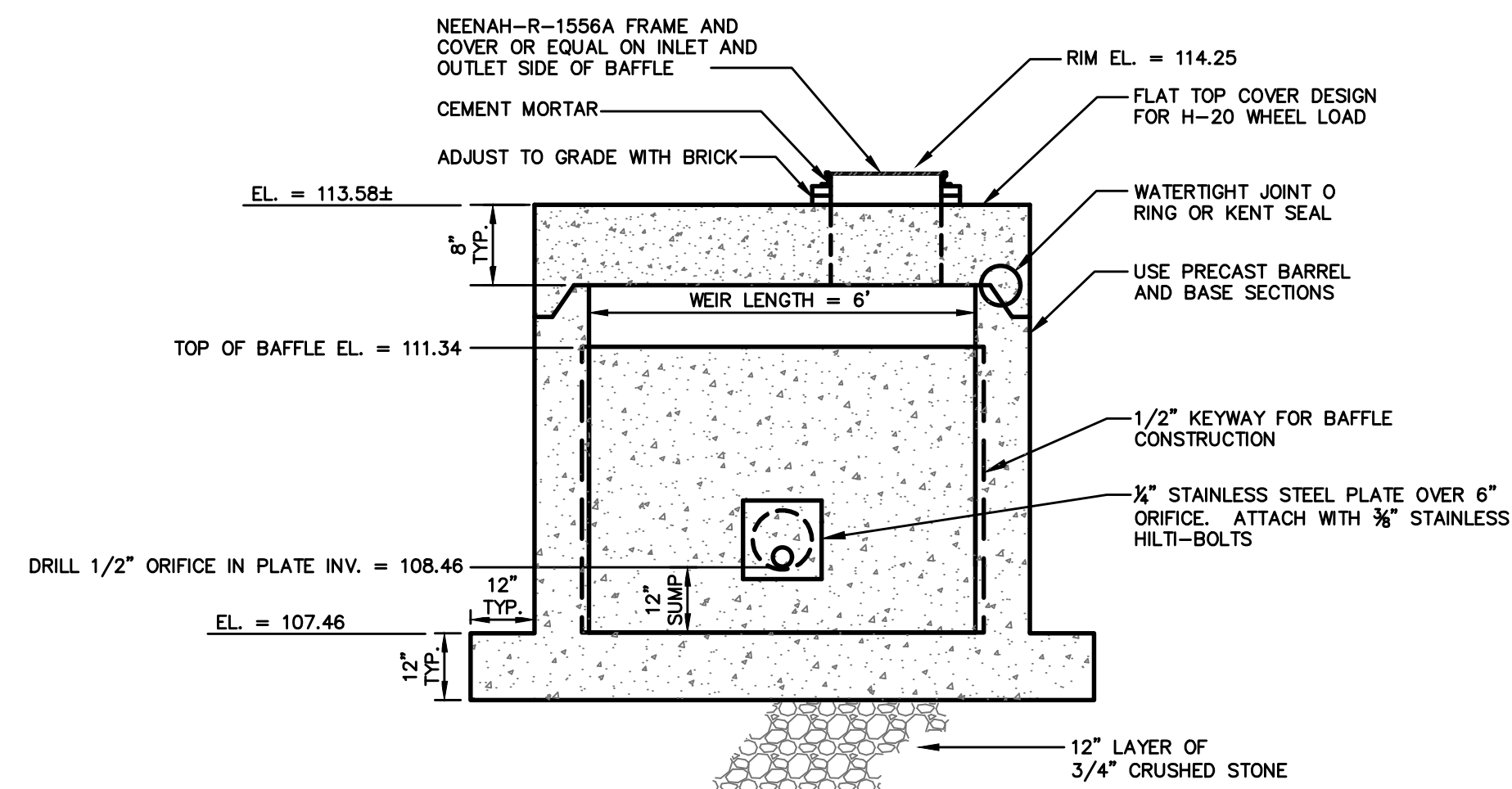
SECTION A-A

C OUTLET CONTROL STRUCTURE 24 (OCS 24) DETAILS
N.T.S.



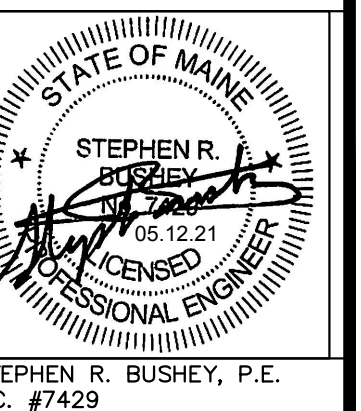
PLAN VIEW

D OUTLET CONTROL STRUCTURE 14 (OCS 14) DETAILS
N.T.S.



SECTION A-A

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File Name: 356403-WSHED.dwg

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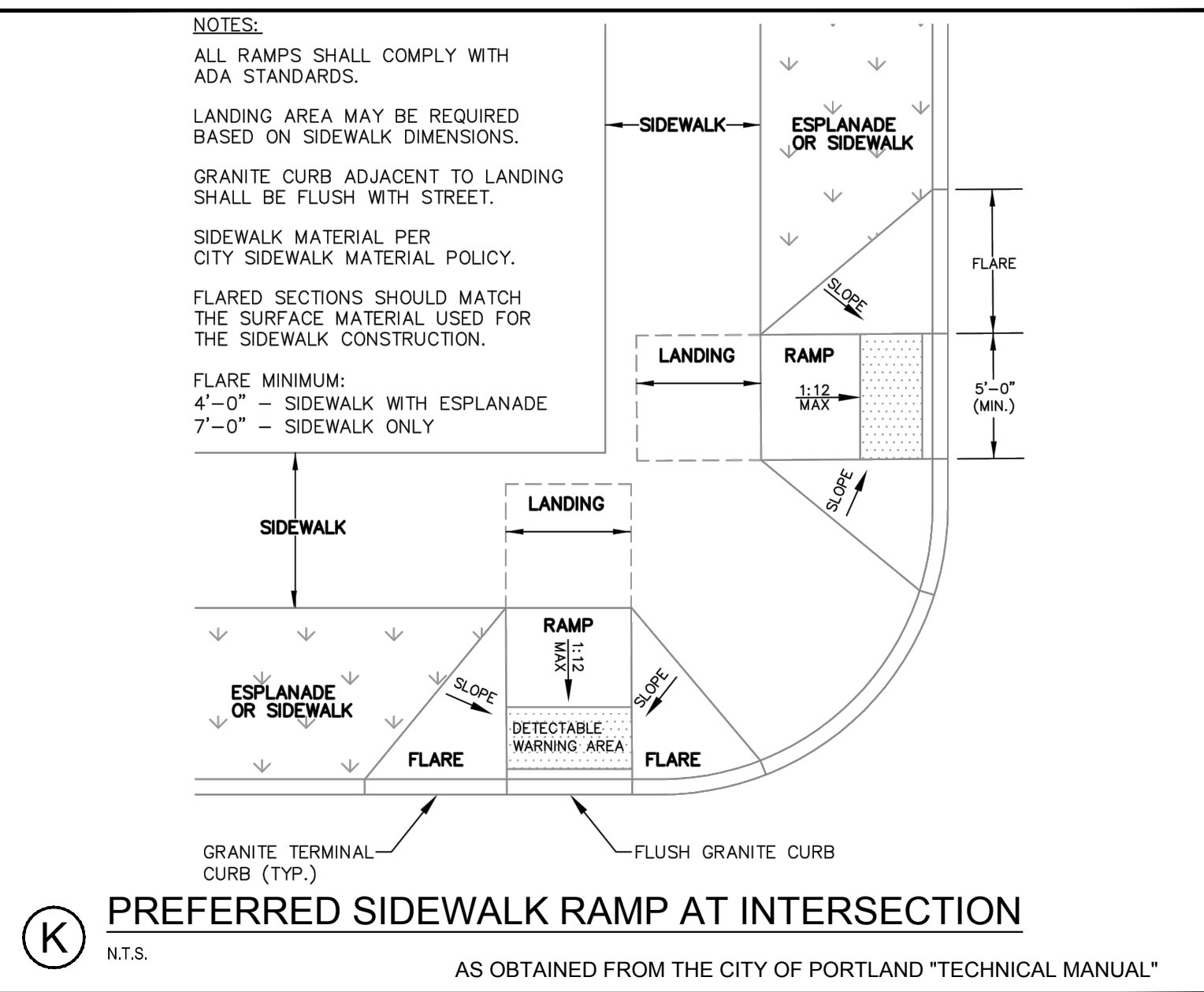
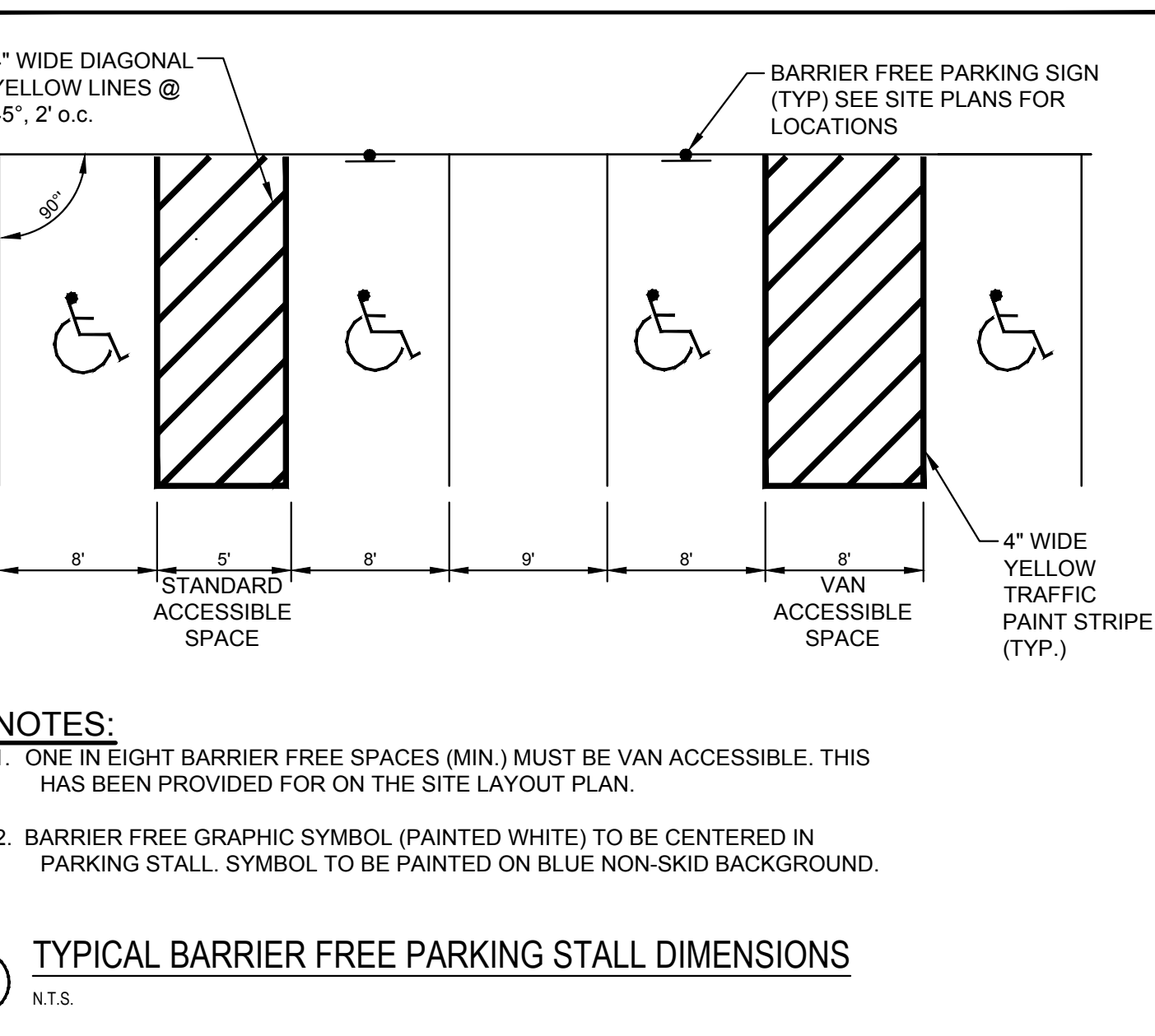
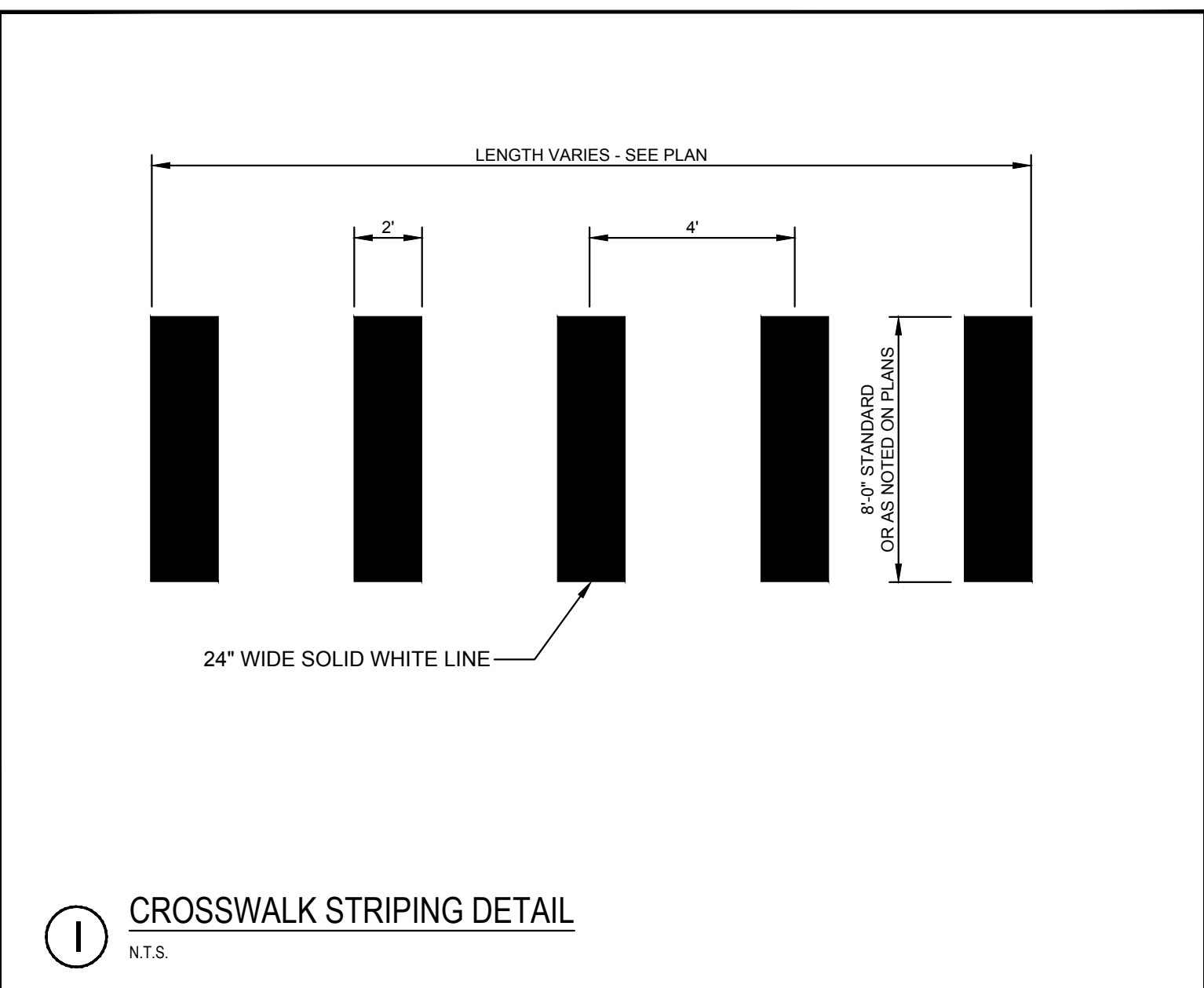
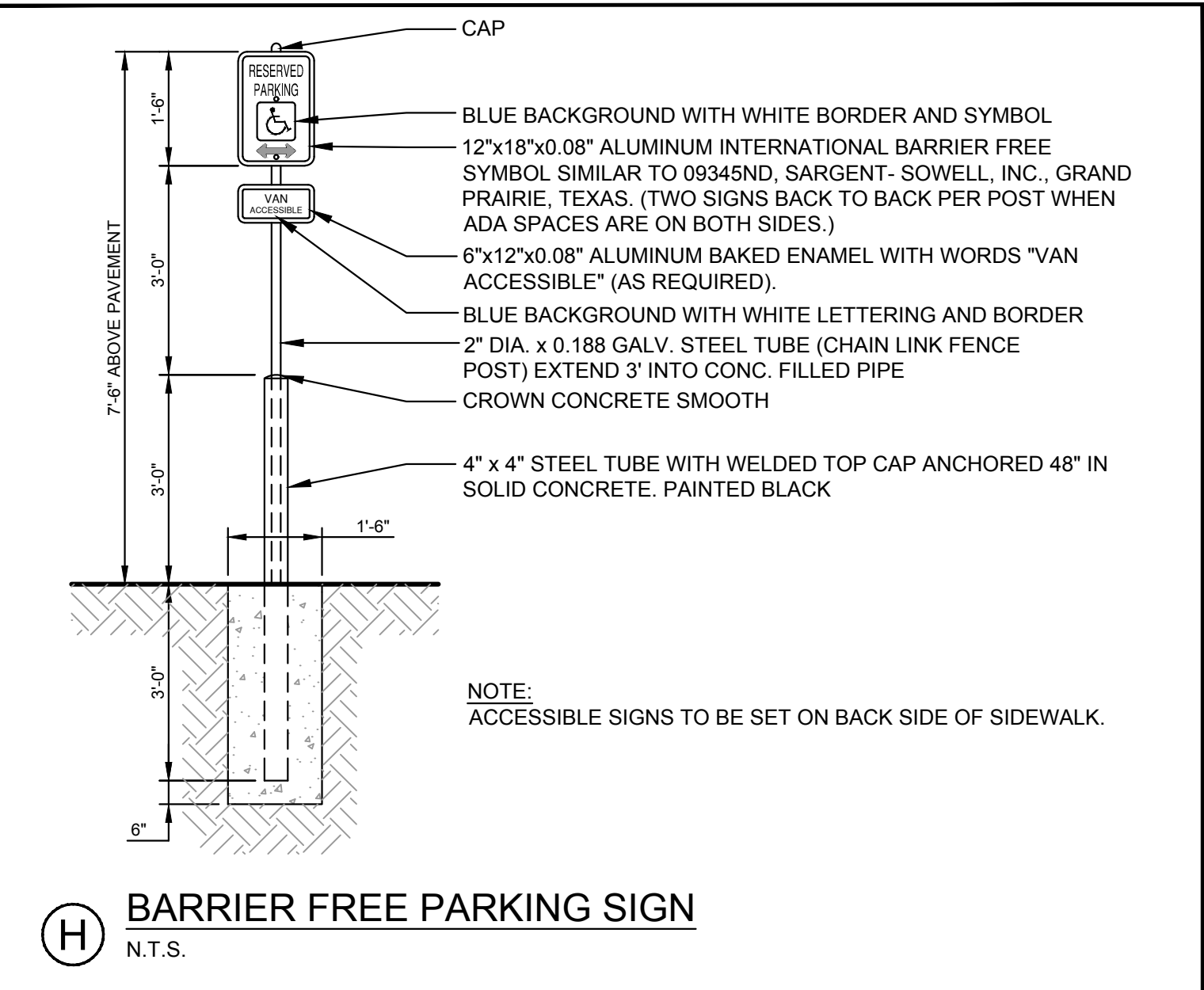
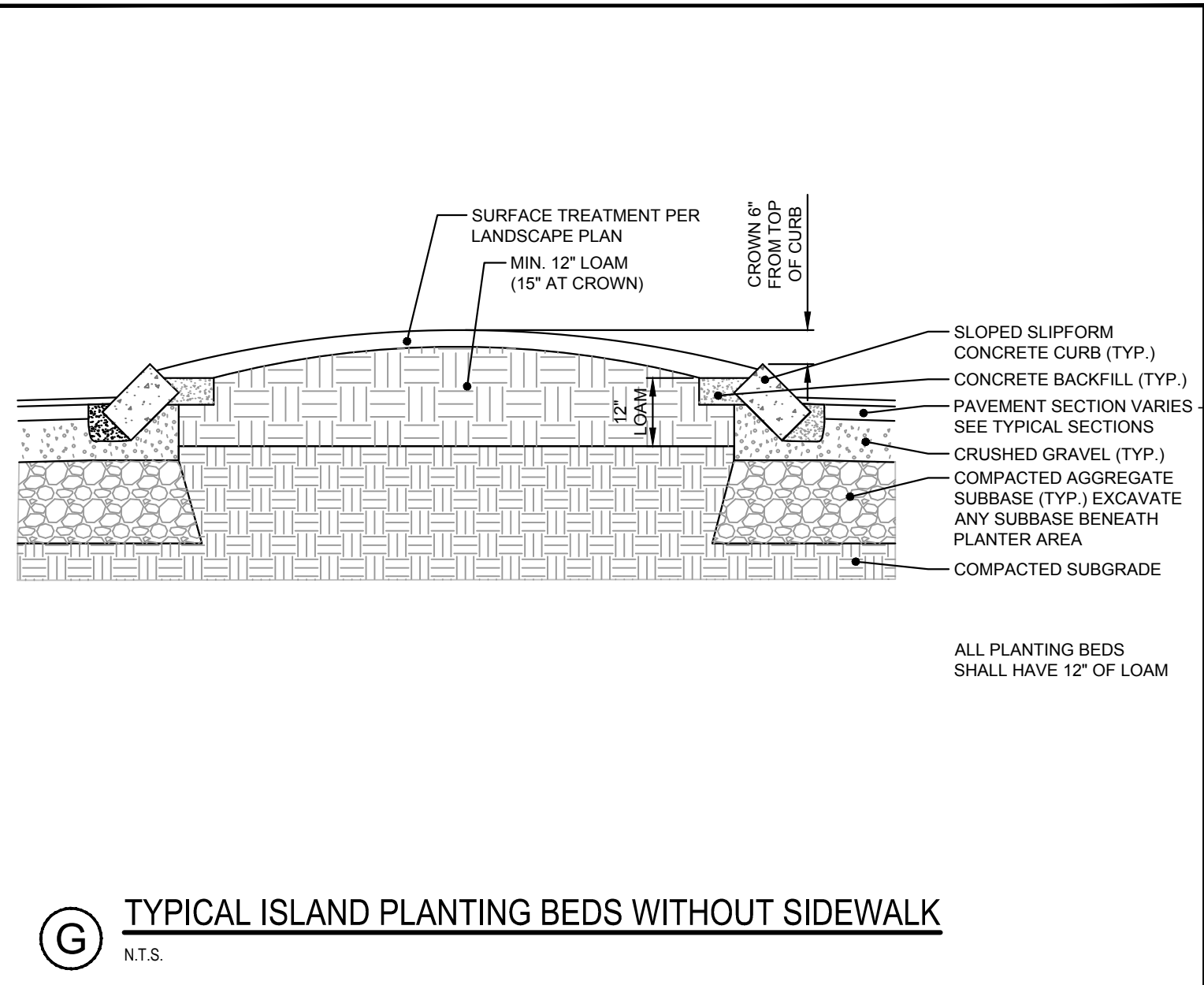
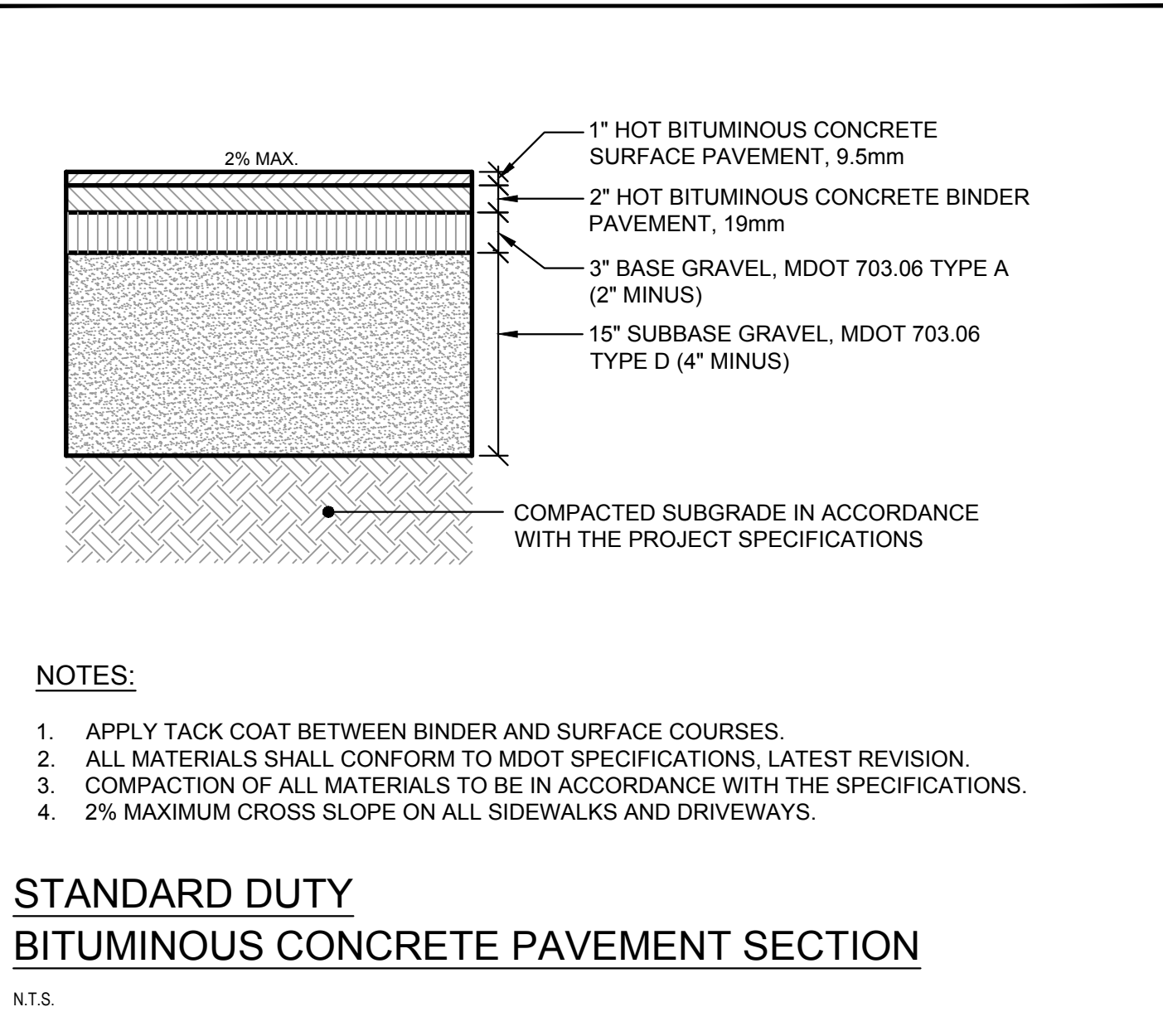
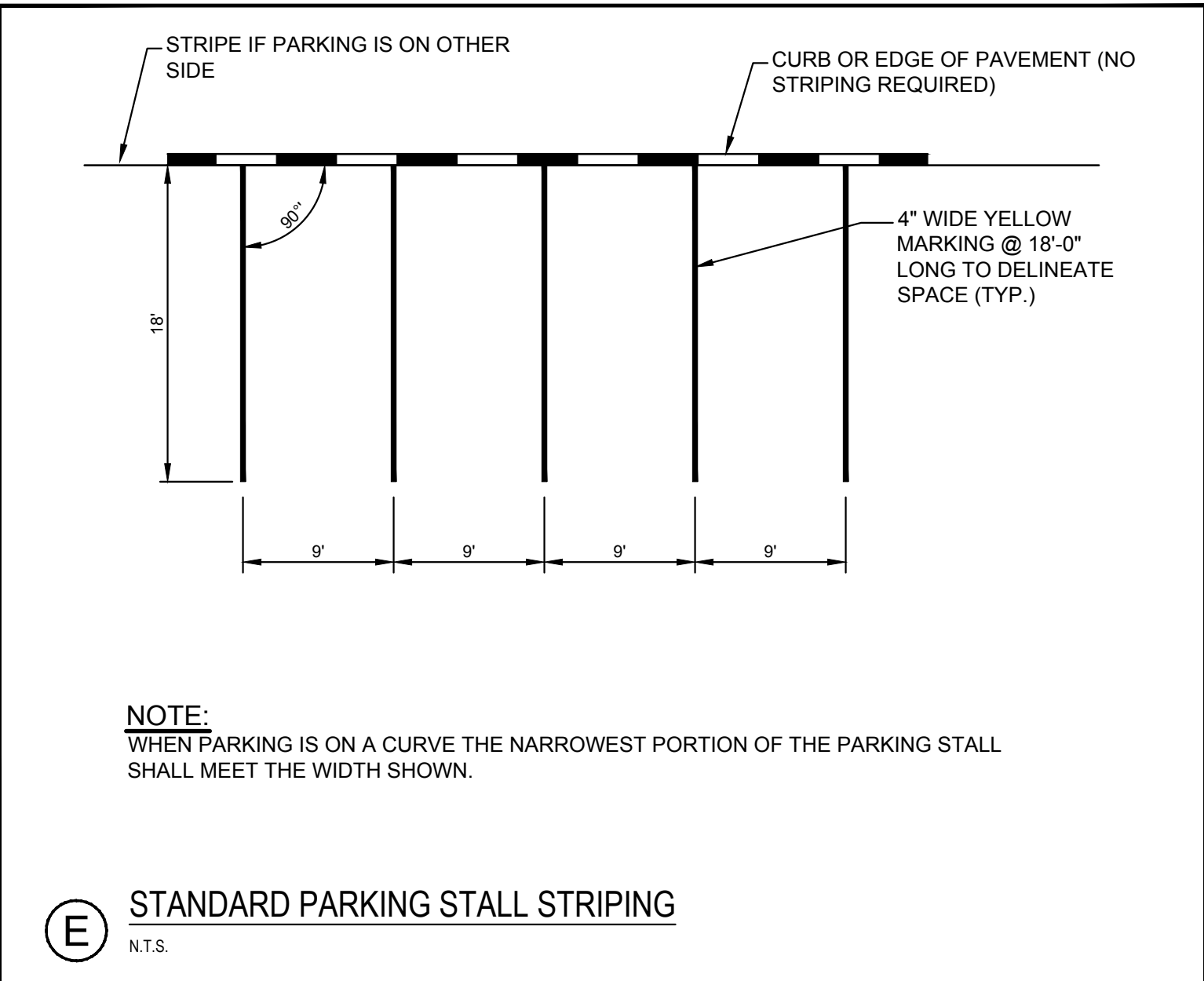
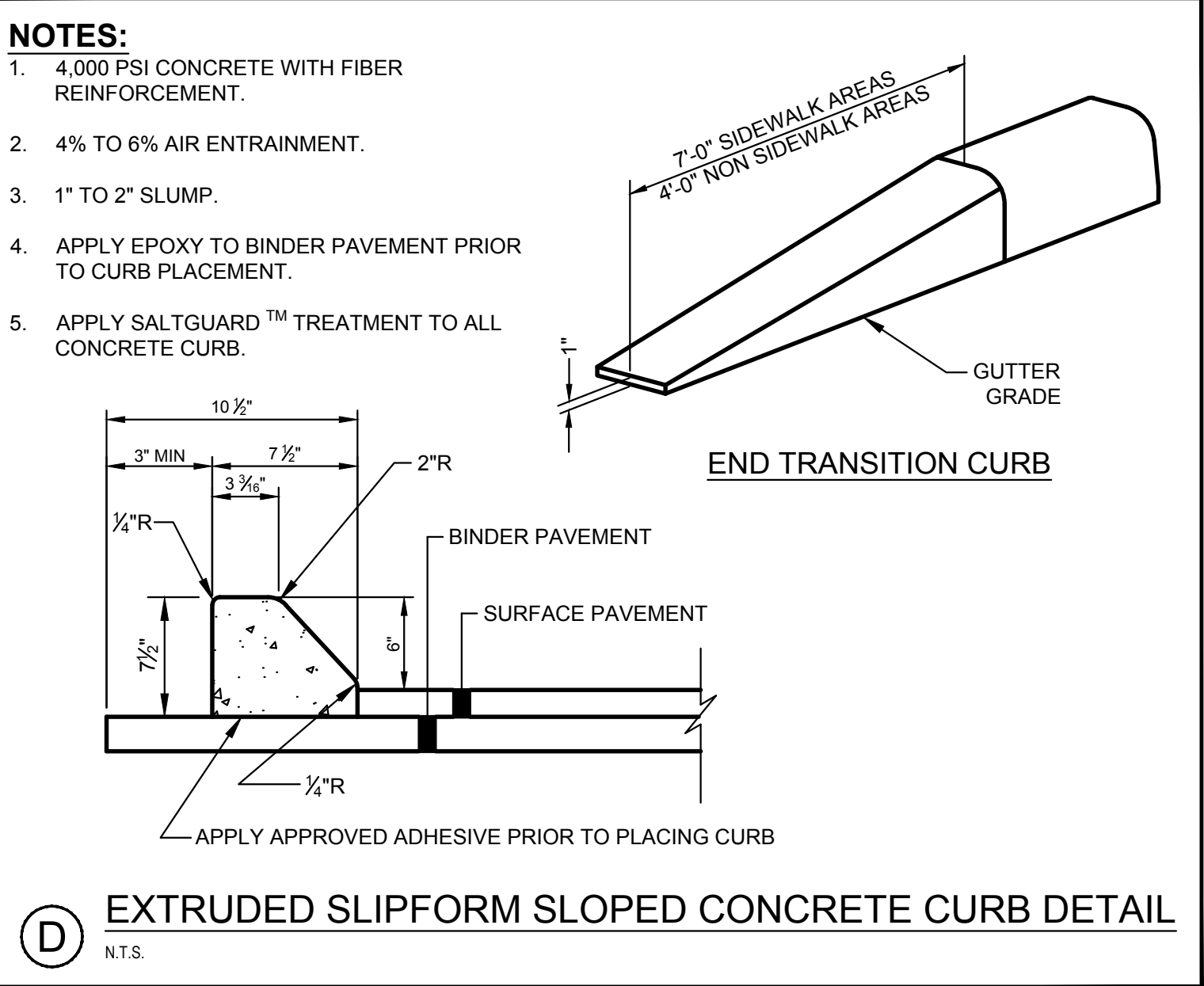
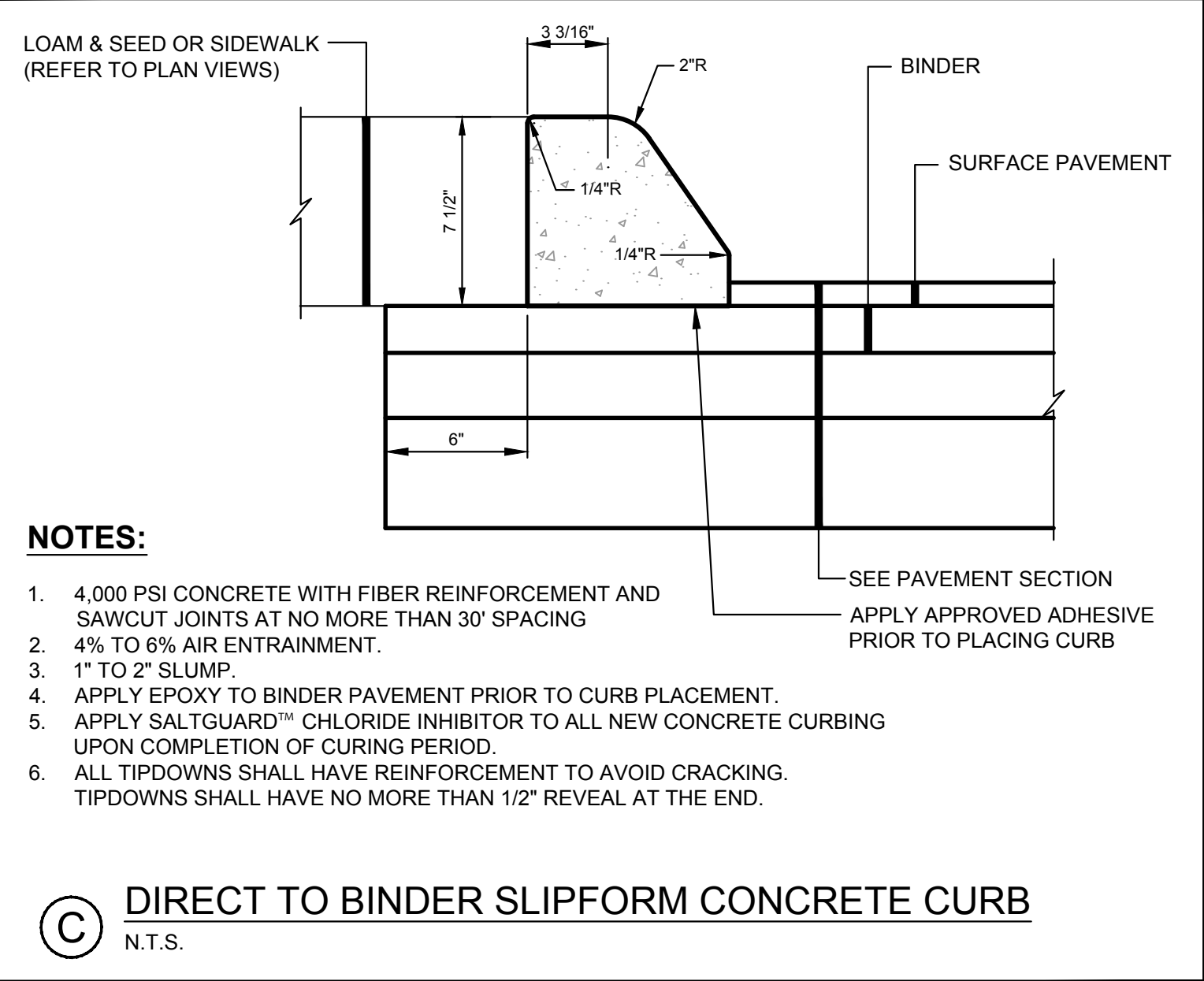
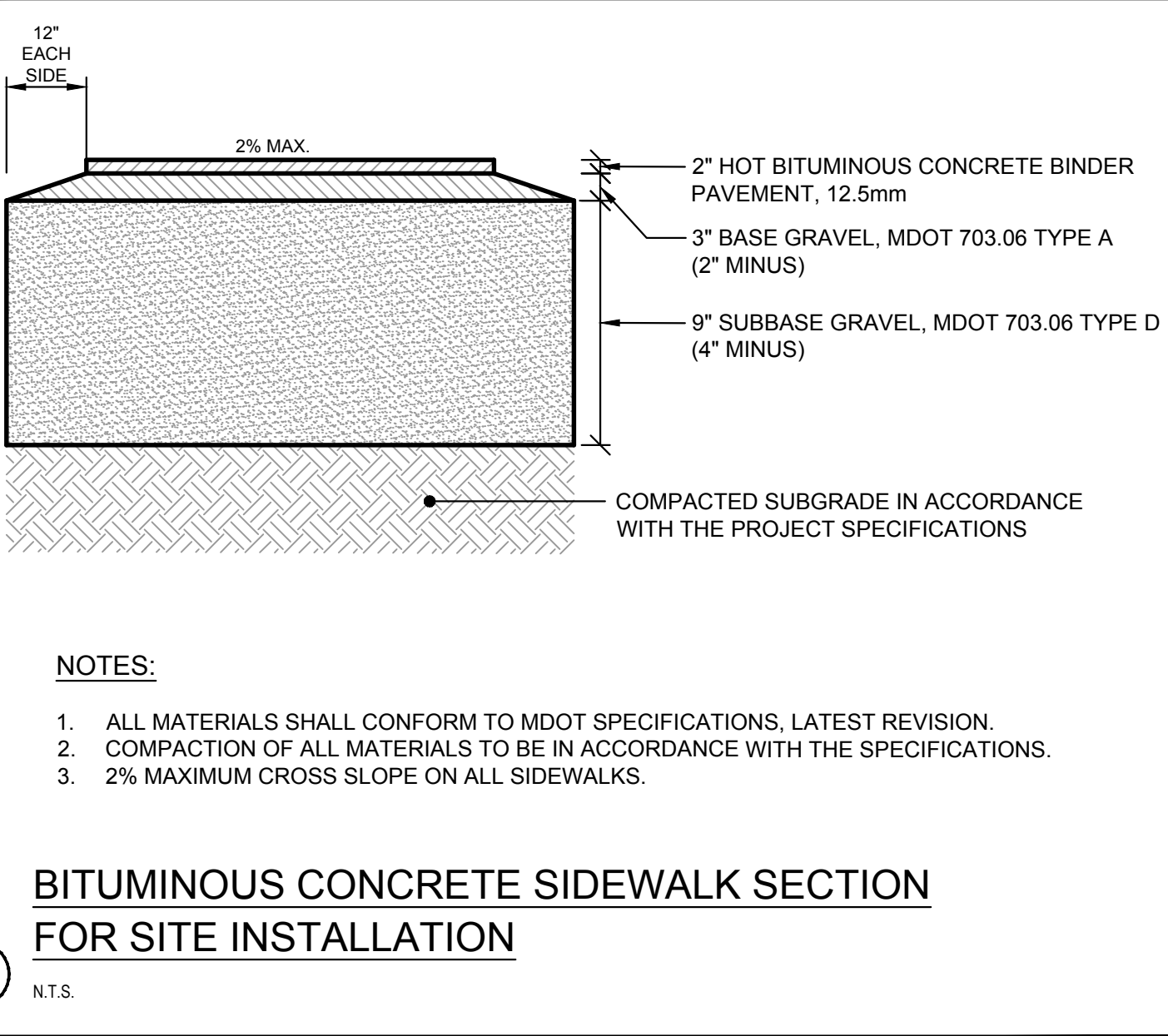
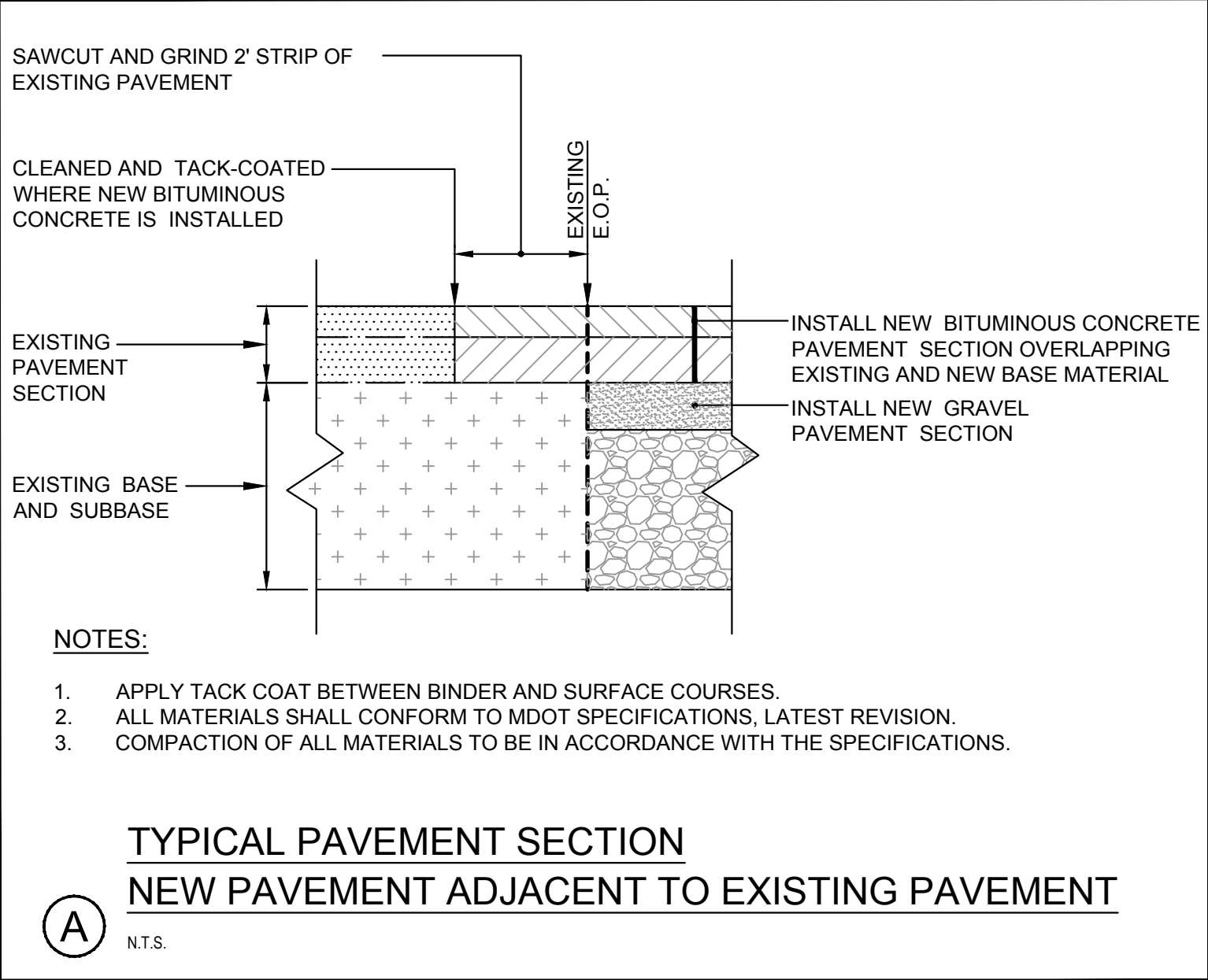


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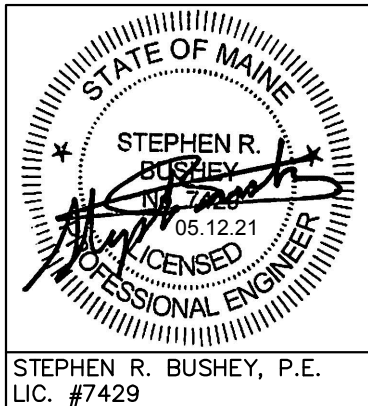
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Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-7.5

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Design: SRB	Draft: CDD	Date: MAY 2021
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File Name: 356403-DETAILS.dwg		
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Drawing Name:	SITE DETAILS
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-8.0



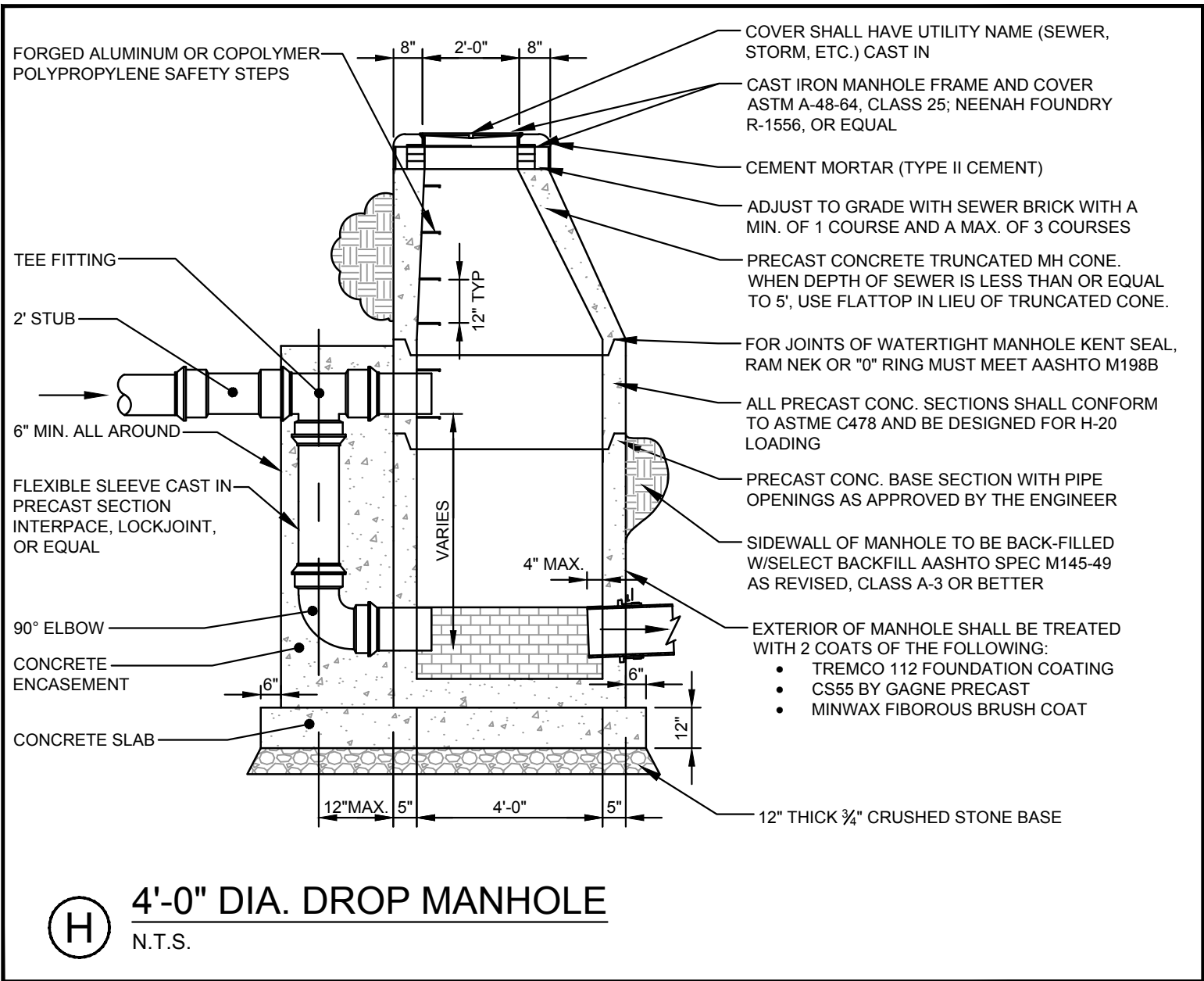
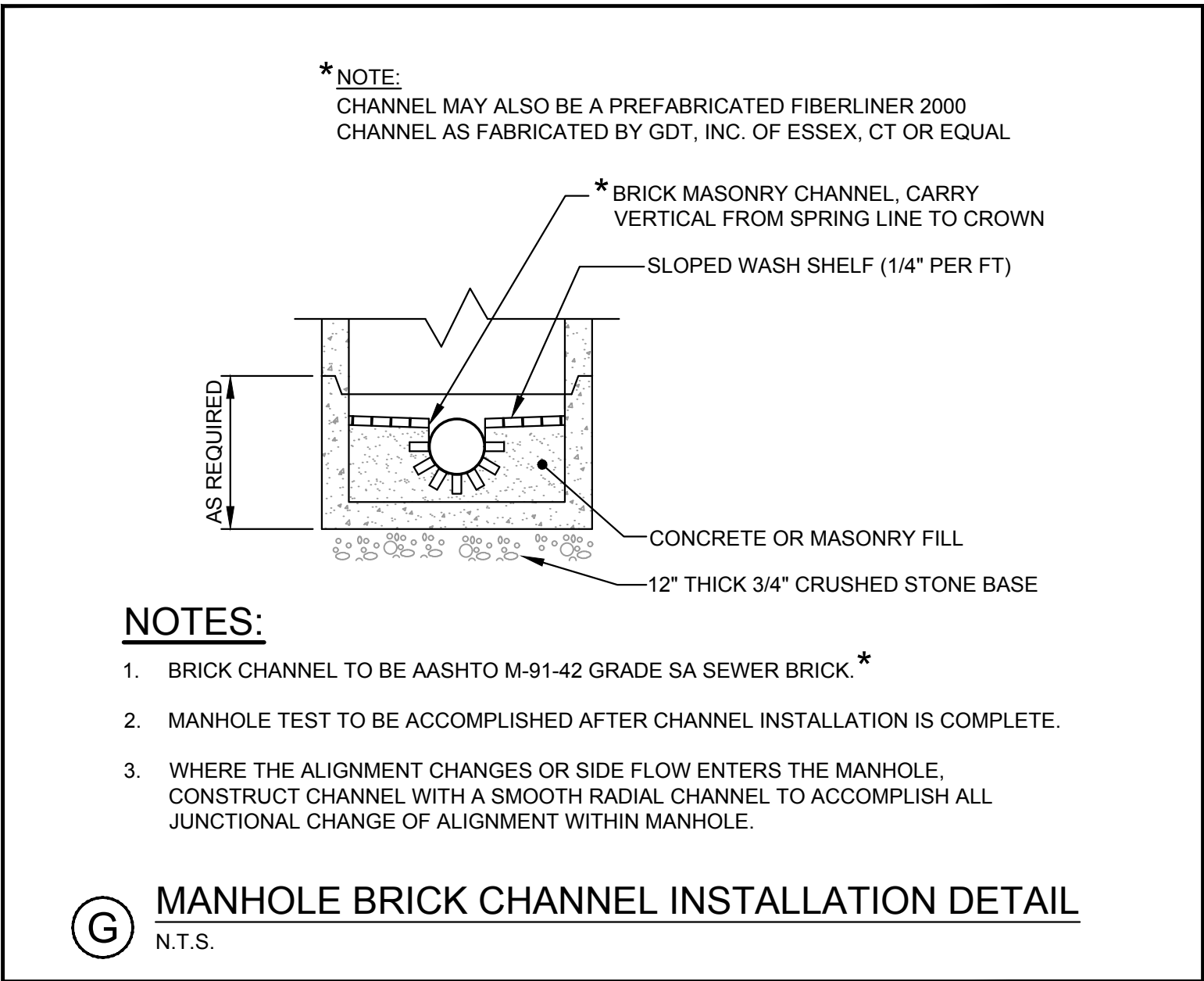
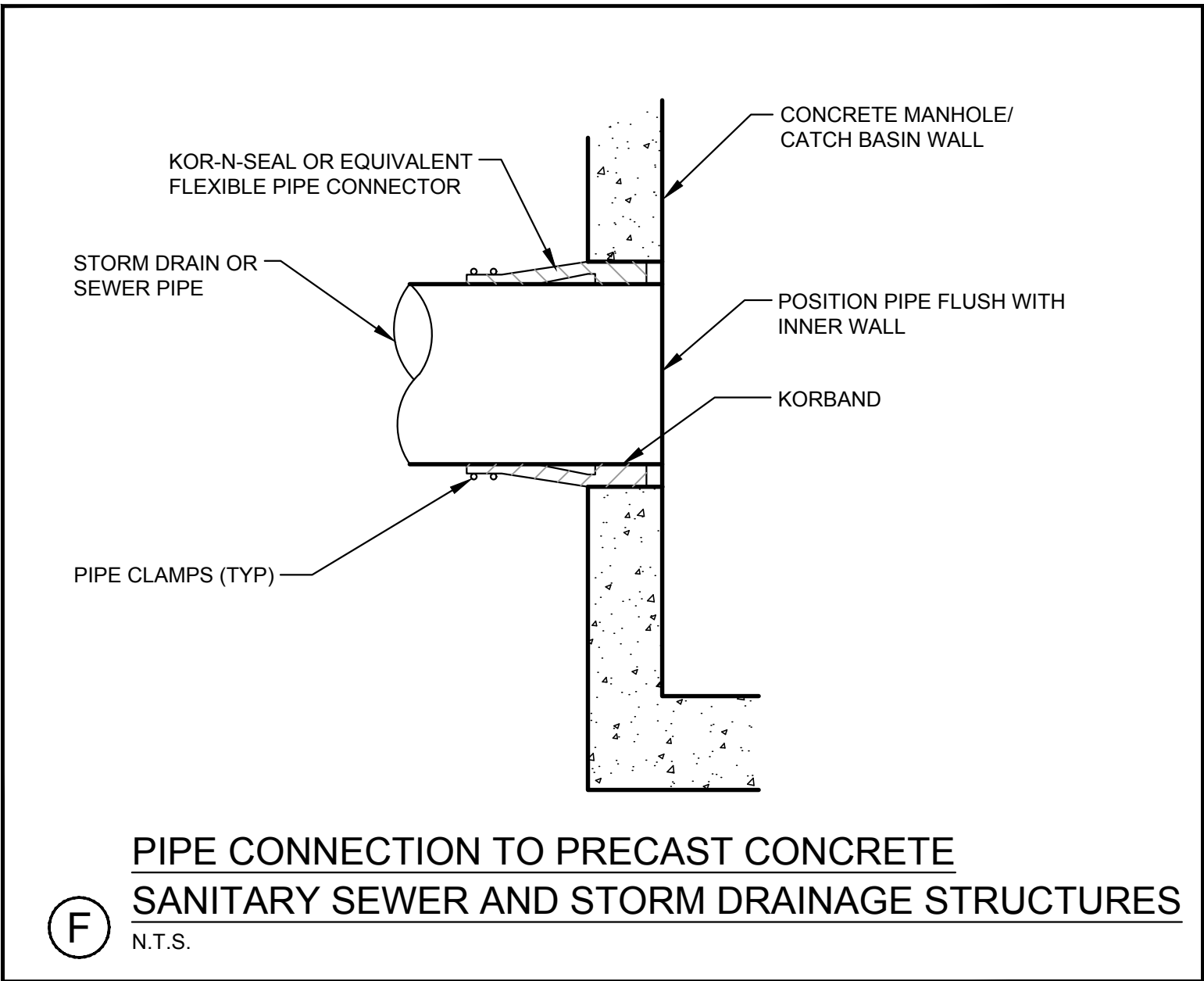
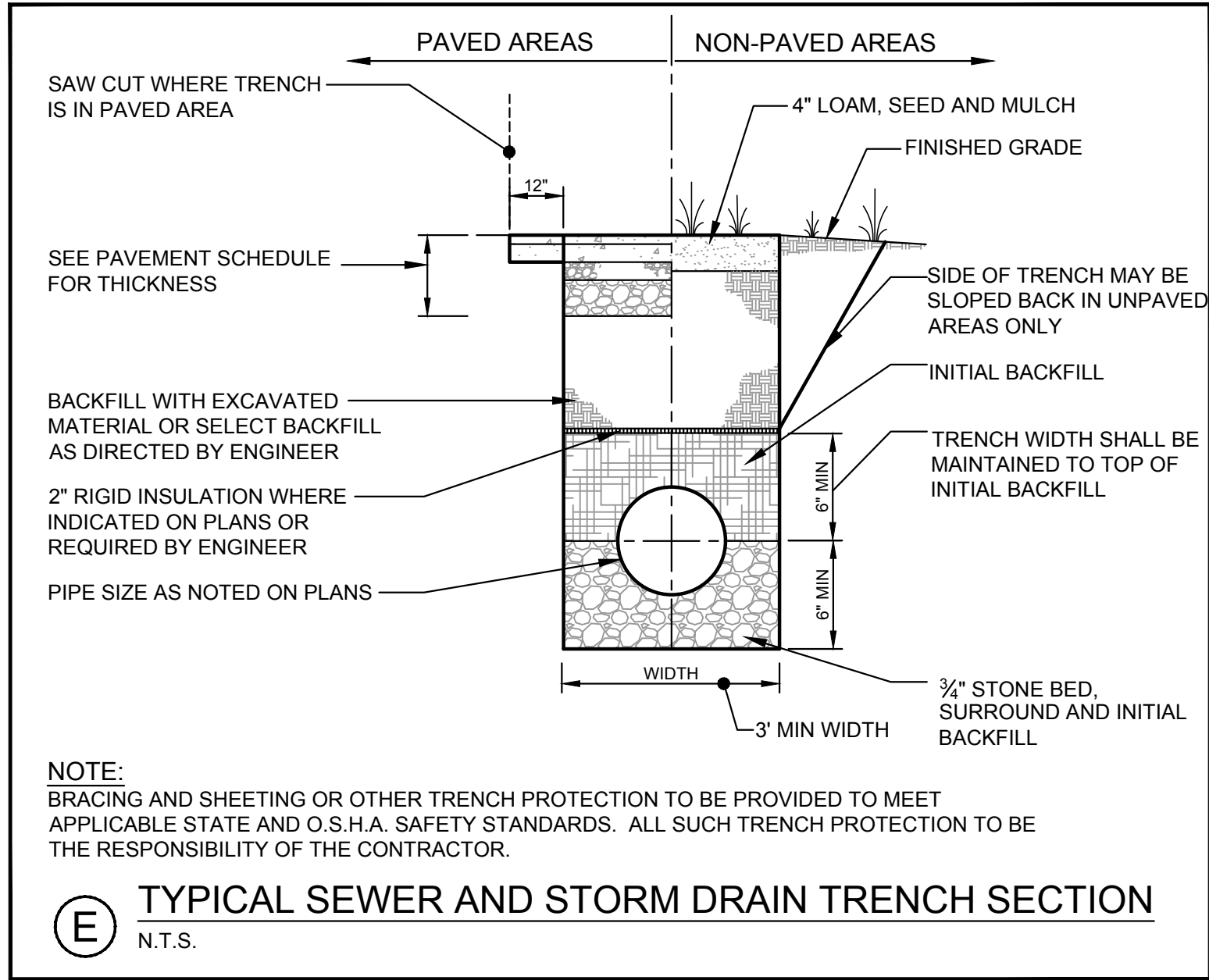
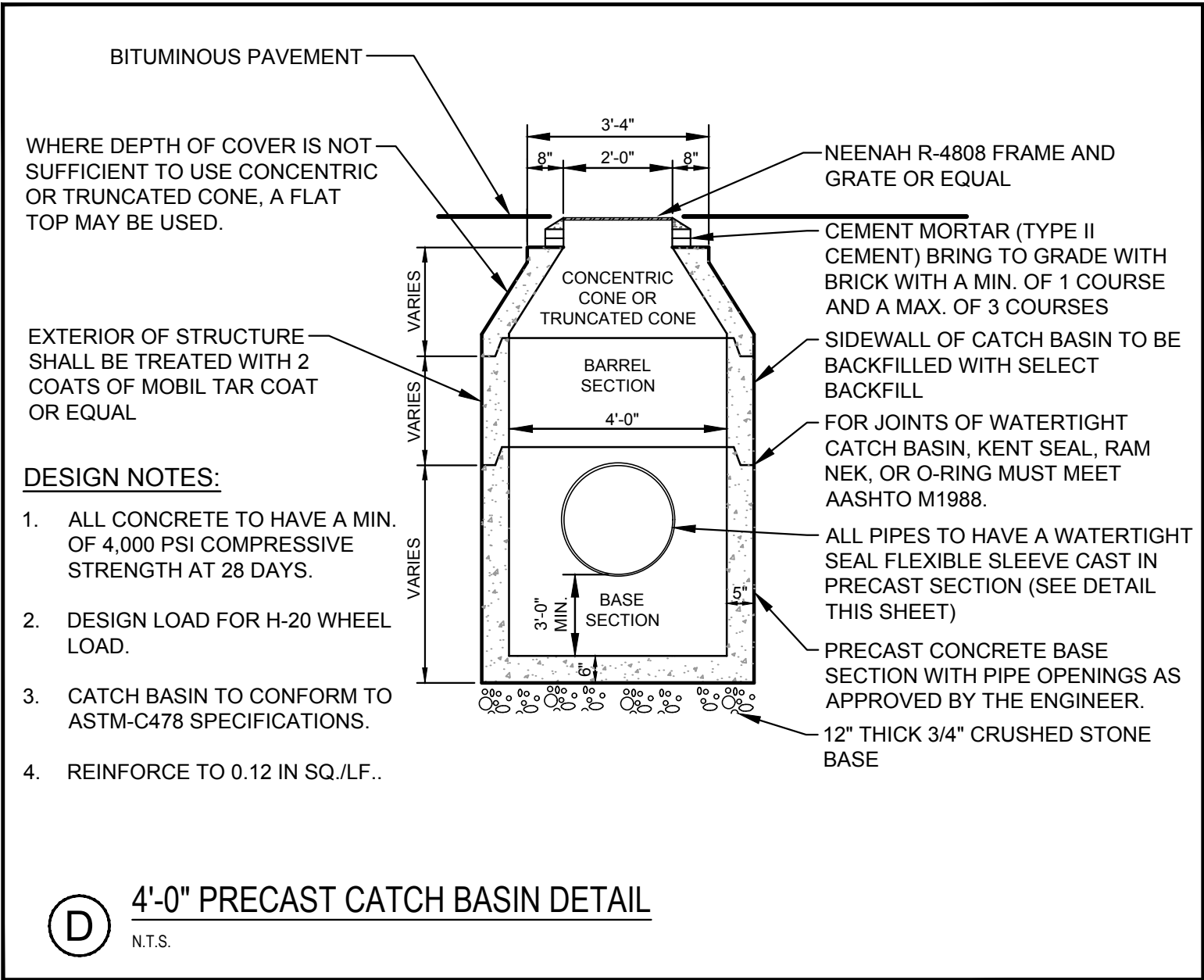
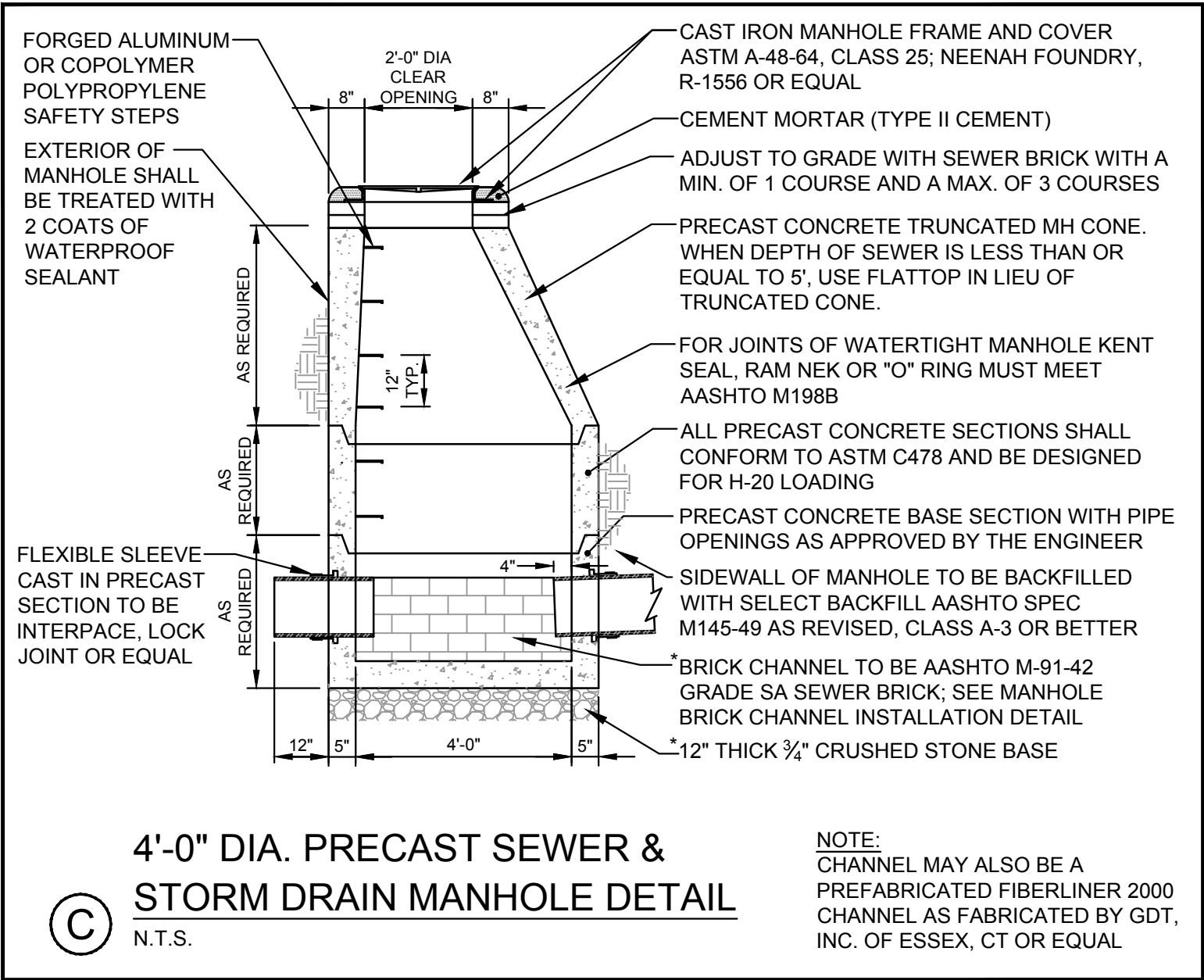
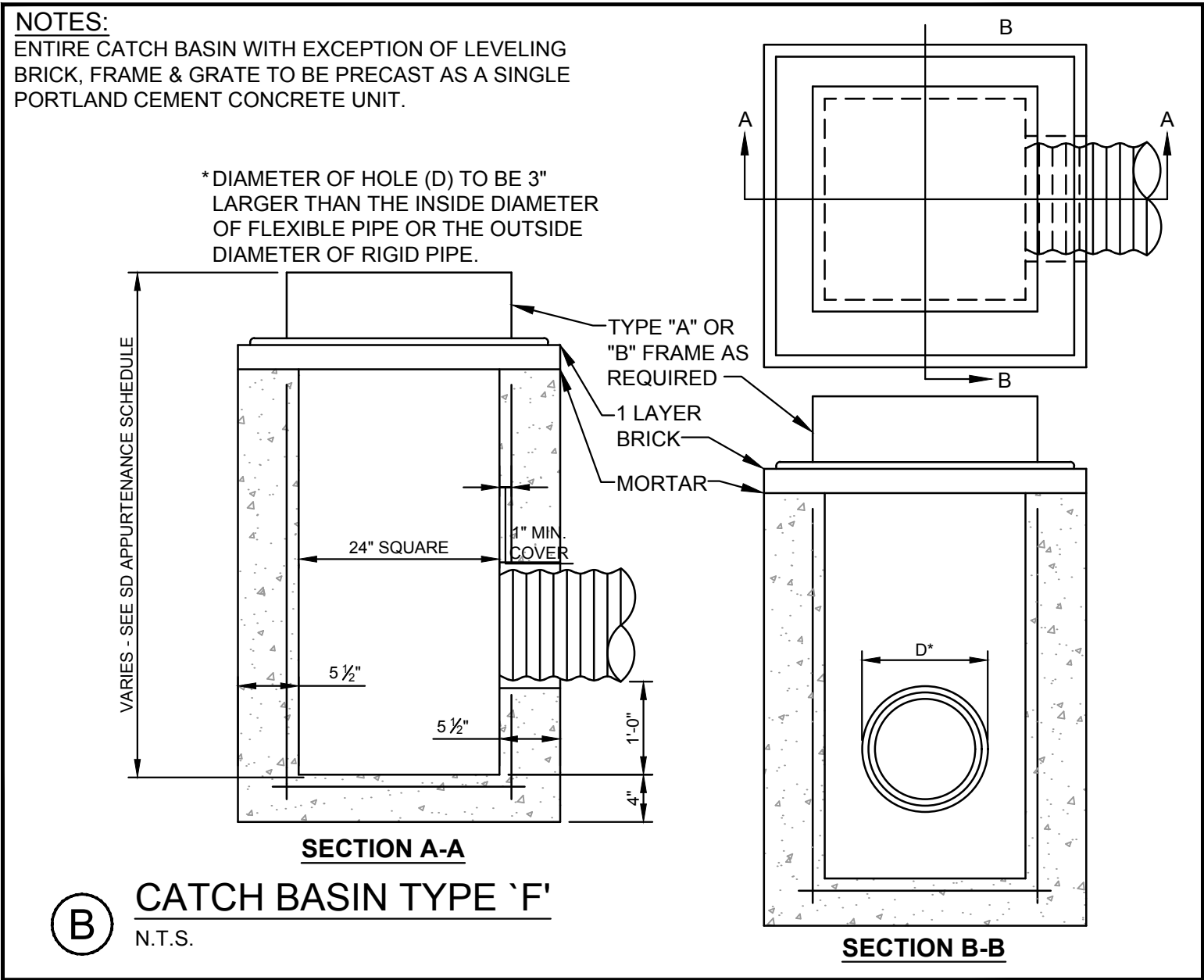
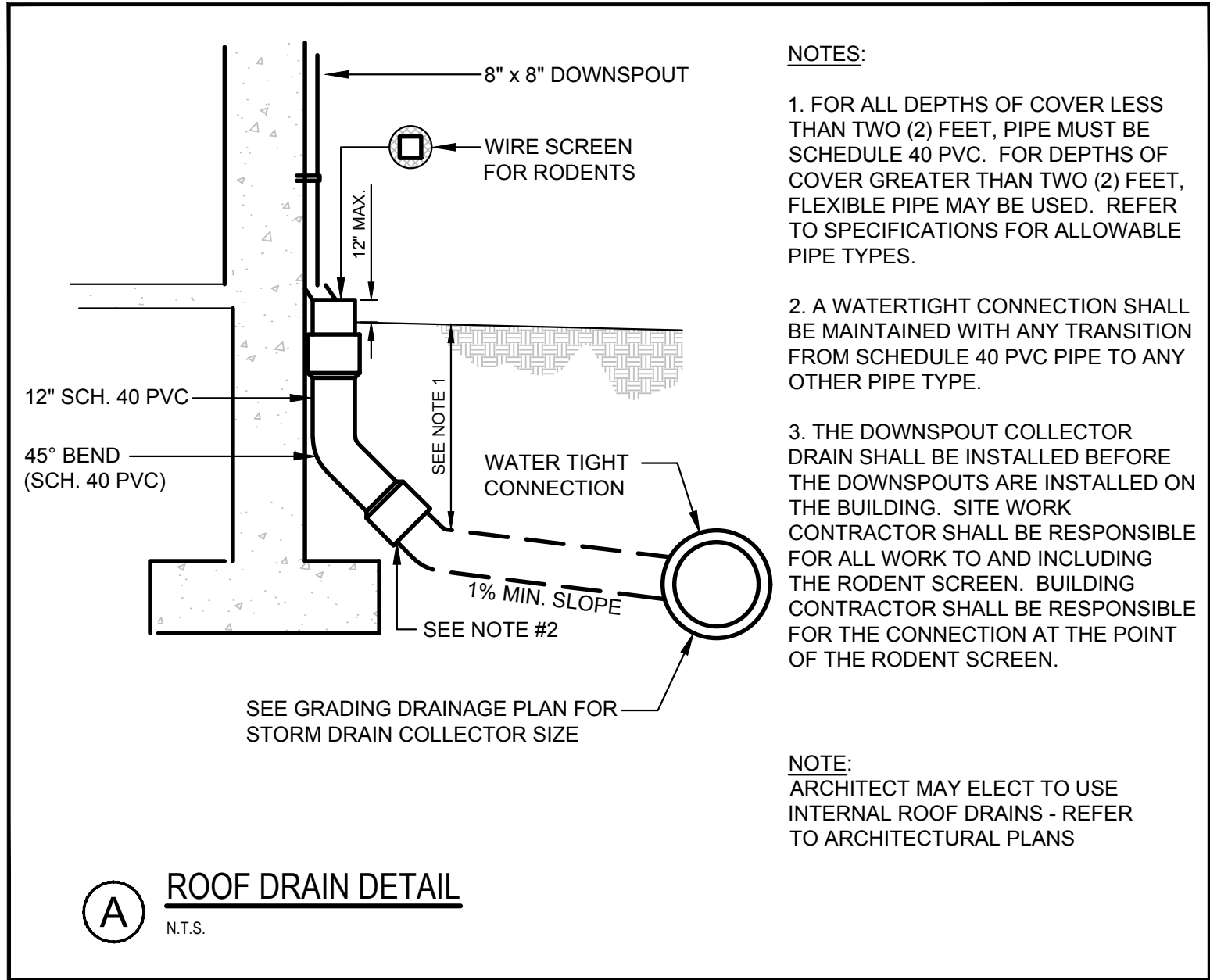
STEPHEN R. BUSHEY, P.E.
LIC. #7429

Design: SRB	Draft: CDD	Date: MAY 2021
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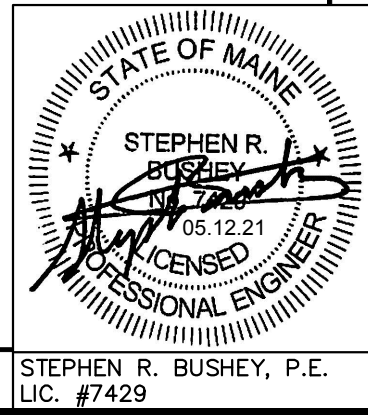


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LIC. #7429

Rev.	Date	Revision

Rev.	Date	Revision
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Checked: SRB	Scale: AS NOTED	Job No.: 3564.03
File Name: 356403-DETAILS.dwg		
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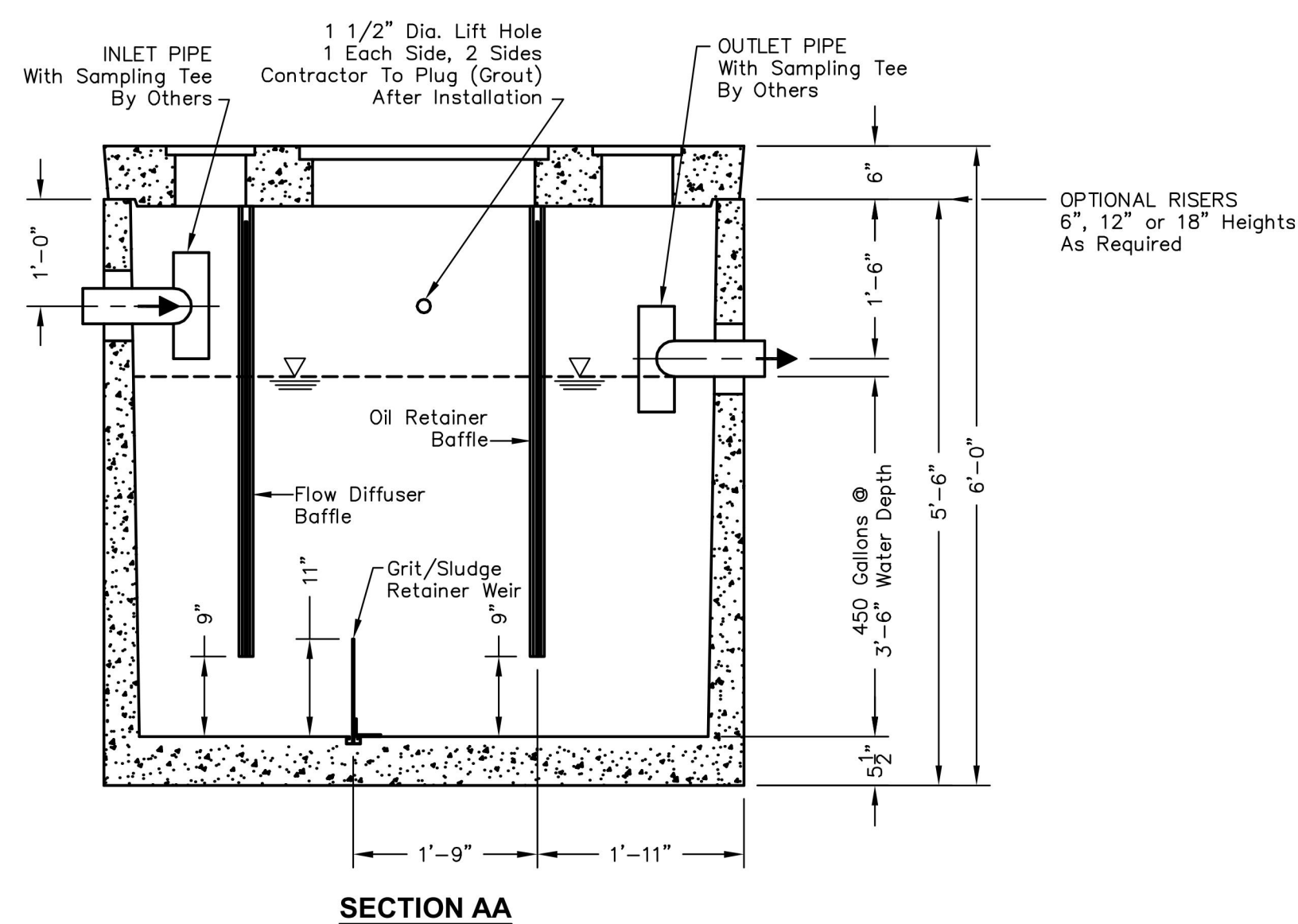


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Drawing Name:	STORM DRAIN & UTILITY DETAILS
Project:	Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.
C-8.2

660-SA

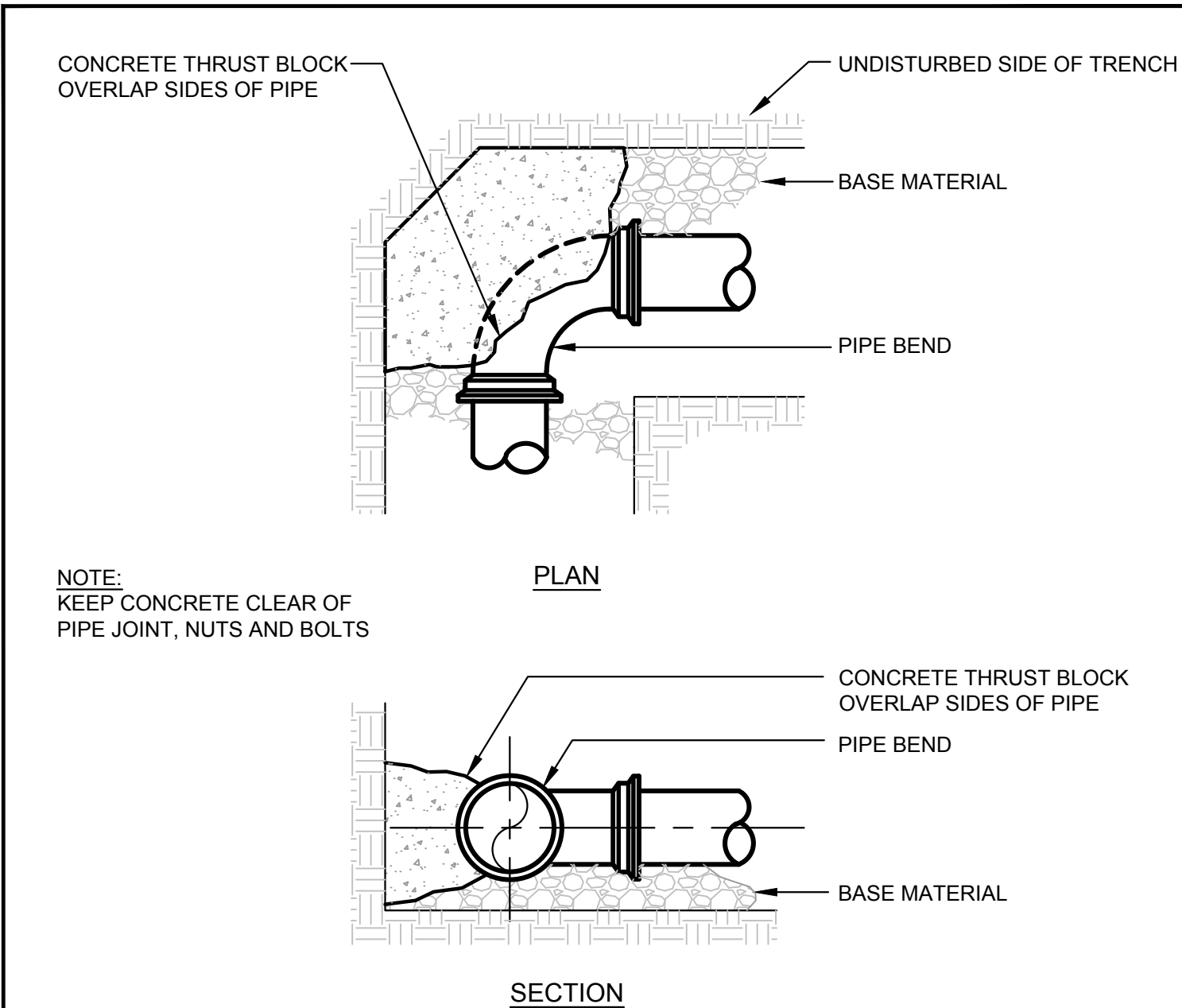
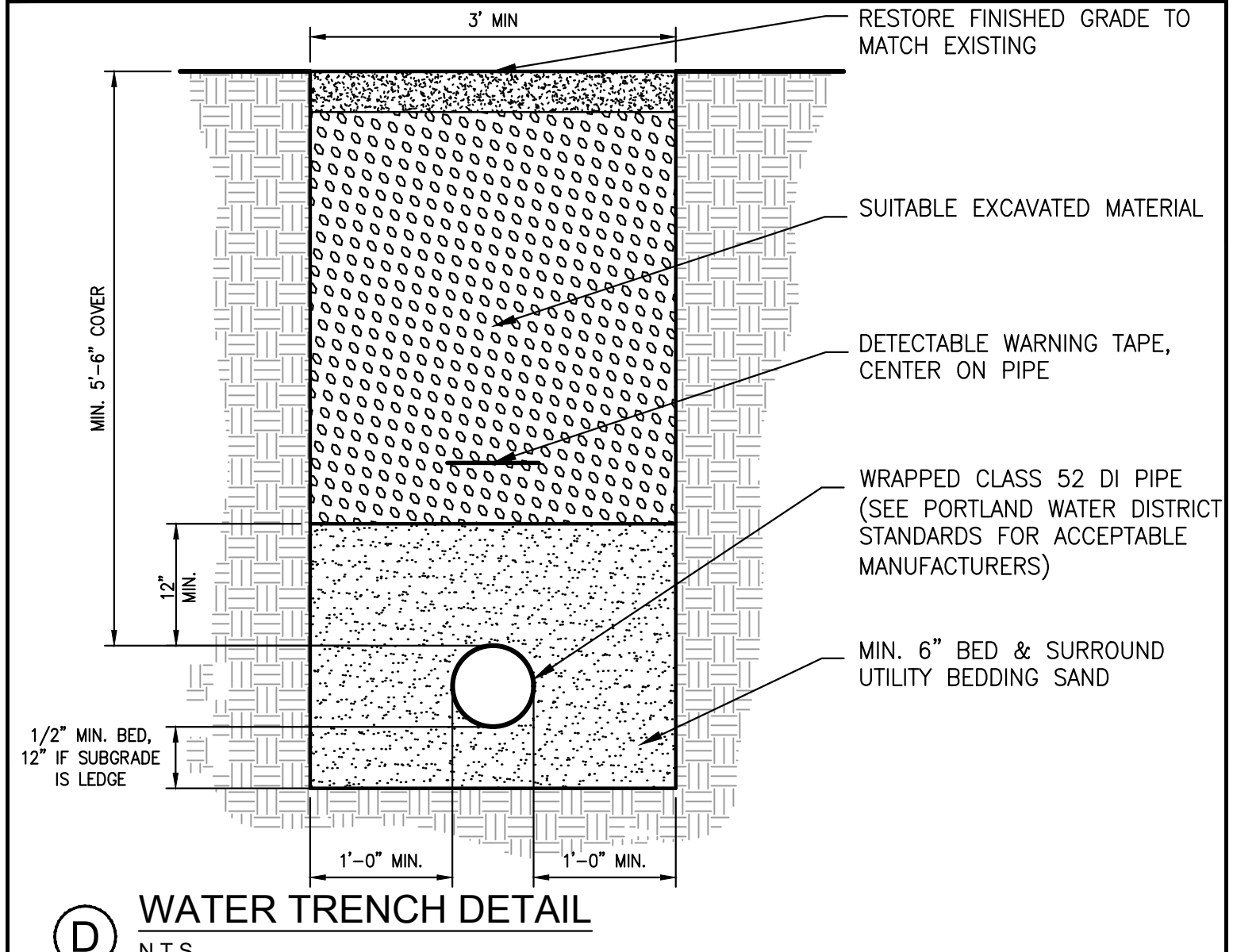
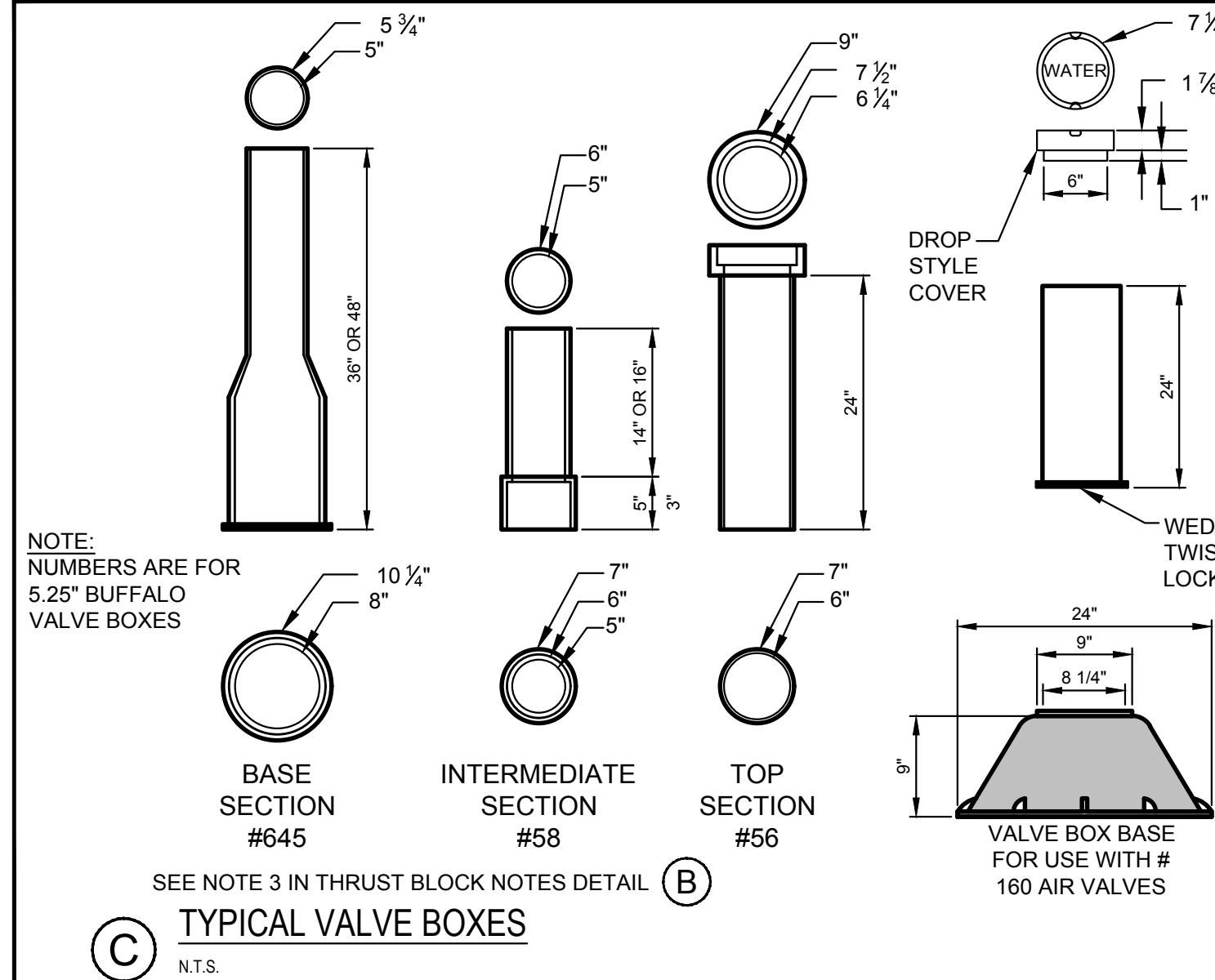
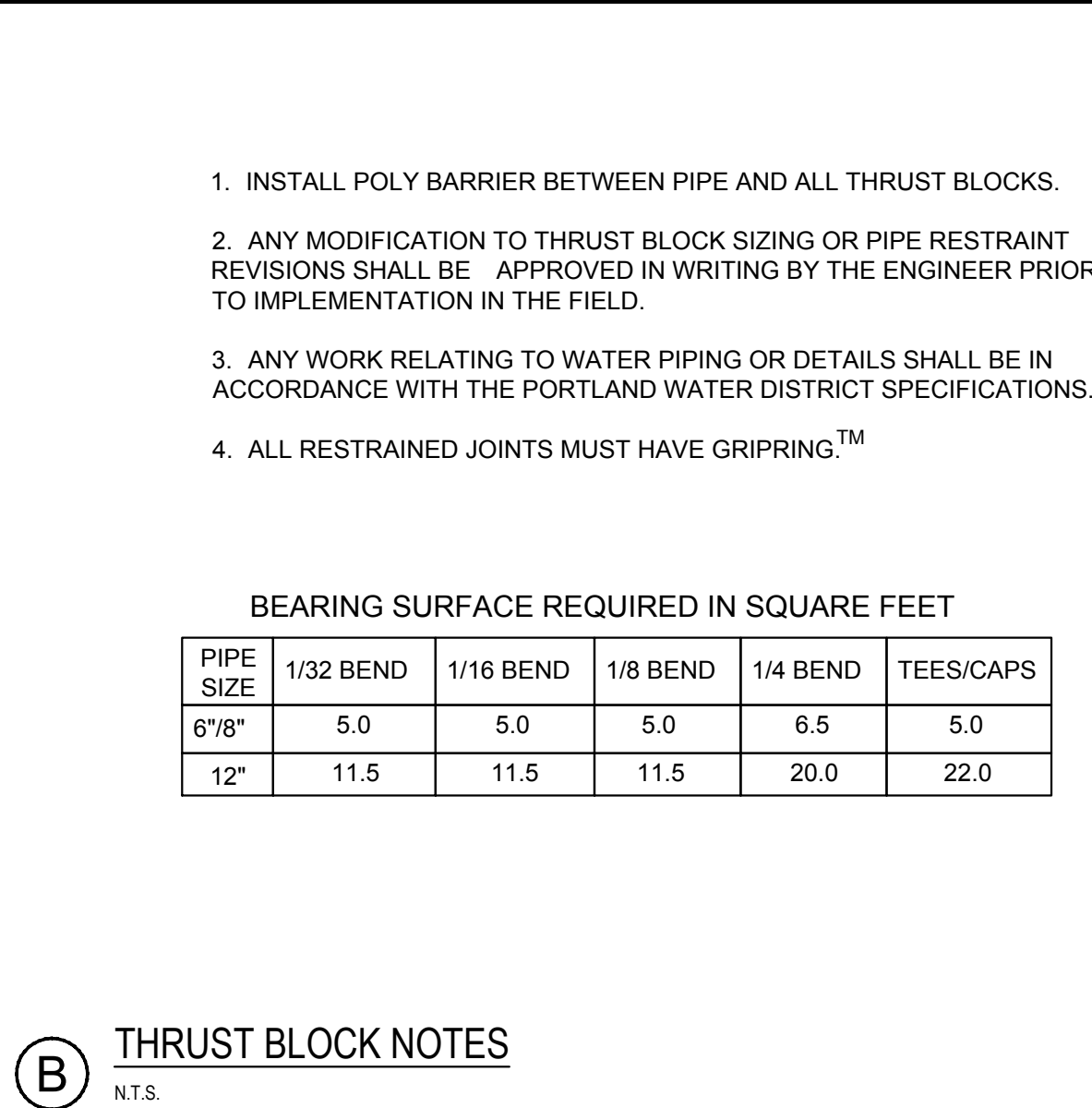
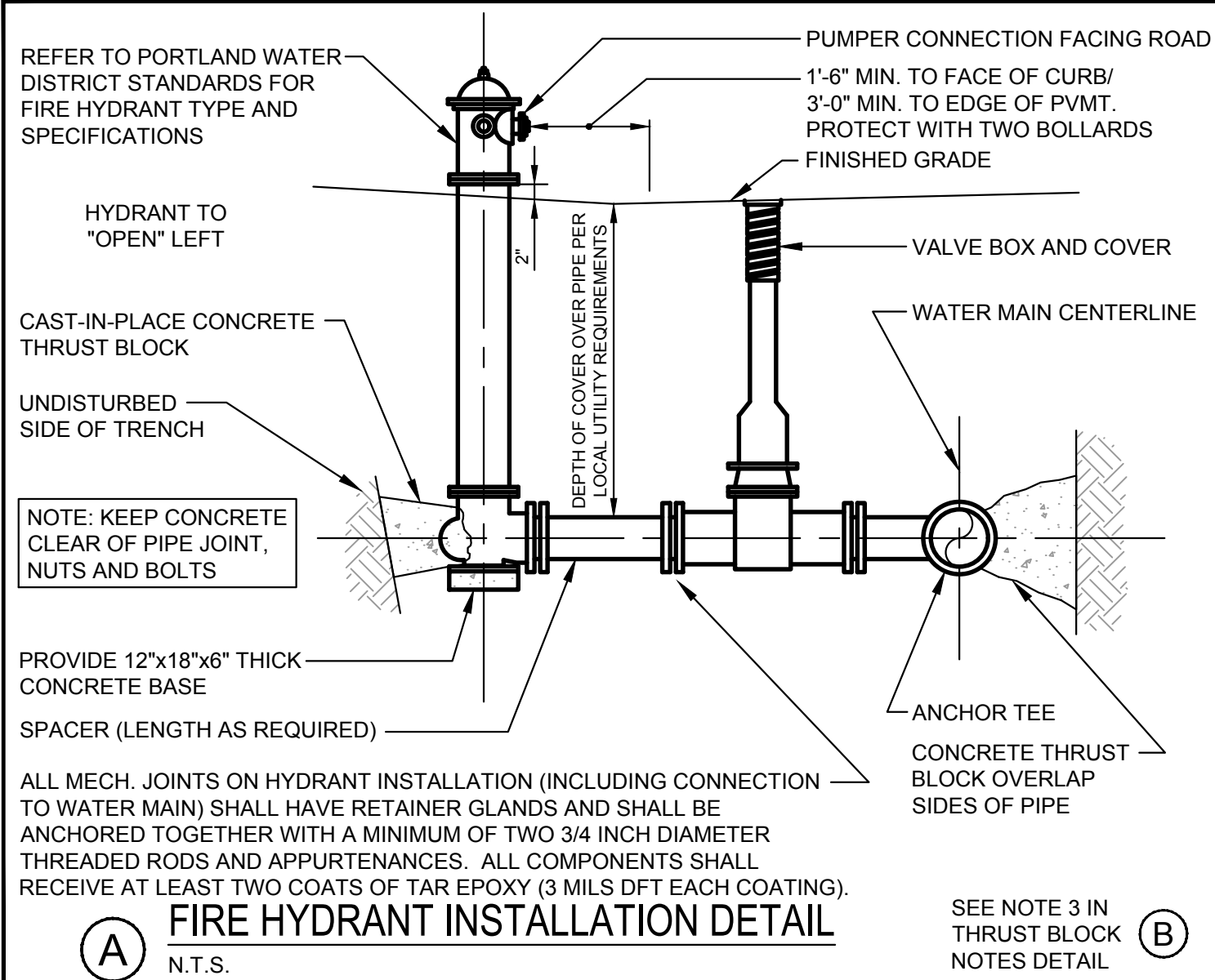


STEPHEN R. BUSHEY, P.E.
#7429

Drawing No.

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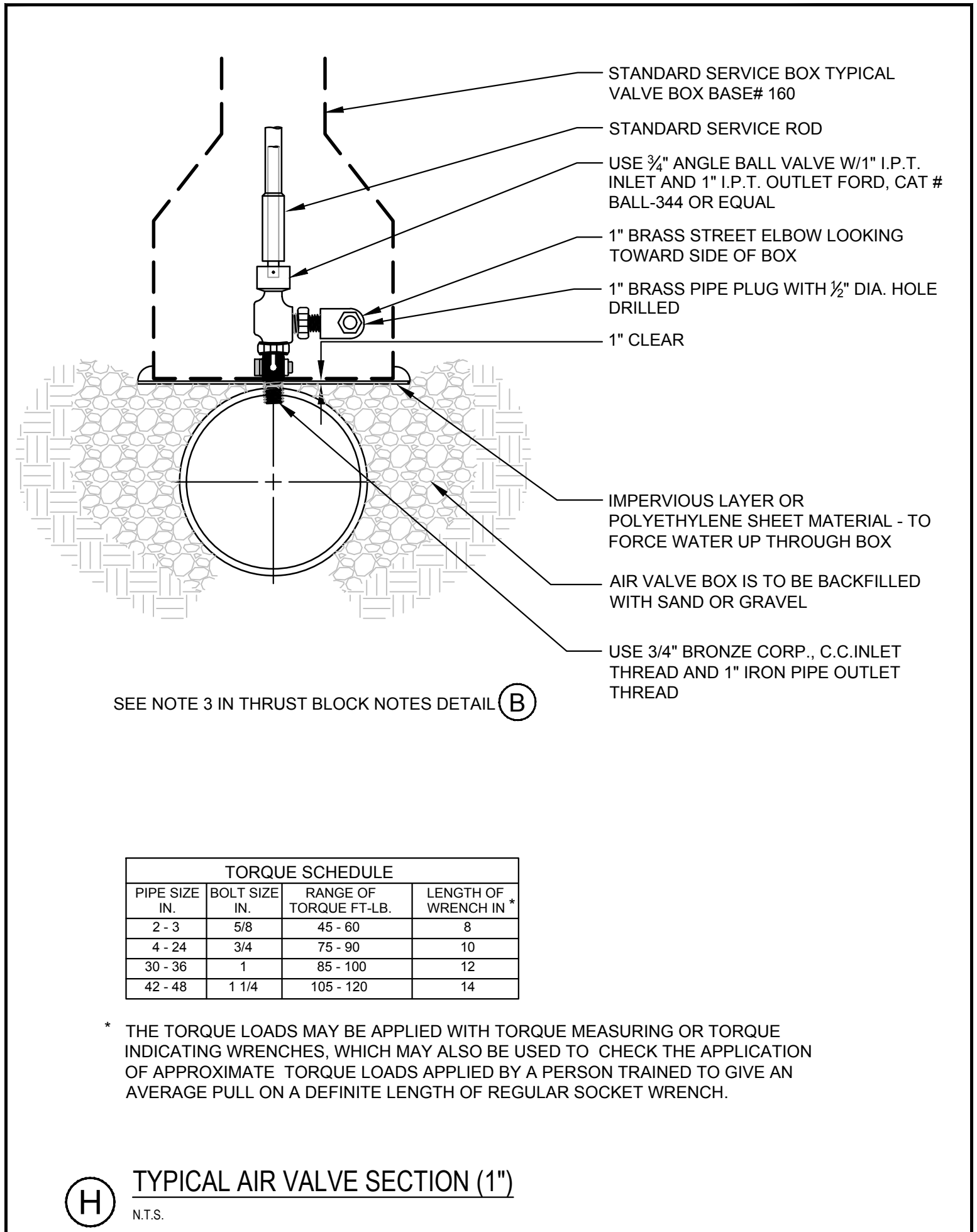
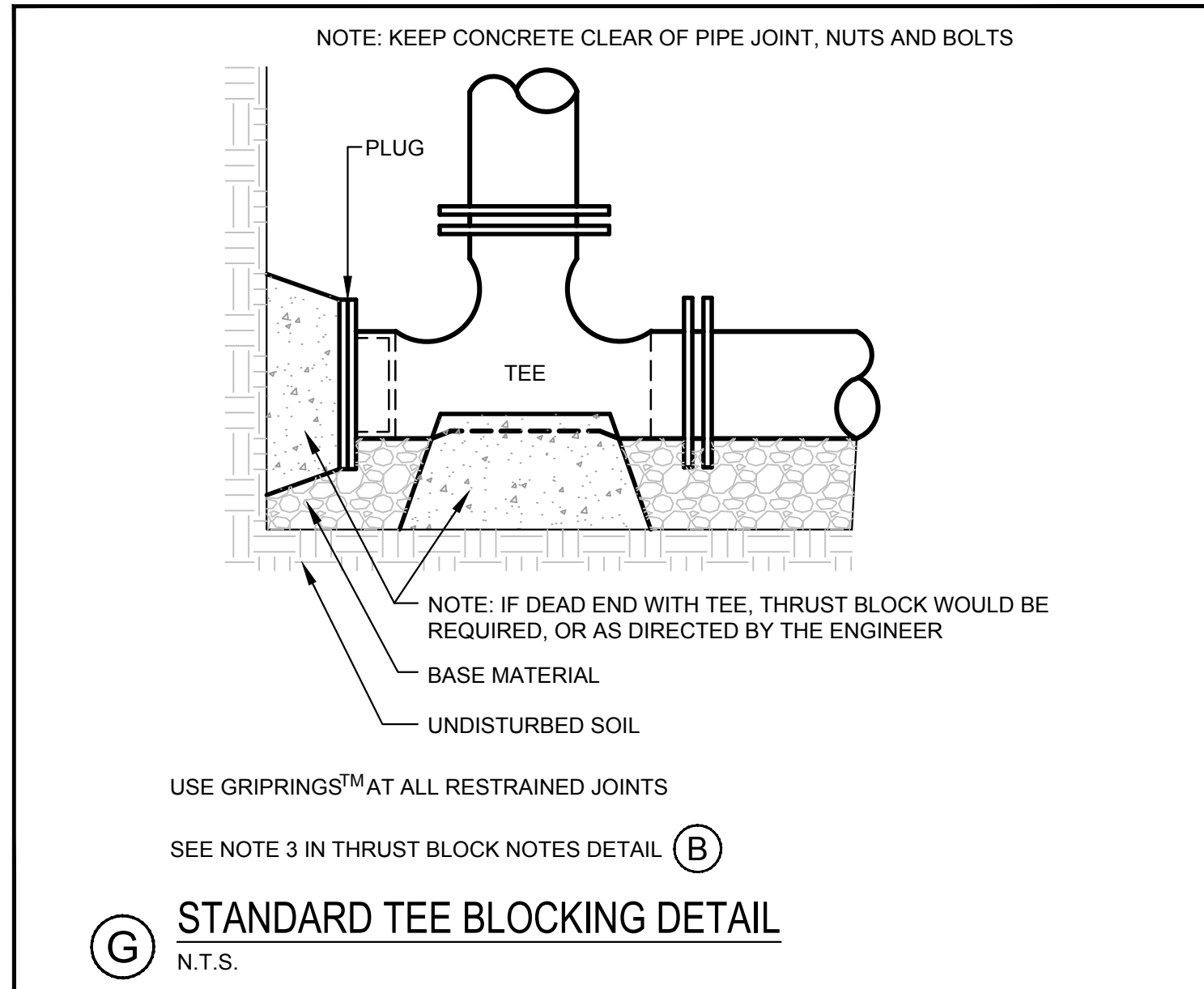
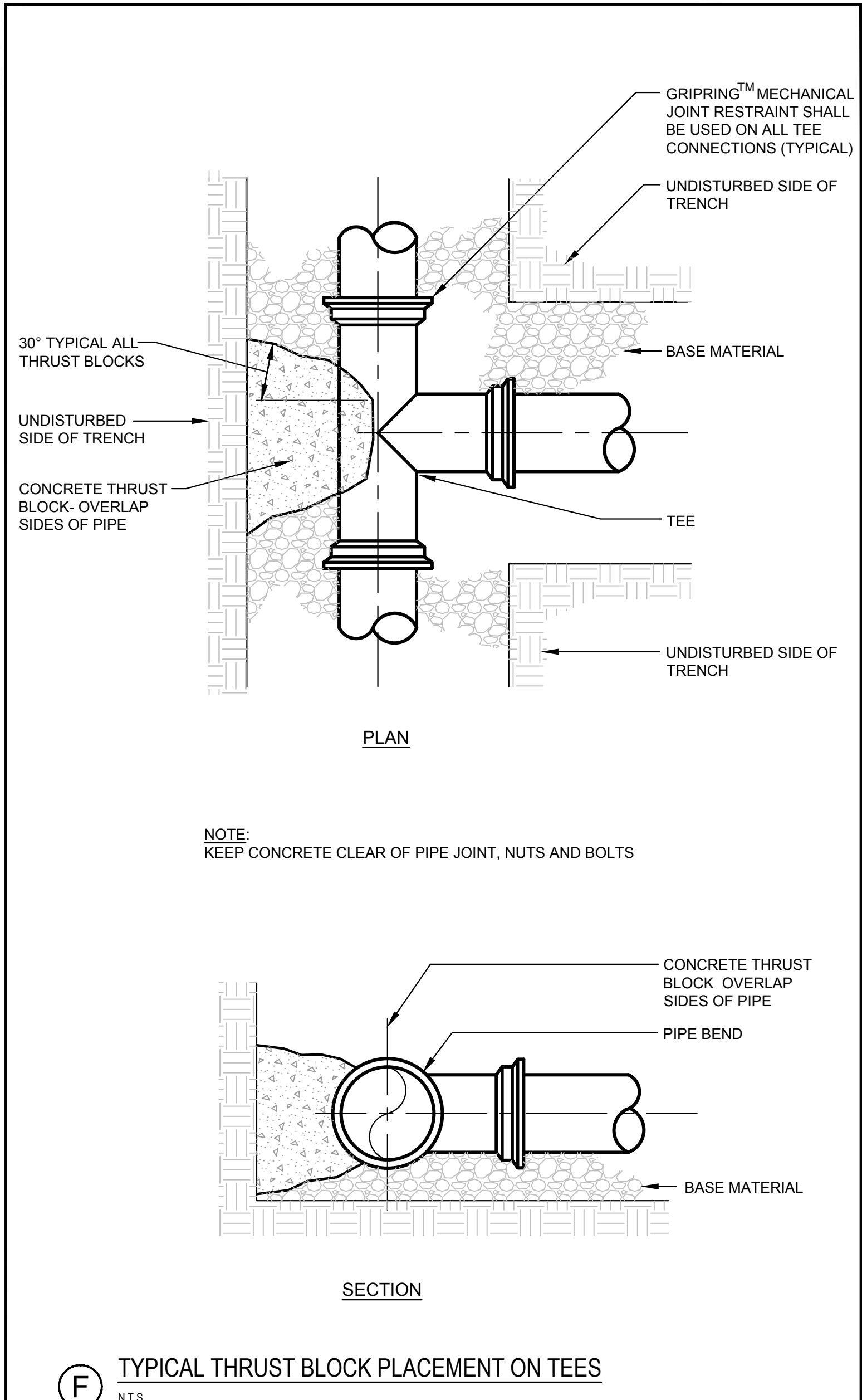


THRUST/RETAINER GLAND SCHEDULE		
1/4 BEND	(90°)	USE POURED-IN-PLACE THRUST BLOCK WITH GRIPRING™ MECHANICAL JOINT RESTRAINT
1/8 BEND	(45°)	THRUST BLOCK w/ GRIPRING™
1/16 BEND	(22 1/2°)	THRUST BLOCK w/ GRIPRING™
1/32 BEND	(11 1/4°)	THRUST BLOCK w/ GRIPRING™

THE ABOVE SCHEDULE IS SUBJECT TO THE APPROVAL OF THE ON-SITE INSPECTOR DUE TO SOILS AND WORKING PRESSURES IN THE AREA.

NOTES:

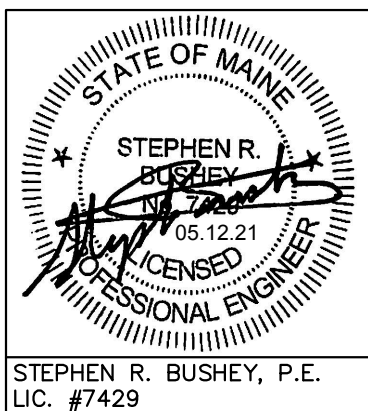
- THE PORTLAND WATER DISTRICT MAY HAVE INSPECTION FEES AND REQUIRE OBSERVATION OF ALL PIPING INSTALLATION BEFORE BURIAL. REFER TO SPECIFICATIONS.
- FOR WATER MAIN LAYOUT SEE SHEET C-5.0.
- FOR WATER MAIN TRENCH SEE DETAILS ON THIS SHEET.
- REFER TO PORTLAND WATER DISTRICT SPECIFICATIONS FOR TESTING AND CHLORINATION REQUIREMENTS.
- ALL HYDRANTS AND VALVES TO BE EPOXY COATED, NUTS AND BOLTS TO BE STAINLESS STEEL.
- SERVICE RODS FOR DOMESTIC SERVICE OR AIR VALVES TO BE STAINLESS STEEL.



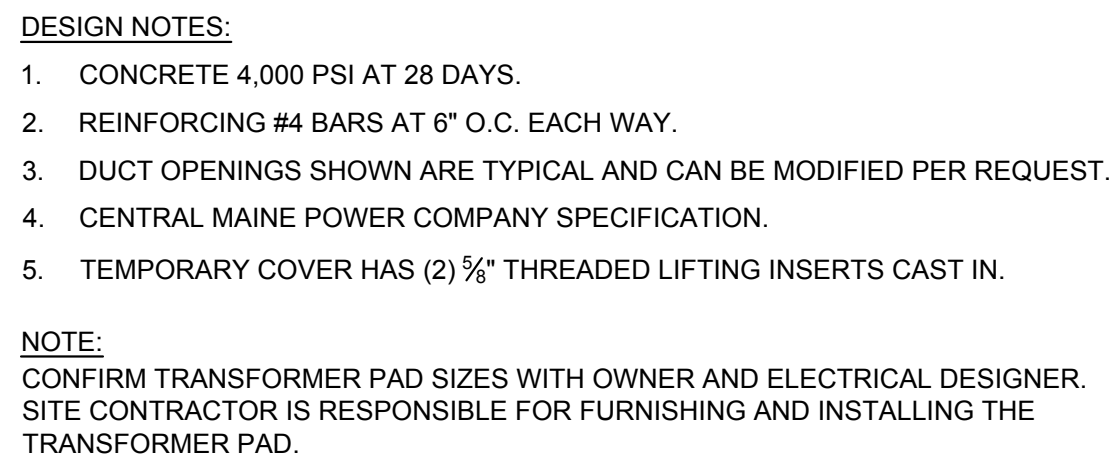
TORQUE SCHEDULE			
PIPE SIZE IN.	BOLT SIZE IN.	RANGE OF TORQUE FT-LB.	LENGTH OF WRENCH IN *
2 - 3	5/8	45 - 60	8
4 - 24	3/4	75 - 90	10
30 - 36	1	85 - 100	12
42 - 48	1 1/4	105 - 120	14

* THE TORQUE LOADS MAY BE APPLIED WITH TORQUE MEASURING OR TORQUE INDICATING WRENCHES, WHICH MAY ALSO BE USED TO CHECK THE APPLICATION OF APPROXIMATE TORQUE LOADS APPLIED BY A PERSON TRAINED TO GIVE AN AVERAGE PULL ON A DEFINITE LENGTH OF REGULAR SOCKET WRENCH.

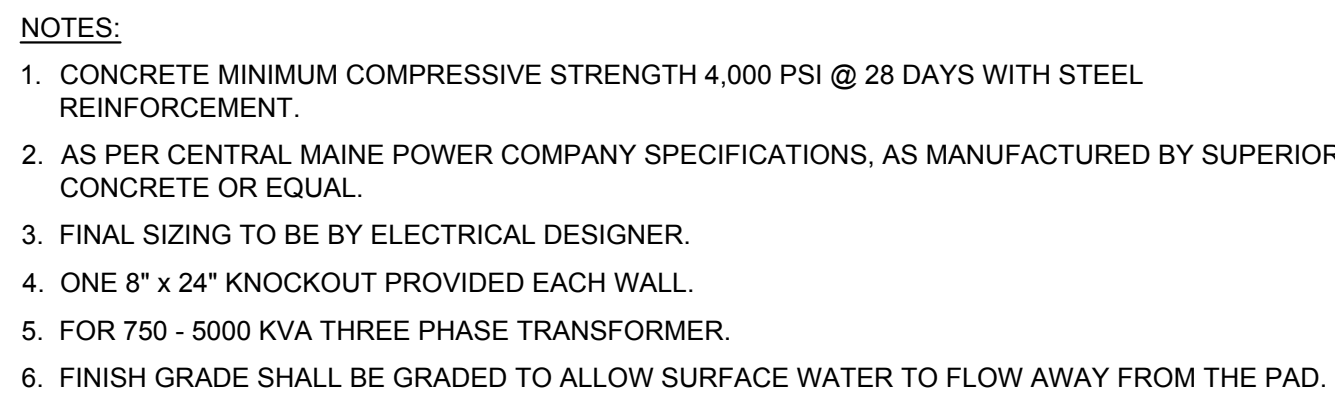
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Rev.	Date	Revision	1 2021.05.12 SUBMITTED TO CITY FOR REVIEW		Project: Stevens Square at Baxter Woods - Phase 2 583 Stevens Avenue, Portland, Maine Client/Owner: DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696	



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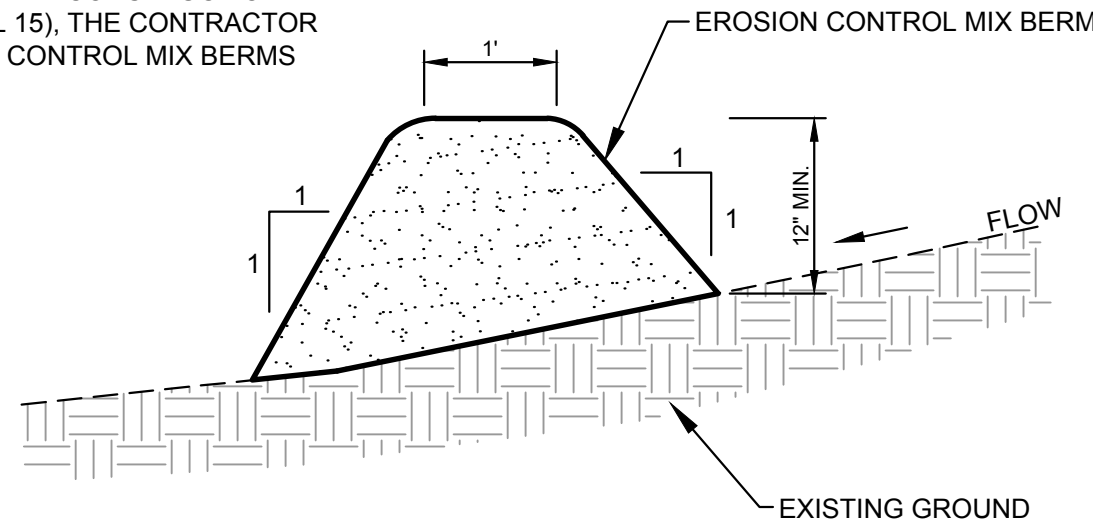
Drawing Name:	ELECTRIC & UTILITY DETAILS		
Project:	Stevens Square at Baxter Woods – Phase 2 583 Stevens Avenue, Portland, Maine		
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696		

Drawing No.

C-8.5

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NOTE:
DURING PERIODS OF WINTER CONSTRUCTION (NOV. 15 THROUGH APRIL 15), THE CONTRACTOR SHALL INSTALL EROSION CONTROL MIX BERMS IN LIEU OF SILT FENCE.



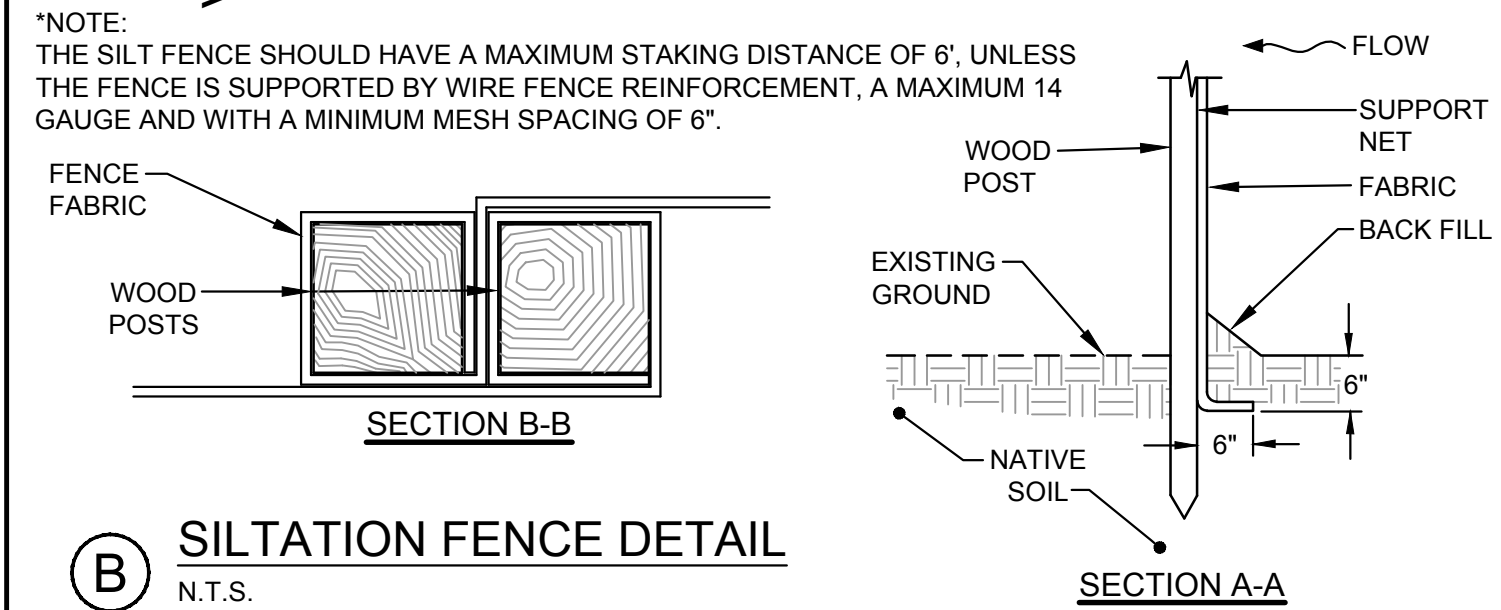
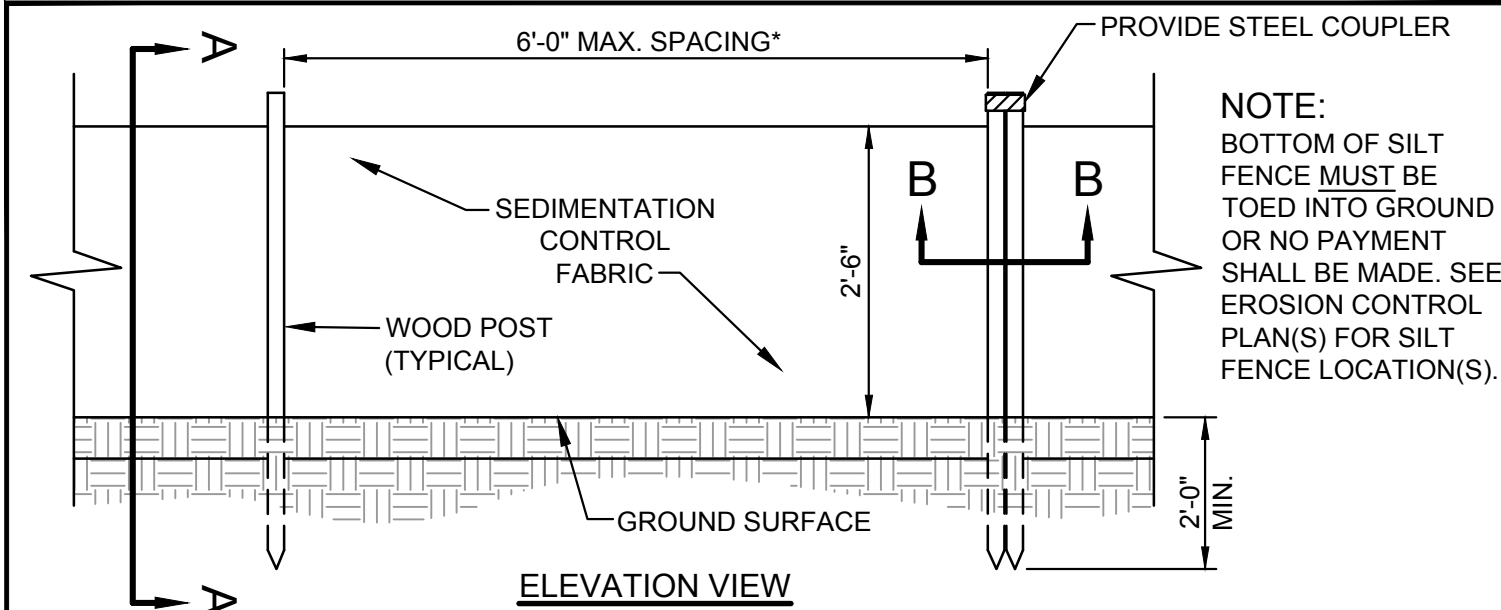
EROSION CONTROL MIX:

EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES & MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:

- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100%, DRY WEIGHT BASIS.
- PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85%, PASSING A 0.75" SCREEN.
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- SOLUBLE SALTS CONTENT SHALL BE < 4.0 mmhos/cm.
- PH SHALL FALL BETWEEN 5.0 AND 8.0.

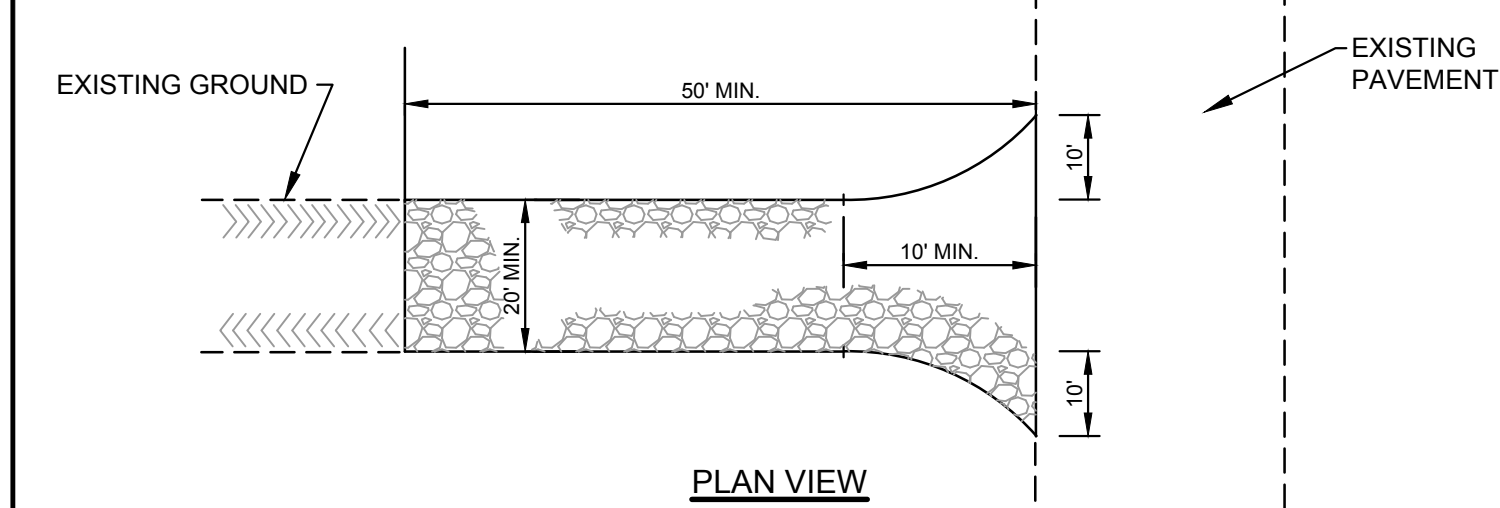
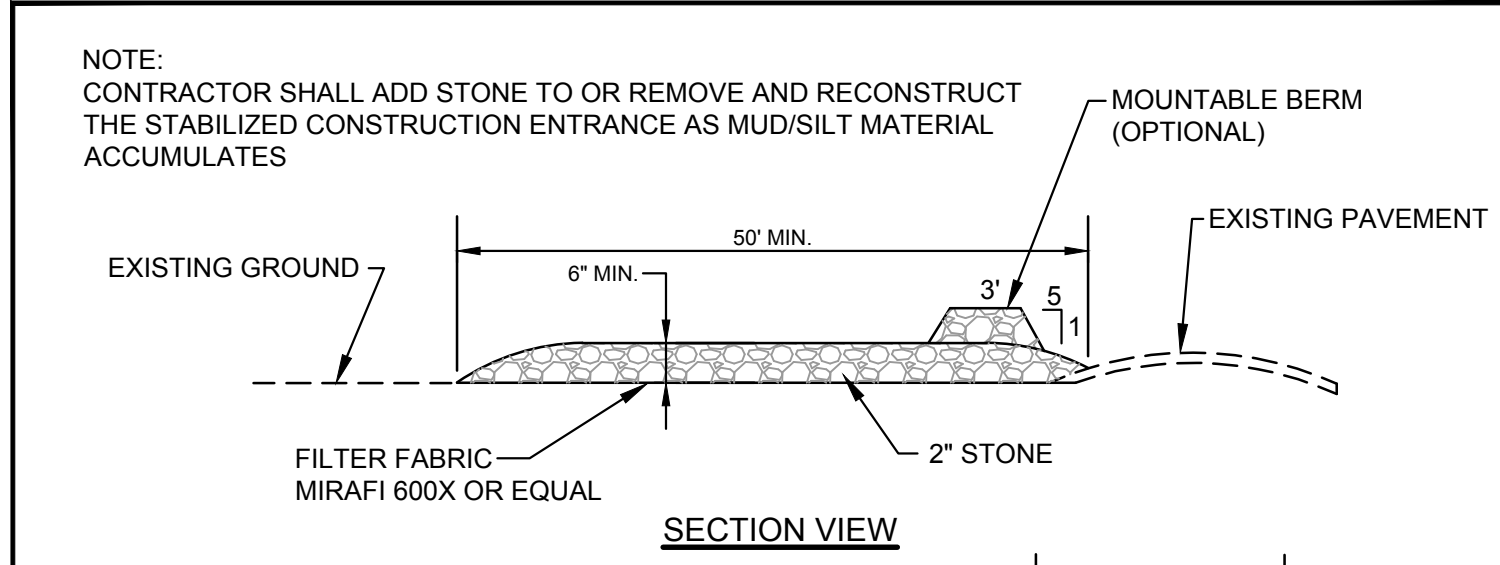
EROSION CONTROL MIX BERM DETAIL

N.T.S.



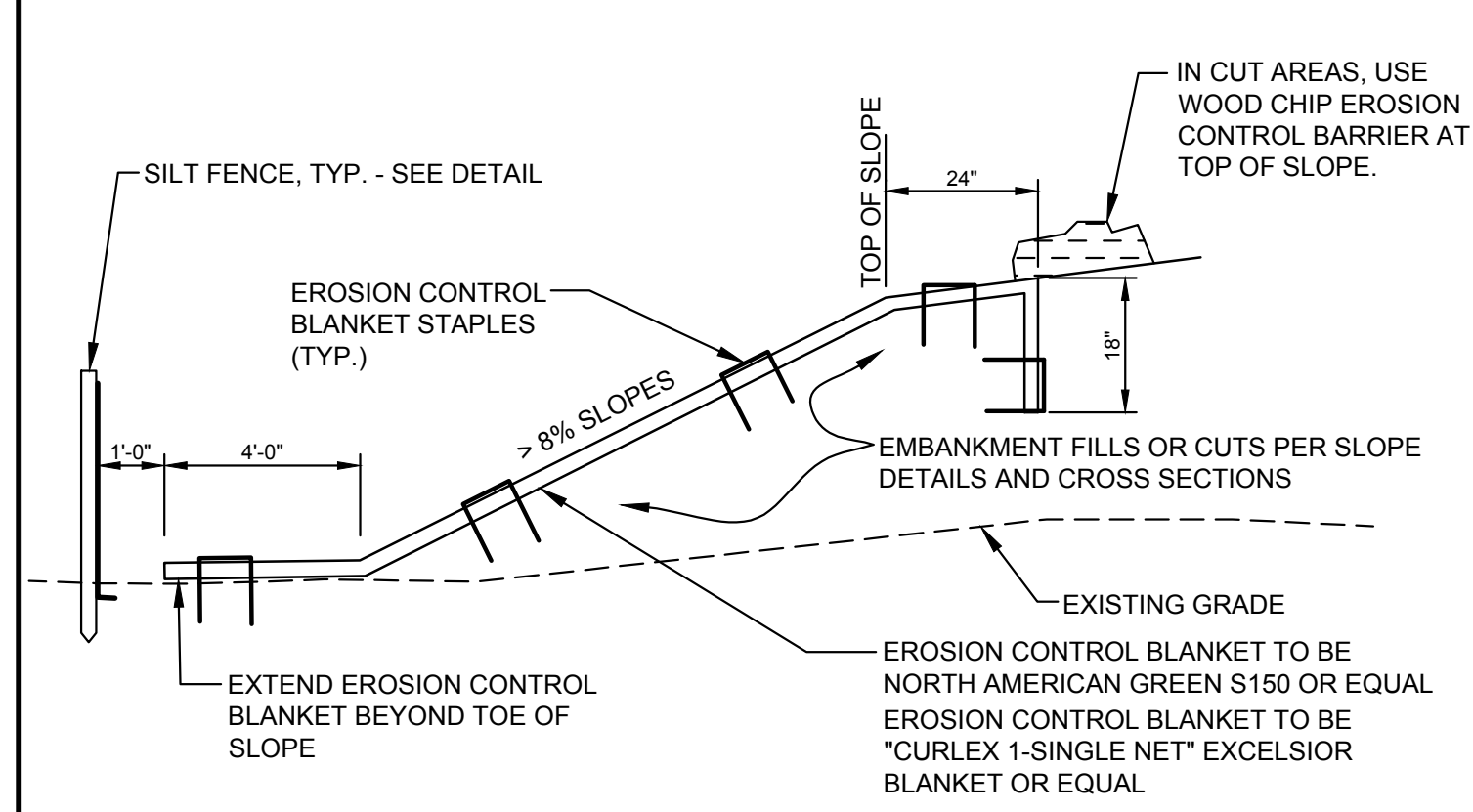
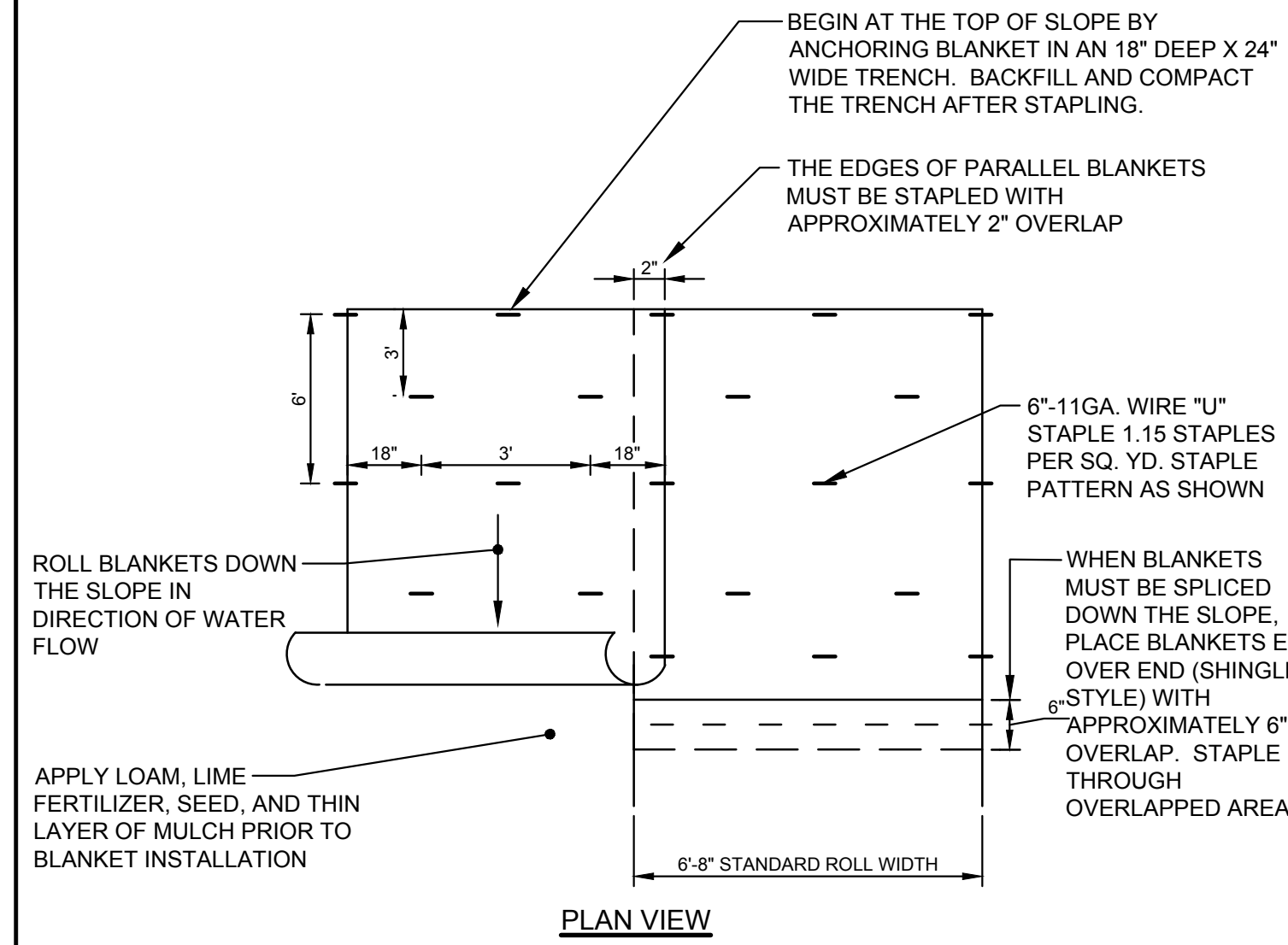
SILTATION FENCE DETAIL

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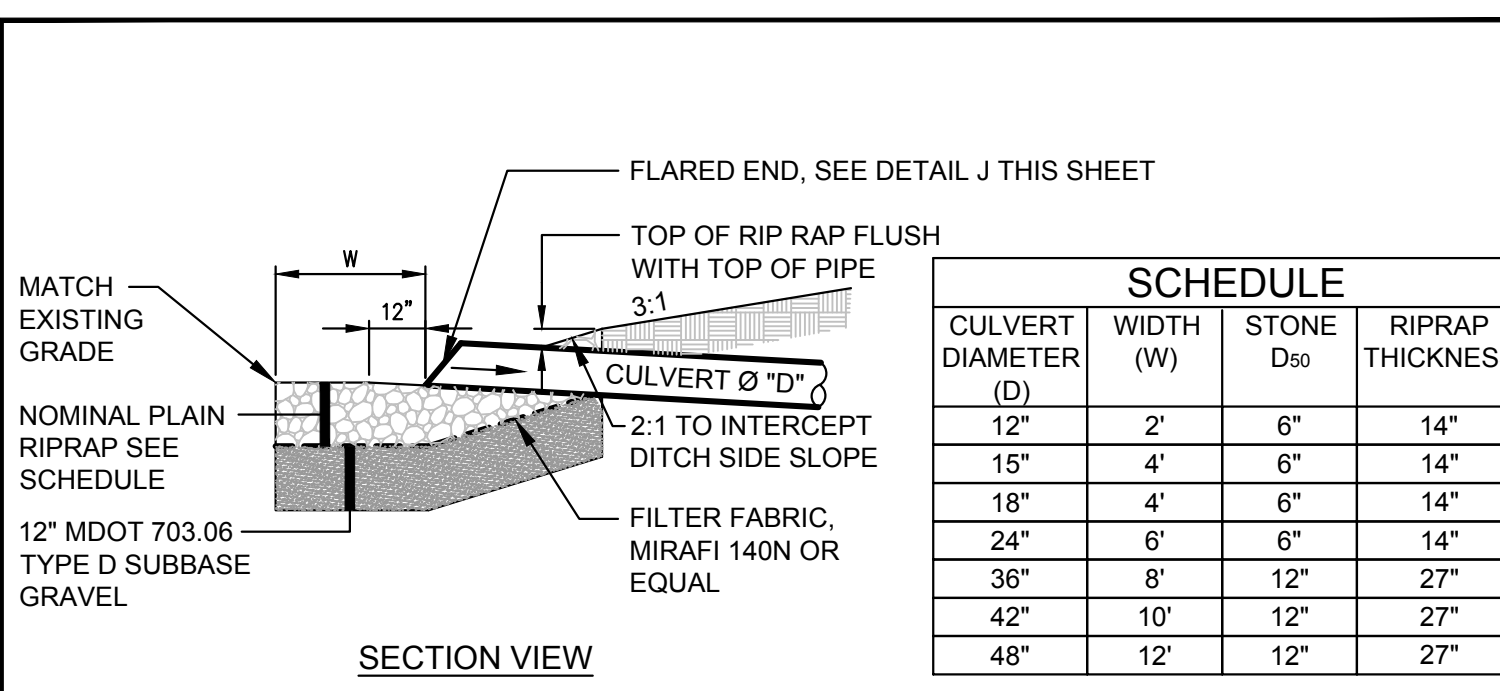
STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.



EROSION CONTROL BLANKET SLOPE STABILIZATION DETAIL

N.T.S.

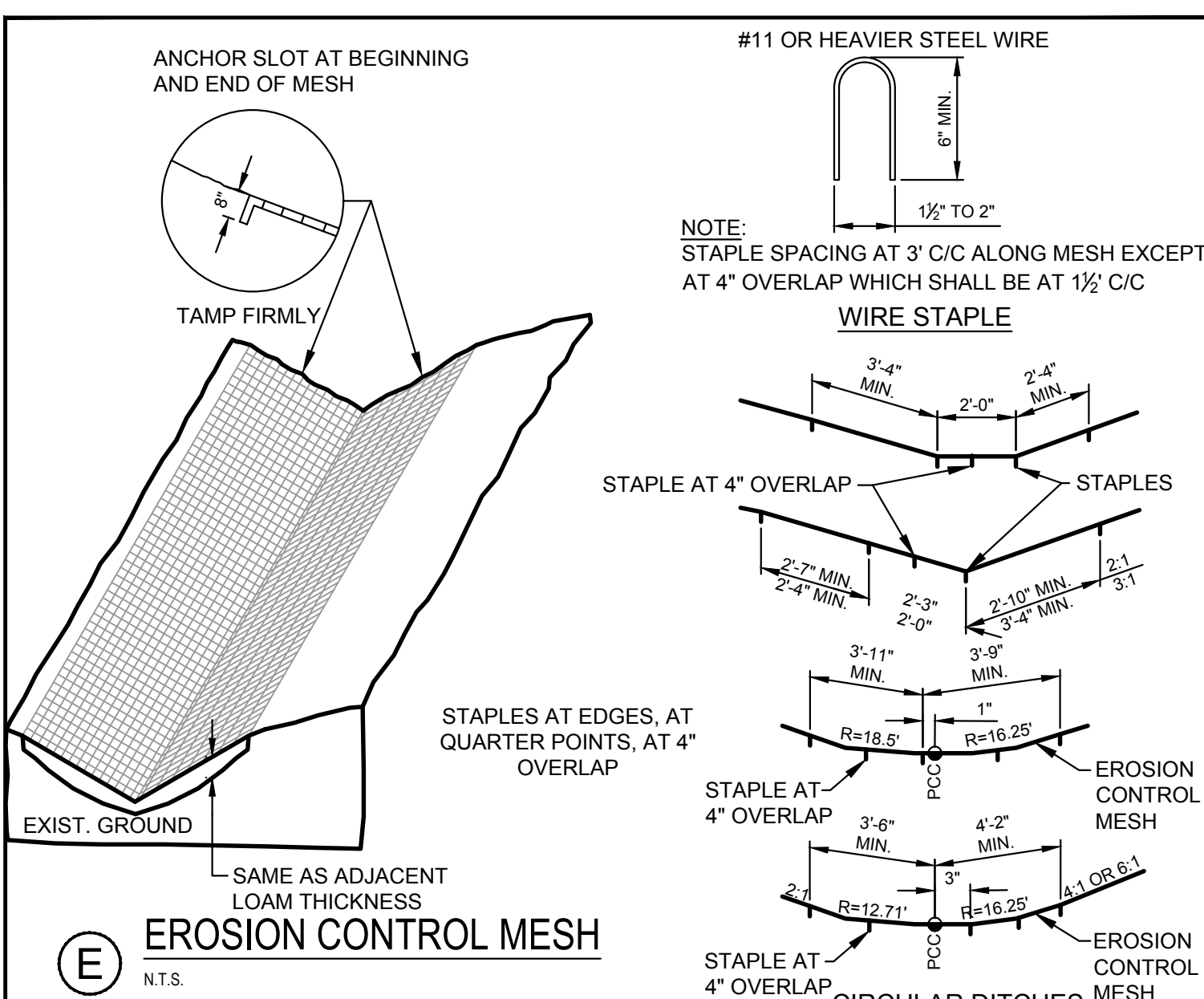


SCHEDULE			
CULVERT DIAMETER (D)	WIDTH (W)	STONE D ₅₀	RIPRAP THICKNESS
12"	2'	6"	14"
15"	4'	6"	14"
18"	4'	6"	14"
24"	6'	6"	14"
36"	8'	12"	27"
42"	10'	12"	27"
48"	12'	12"	27"

NOTE:
RIPRAP GRADATION AND PLACEMENT - THE RIPRAP GRADATION SHALL BE A WELL-GRADED MIX FROM ABOUT 1.5 TIMES THE D SIZE TO ABOUT 25 PERCENT OF THE D SIZE. THE RIPRAP STONES SHALL BE CAREFULLY PLACED WORKING FROM THE TOE OF THE SLOPE UPWARD. THE STONES SHOULD BE LOWERED TO THE SLOPE AND NOT BE ALLOWED TO DROP MORE THAN 12 INCHES ONTO THE GEOTEXTILE. THE FINISHED SURFACE SHALL BE A RELATIVELY SMOOTH UNIFORMLY SLOPED SURFACE.

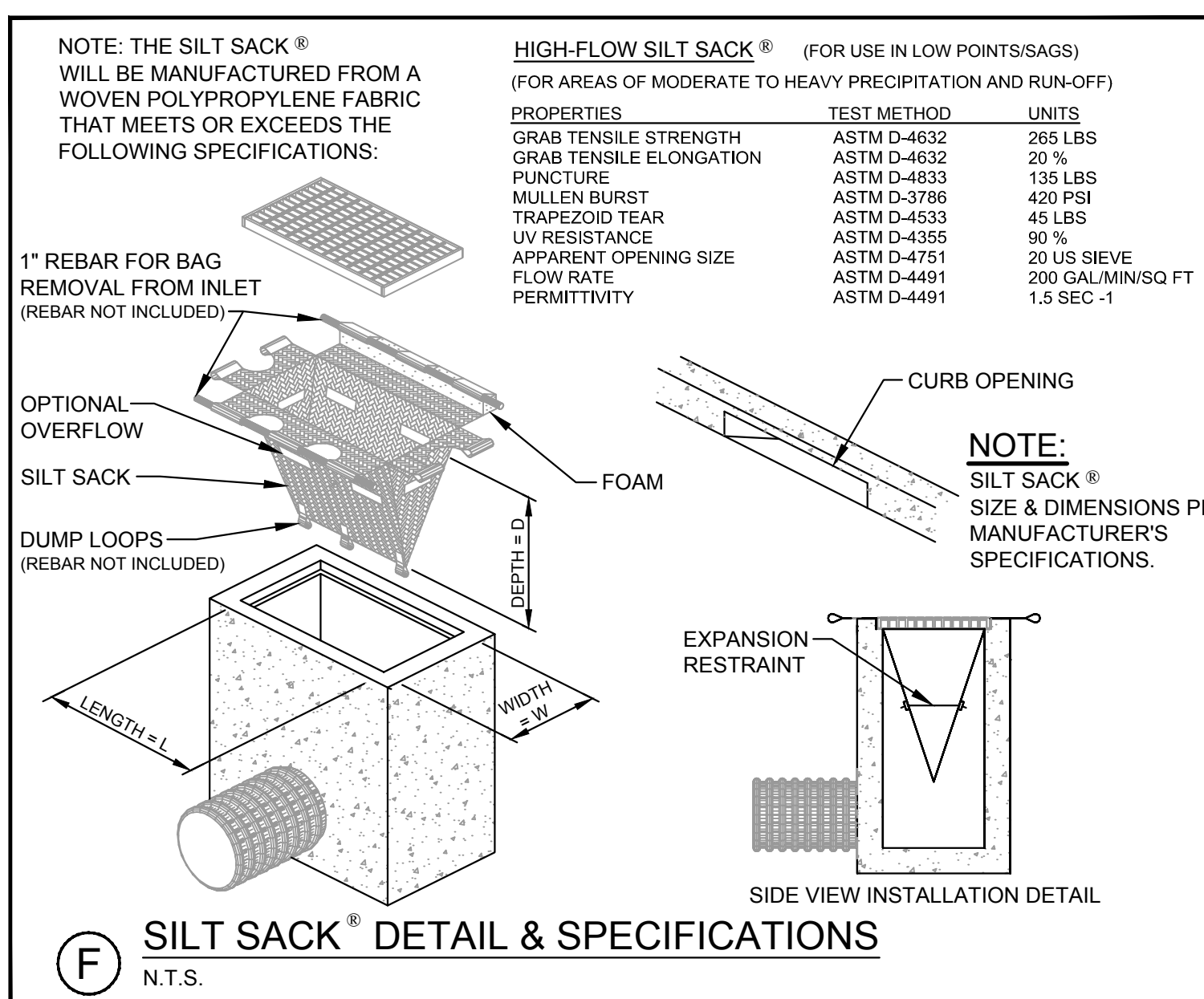
PIPE/CULVERT INLET APRON

N.T.S.



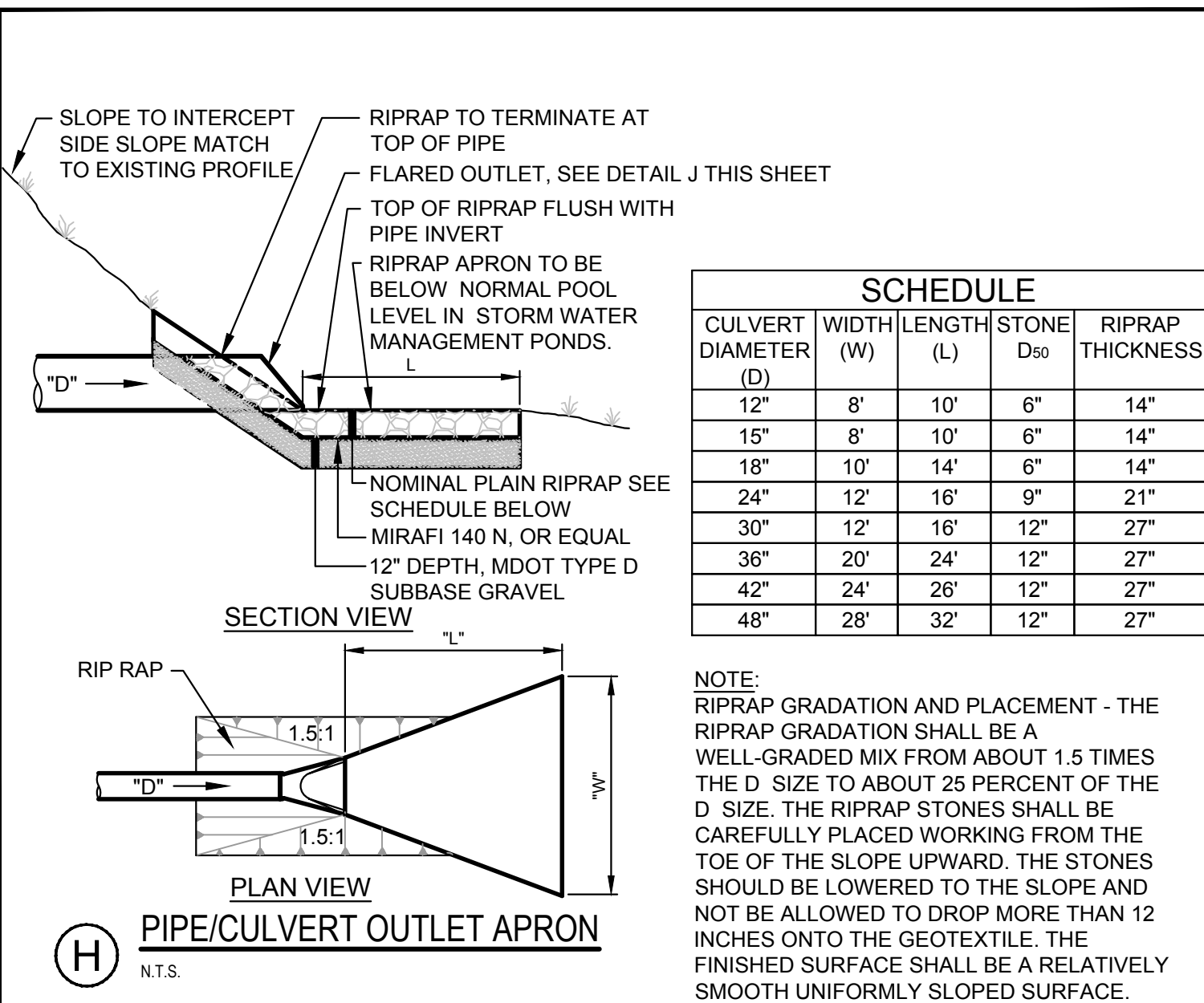
EROSION CONTROL MESH

N.T.S.



SILT SACK ® DETAIL & SPECIFICATIONS

N.T.S.

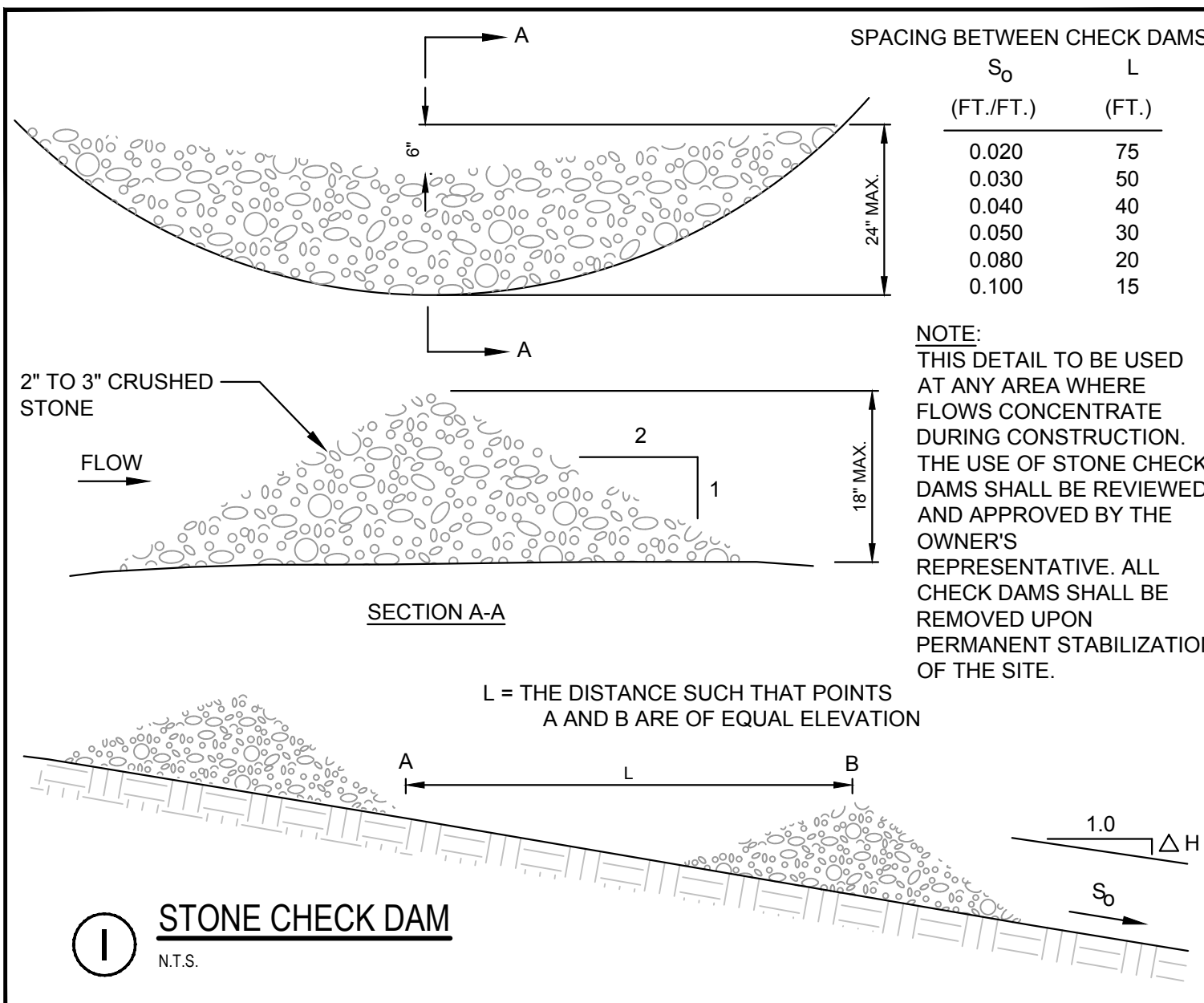


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NOTE:
RIPRAP GRADATION AND PLACEMENT - THE RIPRAP GRADATION SHALL BE A WELL-GRADED MIX FROM ABOUT 1.5 TIMES THE D SIZE TO ABOUT 25 PERCENT OF THE D SIZE. THE RIPRAP STONES SHALL BE CAREFULLY PLACED WORKING FROM THE TOE OF THE SLOPE UPWARD. THE STONES SHOULD BE LOWERED TO THE SLOPE AND NOT BE ALLOWED TO DROP MORE THAN 12 INCHES ONTO THE GEOTEXTILE. THE FINISHED SURFACE SHALL BE A RELATIVELY SMOOTH UNIFORMLY SLOPED SURFACE.

PIPE/CULVERT OUTLET APRON

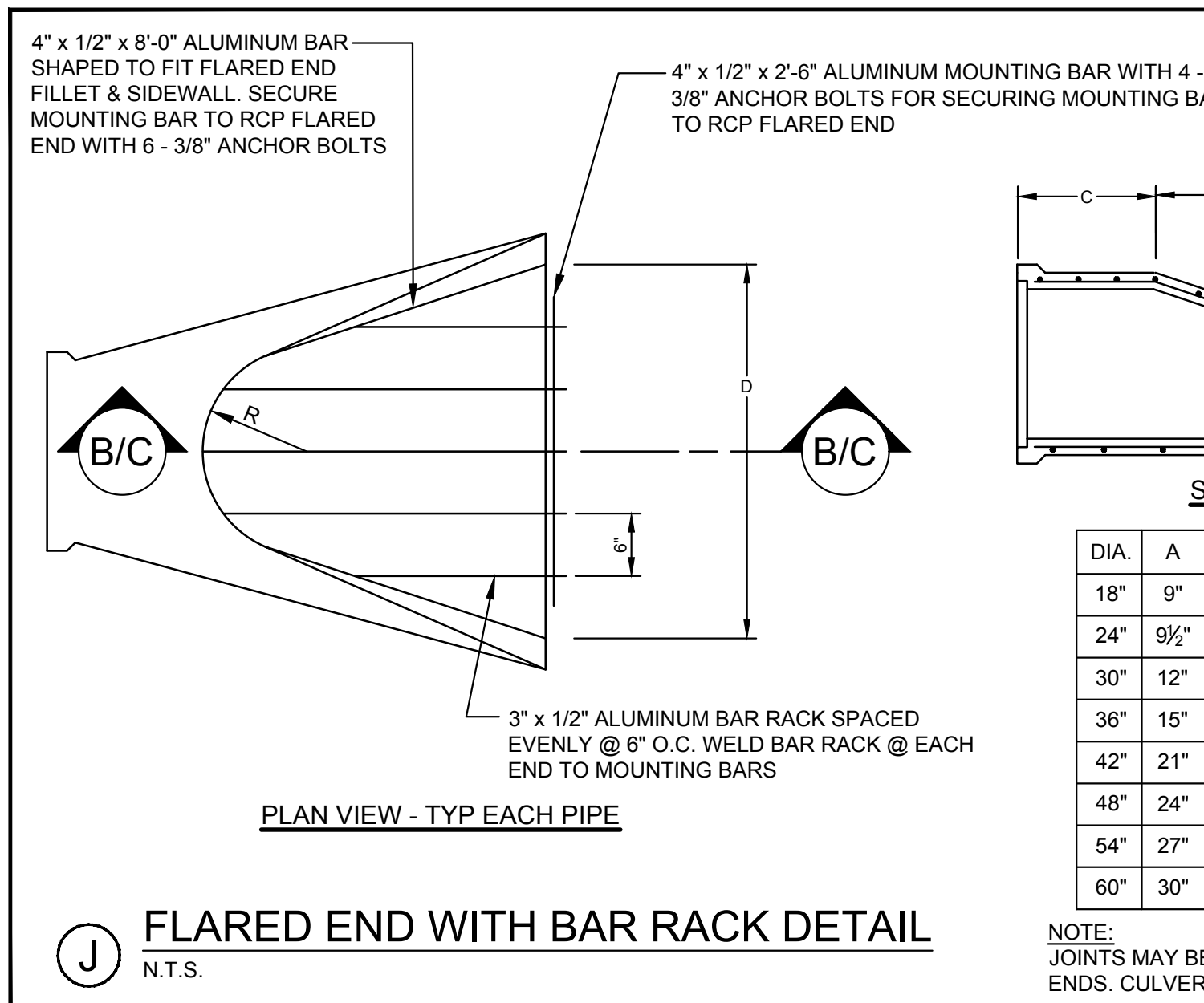
N.T.S.



SPACING BETWEEN CHECK DAMS	
S ₀ (FT./FT.)	L (FT.)
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	15

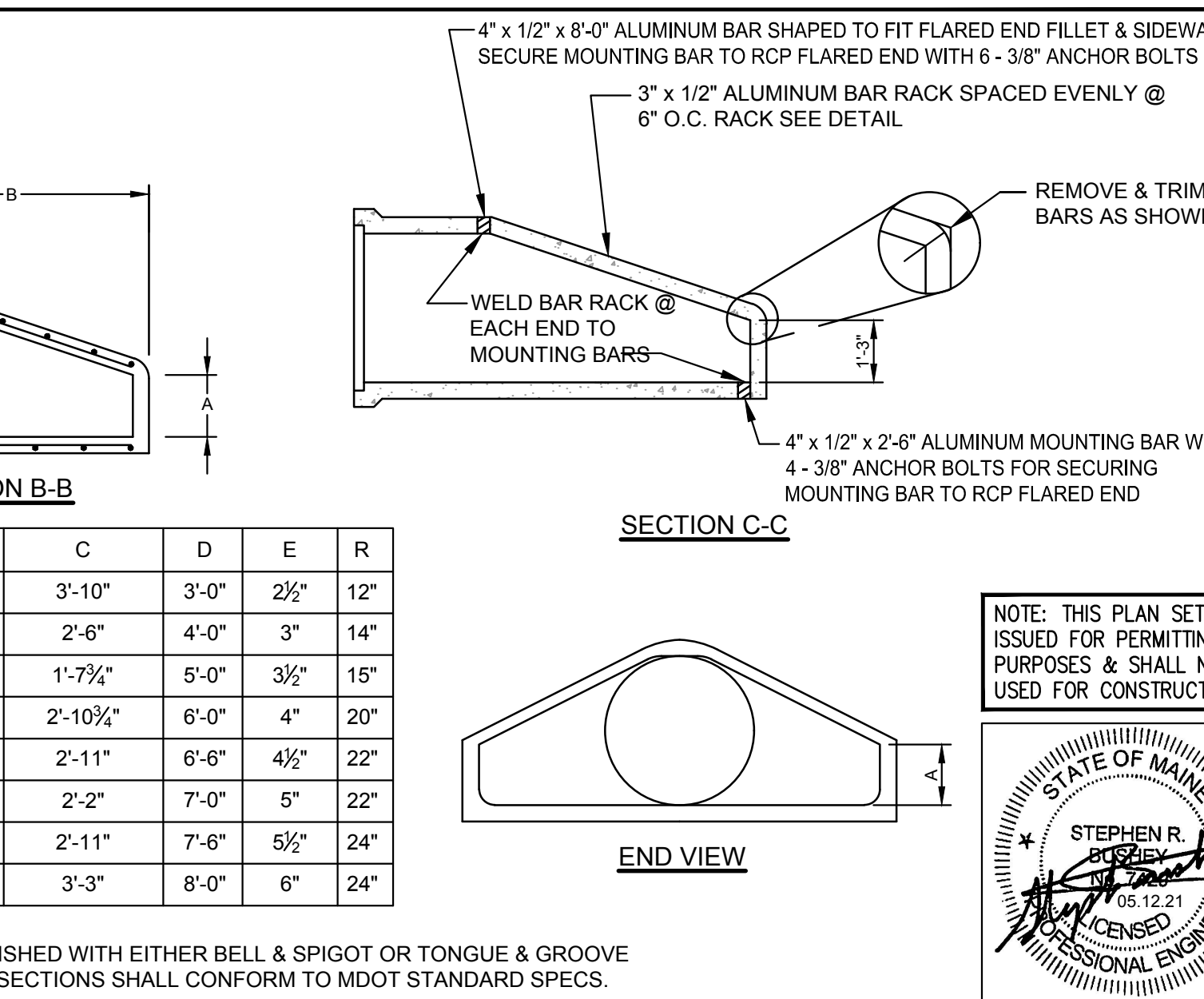
STONE CHECK DAM

N.T.S.



FLARED END WITH BAR RACK DETAIL

N.T.S.



EROSION CONTROL DETAILS

Drawing Name:	
Stevens Square at Baxter Woods - Phase 2	
583 Stevens Avenue, Portland, Maine	
Client/Owner:	
DC BAXTER WOODS LLC	
100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696	

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Rev.	Date	Revision
1	2021.05.12	SUBMITTED TO CITY FOR REVIEW

Rev.	Date	Revision

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1.3.5 EROSION CONTROL MEASURES AND SITE STABILIZATION

THE PRIMARY EMPHASIS OF THE EROSION/SEDIMENTATION CONTROL PLAN, WHICH WILL BE IMPLEMENTED FOR THIS PROJECT, IS AS FOLLOWS:

- DEVELOPMENT OF A CAREFUL CONSTRUCTION SEQUENCE.
- RAPID REVEGETATION OF DENUDEED AREAS TO MINIMIZE THE PERIOD OF SOIL EXPOSURE.
- RAPID STABILIZATION OF DRAINAGE PATHS TO AVOID RILL AND GULLY EROSION.
- THE USE OF ON-SITE MEASURES TO CAPTURE SEDIMENT (HAY BALES/ STONE CHECK DAMS/SILT FENCE, ETC.)

THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL DEVICES WILL BE IMPLEMENTED AS PART OF THE SITE DEVELOPMENT. THESE DEVICES SHALL BE INSTALLED AS INDICATED ON THE PLANS OR AS DESCRIBED WITHIN THIS REPORT. FOR FURTHER REFERENCE, SEE THE LATEST EDITION OF THE MAINE EROSION AND SEDIMENT CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS.

A. DEWATERING

WATER FROM CONSTRUCTION TRENCH DEWATERING SHALL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE 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 50 FEET OF A PROTECTED NATURAL RESOURCE. DEWATERING DISCHARGE SHALL NOT BE DIRECTED ACROSS ADJACENT PROPERTIES IN A CONCENTRATED MANNER.

B. 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 DAMAGES AND/OR UNESTABLISHED SPOTS. ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

THE FOLLOWING STANDARDS MUST BE MET DURING CONSTRUCTION.

(a) **INSPECTION AND CORRECTIVE ACTION.** INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL) AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.

(b) **MAINTENANCE.** IF BEST MANAGEMENT PRACTICES (BMPs) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPs OR SIGNIFICANT REPAIR OF BMPs ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

(c) **DOCUMENTATION.** KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAMES AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATES) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLE ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPs THAT NEED MAINTENANCE, BMPs THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPs ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPs, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN.

THE LOG MUST BE MADE ACCESSIBLE TO CITY STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

C. TEMPORARY EROSION CONTROL MEASURES

TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AS REQUIRED BY THIS REPORT AND AS SHOWN ON THE PLAN SET FOR THE PROJECT. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTIONS OF THE OWNER, THE CITY OF PORTLAND, OR THEIR REPRESENTATIVES AT NO ADDITIONAL COST TO THE OWNER.

THE FOLLOWING MEASURES ARE PLANNED AS TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION:

1. CRUSHED STONE-STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO EACH CONSTRUCTION AREA.
2. SILTATION FENCE OR WOOD WASTE COMPOST BERMS SHALL BE INSTALLED DOWNSTREAM OF ANY DISTURBED AREAS TO TRAP RUNOFF. BORNE SEDIMENTS UNTIL GRASS AREAS ARE REVEGETATED. THE SILT FENCE AND/OR WOOD WASTE COMPOST BERMS SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THIS PACKAGE AND INSPECTED AT LEAST ONCE A WEEK AND BEFORE AND IMMEDIATELY AFTER A STORM EVENT OF 0.5 INCHES OR GREATER, AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE OR BERM LINE. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM. WOOD WASTE COMPOST BERMS ARE NOT TO BE USED ADJACENT TO WETLAND AREAS THAT ARE NOT TO BE DISTURBED.
3. STRAW OR HAY MULCH INCLUDING HYDROSEEDING IS INTENDED TO PROVIDE COVER FOR DENUDEED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15TH AND OCTOBER 15TH ON SLOPES OF LESS THEN 15 PERCENT SHALL BE ANCHORED BY APPLYING WATER; MULCH PLACED ON SLOPES OF EQUAL TO OR STEEPER THAN 15 PERCENT SHALL BE COVERED BY A FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. FABRIC NETTING AND STAPLES SHALL BE USED ON DISTURBED AREAS WITHIN 50' OF LAKES, STREAMS, AND WETLANDS REGARDLESS OF THE UPSTREAM SLOPE. MULCH PLACED BETWEEN OCTOBER 15TH AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT SHALL BE COVERED WITH A FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SLOPES STEEPER THAN 3:1 AND EQUAL TO OR FLATTER THAN 2:1, WHICH ARE TO BE REVEGETATED, SHALL RECEIVE CURLEX BLANKETS BY AMERICAN EXCELSIOR OR EQUAL. SLOPES STEEPER THAN 2:1 SHALL RECEIVE RIPRAP AS NOTED ON THE PLANS. THE MULCH APPLICATION RATE FOR BOTH TEMPORARY AND PERMANENT SEEDING IS 75 LBS PER 1000 SF AS IDENTIFIED IN ATTACHMENT A OF THIS SECTION. MULCH SHALL NOT BE PLACED OVER SNOW.
4. TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION WILL BE PROTECTED AS FOLLOWS:
 - a) TEMPORARY STOCKPILES SHALL NOT BE LOCATED WITHIN 100 FEET OF ANY WETLANDS WHICH WILL NOT BE DISTURBED AND SHALL BE LOCATED AWAY FROM DRAINAGE SWALES.
 - b) STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS BY EITHER TEMPORARILY SEEDING THE STOCKPILE BY A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH, SUCH AS HAY, STRAW, OR EROSION CONTROL MIX.
 - c) STOCKPILES SHALL BE SURROUNDED BY SEDIMENTATION BARRIER AT THE TIME OF FORMATION.
5. ALL DENUDEED AREAS THAT ARE WITHIN 100 FEET OF AN UNDISTURBED WETLAND, WHICH HAVE BEEN ROUGH GRADED AND ARE NOT LOCATED WITHIN A BUILDING PAD, PARKING AREA, OR ACCESS DRIVE SUBBASE AREA, SHALL RECEIVE MULCH OR EROSION CONTROL MESH FABRIC WITHIN 48 HOURS OF INITIAL DISTURBANCE OF SOIL. ALL AREAS WITHIN 100 FEET OF AN UNDISTURBED WETLAND SHALL BE MULCHED PRIOR TO ANY PREDICTED RAIN EVENT REGARDLESS OF THE 48 HOUR WINDOW. IN OTHER AREAS, THE TIME PERIOD MAY BE EXTENDED TO 7 DAYS.
6. FOR WORK, WHICH IS CONDUCTED BETWEEN OCTOBER 15TH AND APRIL 15TH OF ANY CALENDAR YEAR, ALL DENUDEED AREAS, SHALL BE COVERED WITH HAY MULCH OR EROSION CONTROL MIX, APPLIED AT TWICE THE NORMAL APPLICATION RATE AND ANCHORED WITH A FABRIC NETTING. THE TIME PERIOD FOR APPLYING MULCH SHALL BE LIMITED TO 2 DAYS FOR ALL AREAS.
7. MCCAULEY WAY SHALL BE SWEEP TO CONTROL MUD AND DUST AS NECESSARY. ADDITIONAL STONE SHALL BE ADDED TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.

8. DURING GRUBBING OPERATIONS STONE CHECK DAMS SHALL BE INSTALLED AT ANY EVIDENT CONCENTRATED FLOW DISCHARGE POINTS AND AS DIRECTED ON THE EROSION CONTROL PLANS.

9. SILT FENCING WITH A MINIMUM STAKE SPACING OF 6 FEET SHALL BE USED, UNLESS THE FENCE IS SUPPORTED BY WIRE FENCE REINFORCEMENT OF MINIMUM 14 GAUGE AND WITH A MAXIMUM MESH SPACING OF 6 INCHES, IN WHICH CASE STAKES MAY BE SPACED A MAXIMUM OF 10 FEET APART. THE BOTTOM OF THE FENCE SHALL BE ANCHORED. A DOUBLE ROW OF SILT FENCE SHALL BE USED ADJACENT TO WETLANDS.

10. WOOD WASTE COMPOST/BARK BERMS MAY BE USED IN LIEU OF SILTATION FENCING. BERMS SHALL BE REMOVED AND SPREAD IN A LAYER NOT TO EXCEED 3" THICK ONCE UPSTREAM AREAS ARE COMPLETED AND A 90% CATCH OF VEGETATION IS ATTAINED.

11. STORM DRAIN CATCH BASIN INLET PROTECTION SHALL BE PROVIDED THROUGH THE USE OF STONE SEDIMENT BARRIERS OR APPROVED SEDIMENT BAGS (SUCH AS SILT SACK). INSTALLATION DETAILS ARE PROVIDED IN THE PLAN SET. THE BARRIERS SHALL BE INSPECTED AFTER EACH RAINFALL AND REPAIRS MADE AS NECESSARY. SEDIMENT SHALL BE REMOVED AND THE BARRIER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ½ THE DESIGN DEPTH OF THE BARRIER. THE BARRIER SHALL BE REMOVED WHEN THE TRIBUTARY DRAINAGE AREA HAS BEEN STABILIZED.

12. WATER AND/OR CALCIUM CHLORIDE SHALL BE FURNISHED AND APPLIED IN ACCORDANCE WITH MDOT SPECIFICATIONS - SECTION 637 - DUST CONTROL.

13. LOAM AND SEED IS INTENDED TO SERVE, AS THE PRIMARY PERMANENT REVEGETATIVE MEASURE FOR ALL DENUDEED AREAS NOT PROVIDED WITH OTHER EROSION CONTROL MEASURES, SUCH AS RIPRAP. APPLICATION RATES ARE PROVIDED IN ATTACHMENT A OF THIS SECTION. SEEDING SHALL NOT OCCUR OVER SNOW.

D. PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES HAVE BEEN DESIGNED AS PART OF THE EROSION/SEDIMENTATION CONTROL PLAN:

1. ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.) WILL BE LOAMED, LIMED, FERTILIZED, MULCHED, AND SEEDED. FABRIC NETTING, ANCHORED WITH STAPLES, SHALL BE PLACED OVER THE MULCH IN AREAS AS NOTED IN **TEMPORARY EROSION CONTROL MEASURES** PARAGRAPH 3 OF THIS REPORT. ALL AREAS WITHIN 100 FEET OF AN UNDISTURBED WETLAND SHALL BE MULCHED PRIOR TO ANY PREDICTED RAIN EVENT REGARDLESS OF THE 48 HOUR WINDOW. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.
2. ALL STORM DRAIN PIPE OUTLETS SHALL HAVE RIPRAP APRONS AT THEIR OUTLET TO PROTECT THE OUTLET AND RECEIVING CHANNEL FROM SCOUR AND DETRIORATION. INSTALLATION DETAILS ARE PROVIDED IN THE PLAN SET. THE APRONS SHALL BE INSTALLED AND STABILIZED TO THE EXTENT PRACTICABLE PRIOR TO DIRECTING RUNOFF TO THE TRIBUTARY PIPE OR CULVERT.

1.4 IMPLEMENTATION SCHEDULE

THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO ENSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES ARE OPTIMIZED:

IT IS ANTICIPATED THAT CONSTRUCTION OF BUILDINGS 2-5 AND RELATED INFRASTRUCTURE WILL COMMENCE IN SUMMER OF 2021 AND BE COMPLETED BY SPRING OF 2022.

NOTE: FOR ALL GRADING ACTIVITIES, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO OVEREXPOSE THE SITE, THIS SHALL BE ACCOMPLISHED BY LIMITING THE DISTURBED AREA.

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE AT CONSTRUCTION ACCESS POINTS FROM PAVED ROADWAYS.
2. INSTALL CATCH BASIN INLET PROTECTION, AND PERIMETER SILT FENCE/WOOD WASTE BERMS PRIOR TO GRUBBING RESPECTIVE AREAS.
3. CLEAR AND GRUB AREA TO BE DEVELOPED. INSTALL STONE CHECK DAMS AT ANY EVIDENT CONCENTRATED FLOW DISCHARGE POINTS.
4. FOUNDATION PREPARATION AREA SHALL BE EXCAVATED FOR INSTALLATION OF THE BUILDING FOOTINGS. BUILDING WORK WILL BE ON GOING THROUGH THE REMAINDER OF THE PROJECT.
5. COMMENCE INSTALLATION OF DRAINAGE APPURTENANCES.
6. COMMENCE CONSTRUCTION OF PERVIOUS PAVER FILTER/RESERVOIR UP TO CHOKER COURSE, FOCAL POINT FILTERS AND DETENTION PONDS.
7. COMMENCE EARTHWORK AND GRADING TO SUBGRADE.
8. COMMENCE INSTALLATION OF UTILITIES.
9. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
10. COMPLETE INSTALLATION OF UNDERGROUND UTILITIES TO WITHIN 5' OF THE BUILDINGS.
11. INSTALL LIGHT POLE FOUNDATIONS AND LIGHT POLES.
12. COMPLETE REMAINING EARTHWORK OPERATIONS.
13. COMPLETE INSTALLATION OF CATCH BASINS AND APPURTENANCES.
14. INSTALL SUB-BASE AND BASE GRAVEL WITHIN PARKING FIELDS, WALKWAYS, AND ALL DRIVEWAYS.
15. INSTALL BASE COURSE PAVING FOR ACCESS DRIVE AND PARKING AREA AS WELL AS CONCRETE SURFACES.
16. INSTALL CURBING IN PARKING FIELDS, DRIVEWAYS, AND ALONG THE STREETS AS NEEDED.
17. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS AND COMPLETE ALL LANDSCAPING.
18. INSTALL PERVIOUS PAVERS AND INFILL STONE, SURFACE COURSE PAVING FOR ACCESS DRIVE AND PARKING AREAS, STRIPE PER PLAN.
19. ONCE THE SITE IS STABILIZED AND A 90% CATCH OF VEGETATION HAS BEEN OBTAINED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
20. TOUCH UP LOAM AND SEED.

NOTE: ALL DENUDEED AREAS NOT SUBJECT TO FINAL PAVING, RIPRAP, OR GRAVEL SHALL BE REVEGETATED.

PRIOR TO CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE FOR THE COMPLETION OF THE WORK, WHICH WILL SATISFY THE FOLLOWING CRITERIA:

1. THE ABOVE CONSTRUCTION SEQUENCE SHOULD GENERALLY BE COMPLETED IN THE SPECIFIED ORDER; HOWEVER, SEVERAL SEPARATE ITEMS MAY BE CONSTRUCTED SIMULTANEOUSLY. WORK MUST ALSO BE SCHEDULED OR PHASED TO REDUCE THE EXTENT OF THE EXPOSED AREAS AS SPECIFIED BELOW. THE INTENT OF THIS SEQUENCE IS TO PROVIDE FOR EROSION CONTROL AND TO HAVE STRUCTURAL MEASURES SUCH AS SILT FENCE AND CONSTRUCTION ENTRANCES IN PLACE BEFORE LARGE AREAS OF LAND ARE DENUDEED.
2. THE WORK SHALL BE CONDUCTED IN SECTIONS WHICH SHALL:
 - a) LIMIT THE AMOUNT OF EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE PRECEEDING 30 DAYS.
 - b) REVEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT; OR TEMPORARILY STABILIZED WITHIN 48 HOURS OF INITIAL DISTURBANCE OF SOIL FOR AREAS WITHIN 100 FEET OF AN UNDISTURBED WETLAND AND 7 DAYS FOR ALL OTHER AREAS. AREAS WITHIN 100 FEET OF AN UNDISTURBED WETLAND SHALL BE MULCHED PRIOR TO ANY PREDICTED RAIN EVENT REGARDLESS OF THE 48 HOUR WINDOW.
 - c) INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEM AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE. THE DITCHES SHALL BE IMMEDIATELY LINED OR REVEGETATED AS SOON AS THEIR INSTALLATION IS COMPLETE.

1.5 EROSION, SEDIMENTATION AND STABILIZATION CONTROL PLAN

THE EROSION CONTROL PLAN IS INCLUDED IN THE PLAN SET.

1.6 DETAILS AND SPECIFICATIONS

THE EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

1.7 WINTER STABILIZATION PLAN

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 RIPRAP 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, RIPRAP OR GRAVEL BASE ON A ROAD.

WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT ANY AREA LEFT EXPOSED CAN BE CONTROLLED BY THE CONTRACTOR. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE PRECEEDING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT.

ALL AREAS SHALL BE CONSIDERED TO BE DENUDEED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN ROADWAY/PARKING AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH RATE SHALL BE A MINIMUM OF 150 LBS/1,000 S.F. (3 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED.

THE CONTRACTOR SHALL 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 SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR AT 150 LBS/1,000 S.F. (3 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOODWASTE EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE SHALL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

2. NATURAL RESOURCE PROTECTION

ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH EROSION CONTROL MATS. DURING WINTER CONSTRUCTION, A DOUBLE LINE OF SEDIMENT BARRIERS (I.E. SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

3. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS SHALL CONSIST OF WOODWASTE FILTER BERMS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES AND SEDIMENT SILT FENCES.

4. MULCHING

AN AREA SHALL CONSIDERED DENUDEED 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 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75-LBS/1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE-INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1,000 SQUARE FEET (3 TONS/ACRE) AND ADEQUATELY ANCHORED THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH.

BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL, OR WOOD CELLULOSE FIBER. WHEN GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH THEN COVER IS SUFFICIENT. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL BARE SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

5. MULCHING ON SLOPES AND DITCHES

SLOPES SHALL NOT BE LEFT EXPOSED FOR ANY EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY MULCHED AND ANCHORED WITH PEG AND NETTING OR WITH EROSION CONTROL BLANKETS. MULCHING SHALL BE APPLIED AT A RATE OF 230 LBS/1,000 S.F. ON ALL SLOPES GREATER THAN 8%.

MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAT 8%. EROSION CONTROL BLANKETS SHALL BE USED IN LIEU OF MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 8%. EROSION CONTROL MIX CAN BE USED TO SUBSTITUTE EROSION CONTROL BLANKETS ON ALL SLOPES EXCEPT DITCHES.

6. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING FINISHED AREAS SHALL BE FINELY GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOAMED, 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 SELECTED TO 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 80% OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

STANDARDS FOR TIMELY STABILIZATION OF CONSTRUCTION SITES DURING WINTER

1. **STANDARD FOR THE TIMELY STABILIZATION OF DITCHES AND CHANNELS** -- THE APPLICANT SHALL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY NOVEMBER 15. THE APPLICANT SHALL CONSTRUCT AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 1. IF THE APPLICANT FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 1, THEN THE APPLICANT WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER.

INSTALL A SOD LINING IN THE DITCH -- THE APPLICANT SHALL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING THE SOD WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS.

INSTALL A STONE LINING IN THE DITCH --THE APPLICANT SHALL LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 15. THE APPLICANT SHALL 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 APPLICANT SHALL 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 FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES** -- THE APPLICANT SHALL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE APPLICANT SHALL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 1. THE DEPARTMENT SHALL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% TO BE A SLOPE. IF THE APPLICANT FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 1, THEN THE APPLICANT SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY SEPTEMBER 1 THE APPLICANT SHALL 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 APPLICANT SHALL 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 BY NOVEMBER 1, THEN THE APPLICANT SHALL COVER THE SLOPE WITH A LAYER OF WOODWASTE COMPOST AS DESCRIBED IN ITEM III OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM IV OF THIS STANDARD.

STABILIZE THE SLOPE WITH SOD -- THE APPLICANT SHALL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY SEPTEMBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE APPLICANT SHALL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).

STABILIZE THE SLOPE WITH WOODWASTE COMPOST -- THE APPLICANT SHALL PLACE A SIX-INCH LAYER OF WOODWASTE COMPOST ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE WOODWASTE COMPOST, THE APPLICANT SHALL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE APPLICANT SHALL NOT USE WOODWASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

STABILIZE THE SLOPE WITH STONE RIPRAP -- THE APPLICANT SHALL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT SHALL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

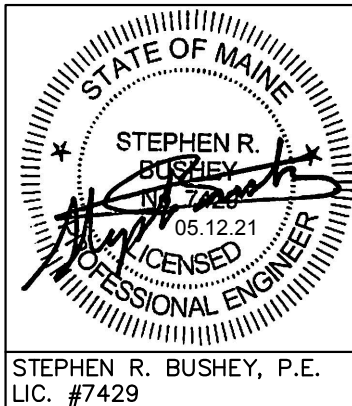
3. **STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS** -- BY SEPTEMBER 15 THE APPLICANT SHALL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE APPLICANT FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE APPLICANT SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.

STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY SEPTEMBER 1 THE APPLICANT SHALL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1,000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT SHALL 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 APPLICANT SHALL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED BELOW.

STABILIZE THE SOIL WITH SOD -- THE APPLICANT SHALL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY SEPTEMBER 15. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

STABILIZE THE SOIL WITH MULCH -- BY NOVEMBER 15 THE APPLICANT SHALL 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 APPLICANT SHALL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

NOTE: THIS PLAN SET IS ISSUED FOR PERMITTING PURPOSES & SHALL NOT BE USED FOR CONSTRUCTION.

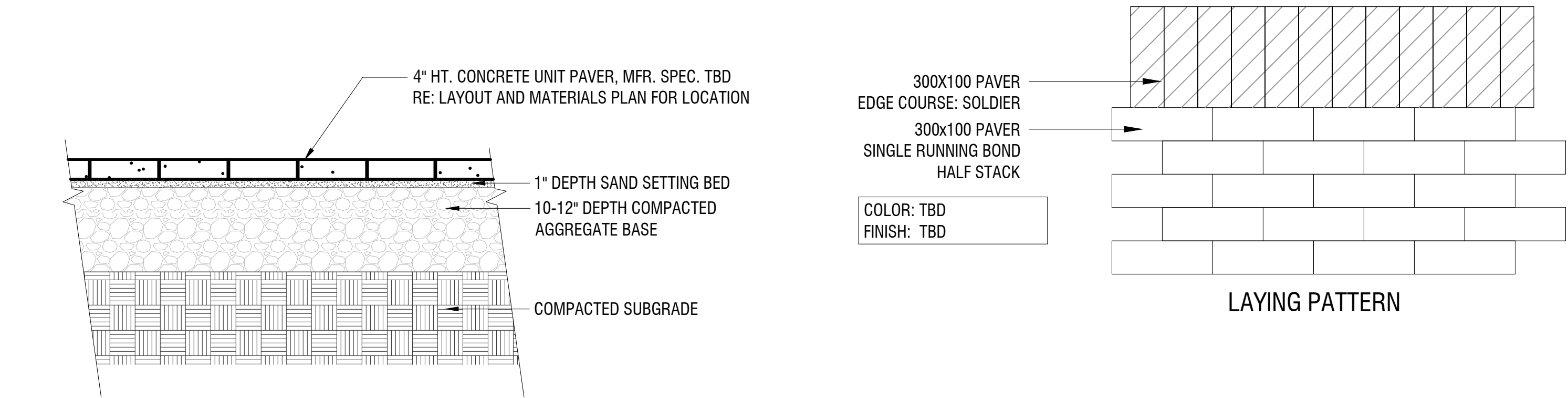


STEPHEN R. BUSHEY, P.E.
LIC. #7429

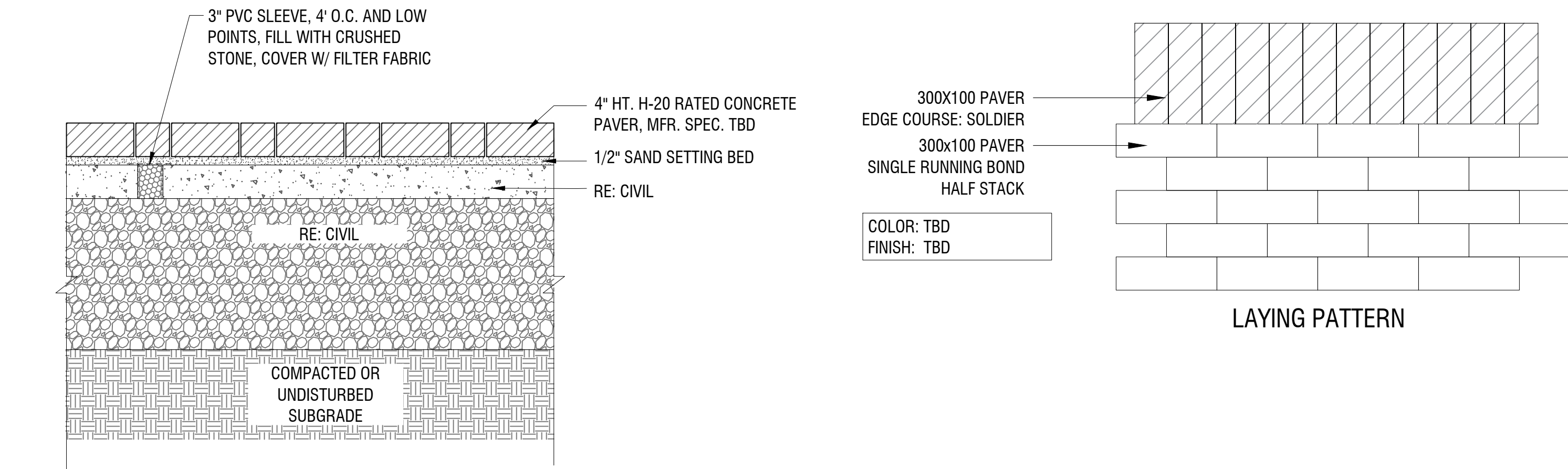
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Project:	Stevens Square at Baxter Woods -- Phase 2 583 Stevens Avenue, Portland, Maine
Client/Owner:	DC BAXTER WOODS LLC 100 COMMERCIAL STREET, SUITE 414, PORTLAND, ME 04101 PH. 207.766.6696

Drawing No.

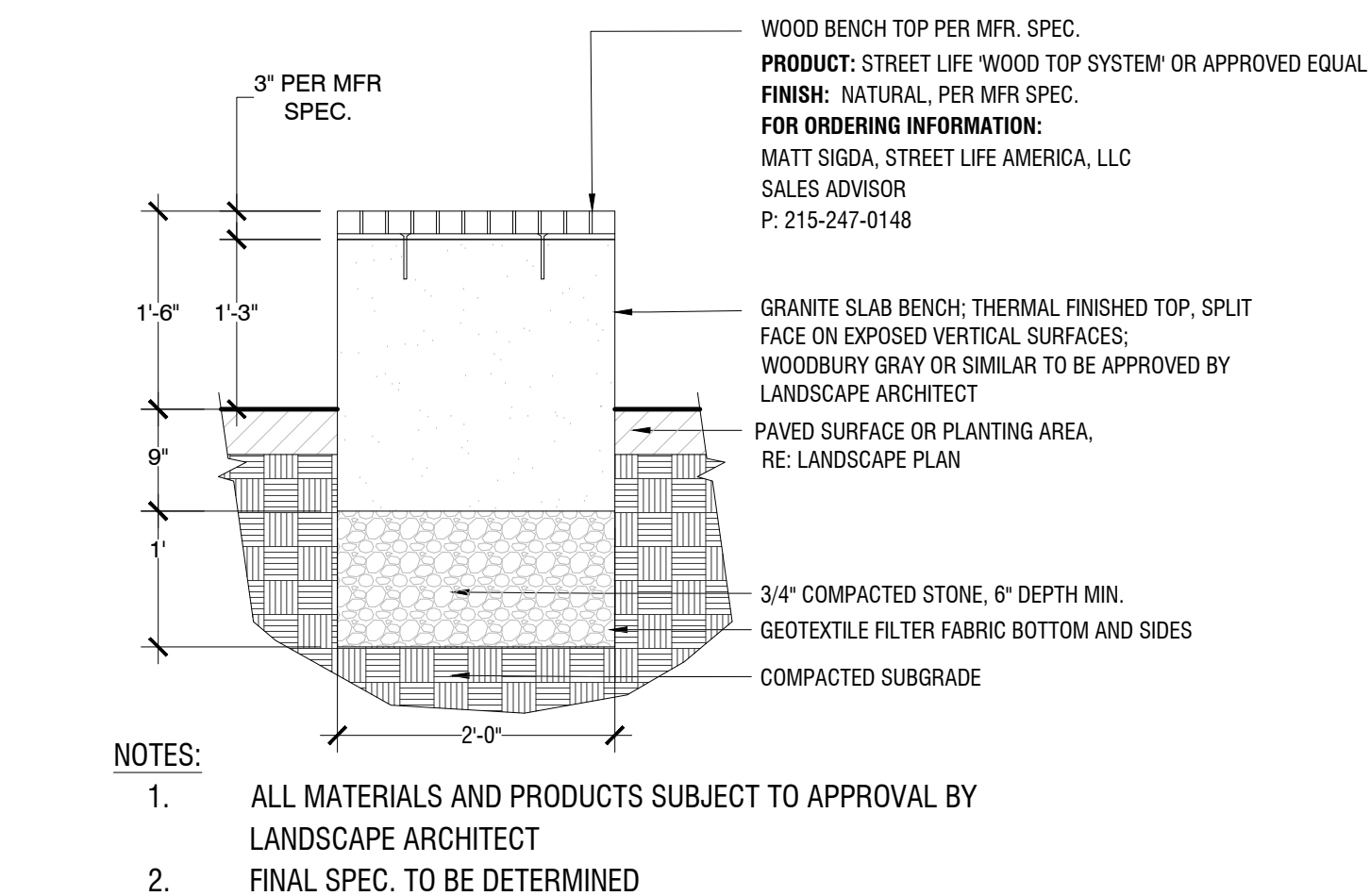
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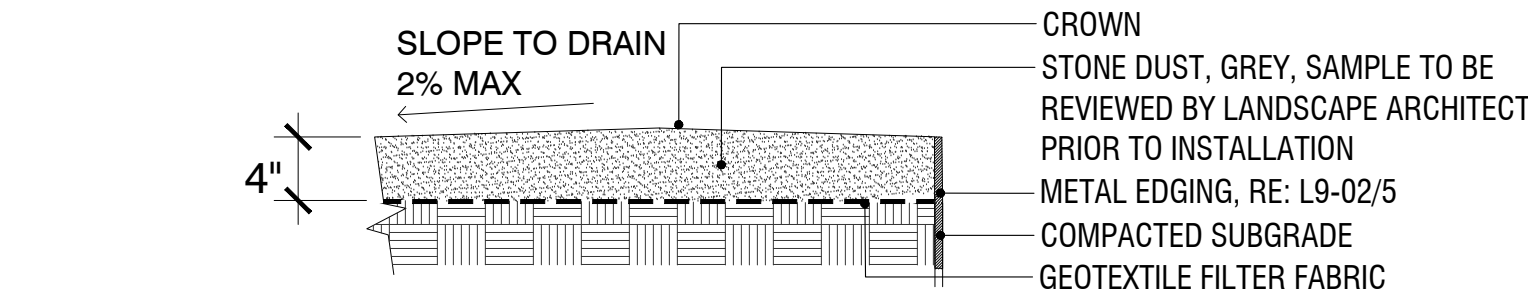
1 CONCRETE UNIT PAVING - PEDESTRIAN
1":1'-0"



2 CONCRETE UNIT PAVING - VEHICULAR
1":1'-0"



3 GRANITE SLAB BENCH
NTS



4 STONE DUST PAVING
1":1'-0"

NOTES

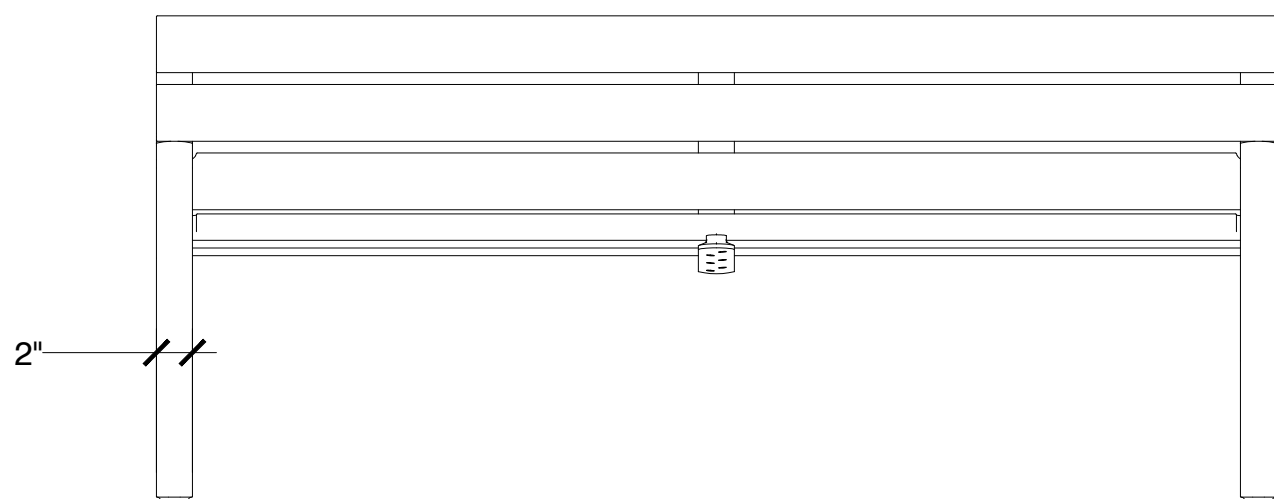
PAVER PRODUCT: 4" HT. H-20 RATED, MFR. TBD
COLOR: TBD
FINISH: TBD

- NOTES:
1. ALL MATERIALS AND PRODUCTS SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT
 2. CONTRACTOR SHALL PROVIDE SAMPLES OF FINAL PRODUCT AND MATERIALS SPEC.
 3. A FULL SCALE MOCKUP OF PAVING LAYUP SHALL BE PROVIDED PRIOR TO CONSTRUCTION
 4. ANY SUBSTITUTIONS SUBJECT TO LANDSCAPE ARCHITECT APPROVAL

NOTES

PAVER PRODUCT: 4" HT. H-20 RATED, MFR. TBD
COLOR: TBD
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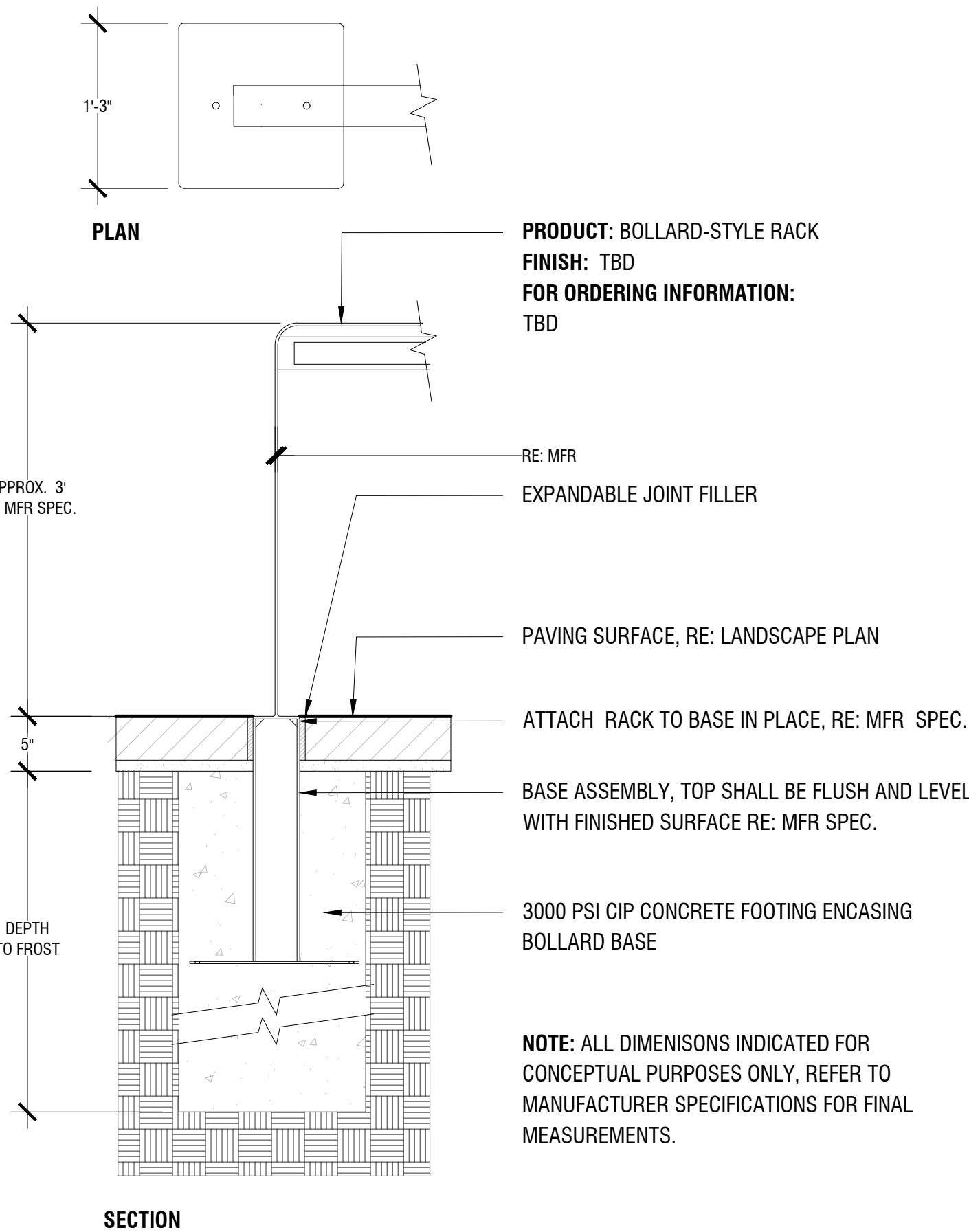


- NOTES:
1. ALL MATERIALS AND PRODUCTS SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT
 2. FINAL BENCH SPEC. TO BE DETERMINED

5 BENCH
1":1'-0"

SITE KEYNOTES:

1.0	PAVEMENTS, RAMPS, CURBS	DETAIL / SHEET	6.0	RAILINGS, BARRIERS, FENCING	DETAIL / SHEET
1.1	PAVERS - PEDESTRIAN	1/L4-00	XX	NOT USED AT THIS TIME	X/XX-XX
1.2	PAVERS - VEHICULAR	2/L4-00			
1.3	STONE DUST PATH	3/L4-00			
			7.0	SITE LIGHTING	
				BY OTHERS	
2.0	JOINTING			DRAINAGE	
XX	NOT USED AT THIS TIME	X/XX-XX	8.0	XX	NOT USED AT THIS TIME X/XX-XX
3.0	STEPS			PLANTING AND LANDSCAPE	
XX	NOT USED AT THIS TIME	X/XX-XX	9.0		
			9.1	DECIDUOUS TREE PLANTING	1/L4-01
			9.2	EVERGREEN TREE PLANTING	2/L4-01
			9.3	SHRUB PLANTING	3/L4-01
			9.4	PERENNIAL PLANTING	5/L4-01
			9.5	STEEL EDGING	4/L4-01
			9.6	TREE PROTECTION	6/L4-01
				MISCELLANEOUS ELEMENTS	
4.0	SITE WALLS/ EMBANKMENTS		10.0	XX	NOT USED AT THIS TIME X/XX-XX
XX	NOT USED AT THIS TIME	X/XX-XX			
5.0	SITE FURNITURE				
5.1	GRANITE BENCH WOOD TOP	4/L4-00			
5.2	BICYCLE RACK	6/L4-00			
5.3	BENCH	1/L4-00			



6 STONE DUST PAVING
1":1'-0"

5.2

SEAL

PROJECT TITLE

STEVEN'S SQUARE AT
BAXTER WOODS
LOT 4 / PHASE 2
583 STEVEN'S AVE
PORTLAND, ME

PREPARED FOR

OWNER:

DC BAXTER WOODS LLC
100 COMMERCIAL ST.
SUITE 400
PORTLAND, ME 04101

REVISIONS

REVISIONS	DATE

ISSUE DATE

SITE PLAN REVIEW
MAY, 2021

SHEET TITLE

SITE DETAILS

SHEET INFORMATION

L4-00

PLANNING BOARD REPORT PORTLAND, MAINE

Major Site Plan (Change of Use)
Change of Use Office to Institutional
Project PL-001679-2021
University of Maine System, Applicant



Submitted to: Portland Planning Board
Public Hearing Date: August 10, 2021

Prepared by: Jimmy Dealaman, Planner
Date: August 6, 2021

I. INTRODUCTION

The University of Maine System is seeking a Major Site Plan approval to facilitate a change of use from commercial office to institutional for five floors (totaling 63,841 square feet), at the existing building located at 300 Fore Street. The site is situated in the B-3 Downtown Business Zone and located in Downtown Portland.

The proposed change of use exceeds 20,000 square feet, which requires a Major Site Plan approval to be reviewed by the Planning Board for compliance with the site plan standards in Section 14.6 of the City's Land Use Code.

Owner/Applicant: University of Maine System
Agent: Mary Costigan, Bernstein Shur



Figure 1: Aerial of Development Site - Source: Google Earth

II. REQUIRED REVIEWS

<i>Applicant's Proposal</i>	<i>Applicable Standards</i>
Change of use with Floor Area > 20,000 SF	Major Site Plan (Section 14.6)



Figure 2: Aerial View of Development Site Existing Conditions – Source: Google

III. PROJECT DATA

<i>Subject</i>	<i>Data</i>
Total area of the site	12,293 sf
Zoning Districts	B-3 Downtown Business Zone; Waterfront (Old Port) Historic District Pedestrian Activities District (PAD) Encouragement Area Downtown Entertainment Overlay Zone
Existing Use	Commercial/Service (Commercial Office)
Proposed Use	Institutional (Post-secondary School)

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Impervious Surface Area	11,000 sf	11,000 sf	No Change
Parking Spaces	145 spaces off-site	To be determined (but no less than 123 spaces)	To be determined
Office Use Floor Area	68,841 sf	5,000 sf	-63,841 sf
Institutional Use Floor Area	0 sf	63,841 sf	+63,841
Total Building Floor Area	68,841 sf	68,841 sf	No Change

IV. BACKGROUND

The proposed project is part of the University of Maine System's long-term plan to demolish the existing law school building located at 246 Deering Avenue and temporarily relocate the Maine Law School and other graduate-level programs to 300 Fore Street until a new Maine Center building is constructed on the University of Southern Maine campus.

On March 28, 2006, The Planning Board approved site plan and subdivision applications to facilitate the development of the existing building at 300 Fore Street (Attachment 1).

V. EXISTING CONDITIONS



Figure 3: Existing Conditions (Image of Building Front) Source: Google Earth

The site, 300 Fore Street (CBL 029 Koo6001), consists of an approximately 12,293 square-foot corner lot, improved with a five-story commercial office building constructed in 2006-07. The site has a primary frontage on Fore Street, and is bounded by Custom House Street to the south. The existing building is attached to a five-story office and retail structure (7 Custom House Street) at the corner of Custom House Street and Commercial Street which is adjacent to the historic Thomas Mayhew Block (a.k.a. Blake Building) at 83 Commercial Street.

Immediately north of the site is 288 Fore Street, a single-story building that includes the Fore Street restaurant and Standard Baking Company. The Custom House Garage is located to the west, directly across Fore Street. Across Custom House Street to the south is the Custom House building an individually designated historic landmark. The subject site is located within the Portland Waterfront Historic District.

The building at 300 Fore Street contains nine condominium units that make up the “Custom House Square Condominium.” The building has been occupied by the Council on International Educational Exchange (CIEE) since 2007 as general office use for its study abroad and exchange program business.

The site is accessible to public transit via METRO routes 1, 7, 8, 9A, and 9B as well as South Portland bus routes 21, 24A, and 24B. The site is also within walking distance to the Portland waterfront, which provides access to Casco Bay Ferry service.

Previous 2006 Planning Board Approval:

As part of the 2006 Planning Board approval the site was subject to general conditions (Attachment 1) tied to both the Traffic Movement Permit and Site Plan approval.

Planning Board conditions associated with the 2006 approval required that the applicant make financial contributions for infrastructure improvements in the vicinity, required easements, sought additional staff review of curbing and condo docs and any future lighting and signage changes, and required a revised traffic study to be reviewed by staff should the original parking location change or any change of the use or occupancy of the building requiring a change to the number of parking spaces. In addition, the Board set a parking minimum of 123 spaces requiring a lease documentation for the original parking arrangement, and also linked the 123 parking space requirement to the specific occupants of the building and conditioned that any changes to the occupancy or ownership of the building or any intensification of use would require an amendment to the parking requirement.

Staff Analysis: Staff examined the 2006 conditions of approval as they relate to the current change of use application review, and as a result of the City's Land Use Code being updated in 2010 which exempted parking requirements for changes of use in the B-3 zone (See Land Use Code, Section 19.1, Table 19-B) Planning Staff has determined that the conditions requiring a nexus between the site's parking arrangement and variations in occupancy/ownership/use to no longer be valid/active. The applicant is not proposing any exterior changes to the building, therefore the 2006 condition requiring the Planning Authority to review any proposed lighting changes is not applicable. Signage will be reviewed under a separate permit which involves a separate review by the City's Permitting and Historic Preservation Office.

VI. PROPOSED DEVELOPMENT

The applicant is proposing a change of use from commercial office to institutional, which includes interior renovations on the first five floors of the building (63,841 square feet). The applicant is not proposing any exterior changes to the building. The University intends to relocate several graduate programs to the property: Maine Law School, the Graduate and Professional Center, Maine MBA, MECIS, and the Advanced Structures and Composite Center.

The applicant has also provided the following schedule associated with the new use:

Monday - Thursday

- 250 students will arrive between 8:00 a.m. - 8:30 a.m. for classes and will be in the building until 3:30 p.m.
- Seminar classes are held 3:30 p.m. - 5:00 p.m. Fewer than 100 students are in attendance.

Friday

- 100 students will arrive between 8:00 a.m. - 8:30 a.m. for classes and be in the building until 5:00 p.m.

Approximately 80 faculty members and staff will use the building from 8:00 am-6:00 pm M-F. There may be lighter use after hours. The MBA program is mostly online, so will not add regular occupants of the building.

While changes of use in the B-3 zone are not required to provide parking, the University of Maine System intends to secure off-site parking prior to occupancy and is currently in the midst of an RFP process to continue to accommodate the parking needs of users of the site.

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

The owner of the property is CIEE, Inc. The applicant has provided a copy of a lease for premises totaling 63,841 rentable square feet (Units B1, 1A, 1B, 2, 3, 4 and 5) as defined in the deed, recorded at the Cumberland County Registry of Deeds (Book 25463 Page 1), as amended by First Amendment (Book 33210, Page 45), and delineated on the condominium plats and plans recorded (Plan Book 207, Pages 533-542) which demonstrates their right, title and interest in the property.

The applicant has submitted a letter from the USM School of Law Office of Finance and Administration describing Maine Law's financial capacity (Attachment G).

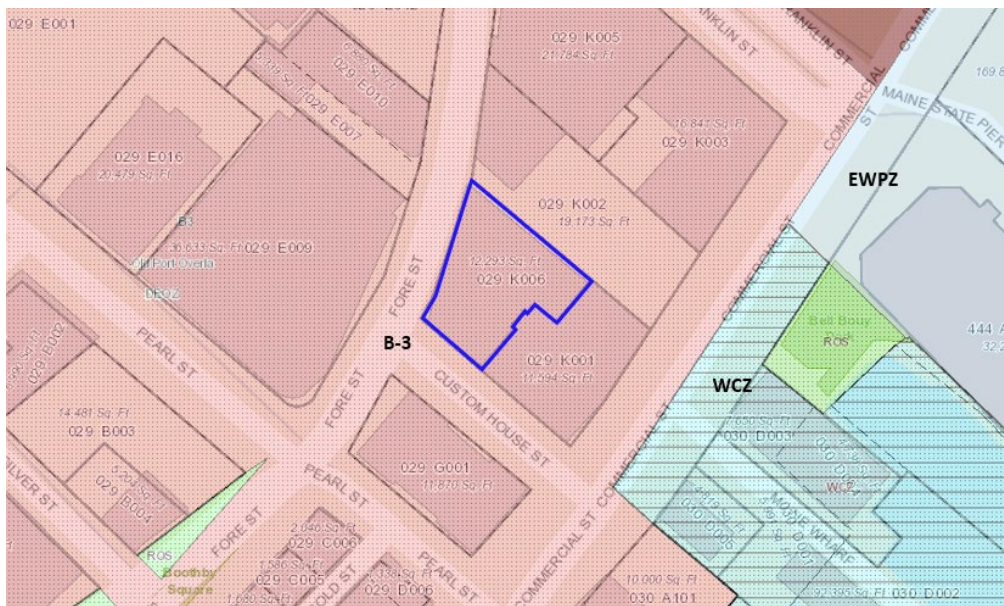


Figure 5: Screenshot of Zoning Map

VIII. ZONING ANALYSIS

A. DIMENSIONAL AND USE REQUIREMENTS

The parcel is located in the B-3 Downtown Business Zone. The proposed institutional use of post-secondary school is permitted in this zone.

According to the off-street parking exceptions contained in Table 19-B under Article 19 of the City's Land Use Code, no off-street parking is required for changes of use in the B-3 zone.

The following table is provided to summarize the dimensional requirements of the B-3 zone (Land Use Code Sec. 7.3) which are met or exempt.

	<i>Permitted</i>	<i>Proposed</i>
Lot Size	n/a	12,293 sq. ft.
Minimum Street Frontage	15 ft.	129 ft (scaled)
Maximum Front Setback (from all street frontages)	5 ft.	0 ft. (Waiver to requirement granted by Planning Board in 2006)
Minimum Rear Setback	N/A	N/A
Minimum Side setback	N/A	N/A
Stepbacks	N/A	N/A
Floor Area	None, except 15,000 SF for each floor above 125 ft.	68,841 sf
Maximum Structure Height	65 ft. (Per Downtown Overlay Map)	65 ft.
Maximum Lot Coverage	25% of lot area for portions of structures exceeding 125 ft. in height (Except that no floor area shall be required to be less than 10,500 SF, gross)	11,320 sq ft. (footprint) / 12,293 sq ft. (lot size) = Approx. 92% (Lot Coverage)

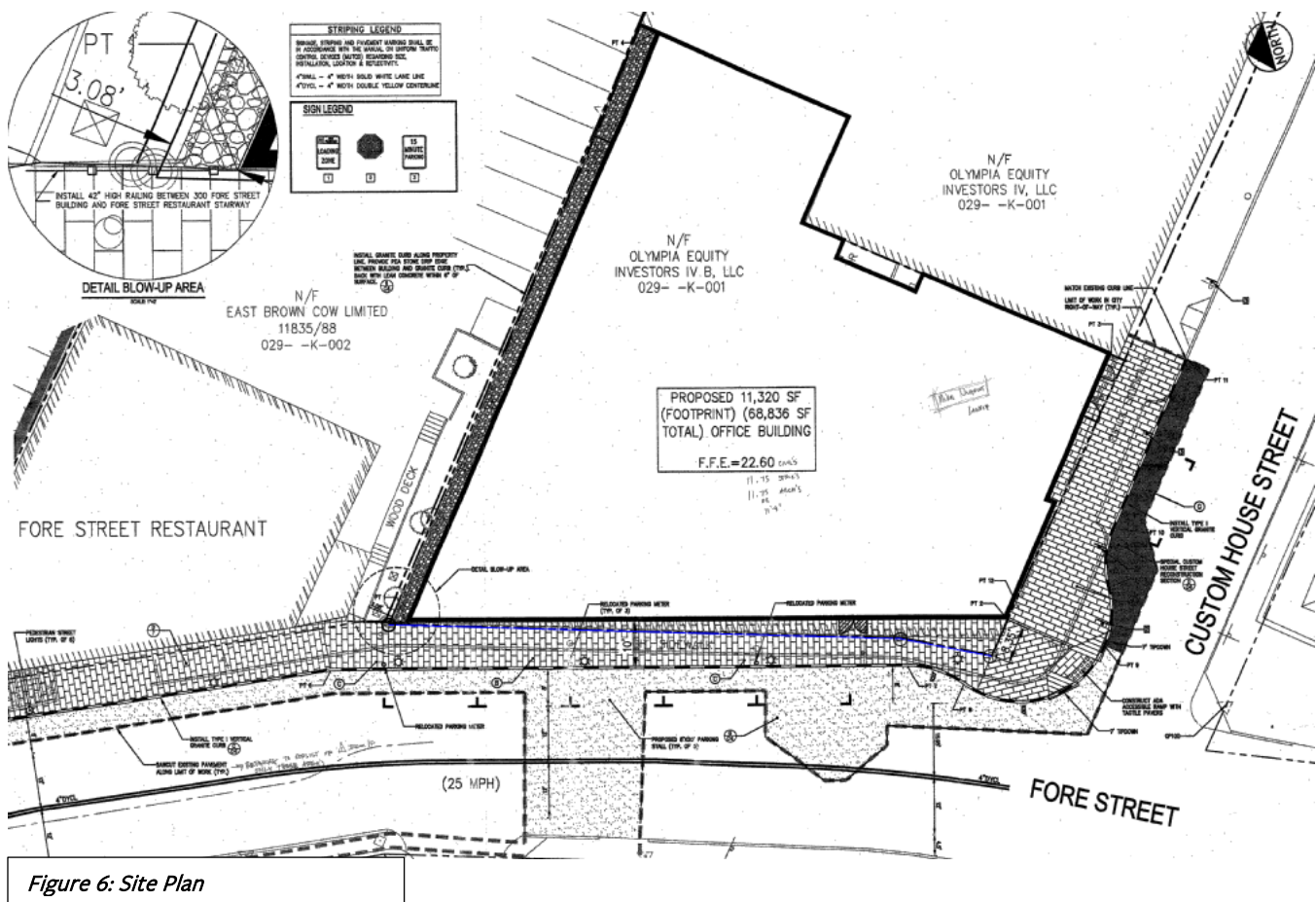


Figure 6: Site Plan

IX. DEVELOPMENT REVIEW

A. SITE PLAN STANDARDS (Section 14.6)

1. Transportation Standards (Section 14.6.1)

Impact on Surrounding Street Systems (Section 14.6.1A); Access and Circulation (Section 14.6.1B); Loading and Servicing (Section 14.6.1.B.2)

The existing building at 300 Fore Street has a primary entrance located on Fore Street. The attached building at 7 Custom House Street, which serves separate tenants, has a separate/primary entrance on Custom House Street. Trash and deliveries to 300 Fore Street occur via double swing pedestrian doors on Custom House Street, which connects to a commercial loading area. There is also an ATM terminal recessed within the building's footprint, adjacent to the delivery doors. Additionally, a pedestrian path/stairway runs between the building's north elevation and the adjacent property at 288 Fore Street connecting Fore Street to a surface parking lot which opens to Commercial Street.

Staff have reviewed the project and found that the site continues to provide safe and reasonable access and circulation for all users as well as loading and servicing areas. No alterations to access and circulation are planned as part of this change of use application.

The applicant reports that on average the previous occupant, CIEE, had approximately 350 individuals using the property on a daily basis, with 400 individuals at its peak. Generally, employees and guests traveled to the office by personal vehicles and parked at the Ocean Gateway Garage, where CIEE previously leased 145 parking spaces.

When the building was originally approved and built, the project had previously included 8,900 square feet of restaurant space. Due to the CIEE offices seeking to expand in 2008, the restaurant use was subsequently converted to office space. Based on the 2006 conditions of approval, the change in use necessitated an updated trip generation analysis submitted by the applicant and reviewed by staff. The results of this analysis found a significant reduction in trip generation with the exception of the AM peak hour, and staff review concluded the change would have negligible impact to both traffic generation and parking demand.

The current applicant has stated, *“The method of transportation will be a similar mix as the CIEE use. It is anticipated that many faculty and staff will arrive by personal vehicle and the students will utilize a mix of transportation options. The University is in communication with Metro regarding bus transportation and will encourage alternative modes of transportation to its students and faculty.”*

Due to a change of use application having the potential to increase the number of trips to a site, staff requested the applicant provide an updated trip generation estimate in order for it to be reviewed/compared with the previous Traffic Study conducted for the site in 2006.

The applicant’s updated estimate (Attachment E), was reviewed by City staff and found that the proposed change of use is presumed to generate a total of 166 am peak hour trips and 130 pm peak hour trips as compared to the trip generation of the site’s previous use which totaled 130 am peak hour trips and 219 pm peak hour trips (Attachment F). The peak of the proposed institutional use will occur during the am peak hour while the peak hour of the previous user occurred during the pm hour. As shown, the proposed use is anticipated to generate fewer trips when comparing the two uses peak hours, with a net reduction of -53 trips. Staff has reviewed the trip estimates prepared by the University of Maine System for the new use and finds that the change of use will have a negligible impact on traffic and on the surrounding street systems compared to the previous use. Therefore, staff have confirmed that no new TMP application or transit study is required.

Due to the project not significantly increasing the number of trips to the site under the new use and a reduction of trips when comparing peak hours, staff find that the change to institutional use will not create or aggravate a hazard to safety, and not substantially increase congestion.

Curb and sidewalks (Section 14.6.1.B.3)

No exterior alterations are proposed as part of this application. The existing site includes existing brick sidewalks and vertical granite curbing that was added in accordance with the Planning Board’s 2006 site plan approval.

Public Transit Access (Section 14.6.1C)

Not applicable. The site is not located along an existing bus route and is located less than a quarter mile away from an existing transit shelter.

Vehicle Parking (Section 14.6.1.D.1)

Not applicable. Per Table 19-B under Article 19 of the City’s Land Use Code, changes of use in the B-3 zone do not require parking. Consequently, the current review does not consider changes to the parking arrangement which are outside the scope of a change of use application review. The applicant has indicated that they intend to secure off-site parking prior to occupancy and is currently amidst an RFP process to continue to accommodate the parking needs of users of the site.

[Note: Planning Staff confirmed with the City’s Zoning Administrator that the Land Use Code was amended in 2010 to include an exception to parking requirements for changes of use in the B-3 zone, so any language contained in the 2006 approval requiring an amendment of the parking component is therefore superseded by this change (See Section V Existing Conditions above)]

Bicycle Parking (Section 14.6.1D.2)

The site is located in the B-3 zone, which does not require parking for changes of use. However, the existing site has two, 18-space bicycle racks, for a total of 36 outdoor bicycle spaces available.

Snow Storage (Section 14.6.1.D.3)

Snow storage is not provided on the site plan, however the lease (Attachment B) between CIEE, Inc. and the University of Maine System specifies that the tenant is responsible for snow, ice and debris removal.

Electric Vehicle (EV) Charging Stations (Section 14.6.1.D.4)

Not applicable. No new structured or surface parking lots are proposed.

Transportation Demand Management (Section 14.6.1.E)

While the proposed change of use in the B-3 does not require parking to be provided and the site is located in Portland's walkable transit rich downtown, the City's Land Use Code Site Plan Standards Section 14.6.1.E requires a Transportation Demand Management (TDM) plan for "All commercial or institutional uses designed to accommodate 100 or more employees or, for educational institutions, 100 or more students."

The applicant has provided a TDM Plan (Attachment E). The plan was reviewed by staff and the City's Transportation Programs Manager (Attachment 2).

2. Environmental Quality Standards (Section 14.6.2)

Preservation of Significant Natural Features (Section 14.6.2.A); Landscape Preservation (Section 14.6.2.B)

Not applicable. The project does not propose any exterior alterations to the site.

Site Landscaping and Buffers (Section 14.6.2.C)

The Land Use Code requires "all development subject to required zoning setbacks shall include a minimum of one shade tree or six plantings per 30 linear feet of all frontages as measured along the property line-" however, the site is already developed and the change of use application is not subject to landscaping requirements.

The building's loading and trash area is contained within the structure therefore no screening is necessary.

The proposed change of use does not include exterior changes to the building. However, the existing building's roof-mounted utility structures are at a relatively high elevation (approx. 65 feet) are sufficiently away from view of from public sidewalks, streets and adjacent properties.

Street Tree (Section 14.6.2.C.4)

The site is a constrained urban site and there is not adequate space in the public right of way to accommodate trees. Institutional developments shall provide street trees 30 to 45 feet apart on center in the City right of way along all street frontages. Therefore, staff requests a contribution of \$2,800 in lieu of providing the required seven trees (\$400 per tree x 7 trees). This has been added as a **condition of approval**.

Water Quality, Storm Water Management and Erosion Control (Section 14.6.2.D)

Not applicable. The site is already developed. Stormwater will continue to be managed as it is currently, and no exterior alterations are proposed.

3. Public Infrastructure and Community Safety Standards (Section 14.6.3)

Consistency with City Master Plans (Section 14.6.3.A)

The project is seeking to relocate a post-secondary school to Downtown Portland to further the University of Maine System's expansion and renovation efforts. Staff identified a number of objectives outlined in the City's comprehensive plan, [Portland's Plan 2030](#) that support the proposal. Those sections include *A Vibrant City*, the Plan's Economy Policy Guide, *A Full Service City*, the Plan's Facilities and Services Policy Guide, as well as the City's future land use guide specifically supporting the City's vision to reinforce the center. The proposal aligns with these vision statements and goals by adding an institutional use within Portland's, walkable downtown and further embraces the principle that downtown should continue to be a predominant locus of activity for the broader region. The project is also meeting the following strategies:



Economy

- Support sustainable growth in our educational, medical, and cultural institutions (*Local Goals*).
- Invest in, attract, and retain human capital to support growing economy (*Local Goals*).
- Prepare our current and future residents to compete in an increasingly knowledge-based economy.
- Invest in educational institutions and training as a means of attracting, developing, and retaining an educated workforce.
- Promote the orderly expansion of institutional uses, such as educational, cultural, and hospital campuses, which are central to workforce development, employment, and the health of the local and regional economies.

Facilities and Services

- Make strategic investments in school facilities to modernize and update buildings and grounds, ensure student safety, and preserve and enhance neighborhood connections.

Public Safety and Fire Prevention (Section 14.6.3.B) (CPTED and Fire)

The application was reviewed for compliance with relevant life/safety requirements and deemed satisfactory. The property primarily relies upon street lighting along Fore and Custom House streets, as well as some fixtures at the main entrance and ATM terminal. Additional site lighting is provided along a pedestrian stairway/path which crosses between 300 Fore Street and 288 Fore Street (See Figure 7). The institutional use anticipates having hours of operation between 8am – 6pm.

Also in 2006, the current structure and site was reviewed and approved by Fire safety staff. Given that there are no exterior changes being proposed, staff have no concerns given that any renovations work will be reviewed by the Permitting office during the building permit review.

Availability and Adequate Capacity of Public Utilities (Section 14.6.3.D)

No additional infrastructure changes have been proposed as part of this application. The site has previously demonstrated compliance by providing the required letters of capacity for infrastructure that serves the site and is deemed satisfactory.

4. Site Design Standards (Section 14.6.4)

Massing, Ventilation and Wind Impact (Section 14.6.4.A)

The building is existing and the bulk/height was reviewed in 2006 by staff and the Planning Board which found no adverse impacts were anticipated. Staff find this standard met.



Shadows (Section 14.6.4.B)

The proposed project is a change of use within an existing building, there are no proposed exterior changes. The project is located within the B-3 zone, and is exempt from the shadow standards as stated in Section 14.6.4.B.

Figure 7: Photo Taken by Staff of Pedestrian Path Between 300 Fore St and 288 Fore St

Snow and Ice Loading (Section 14.6.4.C)

The building is existing and staff are not aware of any existing concerns. As stated above, under the terms of the lease (Attachment B), the tenant is responsible for snow, ice and debris removal.

View Corridors (Section 14.6.4.D)

The building is existing; however, no designated view corridors are impacted. The Custom House is a designated landmark and view focal point and the building was originally designed to allow continued views of the Custom House.

Historic Resources (Section 14.6.4.E)

The site is situated within the Waterfront Historic District and in 2005, the Historic Preservation Board reviewed and approved a Certificate of Appropriateness for the building addition.

The project is not proposing any exterior changes therefore does not trigger any additional review or approvals under the Historic Preservation Ordinance.

Exterior Lighting (Section 14.6.4.F)

As part of the 2006 Planning Board approval, pedestrian scaled streetlights in the “Old Port” style were installed along Fore Street which continues down Custom House Street. The existing building has lighting fixtures at the front entrance on Fore Street, as well as fixtures to illuminate the recessed ATM on site. At the time the project was approved by the Planning Board in 2006, the current lighting standards (contained in Section 12 of the Technical Manual) did not exist.

While the site is located in an area with existing streetlights due to the site not having a lighting plan on record in order for staff to confirm sufficient lighting levels, staff recommend a **condition of approval** that the applicant submit a lighting plan to be reviewed and approved by staff in order to confirm that site lighting meets adequate levels.

Noise and Vibration (Section 14.6.4.G)

The building contains existing rooftop utilities. No additional HVAC, AHU, or emergency generators changes have been proposed as part of this application.

Signage and Wayfinding (Section 14.6.4.H)

The applicant states “New signage is planned for the building. The University will apply for sign permits upon completion of design.” Given that future signage will require a separate building permit which is reviewed by Permitting and Historic Offices, staff have no concerns.

Zoning Related Design Standards (Section 14.6.4.I)

As referenced under the ‘Historic Resources’ section above, the Historic Preservation Board, conducted a design review of the current structure and approved a Certificate of Appropriateness for the project in 2005.

The project is not proposing any exterior changes therefore does not trigger any additional design review or approvals under the Historic Preservation Ordinance.

X. PUBLIC COMMENT

A notice of this Public Hearing was sent to one hundred twenty-six (126) property owners within 500 feet and interested citizens, and appeared in the July 31st and August 1st, 2021 editions of the *Portland Press-Herald*. A Neighborhood Meeting was held on August 3rd, 2021 at 6:00 pm.

At the time of writing this memo, the Planning Department has not received any public comments.

XI. PROPOSED MOTIONS

A. SITE PLAN

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for PL-001679-2021 relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board **[finds/ does not find]** that the plan is in conformance with the site plan standards of the Land Use code, subject to the following conditions of approval:

PRIOR TO ISSUANCE OF A BUILDING PERMIT

1. The applicant shall submit a lighting plan for review and approval by the Planning Authority.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

2. The applicant shall provide executed leases for off-site parking, for review and approval by the Planning Authority.
3. Due to site constraints preventing the planting of required street trees in the right-of-way, the seven street trees required in Sec. 14.6.2.C.4 of the Site Plan Ordinance cannot be met; the applicant shall contribute to the tree fund of \$400 per tree for 7 x \$400 for a total of \$2,800.

XII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Planning Board Approval Letter (dated 3.28.2006)
2. Comments from Transportation Program Manager
3. Pedestrian Activities District Overlay Zone Map

APPLICANT'S SUBMITTAL

- A. Project Summary
- B. Right Title Interest
- C. Application Checklist
- D. Zoning Assessment
- E. Traffic Memo & TDM
- F. 2006 Traffic Letter
- G. Financial Capacity Letter

PLANS

- | | |
|--------|----------------------------------|
| Plan 1 | Site Plan |
| Plan 2 | Elevations and Building Sections |

CITY OF PORTLAND, MAINE

PLANNING BOARD

Kevin Beal, Chair
Michael Patterson, Vice Chair
John Anton
Lee Lowry III
Shalom Odokara
David Silk
Janice E. Tevanian

April 18, 2006

Mr. Tim Levine
Olympia Equity Investors, IVB
280 Fore Street
Portland, Maine 04101

RE: 300 Fore Street, Custom House Square Office and Retail Project

Dear Mr. Levine:

On March 28, 2006, the Portland Planning Board acted upon Olympia Investors IV-B's applications for site plan and subdivision approval, traffic movement permit, and B-3 maximum setback waiver as follows:

A. B-3 Maximum Setback Waiver

In accordance with Site Plan standard 14-526, 16 (b) 2 – *Standards for increasing setback beyond street build-to line in the B-3 zone*, the Planning Board found that the introduction of increased building setbacks at the street level:

- (a) Provides substantial and viable publicly accessible open space,
- (b) Does not substantially detract from the prevailing street wall character,
- (c) Does not detract from existing publicly accessible open space, and
- (d) The area of setback is of high quality and character of design and is attractive to pedestrian activity,

and on that basis granted the B-3 maximum setback waiver as depicted on the applicant's site plan. (6 to 0, Patterson absent)

B. Traffic Movement Permit

The Planning Board found that the project is in conformance with the standards for granting a Traffic Movement Permit, subject to the following conditions of approval:

- i. *That the applicant contributes \$15,000 to the implementation of future improvements (including, but not limited to, signalization) at the Middle Street and India Street intersection. The monetary contribution shall be placed in an escrow account and if not used within ten years of the escrow agreement date, shall be returned to the applicant;*
- ii. *That any change of the location of parking associated with 300 Fore Street from the site of the proposed Riverwalk, LLC parking garage, at the northwesterly corner of the intersection of Fore and Hancock Streets shall be communicated to the Planning Department, together with a revised and updated Traffic Study, and shall prompt review of the Traffic Movement permit by the Public Works Department and the Planning Authority; and*
- iii. *That any change of the use or occupancy of the building proposed to be constructed at 300 Fore Street, which would require a change to the number of parking spaces utilized by the subject project, shall be communicated to the Planning Department, together with a revised and update Traffic Study, and shall prompt a review of the traffic movement permit by the Public Works Department and the Planning Authority.*

(6-0, Patterson absent)

C. Site Plan

That the plan is in conformance with the Site Plan Standards of the Land Use Code, subject to the following conditions of approval:

- i. *That any additional or changed, proposed lighting and/or signage on the site be communicated to the Planning Department for Planning Authority, Zoning and/or Historic Preservation staff review and approval, as applicable;*
- ii. *That a revised design for the alignment of curbing at the Custom House and Fore Streets intersection be submitted for Planning Authority and Public Works review and approval prior to the issuance of a building permit.*
- iii. *That the applicant provide the following documents for the review and approval of City of Portland Corporation Counsel prior to the issuance of a building permit:*
 - a. *Pedestrian easement granting public access to and use of the privately owned sidewalk located between the Fore Street right-of-way and the building;*
 - b. *Final proposed condominium association documents for the development;*
and

- c. *Cross easements between the subject property and 85 Commercial Street for emergency and utility access and maintenance.*
- iv. *That site plan approval of the location and minimum amount of vehicular parking required for the development (a minimum of 123 spaces) is directly linked to the specific occupants identified by the applicant at the March 28, 2006, public hearing of the Planning Board (namely CIEE, Inc, for office use of floors 2, 3, 4, 5 and the basement, and OEI IV-B, LLC, for restaurant/retail use of floor 1). If at any time (a) either occupant changes, (b) any portion of the building is sold, subleased, or further divided, or (c) there is any intensification of any use of the building, such change shall, within 60 days, be communicated by or on behalf of the applicant or its successor in interest to the Planning Authority and shall prompt and require an amendment of the parking component of the site plan approval;*
- v. *The Site Plan is approved for a minimum of 123 spaces to be located on the property owned by Riverwalk, LLC either within the Longfellow Garage or surface spaces in the vicinity of India Street, Middle Street, Hancock Street and Fore Street. No occupancy permits for the subject project shall be issued prior to the applicant's exercising its rights to lease a minimum of 123 parking spaces owned by Riverwalk, LLC. at this location. It is also required that the applicant make a specific documentation identifying the parking property lease, and the applicant shall provide an inventory of parking spaces on the Riverwalk site and their current use and availability.*
- In the event spaces within or at the site of the Longfellow Garage are not yet available as of the completion of the subject project, the applicant shall provide proof of alternative temporary parking arrangements (not to exceed one year) for the review and approval of the Planning Authority at such time.*
- vi. *That the applicant makes a financial contribution for improvements to the southerly sidewalk along Fore Street between India Street and Franklin Arterial. The amount of the contribution shall cover 25% of the cost of improvements up to \$15,000. The contribution shall be held in escrow and returned to the applicant if not used within 10 years. If the location of the project parking changes from the site of the Longfellow Garage, the need for the contribution shall be reassessed by the Public Works Department and the Planning Authority if the project parking location changes prior to spending funds on the Fore Street sidewalk.*

(5 to 1, Silk opposed, Patterson absent)

The approval is based upon and limited to the site plan and information relating to the City of Portland site plan, subdivision, and related standards set forth in Planning Report #20-06 (copy

enclosed), and/or introduced into the record at the March 28, 2006, public hearing.

Please note the following provisions and requirements for all site plan approvals:

1. Where submission drawings are available in electronic form, the applicant shall submit any available electronic Autocad files (*.dwg), release 14 or greater, with seven (7) sets of the final plans.
2. A performance guarantee covering the site improvements as well as an inspection fee payment of 2.0% of the guarantee amount and 7 final sets of plans must be submitted to and approved by the Planning Division and Public Works prior to the release of the building permit. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval.
3. The site plan approval will be deemed to have expired unless work in the development has commenced within one (1) year of the approval or within a time period agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the expiration date.
4. A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
5. Prior to construction, a pre-construction 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 representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.
6. If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

The Development Review Coordinator must be notified five (5) working days prior to date required for final site inspection. The Development Review Coordinator can be reached at the Planning Division at 874-8632. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Bill Needelman, Senior Planner, at 874-8722.

Sincerely,



Kevin Beal, Chair
Portland Planning Board

cc: Lee D. Urban, Planning and Development Department Director
Alexander Jaegerman, Planning Division Director
Sarah Hopkins, Development Review Services Manager
Bill Needelman, Senior Planner
Jay Reynolds, Development Review Coordinator
Marge Schmuckal, Zoning Administrator
Inspections Division
Michael Bobinsky, Public Works Director
Traffic Division
Eric Labelle, City Engineer
Jeff Tarling, City Arborist
Penny Littell, Associate Corporation Counsel
Greg Cass, Fire Prevention
Assessor's Office
Approval Letter File

**“CUSTOM HOUSE SQUARE”
300 FORE STREET
MAJOR SITE PLAN AND TRAFFIC MOVEMENT PERMIT REVIEW
OLYMPIA EQUITY INVESTORS IV-B, LLC, APPLICANT**

Submitted to:
City of Portland Planning Board

Submitted by:
Bill Needelman, Senior Planner

Date:
March 24, 2006

For review at:
March 28, 2006
Public Hearing

I. Introduction

Olympia Equity Investors are requesting a Public Hearing for a 68,000 sq ft office and retail building to be located at the corner of Fore Street and Custom House Street. The new building is proposed to be visually contiguous with the recent addition to the “Blake Building” located at the corner of Commercial Street and Custom House Street.

This proposal has been reviewed at three previous workshops with the Planning Board and has held the required neighborhood meeting.

The plan is being reviewed for compliance with the Site Plan section of the land use code and a MDOT traffic movement permit under delegated authority. The project is also asking for a waiver of the 5-foot maximum street line setback requirement of the B-3 zone.

The project has already received a conditional approval from the Board of Historic Preservation for compliance with the Historic Preservation Ordinance. A final review of building design details and changes is anticipated for April with the Historic Preservation Board.

II. Project Summary

Zoning:	B-3
Districts:	Historic Preservation District Pedestrian Activities District (encouragement zone on Fore Street)
Project Size:	Parcel area 23,887 sq. ft. Building area 68,836 sq. ft. 10,060 sq. ft. restaurant 58,114 sq. ft. office Building Height 65 feet Parking No spaces on-site 145 spaces off-site
CBL:	022-K-001

III. Project Description

Existing Conditions:

In April of 2000, Olympia Equity Investors was approved to construct an addition to the historic Thomas Mayhew Block (a.k.a., Blake Building) at 83 Commercial Street. The addition was the +/-25,000 square foot, 5-story office and retail structure at the corner of Custom House Street and Commercial Street. Using copper, glass, precast concrete, and concrete panel, the addition provided a contemporary counterpoint to the existing Greek revival brick and granite Blake warehouse.

The current site is the westerly abutter of the Fore Street restaurant parcel at the southeast corner of Fore Street and Custom House Street. The site is located across Fore Street from the Custom House Garage to the north, and across Custom House Street from the historic Italianate styled Custom House building to the west. The Custom House is an individually designated historic landmark and the subject site is part of the Portland Waterfront Historic District.

The rear of the Blake Building is currently comprised of a connected series of brick and block warehouse ells that were not part of the year 2000 renovation. These utilitarian structures extend to the Fore Street right of way and are currently vacant.

The previous addition also provided a truck-loading zone from Custom House Street providing access to the rear service core of the building addition and access to the warehouse ells.

Proposed New Structure:

The proposed 68,836 square foot structure is designed to replace the rear warehouse ells with a five to six story office building. The building site is a portion of the Blake Building parent property to be occupied under a 99-year land lease. While the new building is closely integrated with the existing structure, the entire complex is to be held under condominium ownership with the development designed to be a separate building from a zoning perspective.

While the new and existing buildings will share some facilities in the area of the Custom House Street lobby, the main entrance to the new structure will be established from Fore Street. The main entrance to the existing building, along with secondary circulation, loading and trash removal for the entire complex will locate along Custom House Street. The truck entrance and loading area are to be closed and replaced with an on-street vehicle loading area on Custom House Street.

Custom House Street rises approximately nine feet from Commercial Street to Fore Street and the new structure is proposed to rise with it. The proposal shows a five-story façade along Fore Street, though the building would be six stories tall if measured from Commercial Street. Please see the zoning discussion below to understand how this relates to building height requirements.

The footprint of the building almost completely fills the available land with two exceptions. The building sets back from the easterly abutter (Fore Street Restaurant) by 3 feet. The Board should note that the existing restaurant building sets back an additional +/-15 feet to the east (in the area of pedestrian stairs running from Fore Street to the Standard Bakery parking area) providing a total of 18 feet of separation between the restaurant building and the proposed building.

Along the Fore Street right of way line, the proposed building sets askew from the property line to allow a view corridor along Fore Street looking west to the landmark Custom House building. The maximum setback between the building and the front property line occurs at the Fore and Custom House Street corner and is approximately 8 feet. Front setbacks of more than 5 feet require a waiver from the Board. Please see the Zoning section below and the B-3 zone site plan standards section for a discussion of street setbacks in the B-3. This alignment was previously encouraged and approved by the Historic Preservation Board to ensure the new development's compatibility with the Custom House building.

The Fore Street frontage is shown as a "pedestrian encouragement" area on the Pedestrian Activities District map. The design proposes approximately 10,000 feet of retail use at the Fore Street level, currently assumed to be restaurant space. The design and utilization of the Fore Street level for retail uses is a highly desirable outcome for this building.

IV. Zoning Issues

Building Footprint

The building is shown directly adjacent to the Custom House Street right of way and at an angle to the Fore Street right of way. The Fore Street setback angle allows the building to align with the face of the nearby Custom House building, providing better visibility of the historic granite landmark structure. This alignment was approved by the Board of Historic Preservation as a means to achieve compatibility with the landmark Custom House building while preserving a sense of a continuous urban street wall. As shown, the building starts at the easterly corner within one foot of Fore Street, setting back from Fore Street as the building moves west toward Custom House Street. At its widest, the setback is less than 10 feet. The footprint setback at Fore Street requires a waiver of the B3 zone 5-foot maximum street line set back. Such a waiver is provided in the B-3 zone site plan standards are provided below (Staff comments are provided in *italics*.) The wider sidewalk and street wall considerations described above would appear to satisfy the conditions below.

- 14-526, 16 (b) 2. *Standards for increasing setback beyond street build-to line: A proposed development may exceed maximum setbacks as required in section 14-220(c) only where the applicant demonstrates to the planning board that the introduction of increased building setbacks at the street level:*
- (a) Provides substantial and viable publicly accessible open space or other amenity at the street level that supports and reinforces pedestrian activity and interest. Such amenities may include without limitation plazas, outdoor eating spaces and cafes, or wider

sidewalk circulation areas in locations of substantial pedestrian congestion;

The proposal provides wider pedestrian circulation areas in the vicinity of the primary entrance to the new building.

- (b) Does not substantially detract from the prevailing street wall character by introducing such additional setback at critical building locations such as prominent form-defining corners, or create a sense of discontinuity in particularly consistent or continuous settings;

The proposed setback is designed to enhance street wall development in consideration of the location of the landmark Custom House building.

- (c) Does not detract from existing publicly accessible open space by creating an excessive amount of open space in one (1) area or by diminishing the viability or liveliness of that existing open space;

The closest public open space is Boothby Square located one block to the west. The proposal will not detract from the viability or liveliness of that space.

- (d) The area of setback is of high quality and character of design and of acceptable orientation to solar access and wind impacts as to be attractive to pedestrian activity.

The space is a simple extension of the adjacent brick sidewalk and will be attractive to pedestrian activity.

Building Height

The zoning administrator has determined that the new construction is to be considered a new building and using the average grade of the site as a basis the building conforms to the 65-foot building height maximum for the subject site.

V. Site Plan Review

(1/2) Circulation and Parking

Pedestrian Circulation

As stated above, there are two pedestrian entrances proposed to the new structure: a primary entrance from Fore Street, and a shared entrance at the Custom House Street lobby of the existing building. This lobby accesses a service core that currently serves

both the historic structure and the addition to the Blake Building. An existing ATM will be relocated into the Custom House Street lobby and an additional service door will also be provided.

Sidewalks currently exist along both street frontages, but in very different conditions. The year 2000 building addition included a major street circulation change making Custom House Street one way and allowing the construction of an improved and widened brick sidewalk for its entire length. Fore Street, on the other hand, has a narrow bituminous sidewalk that is interrupted by utility poles, parking meters and street signs that make the sidewalk uncomfortable in summer and impassible in winter.

The applicants have coordinated with City staff and their traffic engineer to determine that some of the Fore Street right of way can be redistributed from vehicle lanes to sidewalk. The current plans show an expanded brick sidewalk with a corresponding realignment of the Fore Street travel lanes. Please see the traffic discussion below.

Parking for the new structure to be provided in the proposed "Longfellow Garage" to be located between Middle and Fore Streets East of India Street. As the Board knows, the Longfellow project is currently being reviewed for its own site plan permits. Following a walking route from the subject property along Fore Street to the south westerly pedestrian entrance of the proposed garage, the subject project is located approximately 750 feet from the parking. Currently, Fore Street has sidewalks along its entire length, though the southerly sidewalk across from the proposed Westin Hotel site is in poor condition. With the recent improvements at 280 Fore Street, the proposed improvements at the Westin Hotel, and the improvements included herein, the pedestrian route from the garage to the subject site should be adequate.

Vehicle Circulation

Currently, there is a truck loading bay at the rear of the Blake Building that is proposed to be eliminated requiring that all deliveries, trash pick up, and service for the combined complex of buildings would occur across the sidewalks from adjacent streets. The plans previously showed an overhead utility door located northerly from the main entrance on Custom House for deliveries and trash removal. The revised elevation drawings show that this feature has been revised to double swing pedestrian doors. The previously provided curb cut is to be closed and the applicant requests a commercial loading designation for the street parking in this location. Design issues are more thoroughly discussed below and in a memo from the Urban Designer as attached.

Dan Goyette, reviewing engineer with Woodard and Curran, and Eric Labelle, City Engineer, suggest that the curb geometry at Fore and Custom House Street be adjusted to better align with the curb at the Fore Street frontage of the Custom House. The applicants have provided a sketch of a possible alignment (attachment 24), but this sketch has not been available for a thorough review. A condition of approval is suggested in the motions.

Traffic Permit

As noted above, the primary vehicular destination for traffic generated by the project is proposed for the Longfellow garage.

There has been a considerable amount of discourse between the applicant's and the City's traffic engineers since the previous meeting as found in the attachments and below. Attachment 18, a Traffic Impact Study produced by Gorrill Palmer Engineers, and Attachments 18a and 18b. (recent updates and responses to City comments) provide an explanation of anticipated impacts and street system function in the area. Consulting traffic engineer, Tom Errico provided a review of the anticipated traffic impacts (previous comments provided in attachment 19) and provides the following comments on the updated material:

I have conducted a detailed review of the following documents as it relates to traffic impacts associated with the 300 Fore Street project:

- *Traffic Impact Study prepared by Gorrill-Palmer Consulting Engineers, Inc., February 2006*
- *Response to Comments prepared by Gorrill-Palmer Consulting Engineers, Inc., March 13 2006*
- *Updated SimTraffic Results prepared by Gorrill-Palmer Consulting Engineers, Inc., February 2006*

In my professional opinion the project meets the requirements of the Traffic Movement Permit and City Site Plan Ordinance with the following commentary and conditions.

The Franklin Arterial/Middle Street intersection is currently a High Crash Location as defined by MaineDOT and may have some operational issues in the future. In respect to the safety issue, the Westin Hotel project is required to implement improvements at this intersection (construction of a left-turn lane on southbound Franklin Arterial) that are expected to mitigate safety problems. The traffic data supplied by the applicant indicates the intersection may experience problems when using Highway Capacity Manual methods, but SimTraffic results indicate the intersection will operate at an acceptable level of service. I agree that physical roadway improvement options at this location are not advisable and accordingly, no mitigation is recommended. I should note that the Westin Hotel project will be conducting a post-construction monitoring study of the intersection and will implement signal improvements if problems are identified.

1. *The Franklin Arterial/Fore Street intersection may experience problems when using Highway Capacity Manual methods, but SimTraffic results indicate the intersection will operate at an acceptable level of service. I*

agree that physical roadway improvement options at this location are not feasible (intersection expansion is not possible) and accordingly no mitigation is recommended. I should note that the Westin Hotel project will be developing a signal coordination plan for the intersection.

- 2. The Franklin Arterial/Commercial Street intersection may experience problems when using Highway Capacity Manual methods, but SimTraffic results indicate the intersection will operate at an acceptable level of service. I agree that physical roadway improvement options at this location are not feasible (intersection expansion is not possible) and accordingly no mitigation is recommended. I should note that the Westin Hotel project will be developing a signal coordination plan for the intersection.*
- 3. The Middle Street/India Street intersection is projected to operate at an unacceptable level of service following build-out of this project. The applicant has conducted a preliminary traffic warrant analysis that indicates traffic signals are not warranted. Long-term improvement strategies as contained in the Portland Peninsula Study indicate traffic signalization will be necessary in the future as development activity continues. It is my recommendation that the applicant contributes \$15,000 to the implementation of possible future improvements (including signalization) at this location. I would suggest that the monetary contribution be placed in an escrow account to be applied to unspecified future improvements at the subject intersection. If the escrow money is not used within ten years of the escrow agreement date, the money and accrued interest shall be returned to the applicant. I would note that the exact improvement scheme has not yet been determined and will be a function of development changes in the area (Westin Hotel, Longfellow, Ocean Gateway) and roadway system changes (signalization of India Street/Fore Street, extension of Commercial Street, extension of Hancock Street). Accordingly, the City will be closely monitoring conditions in the future and will be developing an appropriate action plan for the Middle Street/India Street intersection.*

I did review the concept plan (emailed to me today) of the enhanced sidewalk/corner area at the Fore Street/Custom House Street intersection and I generally find it to be acceptable. I would suggest that the curb extension extend farther along Fore Street to better shadow the parking spaces (the plan illustrates a 20-foot separation), but recognize that Eric needs to participate in this discussion.

Finally, I want to note that the traffic volumes at intersections on Franklin Arterial used in the traffic study for this project are significantly different from those used by the Westin Hotel project. Accordingly, I do not formally approve of the traffic volumes used, but based upon the fact that intersection expansion along Franklin Arterial is limited and not practical, I find the study conclusions to be acceptable (with the above conditions).

In summary, the project is presumed to generate 112 am peak hour trips and 162 pm peak hour trips. The Gorrill Palmer report suggests that the only roadway improvement needed is a left turn lane added to Franklin Arterial onto Middle Street (heading toward the Longfellow project.) This improvement is part of the approved Traffic Permit requirements for the Westin project.

Mr. Errico's recommendation that the applicant provide \$15,000 in escrow for future improvements to the Middle and India Street intersection is reflected as a condition in the suggested motions.

Parking

No vehicle parking is proposed on site. As noted above, the applicants propose to utilize the future Longfellow garage. The applicants have provided a signed option letter to lease these spaces. Gorrill Palmer Engineers have provided a parking demand analysis for the Board's review (attachment 7.) In summary, the report assumes a parking demand of 145 spaces. This number is lower than would normally be expected for a project of this size. For comparison, the recent office project at 280 Fore Street (by the same developer) provided 168 spaces for a 59,000 square foot project. The Gorrill Palmer report uses the presumed low parking demand of the primary tenant (owner) as a justification for the lower number. Additionally, the parking demand is assumed to be further reduced by the offsetting times of use between the restaurant and the office uses.

As a project of over 50,000 square feet, the Planning Board is responsible for determining the required parking for the project. As requested by the Board at the last meeting, Mr. Errico has provided an opinion of the parking assumptions as quoted below:

As requested, I have prepared an estimate of parking demand for the proposed 300 Fore Street office project assuming the primary tenant will be the Council on International Education Exchange (CIEE). The parking demand was based upon specific details on employee characteristics and is summarized below.

* *Peak employee level = 150 employees*

* *Parking reduction to account for J-1 visa students (none own cars) = 20 employees*

- * *10% parking reduction to account for non-automobile trips (bicycle, walk, and transit) = 13 employees (I reviewed 2000 US Census data and for employers in the area of the proposed project, 23% of employees live on the peninsula. I continue to conduct research on this relative to journey to work data. A 15% reduction seems a little high, used by the applicant, so I have applied a 10% reduction. Further analysis will be required.)*
- * *15% reduction to account for employee travel off-site = 19 employees (This reduction is solely based upon input from the applicant. If this activity does not happen on a regular 5 days per week basis, parking demand will be greater)*
- * *Total adjusted employee count = 98 employees (150 - 20 - 13 - 19)*
- * *Total Parking Demand for Office Space = 98 spaces*
- * *Restaurant Parking Requirement = 25 spaces*
- * *Total Parking Requirement = 123 spaces*

If the Board agrees with the assumptions regarding the low amount of parking needed for the primary tenant, a conditional approval could be structured that any change of ownership or tenancy that requires additional parking would need to return to the Planning Board for review. The Board will need to further condition approval and/or occupancy of the building upon a certificate of occupancy of the proposed Longfellow garage. Conditions of approval are suggested in the motions.

(3)(4) Bulk height of proposed buildings

As stated above, the proposed building is designed along a party wall with the abutting Blake building, which is under ownership of a related LLC under control of the applicant. Also as noted above, the abutting Fore Street restaurant building is located 18 feet from the proposed building. No adverse impacts are anticipated, and the applicant has provided an explanatory narrative in support of this assumption in the updated written statements in attachment 1a.

(5) Sewers, stormwater, and utilities.

Sanitary flow is proposed from a new line to be connected into the existing 15-inch combined sewer in Fore Street. A sewer capacity letter has been provided from DPW.

Stormwater currently flows into an existing catch basin located near the center of the site. This structure was utilized as part of the previous addition to the Blake building for the transfer of stormwater from this part of the parcel into the City system (presumed to be Commercial Street.) The applicants propose to connect all roof drains from the new

structure into this existing line. The applicant's engineers have responded to City comments regarding the design of the site (attachment 1a) and the City's reviewing engineer, Dan Goyette, has provided his approval (attachment 21a.)

The project is otherwise proposing underground utilities. Previously there was a question if overhead utilities were needed, but the current proposal removes the existing overhead lines with underground conduit as well as a series of three sidewalk vaults for transformers.

(6/7) Landscaping

With virtually no site other than buildings and some sidewalk, the applicant is not proposing any landscaping.

(8) Stormwater

Please see above.

(9) Exterior lighting

Pedestrian scaled streetlights in the "Old Port" style are proposed along Fore Street. No other lighting is proposed.

(10) Fire Safety

Fire safety staff has approved the project.

(11) Off-premises infrastructure

Pending review of the traffic considerations listed above, the project is consistent with related infrastructure in the area.

(12) NA

(13) NA

(14) NA

(15) NA

(16) Development located within the B-3 zone

Urban Designer, Carrie Marsh had provided a memo on the project's adherence to the B-3 Design Standards. Please see attachment 20. As of the writing of this report, new elevation drawings were provided, but have not received substantial review (please see attachment B.) The new drawings were in response to a recent workshop with the

Historic Preservation Board and the project is scheduled to have public hearing later in April. The applicants ask that the Board conditionally approve the project as substantially in conformance with the B-3 standards, subject to final design review by the Historic Preservation Board.

In application of the B-3 Urban Design Guidelines, the B-3 Site Plan Standards, and the Historic Preservation (HP) Standards for new construction, Planning Staff has found a significant consistency between the B-3 and HP requirements. If the Board finds that the revised drawings generally reflect the B-3 standards in massing, building placement, materials and layout, the condition is reasonable. If the Board is uncomfortable approving a project that has not had a final design review, the item could be tabled to allow resolution of design issues.

(17) Complete Application

With the receipt of the architectural elevations, the application is complete.

(18) Projects within one hundred (100) feet of a Historic Landmark

As noted, the project is currently under review for approval as development within the Portland Waterfront Historic District by the Historic Preservation Board.

(19) View corridors

No designated view corridors are impacted. The Custom House is a designated landmark and view focal point and the project is designed to allow continued views of the Custom House.

(20/21) Natural Resources Impacts

No natural resource impacts are anticipated. The site is located at the presumed location of the historic shoreline (the southerly edge of Fore Street), but previous development of the site has presumably disturbed whatever archeological remains may have previously existed.

(22/23) Signs

No signage plans have been provided. A condition of approval is provided.

VI. Recommendations

Subject to the conditions suggested below, staff recommends that the Board find the proposed development consistent with the applicable standards of the Site Plan ordinance and for issuance of a MDOT Traffic Movement Permit under delegated review authority.

VII. Motions for Consideration

A. B-3 Maximum Setback Waiver

In accordance with Site Plan standard 14-526, 16 (b) 2. *Standards for increasing setback beyond street build-to line in the B-3 zone*, the Planning Board finds that the introduction of increased building setbacks at the street level:

- (a) Provides substantial and viable publicly accessible open space,
- (b) Does not substantially detract from the prevailing street wall character,
- (c) Does not detract from existing publicly accessible open space, and
- (d) The area of setback is of high quality and character of design and is attractive to pedestrian activity.

B. Traffic Movement Permit

The Planning Board finds that the project is in conformance with the standards of a Traffic Movement Permit subject to the following condition of approval:

- i. *That the applicant contributes \$15,000 to the implementation of future improvements (including, but not limited to signalization) at the Middle Street and India Street intersection. The monetary contribution shall be placed in an escrow account and if not used within ten years of the escrow agreement date, shall be returned to the applicant.*

C. Design Standards of the B-3 Zone District

The Planning Board finds that the project is (generally) in conformance with the standards of the B-3 Zone district subject to final review and approval of the architectural elevations by the Historic Preservation Board.

D. Site Plan

That the plan is in conformance with the Site Plan Standards of the Land Use Code subject to the following conditions of approval:

- i. *That any additional lighting and signage be provided for Planning, Zoning and Historic Preservation staff review and approval.*
- ii. *That a revised design for the alignment of curbing at the Custom House Street and Fore Street intersection be submitted for Planning Authority*

and Public Works review and approval prior to issuance of a building permit.

- iii. *That the applicant provide the following documents for the review and approval of the City's Corporation Counsel prior to issuance of a building permit:*
 - a. *Pedestrian easement for access and use of the privately owned sidewalk located along the Fore Street frontage of the building.*
 - b. *Condominium association documents for the development.*
 - c. *Cross easements between the subject property and the abutting parent property (85 Commercial Street) for emergency and utility access and maintenance.*
- iv. *That the site plan approval for the recommended parking requirement (minimum 123 spaces) is directly linked to the specific occupants presented to the Planning Board on March 28, 2006 (namely CIEE, Inc for office use of floors 2, 3, 4, 5 and the basement, and OEI IV-B, LLC for restaurant/retail use of floor 1.) If at any time, (a) either occupant changes, (b) any portion of the building is sold, subleased, or further divided, or (c) there is any intensification of use of the building, then the site plan must return to the Planning Authority for review and approval for an amendment to the parking requirements approved herein.*
- v. *The Site Plan is approved for a minimum of 123 spaces to be located at the Longfellow Garage to be constructed in the vicinity of India Street, Middle Street, Hancock Street and Fore Street. No building permits for the subject project shall be issued prior to the City's acceptance of a performance guarantee for the Longfellow Garage.*

If the parking spaces at the Longfellow Garage are not yet available as of the completion of the subject project, the applicant shall provide proof of alternative temporary parking arrangements (not to exceed one year) for the review and approval of the Planning Authority prior to issuance of a certificate of occupancy. If the Longfellow Garage spaces are not available within one year of issuance of certificate of occupancy, the applicant is required to return to the Planning Board for an amendment to this approval for both Site Plan and Traffic Movement permits.

Attachments:

- 1a. Updated written statement with response to City engineering review
- 1. Written statements and project narratives
- 2. Right title and interest
- 3, 4. Financial and technical capacity
- 5. Unusual, natural areas

6. Site Plan Standards narrative
 7. Parking narrative
 8. Utility Capacity (Water and Sewer)
 9. Historic Preservation approval letter
 10. Geotechnical report (narrative only)
 11. Parking – Signed option to lease
 12. Zoning memo
 13. Solid Waste
 14. Stormwater narrative
 15. Erosion and sedimentation control
 16. Landscaping statement
 17. Maps, vicinity, zoning, tax map
 - 18a. Updated traffic and parking information (3-13-06) with responses to City traffic review (calculations omitted)
 - 18b. Additional traffic information (3-22-06)
 18. Traffic Impact Study (calculations omitted)
 19. Traffic Review memo
 20. Urban Designer memo
 21. Engineering Review memo
 - 21a. Updated Woodard and Curran City engineering review memo (3-22-06)
 22. Parking Manager memo
 23. Neighborhood meeting information
 24. Revised curb alignment sketch
- A. Revised Plan Set
Note – A9 and A10 are the previously submitted architectural elevations and are to be changed.
- B. Updated Architectural elevation drawings
Note – Submitted as of writing of this report and not yet reviewed by Planning or Historic Preservation.



Kevin Kraft <kkraft@portlandmaine.gov>

300 Fore St (USM Law) Vehicle Trips and TDM

Bruce Hyman <bhyman@portlandmaine.gov>

Fri, Aug 6, 2021 at 1:04 PM

To: Kevin Kraft <kkraft@portlandmaine.gov>

Cc: Tom Errico <thomas.errico@tylin.com>, Jimmy Dealaman <jdealaman@portlandmaine.gov>

Good afternoon, Kevin,

I have reviewed the Traffic and TDM Memo provided by VHB dated August 5, 2021. I'll defer to Tom Errico regarding the Trip Generation/Traffic analysis.

The TDM section of the memo generally does a good job of describing the TDM context of the site for the Maine Law School with some notable omissions such as access to other fixed route bus services offered by South Portland Bus Service and Biddeford Saco Old Orchard Bus Service in addition to the mentioned METRO bus service. Another notable omission is a description of the proposed parking regimen for the site and how that might relate to TDM measures and effectiveness.

There are a couple of deficiencies in the plan as presented: TDM plans are required to define TDM targets for trip and parking reductions (in percentage and absolute figures), as appropriate. The plans are to also describe TDM strategies that will be employed to achieve those targets over time as well as a monitoring and evaluation plan for assessing the plan's effectiveness.

I am happy to work with the applicant to address the comments I have provided. Please don't hesitate to contact me if you or the applicant have any questions.

Bruce

On Fri, Aug 6, 2021 at 12:05 PM Kevin Kraft <kkraft@portlandmaine.gov> wrote:

[Quoted text hidden]

--

Bruce Hyman
Transportation Program Manager

Department of Planning & Urban Development
389 Congress Street
Portland, Maine 04101
(207) 874-8717 phone

bhyman@portlandmaine.gov
<http://www.portlandmaine.gov/1363/Transportation-Division>
<http://www.portlandmaine.gov>

Yes! Transportation's Good Here



Pedestrian Activities District Overlay Zone

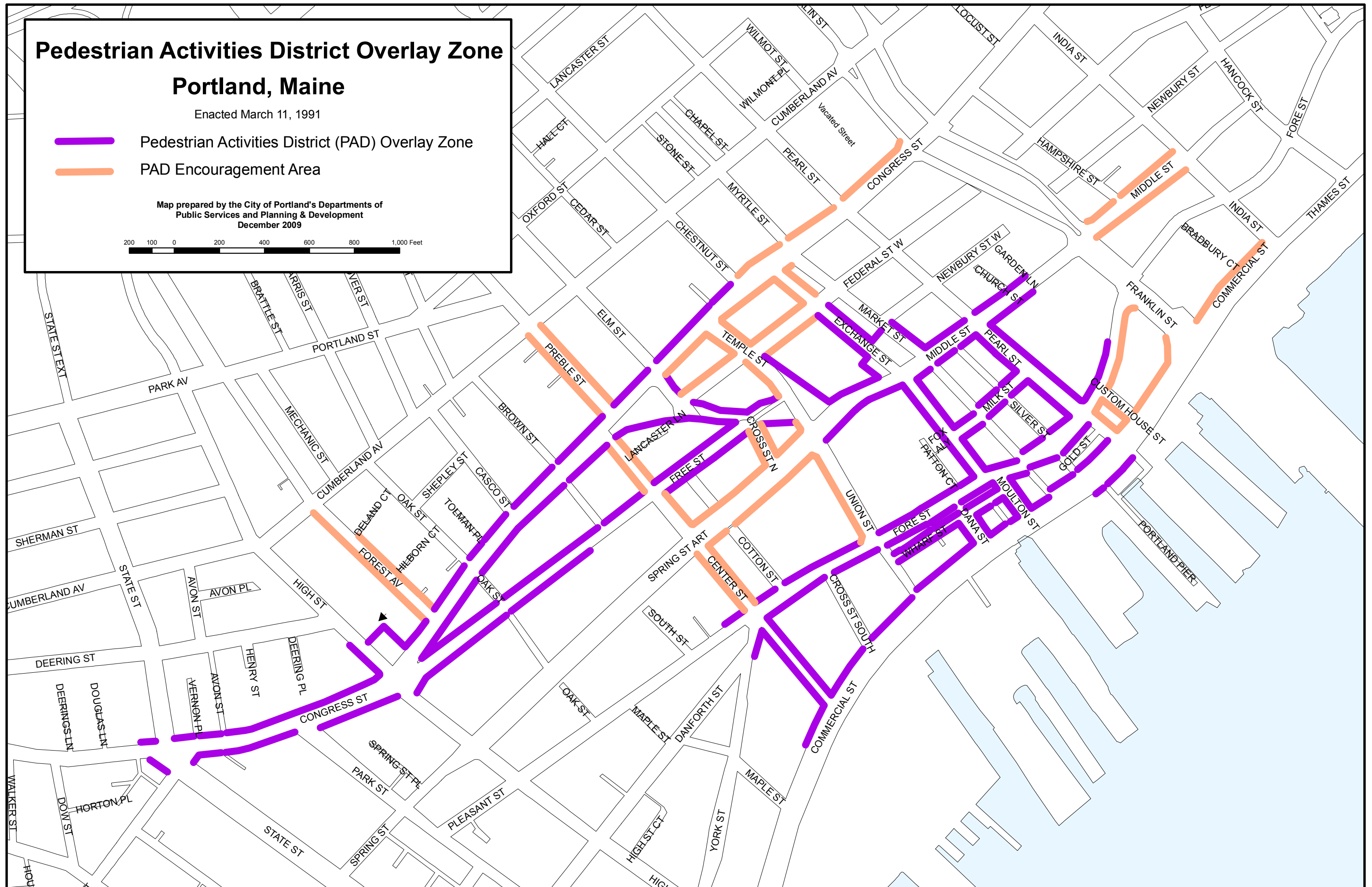
Portland, Maine

Enacted March 11, 1991

-  Pedestrian Activities District (PAD) Overlay Zone
-  PAD Encouragement Area

Map prepared by the City of Portland's Departments of
Public Services and Planning & Development
December 2009

200 100 0 200 400 600 800 1,000 Feet





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Mary E. Costigan
Shareholder
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June 15, 2021

Portland Planning Board
389 Congress St.
Portland, ME 04101

Re: Change of Use Application: 300 Fore Street, Units 1A, 1B & 2; 29-K-6

Dear Board Members,

On behalf the University of Maine System (the "University"), I am submitting application materials for the Change of Use of a building located at 300 Fore Street, pursuant to Major Site Plan review. The building contains nine condominium units that make up the "Custom House Square Condominium." The University plans to lease and occupy units 1A, 1B, and 2 (Unit #2 in the City's property records includes units 2, 3, 4, 5, and B1) (the "Property"), which are owned by CIEE, Inc. ("CIEE"). Those units include the lower level and floors 1-5, totaling 63,841 square feet. CIEE used the Property for office use associated with its study abroad and intercultural exchange organization. The University plans to use the Property to house Maine Law School and other graduate-level programs. There are no exterior alterations planned for the Property. The University does plan to make some interior alterations related to the change of use.

The Property is located in the B-3 Downtown Business Zone where a post-secondary school is a permitted use. The following is a summary of the prior and proposed uses, followed by an analysis of the applicable Site Plan review standards.

CIEE Use

CIEE occupied the Property since 2007 as general office use for its study abroad and exchange program business. On average, 350 individuals used the Property on a daily basis, with 400 individuals at its peak. Employees and guests traveled to the office primarily by personal vehicles and parked in off-site parking spaces. Others walked, biked or used Metro, but exact numbers are unknown. Operating hours were 8:30 am to 5:00 pm Monday through Friday.

University Use

The University will place several graduate programs at the Property: Maine Law School, the Graduate and Professional Center, Maine MBA, MECIS, and the Advanced Structures and Composite Center. The majority of the use will be by the Law School, in accordance with the following schedule:

- Monday - Thursday
 - 250 students will arrive between 8:00 a.m. - 8:30 a.m. for classes and will be in the building until 3:30 p.m.
 - Seminar classes are held 3:30 p.m. - 5:00 p.m. Fewer than 100 students are in attendance.
- Friday - 100 students will arrive between 8:00 a.m. - 8:30 a.m. for classes and be in the building until 5:00 p.m.

Approximately 80 faculty members and staff will use the building from 8:00 am-6:00 pm M-F. There may be lighter use after hours. The MBA program is mostly online, so will not add regular occupants of the building.

The method of transportation will be a similar mix as the CIEE use. It is anticipated that many faculty and staff will arrive by personal vehicle and the students will utilize a mix of transportation options. The University is in communication with Metro regarding bus transportation and will encourage alternative modes of transportation to its students and faculty.

Site Plan Standards

The University will be occupying 63,841 square feet and therefore triggers Major Site Plan review as a change of use greater than 20,000 square feet. Because it is a change of use with no associated changes to the exterior of the building, many of the site plan standards do not apply. In addition, because the Property is located in the B-3 Zone, no off-street parking is required for the change of use.

14.6.1 Transportation standards

When the building received site plan approval in 2006, it also received approval for a Traffic Movement Permit ("TMP"). The TMP approval required mitigation in the form of a \$15,000 contribution for future improvements to the Middle Street and India Street intersection. The TMP approval also required review of the TMP by the Planning Department upon a change of occupancy.¹ A review of the Planning Board report and notes from the TMP scoping session show that the traffic impact study concluded that the use would generate the 112 am peak hour trips and 162 pm peak hour trips. As noted above, the usage of the building in the morning by the University will be similar to that of CIEE. The pm peak traffic is reduced substantially with a majority of the students leaving the building at 3:30, and approximately 150 individuals departing at the peak pm hour. Based upon the similar and somewhat reduced use of the building by the University, the change of use will not have an increased impact in traffic. It therefore continues to meet the following site plan standards related to traffic:

A. Impact on surrounding street systems. The provisions for vehicular loading and unloading, parking, and vehicular and pedestrian circulation on the site and onto adjacent public streets and ways and the incremental volume of traffic will not: 1. Create or aggravate any significant hazard to safety on the surrounding street network; or 2. Substantially increase congestion on any street which is already at a level of service below Level "D" without mitigation proportionate to the level of impact.

Based upon the similar level of usage and impact, the change of use will not create or aggravate a hazard to safety and will not substantially increase congestion.

1. The TMP approval also required a review of the TMP by the Planning Department upon a change in parking location. Because a change of use in the B-3 does not require off-street parking, it is not addressed here in detail. However, the University has received responses to an RFP for parking and will be securing off-site parking prior to occupancy.

B. Access and circulation. All development subject to this article shall provide safe and reasonable access and internal circulation for all users of the site and shall comply with the transportation systems and street design standards of the Technical Manual.

No alterations to access and circulation are planned with the change of use.

C. Public transit access.

The change of use is not anticipated to generate any additional public transit usage than the prior use. Metro's Peninsula Loop stops regularly at Casco Bay Lines, located less than a quarter mile from the Property.

D. Parking: *N/A*

E. Transportation Demand Management (TDM):

A TDM Plan was not a requirement of the original site plan approval for the Property. Because there are no additional impacts created by the change of use, a TDM Plan is unnecessary. As noted above, the University will encourage alternative modes of transportation to its students and faculty.

14.6.2 Environmental quality standards. *N/A, there are no exterior alterations planned.*

14.6.3 Public infrastructure and community safety standards. *N/A, there are no exterior alterations planned. Any interior alterations will meet all applicable public safety and fire prevention standards.*

14.6.4 Site design standards.

New signage is planned for the building. The University will apply for sign permits upon completion of design.

Based on the above we request that the Planning Board find that the proposed change of use complies with all applicable standards. Thank you for your time and consideration.

Sincerely,



Mary E. Costigan

cc: Laurel Hyle

LEASE**CIEE, INC./UNIVERSITY OF MAINE SYSTEM
300 FORE STREET, PORTLAND, MAINE**

THIS LEASE, made as of this 18th day of May, 2021 (the "Effective Date"), is by and between CIEE, INC. (f/k/a Council, International Study Programs, Inc.), a Delaware non-profit corporation with a place of business at c/o Ofer Ohad, Managing Partner, DBI Projects, 1261 Broadway, 9th Floor, New York, NY 10001 (the "Landlord") and UNIVERSITY OF MAINE SYSTEM, a Maine nonprofit corporation with an address of c/o Office of General Counsel, 15 Estabrooke Drive, Orono, Maine 04469 (the "Tenant").

WITNESSETH:

In consideration of the mutual covenants and agreements contained herein and intending to be legally bound hereby, Landlord and Tenant hereby agree with each other as follows:

1. **PREMISES LEASED.** Subject to the terms and conditions of this Lease, Landlord does hereby lease to Tenant, and Tenant does hereby lease from Landlord, condominium units B1, 1A, 1B, 2, 3, 4 and 5 (the "Units") in the Custom House Square Condominium (the "Condominium") and located within the building (the "Building") located at 300 Fore Street, Portland, Maine (the "Property"), together with the units' respective appurtenant interest in the condominium common elements, all improvements therein, and with all rights, privileges, easements and appurtenances thereto (the "Premises"). The Units are determined and defined in that certain Declaration of Custom House Square Condominium (the "Declaration"), dated September 11, 2007, and recorded in the Cumberland County Registry of Deeds in Book 25463, Page 1, as amended by First Amendment dated March 30, 2016 and recorded in said Registry of Deeds in Book 33210, Page 45, and as same may be further amended by the Declaration Amendment as defined below, and as delineated on the condominium plats and plans recorded in said Registry of Deeds in Plan Book 207, Pages 533-542. The Premises are deemed to contain 63,841 rentable square feet. As used in this Lease, the term "Building" shall include the Building and its appurtenances and all exterior areas, yards, plazas, sidewalks, decks, landscaping and the like located outside of the Building but related thereto and the parcels of land on which they are located. There are no parking spaces included with the Premises. Reference is made to that certain ground lease between Olympia Equity Investors IV-B, LLC, declarant under the Declaration, and Olympia Equity Investors IV, LLC, dated October 4, 2006, recorded in said Registry of Deeds in Book 24478, Page 151, as amended by First Amendment to Ground Lease dated September 11, 2007, recorded in said Registry of Deeds in Book 25462, Page 298 (the "Ground Lease").

2. **TERM; RENEWAL.** This Lease shall commence ("Commencement Date") on the date that is the later of:

- A. thirty (30) days after (1) the date Tenant has obtained the Use Permit, and (2) the Landlord has obtained the Declaration Amendment and Ground Lease Amendment (as such terms are defined in Section 33 of this Lease) (such date, the "Use Permit Date"); and
- B. if the Use Permit Date occurs more than 30 days prior to September 1, 2021, then the Commencement Date shall be September 1, 2021 and shall end on August 31, 2026.

If the Use Permit Date occurs after September 1, 2021, then the initial term of this Lease shall commence on the Use Permit Date and shall end on the last day of the month that includes the fifth (5th) anniversary of the Use Permit Date, provided that if the Use Permit Date is the first of the month, the term shall end on the 5th anniversary of the Use Permit Date. Such later date of September 1, 2021 or the Use Permit Date is hereinafter referred to as the "Rent Commencement Date". The term "Lease Year" as used in this Lease shall mean each period of twelve (12) calendar months, with the first Lease Year commencing on the Rent Commencement Date, provided that if the Rent Commencement Date is a date other than the first of the month, the first Lease Year shall commence on the Rent Commencement Date and end on the last day of the calendar month that includes the first (1st) anniversary of the Rent Commencement Date, and each subsequent Lease Year shall commence on the day following the end of the preceding Lease Year. Landlord and Tenant agree to enter into a Rent Commencement Date Agreement in substantially the form attached to and made a part of this Lease as Exhibit A, confirming among other things, the Commencement Date, Rent Commencement Date, and Termination Date of this Lease promptly after the date the Rent Commencement Date is determined. Landlord and Tenant acknowledge and agree that if the Use Permit Date occurs after September 1, 2021, then the Commencement Date and the Rent Commencement Date shall be the same date.

Notwithstanding the Commencement Date of this Lease, Landlord agrees to provide Tenant access to the Premises between the Effective Date and the Commencement Date for purposes of taking measurements, working on plans and specifications, and other non-intrusive purposes, subject to, upon Landlord's request, Tenant entering into an occupancy agreement or similar agreement providing Landlord reasonable protections from such access and the undertaking of such work. Tenant may request and Landlord may grant, prior to the Commencement Date, access to the Units for the purpose of completing the approved Tenant's Work, subject to an occupancy agreement or similar agreement providing Landlord reasonable protections from such access and the undertaking of such work.

Provided that Tenant is not then (meaning at the time the notice described below is given) in default under this Lease beyond any applicable grace or cure period, and provided Tenant gives written notice of Tenant's intent to renew for one renewal term, such written notice to be given no sooner than twelve (12) months prior to the expiration of the initial term of this Lease, and no later than nine (9) months prior to the expiration of the initial term of this Lease, Tenant may renew this Lease for a term of five (5) years from the expiration of the initial lease term (the "Renewal Term"), commencing immediately after the end of the initial term. The Renewal Term shall be on the same terms and conditions as this Lease, except that there shall be no further renewals of this Lease, and except for Base Rent, which shall be adjusted as set forth below.

3. RENT. Tenant covenants and agrees to pay without deduction or set-off (except as specifically provided for in this Lease), annual Base Rent during the term following the Commencement Date. The annual Base Rent shall be payable in advance in equal monthly installments each payable on the first day of each month during the term hereof, with any partial month prorated in accordance with the actual number of days elapsed. Commencing on the Rent Commencement Date and continuing throughout the five (5) year initial term of this lease, the annual Base Rent shall be [REDACTED] per month) based upon a rental rate of [REDACTED] per rentable square foot.

If Tenant exercises its option to renew, the annual Base Rent during the five (5) year Renewal Term shall be equal to the prevailing fair market rent rate in effect at the time of such renewal for space comparable to the Premises in the City of Portland, Maine as agreed upon by Landlord and Tenant, provided, however, in no event shall Base Rent during the Renewal Term be less than [REDACTED] per month), which is based upon a rental rate of [REDACTED] per rentable square foot (the "Minimum Renewal Term Rent"). If Landlord and Tenant cannot agree on the prevailing fair market rent rate prior to the date that is six (6) months prior to the expiration of the initial term of this Lease, then the Base Rent during the five (5) year Renewal Term shall be set at the prevailing fair market rental rates in effect at the time of such renewal for space comparable to the Premises in the City of Portland, Maine as determined by a licensed commercial real estate broker doing business in such city and chosen by Landlord (but not affiliated with Landlord), provided, however, in no event shall Base Rent during the Renewal Term be less than the Minimum Renewal Term Rent. If Tenant disagrees with the determination of fair market rental rate determined by the broker chosen by Landlord, Tenant may seek a second opinion from a licensed commercial real estate broker doing business in such city and chosen by Tenant (but not affiliated with Tenant) and if the two brokers so chosen are unable to reach agreement the parties shall jointly select a third licensed commercial real estate broker doing business in such city who shall decide which of the two opinions of the other brokers is more accurate and the one so chosen shall be used as the fair market rental rate for purposes of the foregoing Base Rent determination for the Renewal Term.

In addition to the foregoing, Tenant covenants and agrees, commencing on the Rent Commencement Date, to pay when due as additional rent all other sums of money or charges required to be paid by Tenant under Section 4 of this Lease (all such amounts, "Additional Rent").

If the term begins on any day other than the first day of a month, Base Rent and Additional Rent for the first month shall be prorated.

If Tenant does not pay monthly installments of Base Rent or Additional Rent within twenty-one (21) days of the date when such amount is due pursuant to the terms of this Lease, then Landlord, in its sole discretion, may charge, in addition to any other remedies it may have, a late charge equal to five (5%) percent of the unpaid amount for every month such amount remains unpaid.

Base Rent and Additional Rent are sometimes collectively referred to in the Lease as "Rent."

4. ADDITIONAL RENT. It is the intention of the parties that the Base Rent payable hereunder shall be net to Landlord so that this Lease shall yield to Landlord the net annual rent specified herein during the term of this Lease, and that all costs, taxes, assessments, expenses, Condominium dues, fees and assessments and other obligations relating to the use and operation of the Premises shall be paid by Tenant, except as otherwise expressly provided herein.

(a) Tenant shall pay, either directly or as Additional Rent to Landlord, all dues, fees, assessments and other charges that shall be charged, levied, assessed, imposed or become due and payable under the Declaration (as affected by the Declaration Amendment) with respect to the Premises during the term of this Lease (hereinafter referred to as "Condominium Expenses") together with, to the extent not included in the Condominium Expenses, all of the expenses (collectively "Operating Expenses") incurred or paid by or on behalf of Landlord or Tenant, with respect to the Premises except as described below. Tenant shall be responsible for management and payment of expenses for the operation, repair, management and maintenance of and provision of services to the Premises, Building, the Property, and common areas thereof, including but not limited to all costs and expenses of: operation and repair; lighting, heating, ventilating, painting, decorating, cleaning, janitorial services and window cleaning; liability, fire, casualty, theft and other insurance as may be required hereunder; all real estate taxes (as defined below) with respect to the Premises, snow, ice and debris removal; traffic control; security; utility fees and costs including all costs for electricity, heat, ventilation, air-conditioning and water for common areas, together with any utility taxes; all building and cleaning supplies; telephone and other communications costs; maintaining, operating and repairing all machinery and equipment in or serving the Premises, Building and the Property including heating and air-conditioning equipment, security equipment, and elevators; repairs, replacements and improvements appropriate for the continued operation of the Premises, Building and the Property; repair and replacement of paving, curbs, walkways, landscaping and other amenities of the Premises, Building and Property; and costs of service and supply contracts relating to operations, repair, maintenance and management of the Premises, Building and Property. Landlord shall have oversight and inspection rights with respect to Tenant's management of the Premises, Building, the Property and the common areas thereof. Tenant agrees to allow Landlord or its agent(s) access to the Premises, Building and Property on reasonable prior notice (but not less than 48 hours), and reasonable access to Tenant's property management books, records and documents upon the reasonable request of Landlord, to enable Landlord or its agent(s) to perform such oversight and inspection responsibilities. Landlord may charge Tenant as Additional Rent a property oversight management fee in the amount of two (2%) percent of gross rents under this Lease.

The Additional Rent (if any) shall be paid by Tenant to Landlord in monthly installments equal to one-twelfth (1/12) of the estimated annual cost of all such expenses, such payments of Additional Rent shall be due and payable on the day the monthly Base Rent payments are due and payable.

Operating Expenses includable as Additional Rent shall not include, however: (a) leasing commissions and advertising expenses or any other costs incurred by Landlord in procuring new tenants; (b) costs, disbursements and other expenses incurred in negotiations or disputes with tenants or prospective tenants; (c) costs of renovating or improving space for tenants or other occupants; (d) depreciation and amortization of the Property; (e) interest, principal payments and

financing costs incurred in connection with any debt associated with the Property; (f) repairs that are covered under warranties by either manufacturer of materials incorporated into any building located at the Property; (g) reasonable legal fees; (h) expenses paid by any tenant directly to third parties or those which Landlord is otherwise actually reimbursed by any third party or by insurance proceeds; (i) costs of a capital nature including, but not limited to, capital improvements, capital repairs, structural repairs, capital equipment, capital tools as determined in accordance with reasonable accounting practices, consistently applied, and/or the equivalent costs and fees of leasing or renting same; (j) reasonable advertising and promotional expenditures; (k) the costs of correcting any code violations resulting from Landlord or Landlord's agents' conduct; (l) any other expense that according to Landlord's reasonable accounting practices, consistently applied, is not considered a normal maintenance or operating expense; (m) costs of replacing the roof of the Building or any part of the Property; (n) (intentionally omitted); (o) expenses for the defense of the Landlord's title to the Property, or any part thereof; (p) any amounts expended by Landlord as environmental response costs for removal, enclosure, encapsulation, clean-up, remediation or other activities regarding Landlord's compliance with federal, state, municipal or local hazardous waste and environmental laws, regulations or ordinances; (q) rental on ground leases or other underlying leases; (r) any amounts recovered or recoverable from insurers and/or other third parties, or (s) any developer, tap, impact, hook-in, utility set-up or similar fees payable in connection with the development or renovation of the Property.

(b) Within one hundred twenty (120) days after the expiration of each Lease Year and after the Termination Date, Landlord shall furnish Tenant with a statement (the "Landlord's Expense Statement"), setting forth in reasonable detail the Operating Expenses for such Lease Year. If the actual Operating Expenses for such Lease Year exceeded the Operating Expenses paid by Tenant for such Lease Year, Tenant shall pay to Landlord the difference between the amount paid by Tenant and the actual Operating Expenses within thirty (30) days after receipt of Landlord's Expense Statement, and if the total amount paid by Tenant for any such Lease Year exceeded the actual Operating Expenses for such Lease Year, such excess shall be credited in equal amounts against the next three (3) installments of Base Rent and Additional Rent. Landlord shall maintain complete and accurate books and records of all Operating Expenses paid or incurred by Landlord and all payments of Operating Expenses received from Tenant. Tenant or its auditors shall have the right, with reasonable notice (which shall in any event not be less than ten (10) days), to inspect, copy and audit such books and records at any time during normal business hours. If the results of such inspection indicate that amounts have improperly billed, Landlord shall promptly repay Tenant for any overpayments which Tenant or its auditors identify and confirm to Landlord. If the results of such inspection indicate that Landlord has not sufficiently billed Tenant for Operating Expenses, then Tenant shall promptly pay Landlord any such amounts due and owing, unless Landlord elects to bill Tenant for such amounts with the next installment of Base Rent and additional rent as provided in this Lease.

(c) For the purposes of this Lease, the term "real estate taxes" shall include without limitation all real estate taxes, betterment assessments, water and sewer taxes, and any other charges made by any governmental authority, which are allocable to the term hereof and imposed or levied upon, or assessed against, the Property, that, upon assessment or upon failure of payment, become a lien upon the Property or any portion thereof or the personal liability of the Landlord. The term "real estate taxes" shall include any payments in lieu of real estate taxes. If

taxes upon rentals shall be substituted, in whole or in part, for the present ad valorem system of real estate taxes, then real estate taxes shall be based upon such taxes on rentals to the extent to which the same shall be a substitute for present ad valorem real estate taxes, plus said ad valorem real estate taxes. The foregoing shall generally apply to any system of taxation instituted, which replaces the present method of taxation, in whole or in part. Notwithstanding anything to the contrary in this Agreement, nothing herein shall require Tenant to pay any of Landlord's income taxes, excess profit taxes, excise taxes, franchise taxes, or estate, succession, inheritance, or transfer taxes.

5. LANDLORD'S WORK; ALLOWANCE; TENANT'S WORK.

(a) No Landlord's Work. Tenant acknowledges and agrees that Landlord shall have no obligation to prepare the Premises for Tenant's occupancy, except for the removal of Landlord's furniture and equipment currently located in the Premises, subject, however, to Landlord and Tenant entering into a mutually satisfactory agreement with respect to Tenant's use and rental of some or a portion of the Landlord's furniture and equipment currently located in the Premises. EXCEPT AS SPECIFICALLY SET FORTH IN THIS LEASE, LANDLORD HAS NOT MADE AND WILL NOT MAKE ANY INSPECTION OF THE PREMISES EXCEPT FOR ITS OWN PURPOSES, AND LANDLORD LEASES AND WILL LEASE AND TENANT TAKES AND WILL TAKE THE PREMISES "AS IS", AND TENANT ACKNOWLEDGES THAT LANDLORD, IN ITS CAPACITY AS LANDLORD HEREUNDER, HAS NOT MADE AND WILL NOT MAKE, NOR SHALL LANDLORD BE DEEMED TO HAVE MADE, ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, OF ANY KIND OR NATURE WITH RESPECT TO THE CONDITION OF THE PREMISES, INCLUDING ANY WARRANTY OR REPRESENTATION AS TO (1) ITS FITNESS, DESIGN OR CONDITION FOR ANY USE OR PURPOSE, (2) THE QUALITY OF THE MATERIAL OR WORKMANSHIP THEREIN, OR (3) ANY LATENT OR PATENT DEFECTS THEREIN, IT BEING AGREED THAT ALL RISKS INCIDENT THERETO ARE TO BE BORNE BY TENANT.

(b) Tenant's Work. Tenant shall, at Tenant's sole cost and expense, perform and be responsible for all construction, renovations and other work necessary to ready the Premises for Tenant's initial occupancy and commencement of operations in the Premises ("Tenant's Work"). Tenant's Work shall be performed (i) in a good and first-class workmanlike manner and (ii) in accordance with all applicable laws, regulations, codes, and ordinances and in accordance with the terms of this Lease and the Declaration, as amended. Prior to the commencement of Tenant's Work, Tenant shall provide its plans and specifications ("Tenant's Plans and Specifications") for Tenant's Work to the Landlord for its review and approval, which approval shall not be unreasonably withheld, conditioned or delayed. Landlord agrees to approve or disapprove Tenant's Plans and Specifications within fifteen (15) business days after delivery of same to Landlord, and to provide specific reasons and instructions regarding any disapproved matters. If Landlord fails to so respond within such fifteen (15) business day period, Tenant's Plans and Specifications shall be deemed disapproved by Landlord. Landlord shall have the right, but not the obligation, to inform Tenant at the time it reviews and approves Tenant's Plans and Specifications which of the renovations and improvements to be made in accordance with the Plans and Specifications shall either remain in the Premises or be removed from the Premises (at Tenant's sole cost and expense) at the expiration or termination of this Lease.

(c) Indemnity Against Liens. If, because of any act or omission of Tenant, any mechanic's lien or other lien, charge or order for the payment of money shall be filed against Landlord or any portion of the Premises, Tenant shall, at its own cost and expense, cause the same to be discharged of record or bonded within forty-five (45) days after written notice from Landlord to Tenant of the filing thereof; and Tenant shall indemnify and save harmless Landlord against and from all costs (including reasonable attorneys' and paralegals' fees), liabilities, suits, penalties, claims and demands resulting therefrom. Nothing in this Lease and no action or inaction by Landlord shall be deemed or construed to mean that Landlord has granted to Tenant any right, power or permission to do any act or to make any agreement that shall create, give rise to, or be the foundation for, any right, title, interest or lien in or upon the estate of Landlord in the Premises.

(d) Additional Tenant Improvements. Any work or alterations other than Tenant's Work that Tenant shall desire to perform shall constitute Tenant's changes to be performed subject to and in accordance with the provisions of Section 9 of this Lease.

6. UTILITIES; INTERRUPTION OF SERVICES; PERSONAL PROPERTY TAXES. During the term of this Lease, Tenant shall pay directly all charges for oil, gas, electricity, lights, heat, ventilation and air conditioning, power, water charges, sewer charges, telephone and other communication service, and all other utilities and services supplied to or used upon the Premises.

Landlord shall have no obligation to provide utilities or equipment other than the utilities and equipment within the Leased Premises as of the Commencement Date of this Lease. In the event Tenant requires additional utilities or equipment, the installation and maintenance thereof shall be Tenant's sole obligation, provided that such installation shall be subject to the written consent of Landlord.

Except to the extent caused by Landlord's gross negligence, Landlord shall in no way be liable for any loss, expense, or damage (whether direct or indirect) that Tenant may sustain or incur by reason of any change, failure, interference, disruption, interruption, or defect in the supply or character of any utility furnished to the Premises, Building or Property, regardless of its duration, or if the quantity or character of the utility supplied by the existing or any future provider is no longer available or suitable for Tenant's requirements. Additionally, and except to the extent caused by the Landlord's gross negligence, any such change, failure, interference, disruption, interruption, defect, unavailability, or unsuitability mentioned in this paragraph shall not: (i) constitute an actual or constructive eviction of Tenant, in whole or in part; (ii) entitle Tenant to any abatement or diminution of Rent, or any other costs due from Tenant pursuant to this Lease; (iii) relieve or release Tenant from any of its obligations under this Lease; or (iv) entitle Tenant to terminate this Lease. Tenant hereby waives all benefits of any applicable existing or future law permitting the termination of this Lease due to any such change, failure, interference, disruption, interruption, defect, unavailability, or unsuitability as mentioned in this paragraph.

Tenant shall pay prior to delinquency all taxes assessed against and levied upon all of Tenant's trade fixtures, furnishings, equipment and personal property located at the Premises.

7. USE AND CONDITION OF PREMISES. Tenant may use the Premises for any use that is consistent with Tenant's mission as an institution of higher education, provided such use is allowed under the Use Permit, and permitted under the Declaration, as amended. Tenant shall not use or permit or suffer the use of the Premises for any other business or purpose, without the prior written consent of the Landlord, which consent shall not be unreasonably withheld, delayed or conditioned, provided, however, that Landlord may in its sole discretion withhold consent to any change in use that would materially increase the risk of environmental damage or hazard or other extra-hazardous activities upon the Premises. Tenant acknowledges and agrees that it is solely responsible for ensuring that its use of the Premises is a permitted use, and to determine all zoning information and secure all necessary or required permits and approvals for its intended use of the Premises provided that Landlord shall lend such assistance or support to Tenant's efforts to obtain a Use Permit as may be reasonably requested by Tenant.

8. LANDLORD SERVICES; MAINTENANCE, REPAIR AND REPLACEMENT OF CAPITAL ITEMS.

(a) Landlord represents and covenants that the following services are currently available at the Premises at a level, quality and timeliness consistent with the operation of buildings similar to the Property in the greater Portland area, the costs of which shall be the responsibility of Tenant as provided in Section 4:

- (1) Heat and cooling to all portions of the Premises when heat or cooling may reasonably be required for the comfortable occupancy of the Premises.
- (2) Hot and cold running water for janitor closets, kitchen, washrooms and lavatories.
- (3) Adequate lighting of the exterior paths and walkways of the Property.
- (4) The common area fixtures, building systems and equipment serving the Building and Premises, including without limitation plumbing, electrical and mechanical installations, fixtures and equipment are in good working order.

Landlord shall, in performing its obligations under this Lease, comply with all applicable laws, rules, ordinances and regulations, including, without limitation, obtaining any and all permits that may be necessary. Tenant acknowledges that Landlord shall have no obligation, in any manner whatsoever, to make any improvements or alterations to the Premises, Building or the Property or improvements that are a part thereof, at any time during the term of this Lease other than as expressly set forth herein. Landlord shall be responsible for capital replacements of the mechanical, electrical, heating, ventilating, air conditioning or other systems serving the Units.

(b) Except as otherwise set forth herein, Tenant shall at its sole cost and expense (i) keep and maintain the Premises in good order and repair, reasonable wear and tear and damage by fire or other casualty only excepted; (ii) keep all fixtures, systems and equipment within the Premises in good operating condition, reasonable wear and tear and damage by fire or other casualty only excepted, including the overall maintenance of the heating, cooling, and ventilation system in accordance with a service contract with a licensed HVAC company approved by Landlord; (iii) maintain, repair and replace the interior walls, interior ceiling, and doors of the Premises, and provide cleaning and janitorial services for the Premises, including collection of trash and recycling materials within the Premises and depositing the same in the dumpster and recycling receptacles supplied by

Tenant; and (iv) to make all repairs and to perform all other work necessary for the foregoing purposes, at Tenant's sole risk and expense. Tenant covenants and agrees that (i) the Premises shall at their sole expense be kept in a clean, sanitary and safe condition, and in accordance with and in compliance with the applicable easements, conditions and restrictions; (ii) Tenant shall comply with all laws, ordinances and regulations of the State of Maine and local authorities having jurisdiction over the Premises; and (iii) Tenant shall perform necessary alterations, modifications or work necessary to comply with the aforesaid, including, without limitation, accessibility modifications and/or alterations or other modifications and/or alterations required by law, ordinance or regulation.

(c) Tenant further agrees that it shall not use, or suffer or permit the use of the Premises or any part thereof in any manner or for any purpose or do, bring or keep anything, or suffer or permit anything to be done, brought or kept, therein that would violate any applicable easements, conditions and restrictions affecting the Premises or any laws, ordinances and regulations of the State of Maine and local authorities having jurisdiction over the Premises, or which would overload or could cause an overload of the electrical or mechanical systems of the Building or which would exceed the floor load per square foot which the floor was designed to carry.

(d) At the expiration of the Term and except as otherwise set forth herein, Tenant shall surrender the Premises to Landlord. Tenant shall remove all its trade fixtures, as provided in Section 9 below, before surrendering the Premises. Tenant shall repair any damage to the Premises caused by removal of such trade fixtures.

9. SIGNS, FIXTURES AND ALTERATIONS.

(a) Tenant will be permitted, at its sole cost and expense, to erect signs on the Premises and/or on any exterior surface of the Building provided Tenant obtains Landlord's prior written consent to the size, style and location of any such signage, which consent shall not be unreasonably withheld, and further that same comply with the City of Portland's Zoning Ordinances, rules and regulations, and any federal ordinances, rules and regulations. Tenant agrees at its cost and expense to maintain all such signage in good condition and repair at all times. All of Tenant's signage, however designated and wherever located, shall comply with all applicable laws and regulations, and shall be removed by Tenant at its sole cost and expense at the expiration or sooner termination of this Lease.

(b) Other than with respect to the Tenant's Work pursuant to Tenant's Plans and Specifications, Tenant shall not make or cause to be made any structural or material non-structural alterations, changes additions or improvements to the Premises, except for signs advertising Tenant's business upon the Premises as provided herein, without first obtaining Landlord's prior written approval and consent. For purposes of this Section 9(b), "material" shall mean solely those alterations, additions, improvements or changes which in the aggregate will exceed more than \$10,000.00 to complete; "structural" as used above in this section shall include, without limitation, wall or roof penetrating fixtures, equipment or improvements. Landlord's consent shall (i) not be unreasonably withheld or delayed and (ii) be deemed granted after thirty (30) business days from the date Landlord receives plans and specifications from Tenant for such penetrating fixtures, equipment or improvements or non-structural alterations, additions, or improvements, if Landlord has not communicated to Tenant

its disapproval of said plans and specifications within said thirty (30) days, and same are in compliance with all applicable terms of this Lease. Tenant shall in all cases present to Landlord reasonably detailed plans and specifications for any work, alteration, addition or improvement at the time approval is sought. Tenant shall obtain and maintain all necessary federal, state, and local governmental permits and approvals for any such work, and for the installation and display of any signage. All structural alterations and leasehold improvements shall become the property of Landlord unless Landlord has otherwise indicated as provided in this Lease.

(c) All non-structural alterations, decorations, signs, trade fixtures made or installed by Tenant (except all heating, plumbing, electric and gas fixtures, door mechanisms and the like permanently affixed to the Premises by Tenant, which shall automatically become part of the Premises without payment therefor by Landlord) shall remain the property of Tenant for the term of this Lease, or any extension thereof. Except as otherwise set forth herein, upon expiration of the term and so long as Tenant is not in default hereunder, Tenant shall remove all such non-structural alterations, decorations, trade fixtures and shall repair any damage resulting therefrom and restore the Premises. If Tenant fails to remove such alterations, decorations, signs and trade fixtures, and to restore the Premises as aforesaid, then upon the expiration of this Lease, and upon Tenant's removal from the Premises, all said alterations, decorations, signs and trade fixtures shall at the option of Landlord become the property of Landlord without payment or further documentation. Notwithstanding the foregoing, Tenant agrees that, if on termination of this Lease by expiration or otherwise, Tenant shall fail to remove any of its property from the Premises as provided for herein, Landlord shall be authorized, in its sole option and subject to any applicable abandoned property laws, and in Tenant's name and on its behalf, to either (i) cause such property to be removed and placed in storage for the account and at the expense of Tenant; or (ii) sell such property at public or private sale, with reasonable notice to Tenant, and to apply the proceeds thereof, after the payment of all expenses of removal, storage and sale of such property, to the outstanding obligations, if any, of Tenant to Landlord; the surplus, if any, shall be paid to Tenant. All sums payable by Tenant under this Section 9(c), and all reasonable attorneys' fees, disbursements related thereto, and taxes and costs of storage shall be deemed Additional Rent.

10. INSURANCE.

(a) Landlord shall maintain, or cause the Condominium association to maintain, in full force and effect at all times during the term of this Lease, including any renewal thereof, policies of insurance insuring the Premises, the Building, the Property and all other buildings and structures now or in the future located on the land that is a part of the Property (including all improvements regardless of which party paid the cost of such improvements) against (i) loss or damage by fire or other casualty, with coverage for perils at least as broad as Insurance Services Office form CP 1030 (Causes of Loss-Special Form); (ii) rent loss insurance sufficient to pay all rent due under this Lease for a period of no less than twelve (12) months after a casualty; (iii) loss from so-called explosion, collapse and underground hazards; (iv) if a sprinkler is in the Premises, loss from sprinkler leakage; (v) flood and earthquake insurance, (vi) loss or damage from such other risks or hazards of a similar or dissimilar nature which are now or may hereafter be customarily insured against with respect to improvements similar in construction, design, general location, use and occupancy to the Premises, and (vii) general liability insurance in an amount of not less than One

Million Dollars (\$1,000,000). At all times, such insurance coverage shall be in an amount equal to one hundred percent (100%) of the full replacement cost of the Buildings and shall include a so-called "agreed value endorsement". "Full Replacement Cost" shall mean the reasonable cost of replacing the Buildings without deduction for depreciation or wear and tear, such amount to be adjusted annually as necessary to reflect changes in the Full Replacement Cost, and including a reasonable sum for architectural, engineering and legal fees connected with the restoration or replacement of the Premises in the event of damage thereto or destruction thereof.

To the extent not included in the Condominium Expenses, Tenant shall pay to Landlord all such insurance premiums during the term of this Lease as Additional Rent as provided in Section 4. Notwithstanding the foregoing, Landlord shall be solely responsible for such premiums for the period prior to the Commencement Date.

(b) Tenant shall maintain, during the term of this Lease and any renewal thereof, comprehensive general liability insurance covering claims that may be made against Landlord or Tenant for damage to property or injury or death of persons by reason of or in any way arising from occurrences on, about or with respect to the Premises, with a minimum of Five Million Dollars (\$5,000,000.00) per occurrence and Five Million Dollars (\$5,000,000.00) in the aggregate, on an occurrence basis. Each such policy shall be for the benefit of Tenant and Landlord, as insured or additional insured.

(c) Whenever and so long as any construction work or alteration work is in progress at or on the Premises from and after the Commencement Date, Tenant shall procure builder's risk insurance on a completed value form and all-risk basis in an amount of up to Twenty Five Million Dollars (\$25,000,000), or the Contract Value and Soft Costs, whichever is greater.

(d) Tenant agrees that it shall keep its property, including, but not limited to fixtures, merchandise and equipment, insured against loss or damage by fire or other casualty with the usual extended coverage endorsements. It is hereby acknowledged and agreed that Tenant assumes all risk of damage to its own property arising from any cause, including, without limitation, loss by theft or otherwise, excepting from this sentence any loss or damage suffered that is caused by Landlord's negligent or malicious acts or omissions.

(e) Each of Landlord and Tenant hereby releases the other and their officers, directors, members, managers, agents and employees from any and all liability or responsibility (to the other or anyone claiming through or under them by way of subrogation or otherwise) for any loss or damage to property caused by fire or other casualty, except to the extent that such fire or other casualty shall have been caused by the fault or negligence of the other party, or anyone for whom such party may be responsible. Tenant and Landlord shall obtain a waiver of subrogation from their respective insurance companies.

(f) All insurance required from Tenant or Landlord shall be written by companies licensed to transact business in the State of Maine, which companies shall at all times during the term hereof possess a Best's Key Rating of A (or its equivalent). All such insurance policies shall require the insurer to notify Tenant, Landlord and Landlord's lender of any cancellation of insurance at least thirty (30) days in advance thereof.

(g) Except as may be provided in the Declaration, all property policies insuring the Building or improvements (excepting Tenant's property for which Tenant is responsible hereunder) therein shall be payable to Landlord or to the holder of any first Mortgage on the Premises under a standard mortgagee clause. Original certificates of insurance carried by each party evidencing the insurance coverages required hereunder shall be delivered to the other party upon its request and to Landlord's lender at Landlord's request. Landlord, Tenant and its lender shall have the right to receive authenticated copies of insurance policies maintained pursuant to this Lease and Tenant shall, upon written request of Landlord or Landlord's lender, deliver same to Landlord or Landlord's lender within fifteen (15) days of such request. Tenant shall comply with, observe and perform all provisions and requirements of all policies of insurance at any time in force with respect to the Premises.

11. INDEMNIFICATION.

(a) Except to the extent caused by the intentional misconduct or negligent acts or omissions of Landlord, its agents, servants or employees, or to the extent covered by Tenant's insurance maintained in accordance with this Lease, Tenant shall defend and indemnify Landlord and save it harmless from and against any and all claims, actions, damages, liability and expense (including, but not limited to, reasonable attorneys' fees and disbursements) incurred or suffered by Landlord in connection with the loss of life, bodily injury, personal injury or damage to property occurring during the term of this Lease to the extent arising from any act or omission of Tenant, its servants or employees in connection with the occupancy or use by Tenant of the Premises or the operation thereof by Tenant. The provisions of this Section 11(a) shall survive the termination or earlier expiration of the term of this Lease.

(b) Except for matters for which Tenant indemnifies Landlord as provided above, Landlord shall defend and indemnify Tenant and save it harmless from and against any and all claims, actions, damages, liability and expense (including, but not limited to, reasonable attorneys' fees and disbursements) incurred or suffered by Tenant in connection with the loss of life, bodily injury, personal injury or damage to property to the extent arising from any act or omission of Landlord, its servants or employees in connection with the ownership or operation of the Premises and the performance of Landlord's Work. Landlord shall also pay all costs, expenses and reasonable attorneys' fees that may be expended or incurred by Tenant in enforcing the provisions of this Section 11(b). The provisions of this Section 11(b) shall survive the termination or earlier expiration of the term of this Lease.

(c) Any indemnification obligations set forth in this Lease shall be subject to the following conditions: (i) the indemnified party shall notify the indemnifying party in writing promptly upon learning of any claim or suit for which indemnification is sought; (ii) the indemnifying party shall have control of the defense or settlement, provided that the indemnified party shall have the right to participate in such defense or settlement with counsel at its selection and at its sole expense; and (iii) the indemnified party shall reasonably cooperate with the defense, at the indemnifying party's expense.

(d) Landlord acknowledges that Tenant is a government entity which enjoys sovereign immunity and other protections under state law from various claims. As a result, any language in this Lease that provides for indemnification by Tenant, shall be enforceable only to the extent permitted by law and shall be limited to the extent of available proceeds under the insurance policies actually maintained by Tenant. Further, no indemnification by Tenant under this Lease shall be deemed or construed to operate in practical effect to waive any statutory immunity or statutory limitation of liability of Tenant from claims of any third party, or to impose any further or additional liability to Landlord that Tenant is or would be subject to in a direct claim by such third party.

12. ESTOPPEL CERTIFICATE, SUBORDINATION AND ATTORNMEN

(a) At any time and from time to time, within ten (10) business days of written request by Landlord or any mortgagee, Tenant agrees to deliver to any proposed mortgagee or purchaser, or to Landlord, a written statement based upon the best of Tenant's then-current knowledge (but with such changes as are necessary to accurately reflect the then-current status of such matters): (i) ratifying this Lease; (ii) confirming the commencement and expiration dates of the term of this Lease; (iii) certifying that Tenant is in occupancy of the Premises, and that this Lease is in full force and effect and has not been modified, assigned, supplemented or amended except by such writings as shall be stated, and, if requested by any mortgagee, agreeing not to amend or modify (except to the extent Tenant expressly has the right to do so hereunder) this Lease without mortgagee's written consent; (iv) certifying whether any notices of a default by Landlord have been sent pursuant to this Lease and whether any defaults described in any such notices have been cured; (v) certifying that there are no claimed defenses or offsets against the enforcement of this Lease by Landlord, or stating the defaults, offsets and/or defenses claimed by Tenant; (vi) reciting the amount of advance rent, if any, paid by Tenant and the date to which such rent has been paid, and, if requested by any mortgagee, agreeing not to prepay rent more than 30 days in advance; (vii) reciting the amount of security deposited with Landlord; and (viii) any other information which Landlord or the mortgagee may reasonably request. Upon the failure of Tenant to execute, acknowledge and deliver to Landlord and/or any mortgagee a statement in accordance with the provisions of this paragraph within the period set forth, Landlord shall provide written notice to Tenant, explicitly referencing this paragraph, of Tenant's failure to comply with this paragraph and provide Tenant an additional five (5) business days to comply with this paragraph. The failure of Tenant to execute, acknowledge and deliver to Landlord and/or any mortgagee a statement in accordance with the provisions of this paragraph within the said period following the second written notice as set forth shall be a default under this Lease (i.e., the notice and cure period set forth in Section 19 below shall be inapplicable).

(b) Tenant agrees to provide an SNDA to any of Landlord's lender or lenders in the future, whereby Tenant agrees to subordinate this Lease, and all of Tenant's rights hereunder, to any mortgage that may in the future exist upon the Premises or any part thereof, and any extensions, renewals or amendments thereof, and any replacements thereof (collectively, the "Mortgage"); provided that the SNDA is entered into with the holder thereof ("Mortgagee"), which SNDA may provide, without limitation, that:

(i) the Tenant will not pay any rent under the Lease more than thirty (30) days in advance of its due date;

(ii) Tenant will not consent to the modification of any terms of this Lease nor to the termination thereof by the Landlord without the prior written consent of Mortgagee;

(iii) that the Mortgagee shall not be (i) liable for any act or omission of any prior landlord or (ii) subject to any offsets or defenses which Tenant might have against any prior landlord;

(iv) Tenant will not seek to terminate this Lease by reason of any act or omission of the Landlord until the Tenant shall have given written notice of such act or omission to the Mortgagee and until a reasonable period of time shall have elapsed following the giving of such notice during which period such holder shall have the right to remedy such act or omission; and

(v) in the event the Mortgagee, its successors, transferees or assignees takes possession of the Premises or otherwise succeeds to the interest of Landlord hereunder pursuant to a foreclosure or other action taken under the Mortgage, the rights of Tenant shall continue in full force of effect and shall not be terminated or disturbed except in accordance with the provisions of this Lease in case of the default of Tenant and Mortgagee or such successors, transferees or assignees shall not disturb Tenant's possession or other rights hereunder and that Tenant shall attorn to the Mortgagee, its successors, transferees or assignees under this Lease, and the Lease shall continue in full force and effect.

13. SECURITY DEPOSIT. Tenant shall deposit with Landlord on or before the Effective Date the sum of [REDACTED] Dollars as security for the performance or observance by a Tenant of the obligations on the part of Tenant to be performed hereunder. Landlord shall have the right, without notice of Tenant, and regardless of the exercise of any other remedy Landlord may have by reason of a default, to apply all or a part of said deposit to cure any default of Tenant. If Landlord so applies all or a part of said deposit to cure any default, Tenant shall upon receipt of notice from Landlord, deposit with Landlord the amount so applied so that Landlord shall have the full amount of the security at all times during the term of the Lease. The amounts deposited hereunder shall be returned to Tenant upon termination of this Lease, provided the Premises are delivered in a 'broom clean' condition, and there are at that time no current defaults under this Lease.

14. LANDLORD DEFAULT. Landlord shall be considered in default of its obligations hereunder only if Landlord shall fail to perform such obligations within thirty (30) days after notice by Tenant to Landlord specifying the nature of the alleged failure of Landlord to perform its obligations under this Lease, or, if such default cannot be cured within such time, within such additional time as is reasonably necessary to correct any such default provided that Landlord promptly commences cure and diligently pursues cure to completion. Notwithstanding anything to the contrary in this Lease, to the extent Tenant makes any payment or incurs other obligations as a result of Landlord's default, Landlord shall reimburse Tenant for such costs incurred, including, without limitation, reasonable

attorneys' fees and disbursements in the event that Tenant substantially prevails in its claim for reimbursement.

Notwithstanding anything to the contrary contained in this Lease, Tenant agrees that Landlord's shareholders, directors, officers, members, managers, and agents shall never be personally liable for any such judgment, and Tenant hereby waives all claims against such persons.

15. ASSIGNMENT AND SUBLETTING.

(a) Except as permitted below, Tenant shall not assign this Lease or sublet the Premises or any part thereof to an entity not a part of the University of Maine system without the prior written consent of Landlord, which shall not be unreasonably withheld, delayed or conditioned. Notwithstanding any assignment or sublet of the Premises to an entity which is a part of the University of Maine system Tenant shall remain primarily liable for all payment and performance obligations under this Lease. Landlord may reject the proposed assignment or sublease for any of the following reasons:

(i) Landlord in the case of a proposed assignment of this Lease elects to recapture the Premises and terminate this Lease as of the effective date of the proposed assignment (such agreement to provide for the release of Tenant and Landlord from any obligation under this Lease effective as the lease termination date); or

(ii) The proposed use of the Premises after assignment or sublet is materially different from the use permitted under this Lease; or

(iii) The proposed assignee or sublessee is not of a type and quality suitable for the Premises in Landlord's reasonable judgment; or

(iv) Tenant does not agree and acknowledge in a written agreement satisfactory to Landlord its continuing and full obligations and liabilities to Landlord under this Lease notwithstanding the consummation of the proposed assignment or subletting.

(b) Upon receiving Landlord's written consent to a proposed assignment or subletting, a duly executed copy of the assignment or sublease shall be delivered to Landlord within ten (10) days after execution thereof. Any sublease shall provide that the subtenant shall comply with all applicable terms and conditions of this Lease to be performed by Tenant hereunder and shall provide that there shall be no further subletting or assignment of the sublease without compliance with the provisions of this Section 15. Any assignment of this Lease shall contain an assumption by the assignee of all of the terms, covenants and conditions of this Lease to be performed by Tenant hereunder. No assignment or subletting shall be deemed to release Tenant from any of its obligations under this Lease, except as specifically set forth in this Lease. No consent by Landlord to any assignment or subletting shall be deemed or interpreted to be an amendment or modification to the terms of this Lease without Landlord's specific and express agreement to such amendment or modification.

(c) If, with the consent of the Landlord, this Lease is assigned or if the Premises or any part thereof are sublet or occupied by anybody other than Tenant, Landlord may, after default by Tenant uncured within applicable grace periods, collect rent from the assignee, subtenant or occupant, and apply the net amount collected to the rents herein reserved, but no such assignment, subletting, occupancy or collection shall be deemed a waiver of any of Tenant's covenants contained in this Lease or the acceptance of the assignee, subtenant or occupant as Tenant, or a release of Tenant from further performance by Tenant of covenants and agreements of each of them herein contained.

(d) Tenant shall pay to Landlord monthly on the date payments of Base Rent are due and payable one hundred (100%) percent of any "Profits" (as hereinafter defined) received by Tenant with respect to any such assignment or subletting. For purposes hereof, "Profits" shall mean the gross revenue received from the assignee or sublessee during the sublease term or during the assignment, less: (a) the gross revenue (exclusive of any such profits) paid to Landlord by Tenant during the period of the sublease term or during the assignment for the space covered by the sublease or assignment ("Space"); (b) the gross revenue paid to Landlord by Tenant for all days the Space was vacant from the date that Tenant first vacated such Space up to the date the assignee or sublessee was to pay rent; (c) any improvement allowance or other economic concession (space planning allowance, moving expenses, etc.,) paid by Tenant to sublessee or assignee; (d) any broker's commission incurred by Tenant; (e) reasonable attorneys' fees incurred by Tenant; (f) any lease takeover costs; (g) the costs associated with any downtime; (h) costs of advertising and marketing the Space.

(e) Tenant agrees to pay to Landlord, on demand, reasonable costs incurred by Landlord in connection with any and all requests made by Tenant for Landlord to consider and consent to any assignment or subletting by Tenant, including Landlord's reasonable attorneys' fees and expenses related thereto.

16. LANDLORD AND TENANT REPRESENTATIONS AND COVENANTS CONCERNING GOVERNMENTAL COMPLIANCE. Landlord hereby represents and covenants to Tenant that:

(a) To the best of Landlord's knowledge, the Premises and Building comply with current Americans with Disabilities Act requirements;

(b) Landlord has received no notices of any no code or zoning violations with respect to the Premises;

(c) To the best of Landlord's knowledge, the utility systems (including but not limited to electrical, HVAC, plumbing, fiber optic or other high speed internet) serving the Units are consistent with the quality and quantity for Class A office space and have been appropriately maintained at all times prior to the Effective Date.

Tenant and Landlord (subject to the allocation of responsibility to Tenant or Landlord under this Lease) shall comply with all municipal and county ordinances and state and federal statutes, rules and regulations now or hereafter in force, which are or shall become applicable to

its use and occupancy of the Premises hereunder. Landlord and Tenant each acknowledge that no parking is included in this Lease, and that the Tenant shall arrange for such parking as may be necessary or convenient for its operations or required by the City of Portland pursuant to its Use Permit or under the Declaration, as amended.

17. DAMAGE OR DESTRUCTION BY FIRE OR OTHER CASUALTY.

(a) If the Premises, or any part thereof, shall be damaged by fire, the elements, or other casualty, then Tenant shall give notice thereof to Landlord promptly following such occurrence, and except as hereinafter otherwise provided, and subject to the provisions of the Declaration or any mortgage(s) given by Landlord encumbering the Premises, Landlord commence, or if applicable, shall use reasonable efforts to cause the Condominium association to commence, within thirty (30) days after the date of the actual receipt (by Landlord or its mortgagee or the Condominium association, as applicable) of insurance proceeds related thereto, to repair the Premises and shall thereafter prosecute the completion of such repair with due diligence. Landlord and Tenant agree that they will promptly and diligently pursue any applicable insurance proceeds that may be due in connection with any aforementioned occurrence. If the damage to the Premises shall render the whole or any part thereof unusable for Tenant's use, a just proportion of the Base Rent, according to the nature and extent of the damage to the Premises, shall be abated from the date of such damage until the Premises or such part thereof shall be restored for the use and occupation of Tenant. Landlord's efforts to so repair shall be expressly limited to the net amount of the proceeds from insurance (after deducting therefrom the reasonable costs of collecting said proceeds) which Landlord (or its mortgagee) receives as a result of such casualty. Tenant shall promptly and fully cooperate in Landlord's efforts to collect insurance proceeds. Notwithstanding the foregoing or anything else in this Lease to the contrary, if after the beginning of the last Lease Year of the term (taking into account any extensions of the initial term and Tenant's renewal rights), the Premises shall be so damaged or destroyed to the extent of twenty-five percent (25%) or more of its insurable value, Landlord may, if it shall so elect in its sole discretion, terminate this Lease by notice to Tenant within ninety (90) days after Landlord's receipt of notice of any such casualty and this Lease shall thereupon terminate, and a just proportion of the rent shall be apportioned as of the time of termination.

(b) Upon completion of any repair and restoration by Landlord, Tenant shall, at its expense, promptly commence repair and replacement of all trade fixtures, equipment, signs and other property installed by or belonging to Tenant which shall have been damaged or destroyed and shall complete the same with due diligence. Landlord shall not be liable for any inconvenience or annoyance to Tenant, or for any injury or interruption to the business of Tenant resulting from any casualty, Landlord's repair or restoration work or delays related thereto so long as Landlord is diligently pursuing restoration and repair in a commercially reasonable manner.

(c) Subject to the force majeure provisions of this Lease, if Landlord undertakes repair or restoration work under this Section and any substantial portion of the Premises remains untenable, inaccessible, or otherwise unsuitable for the permitted use on account of fire or other casualty, for a period of more than two hundred forty (240) days from the date of the casualty to substantially complete such repair or restoration work and as of the end of this period, there is not a substantial likelihood that Landlord shall substantially complete restoration and/or other required repairs within forty-five (45) days from that date such that the repairs and restoration will be substantially

complete by the end of such forty-five (45)-day period, then Tenant shall have the right to terminate this Lease by written notice to Landlord, which notice shall be effective only if received by Landlord after said two hundred forty (240) day period, but before the date of substantial completion.

(d) Force Majeure. Neither Tenant nor Landlord shall in any event be liable for failure to perform any of its obligations under this Lease (with the specific exception of Tenant's liability, covenant and obligation to pay Base Rent, Additional Rent and other charges hereunder and Tenant's and Landlord's obligations to maintain insurance coverages, which shall not be subject to the terms of this provision) when prevented from so doing by strike, lockout, breakdown, accident, order or regulation of or by any governmental authority, or failure of supply, or inability by the exercise of reasonable diligence to obtain supplies, parts, or employees necessary to furnish such services, or because of flood, earthquake, lightning, act of God, war or other emergency, or for any other cause beyond Landlord's or Tenant's, as the case may be, reasonable control, or for any other cause due to any act or neglect of the other party, or that party's servants, agents, employees, licensees, or any person claiming by, through or under that party.

18. EMINENT DOMAIN.

(a) If the whole of the Premises shall be acquired or condemned by eminent domain, then this Lease shall cease and terminate as of the date of such taking or purchase and all rent shall be paid up to that date and Tenant shall have no claim against Landlord nor the condemning authority for the value of any unexpired term of this Lease and Tenant hereby releases same, provided, however, that Tenant shall have the right to claim and recover from the condemning authority only such compensation or damages as may be separately awarded or recoverable by Tenant on account of any and all damage to Tenant's leasehold improvements, equipment, fixtures or other tangible personal property by reason of the condemnation and for or on account of any cost or loss suffered by Tenant in removing Tenant's leasehold improvements, equipment, fixtures or other tangible personal property.

(b) If any part of the Premises shall be acquired or condemned or purchased as aforesaid and in the event that the Landlord and Tenant reasonably conclude that such partial taking or condemnation or purchase shall render the Premises unsuitable for the business of Tenant (taking into account the possibility of reconfiguration of the Premises and the amount of space needed by Tenant), then this Lease shall cease and terminate as of the date of such taking or purchase. If Landlord and Tenant are not able to reasonably agree on whether such partial taking or condemnation or purchase renders the Premises unsuitable as provided above, Landlord and Tenant agree to submit such issue to mediation with such mediator and upon such terms and conditions as they shall agree upon. Tenant shall have no claim against Landlord or the condemning authority for the value of any unexpired term of this Lease, with the exception of the rights enumerated in subparagraph (a) above, and the rent shall be adjusted to the date of such termination. In the event of a partial taking or condemnation or purchase which is not extensive enough in Landlord's and Tenant's reasonable opinion (or as determined pursuant to mediation as provided above) to render the Premises unsuitable for the business of Tenant, then Landlord shall commence within thirty (30) days after Landlord's receipt of the proceeds due to such taking (or as soon thereafter as is practical under the circumstances), condemnation or purchase to repair, reconfigure or restore the Premises to the extent reasonably necessary to render the remaining portions of the Premises suitable for the purposes for which the Premises were leased and to

reconfigure, as reasonably necessary the remaining portion of the Buildings to a complete architectural unit, provided that such work shall not exceed the scope and quality of the work originally required in the construction of such Buildings, less the portion lost in the taking or purchase. Landlord shall thereafter prosecute the completion of such efforts with due diligence subject further to delays resulting from any force majeure events, this Lease shall continue in full force and effect, and the Base Rent payable hereunder from and after said taking or purchase shall be proportionately reduced on a per square foot basis. If, during the course of such restoration, Tenant is deprived of the use of any or all of the Premises, the Base Rent shall be abated during the period of deprivation in proportion to the portion of the Premises made untenable. Landlord's efforts to restore hereunder shall be further subject to and expressly limited by the restrictions, ordinances, requirements and regulations imposed or enacted by duly constituted public authorities and to the amount and availability of the condemnation proceeds. Notwithstanding the foregoing or anything else in the Lease to the contrary, if after the beginning of the last Lease Year of the term (taking into account any extensions of the initial term and Tenant's renewal rights), there occurs an event of a partial taking or condemnation or purchase that requires under this Section 18 that the Premises be restored and/or reconfigured and such taking or condemnation results in an impact on the Premises that is the equivalent of twenty-five percent (25%) or more of their insurable value, Landlord may nonetheless, if it shall so elect, terminate this Lease by notice to Tenant within ninety (90) days after the date of the actual taking and this Lease shall thereupon terminate, and a just proportion of the rent shall be apportioned as of the time of termination.

(c) Upon completion of any repair and restoration by Landlord, Tenant shall, at its expense, promptly commence repair and replacement of all trade fixtures, equipment, signs and other property installed by or belonging to Tenant which shall have been damaged or destroyed or shall be in need of reconfiguration and shall complete the same with due diligence. Landlord shall not be liable for any inconvenience or annoyance to Tenant, or for any injury or interruption to the business of Tenant resulting from any casualty, Landlord's repair or restoration work or delays related thereto so long as Landlord is diligently pursuing restoration and repair.

(d) Subject to the force majeure provisions of this Lease, if Landlord undertakes repair or restoration work under this Section and any substantial portion of the restored and/or reconfigured Premises remains untenable, inaccessible, or otherwise unsuitable for the permitted use, for a period of more than two hundred forty (240) days from the date of Landlord's receipt of sufficient condemnation proceeds to substantially complete such restoration or reconfiguration and/or repair work and as of the end of this period, there is not a substantial likelihood that Landlord shall substantially complete restoration, reconfiguration and/or other required repairs within forty-five (45) days from that date such that the restoration, reconfiguration and/or other required repairs will be substantially complete by the end of such forty-five (45)-day period, then Tenant shall have the right to terminate this Lease by written notice to Landlord, which notice shall be effective only if received by Landlord after said two hundred and forty (240) day period but before the date of substantial completion. In the event of such termination, Tenant shall have no claim against the Landlord nor the condemning authority for the value of any unexpired term of this Lease and Tenant hereby releases same, provided, however, that Tenant shall have the right to claim and recover from the condemning authority only such compensation or damages as may be separately awarded or recoverable by Tenant on account of any and all damage to Tenant's leasehold improvements,

equipment, fixtures or other tangible personal property by reason of the condemnation and for or on account of any cost or loss suffered by Tenant in removing Tenant's leasehold improvements, equipment, fixtures or other tangible personal property.

19. DEFAULT.

(a) If:

(i) Tenant shall fail to cure any monetary default (e.g., failure to pay Base Rent, Additional Rent or other charges due hereunder) within seven (7) days after written notice thereof from Landlord, or

(ii) Tenant shall fail to cure any default in the performance of any of its non-monetary covenants, agreements or obligations hereunder within thirty (30) days of written notice of default from Landlord; provided that so long as Tenant has diligently commenced cure within said thirty (30) days and has been unable to complete same within said thirty (30) days, Tenant shall have up to ninety (90) days to cure provided that Tenant commences cure within such 30-day period and thereafter diligently pursues such cure to completion ; or

(iii) Tenant shall make any assignment for the benefit of creditors or shall apply for or consent to the appointment of a receiver for themselves or any of their property; or

(iv) Tenant shall be adjudged an involuntary bankrupt, or a decree or order for reorganization under the federal bankruptcy laws as now or hereafter amended, or under the laws of any state, shall be entered against Tenant, and any such decree or judgment or order shall not have been vacated or set aside within sixty (60) days from the date of the entry or granting thereof; or

(v) Tenant shall file or admit the jurisdiction of the court and the material allegations contained in any petition in bankruptcy or any petition pursuant to, or purporting to be pursuant to, the federal bankruptcy laws as now or hereafter amended, Tenant shall institute any proceedings for any relief under any bankruptcy or insolvency laws or any laws relating to the relief of debtors, readjustment of indebtedness, reorganization, arrangements, composition or extension; or

(vi) Tenant's leasehold interest hereunder shall be taken on execution; or

(vii) A decree or order appointing a receiver of all or substantially all of the property of Tenant shall be made and such decree or order shall not have been vacated or set aside within ninety (90) days from the date of entry or granting thereof;

then (notwithstanding any license of any former breach of this Lease or waiver of the benefit hereof or consent in any former instance) in any of such cases Landlord may lawfully, immediately and at any time thereafter, and without further notice or demand, and without prejudice to any other remedies, or mail a notice of termination addressed to Tenant at the Premises, and upon such mailing this Lease shall immediately terminate, and all of Tenant's rights hereunder shall cease and terminate. In addition

to the foregoing and not in lieu of any of Landlord's rights and remedies hereunder or at law or in equity, if a petition is filed by Tenant for relief under Chapter 11 of Title 11 of the United States Code, or for reorganization or arrangement under any provision of the Bankruptcy Code as then in force and effect, or any involuntary petition under any provision of the Bankruptcy Code is filed against Tenant and is not dismissed within sixty (60) days thereafter, then in either of such cases this Lease shall at the option of Landlord terminate upon notice of termination to Tenant.

(b) Further, in case of any termination of this Lease under this Section, and notwithstanding any entry or re-entry by Landlord, whether by summary proceedings, termination, or otherwise, Tenant, as of the date of such termination, (i) shall immediately pay to Landlord as damages all amounts due to Landlord prior to and including the date of termination; (ii) shall be immediately liable for and pay to Landlord as damages for such default the amount by which all amounts due under this Lease for the remainder of the Term as if this Lease had not terminated (including both Base Rent and all forms of Additional Rent) and any other balances due under this Lease for such period that exceeds the net rent and additional rent received during such period from new leases of the Premises entered into pursuant to Landlord's "duty to mitigate" as described in Section 6010-A of Title 14, Maine Revised Statutes Annotated, as the same may be revised, replaced or amended from time to time, and to the extent the same is applicable to Landlord's recovery of damages from Tenant. In determining the net rent from such new leases there shall be deducted from each monthly rental payment the monthly amortization amount of the reasonable costs of reletting the Premises including real estate commissions, advertising and reasonable costs of renovating the Premises to suit any new tenant or tenants, such amortization to be on a straight line basis over the term of the applicable new lease. In addition to the foregoing and notwithstanding any other damages or payments due from Tenant under this Lease or at law or in equity, Tenant agrees that, in the event of its breach of this Lease, it shall be liable to Landlord for Landlord's reasonable attorneys' fees and court costs related to or arising out of Tenant's breach or default of its obligations under this Lease, in the event of termination and otherwise.

(c) Landlord may, at its sole option and without waiving any claim for damages for breach of this Lease or any of Landlord's other remedies hereunder, at any time after an event of default cure such default on the account of Tenant, and Tenant agrees to reimburse Landlord for any amount paid by Landlord in so doing (including reasonable attorneys' fees) as Additional Rent and save Landlord harmless from any liability incurred thereby. Any such reimbursement shall be due immediately upon demand therefor. Landlord's performance of any of Tenant's obligations or covenants shall not release Tenant from liability for nonperformance or breach and Landlord shall not be liable to Tenant for any interference or disruption of Tenant's operations or business caused by or related to Landlord's exercise of its rights hereunder, provided that such rights are exercised in a commercially reasonable manner.

(d) Nothing herein contained shall limit or prejudice the right of Landlord to prove for and obtain in proceedings for bankruptcy or insolvency by reason of the termination, an amount equal to the maximum allowed by any statute or rule of law in effect at the time when, the damages are to be proved, provided that such amount is equal to or less than the amount of the loss or damage referred to herein.

(e) Notwithstanding anything in this Lease to the contrary, and in addition to and not in lieu of anything specifically set forth herein, Landlord shall be entitled to all remedies available to landlords at law and equity, including, without limitation, the remedy of forcible entry and detainer. TENANT, FOR ITSELF, AND ITS HEIRS, SUCCESSORS, AND ASSIGNS HEREBY KNOWINGLY, WILLINGLY, AND VOLUNTARILY WAIVES ANY AND ALL RIGHTS SUCH PARTY MAY HAVE TO A TRIAL BY JURY IN ANY FORCIBLE ENTRY AND DETAINER ACTION AND ANY PROCEEDING TO COLLECT ANY MONEY OR PAYMENTS DUE FROM TENANT UNDER THIS LEASE BROUGHT BY LANDLORD, OR LANDLORD'S SUCCESSORS AND/OR ASSIGNS. LANDLORD, FOR ITSELF, AND ITS HEIRS, SUCCESSORS, AND ASSIGNS HEREBY KNOWINGLY, WILLINGLY, AND VOLUNTARILY WAIVES ANY AND ALL RIGHTS LANDLORD MAY HAVE TO A TRIAL BY JURY IN ANY PROCEEDING TO ENFORCE THIS LEASE BROUGHT BY TENANT, OR TENANT'S SUCCESSORS AND/OR ASSIGNS.

20. HAZARDOUS WASTE.

(a) Tenant covenants and agrees that, with respect to its operations and specifically with respect to any hazardous, toxic or special wastes, medical wastes, materials or substances including without limit waste oil and petroleum products, defined or identified in, or regulated by, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 USC Section 9601, et. seq.), the Hazardous Materials Transportation Act (49 USC Section 1802, et. seq.) and the Resource Conservation and Recovery Act (42 USC Section 6901, et. seq.) or any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to or imposing liability or standards of conduct concerning the environment or any hazardous or toxic waste, substance or material (the "Hazardous Materials"), as now or at any time hereafter in effect (collectively, "Environmental Laws") which Tenant, its agents or employees, may use, receive, handle, store, permit on the Premises, or generate in the conduct of its business at the Premises, Tenant shall: (i) comply with all applicable Environmental Laws which relate to the treatment, storage, transportation and handling of Hazardous Materials; (ii) in no event permit or cause the discharge or disposal of Hazardous Materials in, on or about the Premises in violation of any applicable Environmental Laws; (iii) with respect to any off-site disposal, shipment, storage, recycling or transportation of any Hazardous Materials, Tenant shall properly package and transport the Hazardous Materials and shall cause to be executed and duly filed and retain all manifests and other records as may be required by any applicable Environmental Laws; (iv) at no time operate the Premises as a treatment, storage or disposal facility for the treatment, storage or disposal of Hazardous Materials; (v) to the extent any Hazardous Materials may be temporarily stored at the Premises as part of the ordinary course of Tenant's business, store such materials in secure containers in compliance with all applicable Environmental Laws; (vi) at reasonable times permit Landlord, any mortgagee or their respective agents or employees to enter the Premises to inspect the same for compliance with the terms of this Section 20 and further make available to Landlord, upon fourteen (14) days prior written notice, all manifests and other records which Tenant may be obligated to obtain and keep in accordance with any applicable Environmental Laws; and (vii) at Tenant's sole cost, risk and expense, remove and/or remediate in accordance with all applicable Environmental Laws all Hazardous Materials placed, discharged, released, arriving at, or deposited exclusively after the Commencement Date in, upon or under the Premises by Tenant or any of its affiliates in violation

any Environmental Laws; provided, however, Tenant shall not be responsible for any cost, risk, or expense that arises, in whole or in part, from any Hazardous Materials placed, discharged, released, arriving at, or deposited in, upon or under the Premises prior to the Lease Date (collectively, the "Prior Environmental Conditions").

(b) Landlord shall be and remain fully responsible for all Prior Environmental Conditions. If during the term hereof any Prior Environmental Conditions are discovered, Landlord shall, at its sole cost, risk and expense, remove and/or remediate in accordance with all applicable Environmental Laws all Hazardous Materials placed, discharged, released, arriving at, or deposited in, upon or under the Premises prior to the Lease Date.

(c) In addition to and not in derogation of any other indemnification obligations of Tenant under this Lease, Tenant further agrees to hold harmless and indemnify Landlord for and against any and all claims, loss, costs, damages and expenses, including reasonable attorney's fees, which may arise in the event that Tenant fails to comply with any of the provisions contained in this Section 20; provided, however, this indemnification and hold harmless obligation of the Tenant shall not apply, and instead Landlord shall indemnify and hold harmless Tenant for any such claims, losses, costs, damages and expenses incurred by Tenant to the extent the same arise from any Prior Environmental Conditions.

(d) The provisions of this Section 20 shall survive the expiration or earlier termination of this Lease.

21. ACCESS OF LANDLORD. Upon not less than twenty-four (24) hours prior verbal or written notice (except in case of emergency, when no prior notice shall be required) and subject to the reasonable requirements of Tenant to preserve the confidentiality of any portion of its business or operations, Landlord shall have reasonable access to the Premises for the purpose of examining the same, showing the same to potential purchasers, mortgagees or tenants (provided that showings to tenants shall be made only during the final Lease Year), or to perform any of Tenant's obligations where Landlord is doing so under its exercise of its rights hereunder or to make any replacements or casualty repairs or perform any casualty or eminent domain-related reconstruction as is provided for under this Lease.

22. SUCCESSORS AND ASSIGNS. The provisions of this Lease shall be binding upon and inure to the benefit of the successors and permitted assigns of Landlord and the successors and permitted assigns of Tenant. In the event of any transfer of Landlord's interest in the Premises, upon receipt by Tenant of a written instrument pursuant to which the transferee of Landlord's interest in the Premises expressly assumes and agrees to perform the obligations and liabilities of Landlord hereunder, the party that is transferor of Landlord's interest shall cease to be liable and shall be automatically released from all liability for the performance or observation of any agreements or conditions on the part of the Landlord to be performed or observed subsequent to the time of said transfer, it being understood and agreed that from and after said transfer, the transferee shall be liable therefor. Notwithstanding the foregoing, nothing in this paragraph shall release Landlord or any subsequent transferor from liability arising or accruing prior to the time of said transfer.

23. LANDLORD'S COVENANT OF QUIET ENJOYMENT. Upon payment by Tenant of the Base Rent, Additional Rent and other charges herein provided and upon the observance and performance of all the covenants, terms and conditions on Tenant's part to be observed and performed, Tenant shall, subject to the terms and conditions hereof, peaceably and quietly hold and enjoy the Premises for the term of this Lease and any extensions thereof without hindrance or interruption by Landlord or any person or persons claiming by, through or under Landlord. Landlord warrants and represents, upon which warranty and representation Tenant has relied in the execution of this Lease, that Landlord is or will be on the Commencement Date the fee owner of the Premises free and clear of all encumbrances and restrictions which would prevent or interfere with the use of the Premises for business offices; that on and after the Commencement Date to the best of Landlord's knowledge the Premises shall be free and clear of all liens and encumbrances superior to this Lease which could adversely affect the use and enjoyment of the Premises in accordance with the terms of this Lease other than those that may have arisen from or relate to Tenant or its agent's actions or failure to act.

24. WAIVER. The waiver by any party to this Lease of any breach of any term, covenant or condition herein contained shall not be deemed to be a waiver of such term, covenant or condition on any subsequent breach of the same, or any other term, covenant or condition herein contained. No payment by Tenant or receipt by Landlord of any Rent or other amounts due hereunder shall be deemed to be other than on account of the amount due, and no endorsement or statement on any check or any letter accompanying any check or payment shall be deemed an accord and satisfaction (unless otherwise confirmed by Landlord in writing), and Landlord may accept any such check as full or partial payment of the due charges without prejudice to Landlord's right to recover the balance of such installment or payment or pursue any other rights or remedies available to Landlord. No receipt of money by Landlord from Tenant after the termination of this Lease shall reinstate, continue or extend the Lease term or Tenant's right of possession.

25. NOTICES. Any notice, demand, request or other instrument required or permitted to be given under this Lease shall be delivered in person, sent by certified mail, postage prepaid, or sent by FedEx or other recognized overnight courier service, and shall be addressed (a) if to Landlord addressed to Landlord, c/o Ofer Ohad, Managing Partner, DBI Projects, 1261 Broadway, 9th Floor, New York, NY 10001, and c/o Debra Cronin, 300 Fore Street, Portland, Maine 04101, with a copy to Drew A. Anderson, Esq., Murray, Plumb & Murray, 75 Pearl Street, P.O. Box 9785, Portland, ME 04104-5085, or at such other address as Landlord may designate by written notice, and (b) if to Tenant, c/o Office of General Counsel, 15 Estabrooke Drive, Orono, Maine 04469, with a copy to Pete Klein, Esq., Drummond Woodsum, 84 Marginal Way, Portland, Maine 04101, or at such other address as Tenant shall designate by written notice. All notices shall be deemed received three (3) days after mailing (except in the case of notices delivered by overnight courier service, in which case, the notice shall be deemed received the next business day after mailing). After receiving written notice from any person, firm, or other entity, stating that it holds a Mortgage on the Premises, Tenant shall, so long as such Mortgage is outstanding, be required to give to such holder the same notices as are required to be given to Landlord under the terms of this Lease. Any such Mortgage holder shall have the same opportunity to cure any default, and the same time within which to effect such cure, as is available to Landlord, or such additional time as is set forth in any agreement or document between such holder and Tenant.

26. HOLDOVER. If Tenant remains in possession of the Premises after the expiration of the term of this Lease and any extensions thereof, such possession shall be as month-to-month tenant. During such month-to-month tenancy, the provisions of this Lease for the period just preceding such termination shall be applicable, except that monthly rent shall be in the amount of two (2) times the then-current monthly rent. Landlord or Tenant may terminate any such month-to-month tenancy by giving the other thirty (30) days prior written notice.

27. LANDLORD AND TENANT DEFINED; USE OF PRONOUN. The words "Landlord" and "Tenant" shall be deemed and taken to mean each and every person or party mentioned as a Landlord or Tenant herein, be the same one or more. The necessary grammatical changes required to make provisions of this Lease apply in the plural sense where there is more than one Landlord or Tenant and to either corporations, associations, partnerships, trusts or individuals, males or females, shall in all instances be assumed as though in each case fully expressed. If either Landlord or Tenant is more than one party, then their obligations shall be joint and several.

28. MISCELLANEOUS.

(a) The captions appearing in this Lease are inserted only as a matter of convenience and in no way define, limit, construe or describe the scope or intent of this Lease, nor in any way affect the meaning of this Lease.

(b) Neither party shall record this Lease or a memorandum thereof without the prior written consent of the other provided, however, that the Landlord shall execute and deliver to Tenant a memorandum of this Lease in recordable form containing such information as may be required by statute regarding this Lease [REDACTED]

(c) If any provision of this Lease or its application to any person or circumstance shall to any extent be invalid or unenforceable, the remainder of this Lease or the application of such provision to persons or circumstance other than those as to which it is invalid or unenforceable shall not be affected thereby and each provision of this Lease shall be valid and enforceable to the fullest extent permitted by law.

(d) This Lease constitutes the entire agreement between Landlord and Tenant with respect to the subject matter contained herein and there are no understandings or agreements between Landlord and Tenant with respect to said subject matter which are not contained herein. This Lease cannot be amended except by written instrument executed by Landlord and Tenant.

(e) Landlord and Tenant each covenant to the other that (i) each has the power and capacity to execute this Lease and any documents associated therewith; (ii) that the execution and delivery of this Lease and any documents associated therewith have been duly authorized by appropriate entity actions; (iii) the person or persons executing this Lease is/are the duly authorized officer, trustee or agent therefor; and (iv) this Lease, upon such execution and delivery, shall constitute its valid and binding obligation, enforceable according to its terms. Each shall provide the other upon request with written evidence of such authority, power and capacity, including without limitation, a legal opinion from counsel for such party as to same.

(f) This Lease shall be governed solely by the laws of the State of Maine, excluding the application of its choice of law principles. Tenant consents to the personal and subject matter jurisdiction of the United States Federal courts located in the State of Maine and the Maine State Courts located in Cumberland County Maine for the enforcement of or any dispute or matter arising under this Lease.

29. **BROKERAGE.** Tenant warrants and represents to Landlord that it has not dealt with any broker, finder or similar person concerning this Lease other than Malone Commercial Brokers. Landlord will pay any broker commissions due to Malone Commercial Brokers pursuant to a separate agreement. In the event of any brokerage claims against Landlord by any other broker claiming by, through or under Tenant, Tenant agrees to defend the same and indemnify Landlord against any such claim. Landlord agrees that in the event of any brokerage claims against Tenant by any other broker claiming by, through or under Landlord, Landlord agrees to defend the same and indemnify Tenant against any such claim.

30. TENANT FINANCIALS. If at any time during the term of this Lease Tenant's financial statements are not publicly available, Tenant agrees to provide Landlord upon written request therefor its then most recent three (3) years of financial statements, subject to Landlord, its lender or prospective purchaser of the Premises entering into commercially reasonable confidentiality agreement(s).

[illegible]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

32. RIGHT OF FIRST REFUSAL. If Landlord receives a bona fide offer to purchase all of the Units from an unaffiliated third party, Landlord shall send written notice of such offer (the "Notice of Offer") to Tenant, which Notice of Offer shall set forth all pertinent facts, including the identity of the proposed transferee, the consideration to be paid (the "Purchase Price"), the deposit to be paid, and the other principal terms and conditions, and shall be accompanied by a copy of the written offer, if applicable.

- (a) Tenant shall have an option for fifteen (15) days following receipt of the Notice of Offer to elect to purchase the Units for the Purchase Price, and otherwise upon the same terms and conditions as described in the Notice of Offer. Within said fifteen (15) days, Tenant shall either (1) execute and deliver to Landlord a waiver and release in recordable form to permit the sale of the Premises to the proposed transferee (the "Waiver and Release"), or (2) shall execute and deliver to Landlord a notice of intent to purchase the property (the "Notice of Intent") for the Purchase Price and otherwise upon the terms and conditions as described in the Notice of Offer.
- (b) The execution and delivery of the Notice of Intent shall constitute a binding sales contract between Landlord and Tenant, upon the terms and conditions described in the Notice of Offer, except that the closing shall occur on or before the date set forth in the Notice of Offer unless otherwise agreed by Landlord and Tenant.
- (c) If Tenant shall not exercise his right to purchase, and shall sign a Waiver and Release, or shall fail to respond within said fifteen (15) day period, Landlord shall be free to convey the property to the offeror identified in the Notice of Offer, but only upon the terms and conditions contained in such Notice of Offer, and the right of first refusal contained herein shall be deemed to be forever satisfied. If for any reason the property is not sold to such offeror upon such terms and conditions, the right of first refusal contained herein shall be satisfied again before the Units may be sold to the original offeror or to any other person upon the same or different terms and conditions.
- (d) A transfer by gift, devise or transfer by operation of law of the Units, or by mortgage, shall be exempt from the right of first refusal described herein, provided that upon

acquisition of title to the Units, the transferee in any such exempt transaction shall be subject to the same right of first refusal rights held by Tenant as described herein.

33. LEASE CONTINGENCY. Landlord acknowledges and agrees that Tenant's and Landlord's obligations under this Lease are contingent upon the following:

- (a) Tenant obtaining a use permit from the City of Portland (the "Use Permit"). Tenant agrees that the Use Permit shall not change or prohibit the current permitted use of the Premises for office or retail use as described in the Declaration, and that the Use Permit shall only supplement and add to the current uses allowed at the Premises. Tenant shall provide Landlord with a copy of any proposed Use Permit to be issued by the City of Portland prior to its issuance, and Landlord shall have the right to prevent such permit from being issued if Landlord believes in its sole and absolute discretion that the issuance of such permit is not consistent with the foregoing provisions.
- (b) Landlord obtaining an amendment of the Declaration to allow the expanded use of the Premises to accommodate Tenant's use of the Premises as described in Section 7 of this Lease and such other matters as may be necessary to make the Declaration consistent with the terms of this Lease (the "Declaration Amendment").
- (c) Landlord obtaining an amendment to the Ground Lease to allow the expanded use of the Premises to accommodate Tenant's use of the Premises as described in Section 7 of this Lease and such other matters as may be necessary to make the Ground Lease consistent with the terms of this Lease (the "Ground Lease Amendment").
- (d) Tenant obtaining approval by its Board of Trustees at a meeting on May 24, 2021 (the "Tenant Board Approval").
- (e) Landlord obtaining approval of its Board of Directors (the "Landlord Board Approval").

Tenant may, by written notice to Landlord as provided in this Lease, terminate this Lease without further obligation at any time if Tenant determines in good faith that it will not be able to obtain the Use Permit or Tenant Board Approval for any reason. Landlord may at any time, by written notice to the Tenant as provided in this Lease, terminate this Lease without further obligation if Tenant or Landlord have not, as applicable, despite good faith efforts, obtained the Use Permit, Landlord Board Approval, Declaration Amendment, or Ground Lease Amendment, by December 31, 2021.

[Signatures appear on following page]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the Effective Date.

CIEE, Inc.

Deborah Cronin

Witness

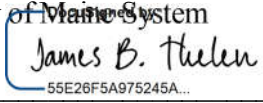
By: *Timothy Propp*

Timothy Propp, Its: Chief Operating Officer

University of Maine System

James B. Thelen

5/18/2021

By: 

James B. Thelen, Its: Vice Chancellor for
Strategic Initiatives and Chief Legal Officer

Witness

EXHIBIT A

RENT COMMENCEMENT DATE AGREEMENT

THIS RENT COMMENCEMENT DATE AGREEMENT (this "Agreement") is executed as of this _____ day of _____, 2021 by University of Maine System ("Tenant") and CIEE, Inc. ("Landlord"), with respect to that certain Lease dated _____, 2021, as the same may have been amended (the "Lease") pursuant to which Tenant has leased from Landlord certain premises at 300 Fore Street, Portland, Maine (the "Premises").

In consideration of the mutual covenants and agreements set forth in the Lease, Landlord and Tenant hereby acknowledge and stipulate as follows:

1. All initially capitalized terms used herein shall have the meanings set forth for such terms in the Lease.
2. The initial term of the Lease is five (5) years. Tenant has one (1) option to extend the Term of the Lease for five (5) years.
3. The Commencement Date occurred on _____, 2021.
4. The Rent Commencement Date occurred on _____, 2021.
5. The initial term expires on _____, 2026.
6. If properly exercised by Tenant, the extension term shall commence on _____, 2026, and expire on _____, 2031. Tenant must give written notice of its exercise of the renewal term no earlier than _____, 202__, and on or before _____, 202__.
7.
8. The Lease is unmodified and in full force and effect.

[signatures appear on following page]

IN WITNESS WHEREOF, the Landlord and Tenant have executed this Rent Commencement Date Agreement as of the date first set forth above.

CIEE, Inc.

Witness

By: _____
Timothy Propp, Its: Chief Operating Officer

University of Maine System

Witness

By: _____
James B. Thelen, Its: Vice Chancellor for
Strategic Initiatives and Chief Legal Officer

CITY OF PORTLAND
Planning & Urban Development Department

MAJOR SITE PLAN GENERAL DOCUMENT AND DRAWINGS CHECKLIST Please submit each document as a separate PDF file. Please confirm by electronically checking the boxes in the left-hand column. ** PLEASE FILL OUT AND UPLOAD THE ZONING ASSESSMENT TABLE AND WAIVER TABLE SEPARATELY AS NOTED BELOW ** At the time of application submission, please contact the Department of Public Works regarding E-911 addressing for your project.			
GENERAL APPLICATION DOCUMENTS			
Yes	X	NA	Project Description Cover letter with detailed project description
Yes	X	NA	Completed Checklist (this document)
Yes	X	NA	Evidence of Right, Title, and Interest Deeds, leases, or purchase and sales agreements
Yes	NA	X	Evidence of State or Federal Approvals Permits or letters of non-jurisdiction, if applicable
Yes	X	NA	Zoning Assessment (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
Yes	X	NA	Site Plan Standards Assessment (see Section 14.6 of the land use code) Summary of project compliance with site plan standards of the land use code
Yes	NA	X	Summary of Existing and/or Proposed Easements or Covenants, applicable. Evidence of existing easements and any proposed easements, covenants, public or private rights-of-way
Yes	NA	X	Waiver Requests (see Waiver Table) Written request for waiver describing request and compliance with applicable waiver standards
Yes	NA	X	Financial Capability Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes	NA	X	Technical Capability Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

MAJOR SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.
Please submit each document as a separate PDF file.

TRANSPORTATION

Yes ☒ NA	Impact on Surrounding Street Systems (14-14.6.1(A)) Describe incremental volume of traffic impacts and mitigation measures. If needed
Yes ☒ NA	Access and Circulation (14-14.6.1(B)) Identify and describe the following: - Site access and internal circulation, including ADA access - Drive-up features, if applicable - Loading and servicing needs, routes, and geometry, providing turning templates for delivery vehicles, if applicable - Sidewalks and condition along street frontages and internal walkways - Engineered details for ADA ramps and public sidewalks, meeting sidewalk material policy and construction requirements (Technical Manual, Section 1)
Yes ☒ NA	Public Transit (14-14.6.1(C)), if applicable Identify and describe the following: Existing available transit service and proposed transit improvements, including design details, such as easement, pad base, and shelter
Yes NA ☒	Off-Street Parking (14-14.6.1(D)), if applicable Identify and describe the following: - Proposed vehicular and bicycle parking supply (including ADA-compliant parking) in relation to applicable parking requirements in Article 19 of the land use code - Curb cut separation and parking layout (Technical Manual, Section 1) - Construction details for bicycle racks - Management plan for snow storage and removal
Yes NA ☒	Transportation Demand Management (TDM) (14-14.6.1(E)), if applicable Provide TDM plan drafted in accordance with Technical Manual Section 1 requirements

ENVIRONMENTAL		
Yes	NA	X
Preservation of Significant Natural Features (14-14.6.2(A)), if applicable Identify and describe the following: • High and moderate value waterfowl and wading habitat • Aquifers (for Casco Bay Islands) • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental compliance consultants and determinations from applicable state and federal agencies		
Yes	NA	X
Landscape Preservation (14-14.6.2(B)) Identify and describe the following: • Measures to preserve trees, including within required zoning setbacks (Technical Manual, Section 4) • Measures to protect existing vegetation during construction		
Yes	NA	X
Site Landscaping and Buffers (14-14.6.2(C)) Identify and describe the following: • Overall landscaping approach and consistency with standards • The use of screening and buffering of service areas and between non-residential and residential uses • Existing Heritage or Feature Trees on site and measures to preserve • Compliance with street tree requirements		
Yes	NA	X
Water Quality, Stormwater Management, and Erosion Control (14-14.6.2(D)) Identify and describe the following: • Erosion and sedimentation control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater law, as applicable • Subsurface sanitary sewage disposal and groundwater protection measures		

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY		
Yes	NA	X
Consistency with City Master Plans (14-14.6.3(A)) Describe proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable		
Yes	NA	X
Public Safety and Fire Prevention (14-14.6.3(B)) Identify and describe the following: - Compliance with Crime Prevention through Environmental Design (CPTED) requirements (Technical Manual, Section 3) - Emergency vehicle access - Consistency with public safety standards (Technical Manual, Section 3)		
Yes	NA	X
Availability and Adequacy of Public Utilities (14-14.6.3(C)) (Technical Manual, Sections 2 & 9) Identify and describe the following: - Electrical services, including providing underground services - Existing and proposed connections for public utilities and required public utility upgrades - Sewer line connections		
SITE DESIGN		
Yes	NA	X
Massing, Ventilations and Wind Impact (14-14.6.4(A)) Identify and describe the following: - Wind and ventilation impacts on adjoining structures and/or adjacent public spaces, including wind study, if applicable - Bulk, location, or height impacts on adjoining structures		
Yes	NA	X
Shadows (14-14.6.4(B)), if applicable Provide shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)		
Yes	NA	X
Snow and Ice Loading (14-14.6.4(C)) Describe building design measures to prevent snow and ice from loading or falling onto adjacent properties or public ways		
Yes	NA	X
View Corridors (14-14.6.4(D)), if applicable Describe any protection of designated view corridors (Portland Design Manual, Appendix. 1)		
Yes	NA	X
Historic Resources (14-14.6.4(E)), if applicable Identify and describe the following: - The site's status as a designated landmark, within a historic district or historic landscape district, or within 100 feet of any designated landmark, historic district, or historic landscape district - Compliance with standards for preservation and documentation of archaeological resources		

Yes	NA X	Exterior Lighting (14-14.6.4(F)) Describe how the proposed site lighting will adhere to photometrics requirements as it relates to light trespass and full cutoff fixture design, pursuant to Technical Manual Section 12
Yes	NA X	Noise and Vibration (14-14.6.4(G)) Provide data on noise levels for HVAC and other mechanical equipment, such as design specifications, to demonstrate consistency with state and federal noise emissions requirements as well as City code
Yes	NA X	Signage and Wayfinding (14-14.6.4(H)), if applicable - Provide signage plan showing the location, dimensions, height and setback of all existing and proposed signs - Provide drawings of all commercial and directional signage on site
Yes	NA X	Zone-Related Design Standards (14-14.6.4(I)) Address any applicable design review standards by zone, including compliance with Design Manual

Zoning Assessment for 300 Fore Street Change of Use Application

Zoning Assessment

The University of Maine System is proposing to lease the building located at 300 Fore Street that has historically been occupied by CIEE as business offices. The University plans to locate the Law School and other graduate programs in the building.

300 Fore Street is located in the B-3 Business Zone. Post-Secondary Schools are listed as a permitted use in the B-3 in Table 6-C of the Land Use Code. The proposed uses of the building by the University are therefore permitted.

Because the proposed change of use does not contemplate any exterior changes to the existing building, no examination of dimensional standards is necessary.

Memorandum

To: Maine Law School

Date: August 5, 2021

Project #: 52718.01

From: Jennifer Conley, PE, PTOE

Re: Trip Generation and Transportation Demand Management
Maine Law School

VHB has been asked to calculate the number of trips anticipated as a result of The University of Maine School of Law (Maine Law) moving from 246 Deering Avenue to the proposed location at 300 Fore Street in Portland, Maine and compare that trip generation to the previously permitted trip generation for the site. VHB is in receipt of the Bernstein Shur letter dated June 15, 2021 (Bernstein Shur letter) that provides basic information about the former and proposed uses on the site. VHB is also in receipt of correspondence related to the previous permitting for the site. Included in this correspondence is a March 13, 2006 Response to Comments letter addressed to the City of Portland Planner on the project prepared by Gorrill Palmer addressing comments raised by the City's Peer Review Traffic Consultant, Tom Errico (2006 letter).

Approximately 250 Maine Law students will be accommodated at 300 Fore Street with 80 faculty and staff (35 associated with the online MBA program and 45 associated with the law school). VHB has estimated the number of trips to the 300 Fore Street site based on available industry standard data as well as existing Maine Law operation information.

Previously Permitted Trip Generation

The 2006 letter includes a revision to the trip generation that had initially been submitted to the Planning Board. At the request of the Peer Review Consultant, Gorrill Palmer modified the trip generation of the site to include all of the uses proposed at that time resulting in a total trip generation for 300 Fore Street of 130 AM peak hour trips and 219 PM peak hour trips. Later correspondence regarding the site refers back to this trip generation for the site.

Trip Generation – Industry Standards

The Institute of Transportation Engineers (ITE) publishes the Trip Generation Manual which provides data for the expected trip rates for a number of land uses. Land Use Code (LUC) 550, University/College, which is data for four year universities or colleges, is the most comparable ITE land use to Maine Law. The LUC 550 land use estimates trip generation of four-year universities or colleges but is not a precise match for the proposed site which will house Maine Law.

LUC 550 has independent variables to estimate trips based on the number of students, employees, or square footage of the facility. A review of the data based on each of these variables shows that data points for the peak hour information for both students and employees are based on school operations significantly larger than the proposed operation. The proposed site will employ 80 people and the smallest data point per ITE has 2000 employees. The proposed site will have 250 students and the smallest data point per ITE has 1650 students. These independent variables will result in trip generation ranging from 38 peak hour trips (based on the number of students) to between 60 and 65 based on the number of employees. The available data based on square footage is more comparable to the proposed Maine Law site at 300 Fore Street, with a 70,000 sf data point, closely matching the proposed site at 63,841 sf.

Table 1 Person Trip Generation – Based on ITE¹

	Weekday AM Peak Hour	Weekday PM Peak Hour
Enter	53	24
Exit	17	52
Total	70	76

¹ 63,841 sf of LUC 550 University/College

If Maine Law were to be considered another land use that more closely resembles the actual operation of the school, such as office space, the trip generation would result in a higher number of peak hour trips that is consistent with the previous use of the site. LUC 710, Office, results in 112 AM peak hour trips and 136 PM peak hour trips when calculated based on square footage. Using another independent variable, such as number of employees, would not provide an accurate estimate since few of the faculty or students travel to and from the site following typical office traffic patterns.

Trip Generation - Site Specific Data

While the ITE data can be used as a starting point, VHB believes that it is more appropriate to supplement that with site specific data based on the existing operations of Maine Law to provide a more accurate estimate of the trip generation. An analysis was conducted to determine the anticipated use of the site based on information provided by Maine Law based on their schedules by student year. Of the 80 employees, half are faculty and half are staff. Based on an interview with Maine Law staff, the staff follows a typical commuter schedule that would involve arrival and departure during the weekday AM and PM peak periods. The schedule includes 8:30 AM class times for only 1st year law students, but later start times for other classes. 1st year student classes are also offered throughout the day so only a portion of 1st year faculty would be on site for the 8:30AM start time. To be conservative, 80 percent of the 40 staff members as well as 14 faculty members were estimated to arrive during the AM peak hour. Similarly, at the end of the day, faculty finish teaching at various times and sometimes offer seminars or office hours after teaching. Therefore, 32 staff members as well as one half of the faculty members are estimated to depart during the PM peak hour.

Of the 250 students, 90 are first year students that have an 8:30 AM class. The remainder will be second and third year students that have later class start times and may be doing off site work that will stagger their arrival at the site. As such, it was estimated that 90 percent of the 90 first year students will arrive during the AM peak hour. Very few second and third year students will arrive at the site prior to 10 AM. As such, it was estimated that 20 percent will arrive during the AM peak hour. Based on information provided by the school, in most cases these first year students will attend classes and sometimes seminars all day and then study in the library until late into the evening. Second and third year students will exit at either 12:10 PM, 3:20 PM, 5:00 PM, or later.

For the purposes of trip generation, it was estimated that 90 percent of first year students will arrive during the AM Peak hour and 20 percent of them will leave the site during the PM peak hour and it was estimated that one third of the second and third year students will exit during the PM peak hour.

The resulting trip generation based on Maine Law information is shown in Table 2. Data illustrating the distributions over the course of the day are provided attached to this memorandum.

Table 2. Site Specific Person Trip Generation – Proposed Uses

		Staff ¹	Faculty ²	First Year Students ³	Second and Third Year ⁴	Total Trips
Weekday AM peak	Enter	32	14	81	32	159
	Exit	2	0	4	1	7
	Total	34	14	85	33	166
Weekday PM peak	Enter	2	1	1	3	7
	Exit	32	20	18	53	123
	Total	34	21	19	56	130

¹ 80 percent of the 40 staff arrive and depart during peak hours.

² One third of faculty were estimated to arrive during the AM peak hour and one half to depart during PM peak hour

³ 90 percent of first year students arrive during AM peak hour but only 20 percent leave during PM peak hour.

⁴ 20 percent of second and third year students arrive during AM peak hour and one third leave during PM peak hour.

The ITE trip generation and the site specific trip generation were compared to the previously permitted trip generation and the results are provided in Table 3. As shown, the proposed site is anticipated to generate fewer trips during the peak hour when comparing the permitted trip generation to the either the ITE or site specific trip generation. The peak of the law school will occur during the AM peak hour with 166 trips and the peak hour of the previous use occurred during the PM peak hour with 219 trips.

Table 3. Trip Generation Comparison

	ITE Trip Generation ²	Permitted Trip Generation ³	Net Trips Permitted to ITE	Site Specific Trip Generation ⁴	Permitted Trip Generation	Net Trips Permitted to Site Spec
Peak Hour ¹	76	219	-143	166	219	-53

¹ TMP guidance requires a comparison of the peak hour of each use, even if peaks are not common

² 63,841 square feet of ITE LUC 550.

³ Per 2006 letter

⁴ Per law school class size and schedule information

Transportation Demand Management

Pursuant to Section 14.6.1.E.1, we are providing the following TDM plan. Due to the nature of the development as a change of use in the B-3 Downtown Business Zone, where no off-street parking is required, the following is a description of the anticipated reduction in the number of auto trips due to the new walkable downtown location of the Law School.

To understand the likely modes of travel used by its students, Maine Law conducted an online survey. Of the 118 responses, 85 percent currently drive to campus, 12 percent walk or bike, and 3 percent take transit.

Memorandum

The 300 Fore Street site is well suited to reduce those automobile trips. Because the site is located in an area with a robust pedestrian network, low speed traffic, bicycle trails, and transit opportunities, it is anticipated that many more trips will be made by alternate modes.

The site will be providing long term bike parking inside the building for students, faculty and staff that wish to commute by bicycle. There is space for 40 bikes in bike racks as well as room for another 10 bikes along the edge of the room if necessary. The site includes showers and locker rooms for those who travel by bicycle or walk/run to the site.

In addition, directly outside the building, three bike racks that have parking for up to 33 bicycles, at the intersection of Fore Street and Custom House Street. Within 500 feet of the site, on Silver Street, there is a bike rack with room for five bikes and the Casco Bay Garage at 54 Commercial has room for 13 bikes.



Fixed route transit services are provided by Greater Portland Metro. In the vicinity of 300 Fore Street, Metro Route 8, the Peninsula Loop, provides half hour stop frequency at the Casco Bay transfer terminal on the State Pier one block from the site. In addition, riders can use Route 8 or walk the 0.6 miles to the Pulse to connect to the other busses in the Metro network. To better provide service from the USM campuses, Maine Law is working with Metro to consider an extension of the Husky Line to this location.

In addition to the Metro, there is fixed route service via South Portland Bus Service and Biddeford Saco Old Orchard Beach Transit. South Portland Bus Service routes 21, 24A and 24B each travel into Portland within 0.5 miles of the site. In addition, Biddeford Saco Old Orchard Beach Transit Green and Purple lines both travel into Portland and pass within 0.6 miles of the site giving many transit opportunities to the 300 Fore Street site.

The Portland Plan included information on the commuting patterns on the Peninsula indicating that only 36 percent of work trips to the Peninsula occur by automobile. It is anticipated that the auto mode share of Maine Law will also decrease based on the alternate mode opportunities.

With the move to 300 Fore Street, approximately 30 percent of survey respondents indicated that their typical mode of travel will or may change. Of those who think their mode will change, 42 percent would be switching from car to walking or biking and 10 percent would be switching from car to transit. An additional 30 percent of those that think it could change are concerned about parking but unsure of what mode they would change to. Smaller percentages will switch from another mode to the car. Therefore, based on the limitation of parking and ease of walking, biking or taking transit, Maine Law students plan to reduce their auto mode share.



Memorandum

Maine Law will appoint a TDM Coordinator for the site who will commit to survey students to understand the mode shares once Maine Law moves to the 300 Fore Street site as well as understand any barriers to using alternate modes. Maine Law will commit to continuing to subsidize student transit passes to further encourage the use of alternative modes at this site.

Conclusions

Based on a review of the ITE trip generation and the site specific estimates, the proposed site is anticipated to generate a reduction in trips during the peak hour. The peak of the law school will occur during the AM peak hour with 166 trips and the peak hour of the previous use occurred during the PM peak hour with 219 trips. Additionally, due to the site location and student survey data, the trip generation may be further reduced with a high ratio of non-automobile based trips. Based on the information received from existing students, approximately 15 percent travel by alternate modes currently and it is likely that 37 percent of them will choose non-auto modes to travel to the site in the future.

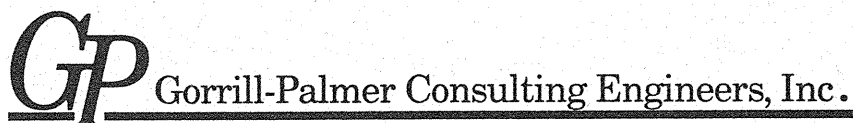
Maine Law Trip Generation

Distribution over the course of the day

arrivals		40	40	90	160	departure		40	40	90	160
		staff	faculty	1st year	2/3 year			staff	faculty	1st year	2/3 year
AM	6					AM	6				
	7	0.05		0.05			7				
	8	0.8	0.33	0.9	0.2		8				
	9	0.15	0.1	0.05	0.1		9				
	10		0.2		0.3		10				
	11		0.1		0		11				
PM	12		0.1		0.05	PM	12				0.1
	1		0.1		0.2		1		0.1		0.02
	2		0.07		0.05		2		0.1		0.02
	3				0.1		3		0.1		0.33
	4						4	0.15	0.1		0.1
	5						5	0.8	0.5	0.2	0.33
	6						6	0.05	0.1	0.2	0.1
	7						7			0.2	
	8						8			0.2	
	9						9			0.2	
	10						10				
totals		1	1	1	1	totals		1	1	1	1

Resulting Trips

arrivals		40	40	90	80	trips	departure		40	40	90	160	
		staff	faculty	1st year	2/3 year	TOTALS			staff	faculty	1st year	2/3 year	TOTALS
AM	7	2	0	4.5	0	7	AM	7	0	0	0	0	0
	8	32	13	81	32	158		8	0	0	0	0	0
	9	6	4	4.5	16	31		9	0	0	0	0	0
	10	0	8	0	48	56		10	0	0	0	0	0
	11	0	4	0	0	4		11	0	0	0	0	0
PM	12	0	4	0	8	12	PM	12	0	0	0	16	16
	1	0	4	0	32	36		1	0	4	0	3.2	7
	2	0	3	0	8	11		2	0	4	0	3.2	7
	3	0	0	0	16	16		3	0	4	0	52.8	57
	4	0	0	0	0	0		4	6	4	0	16	26
	5	0	0	0	0	0		5	32	20	18	52.8	123
	6	0	0	0	0	0		6	2	4	18	16	40
	7	0	0	0	0	0		7	0	0	18	0	18
	8	0	0	0	0	0		8	0	0	18	0	18
	9	0	0	0	0	0		9	0	0	18	0	18
	10	0	0	0	0	0		10	0	0	0	0	0
		0	0	0	0	0			0	0	0	0	0
totals		40	40	90	160	330	totals		40	40	90	160	330



Gorrill-Palmer Consulting Engineers, Inc.

Traffic and Civil Engineering Services

PO Box 1237
15 Shaker Rd.
Gray, ME 04039

207-657-6910
FAX: 207-657-6912
E-Mail: mailbox@gorrillpalmer.com

March 13, 2006

Mr. Bill Needelman, Senior Planner
City of Portland
389 Congress Street
Portland, ME 04101

Re: 300 Fore Street
Response to Comments

Dear Bill:

Gorrill-Palmer Consulting Engineers, Inc. is pleased to respond to Tom Errico's email dated February 23, 2006. His comments are summarized below followed by our responses:

Parking

***Comment 1:** The parking study prepared by the applicant indicates the proposed project requires 145 parking spaces. This estimate is based upon a host of assumptions of which the primary one is the characteristics of the office tenant. These assumptions have led to a parking supply estimate that is lower than a typical office user. There have been some internal discussions about whether a parking requirement should be based upon a specific tenant. There is some concern that if the tenant changed, the replacement company/business could require additional parking demands. I have provided an independent parking analysis for a scenario with a typical office tenant as summarized below:*

- *58,114 sf Office x 2.97 spaces/1,000 sf = 173 parking spaces*
- *10,060 sf Restaurant x 2.75 spaces/1,000 sf = 28 parking spaces*
- *Total = 201 parking spaces*
- *Total w/Shared Usage = 198 parking spaces*

Assumptions for the above analysis include:

- *The office parking rate is from the Parking Generation Manual, ITE 3rd Edition for an Office land use in an "Urban" setting.*
- *The restaurant parking rate is for employee parking needs "only" and is based upon data in the publication Shared Parking, Urban Land Institute.*
- *As suggested in an email from John Peverada, parking needs for the restaurant customers are not expected to be significant due to a "captive market" during the mid-day or lunchtime period.*

Mr. Thomas Errico, PE
 March 13, 2006
 Page 2 of 6

- *A reduction in the restaurant employee parking requirement was included to account for time-of-day demand.*

I have not prepared an estimate of parking requirements incorporating assumptions (specific tenant data) used in the applicants parking analysis. If the Planning Board wishes, I can conduct such an analysis. If I am directed, I would ask that the applicant provide supporting documentation for assumptions used.

Response: Gorrill-Palmer completed an examination of the parking demand based on the use of a general office use as well as quality restaurant. To determine the peak parking demand, our office referenced the ITE Publication *Parking Generation*, 3rd Edition for Land Use Codes 701 and 931, Office Building and Quality Restaurant, respectively. The average peak demand for parking in an urban setting was referenced, and found to be 2.4 spaces per thousand and 5.55 vehicles per thousand for the office and restaurant uses, respectively.

Shared parking totals were based on parking accumulation rates published in *Parking Generation* and the Urban Land Institute publication *Shared Parking*. Our office compiled this information and determined that the peak parking demand, based on a standard office, would be 180 spaces. As this is based on a standard office with a greater demand than that required for CIEE, this results in an excess of 35 spaces over that required for the actual owner of the office building.

It is the opinion of our office that the 145 spaces initially determined in our parking memorandum of January 5, 2006 is sufficient for the current proposed use. However, it is our understanding that should CIEE sell or lease the building or any portion thereof, the applicant will be required to return to the planning board for approval of parking supply.

Traffic

Comment 1: *The size of the land uses in the traffic study does not match those assumed in the parking study. Additionally, the trip generation was based upon 10,500 square feet of Specialty Retail space and not Restaurant space. An explanation should be provided.*

Response: Based on architectural information provided at an earlier date to our office, our office had referenced different information for the office sizes and uses. With the current uses of 58,114 s.f. of office and 10,060 s.f. of quality restaurant, our office updated trip generation calculations based on ITE information. The totals are summarized on the following table:

Trip Generation for Proposed Commercial Building

Land Use Code	Weekday	AM Peak Hour	PM Peak Hour
710, General Office	878	122	144
931, Quality Restaurant	905	8	75
Total	1,783	130	219
Total from TIS	1,256	112	162

As based on the ITE rates alone, the result level of trip generation for the PM peak hour is greater than that in the original study. Our office has revised trip assignment and analysis based on these uses, which are discussed in greater detail in our response to Comment 2.

Mr. Thomas Errico, PE
 March 13, 2006
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It should be noted, however, that the trip generation for the quality restaurant, based on the PM peak hour of adjacent street traffic, is almost as high as that for the peak of the restaurant in the evening. It is the opinion of our office that in reality, this level of trip generation will be lower.

Comment 2: *The applicant should provide capacity analysis print-outs that are Highway Capacity Manual based for all study area intersections.*

Response: Gorrill-Palmer completed analysis in the TIS utilizing SimTraffic. It is important to note that based on our work with MaineDOT, the traffic permitting process typically requires analysis of coordinated signal systems, such as those for Franklin Street Arterial with five runs of SimTraffic, averaged five times.

However, per Tom Errico's request, the analysis has been compiled utilizing HCM, and the postdevelopment analysis is based upon updated volumes as per the revised trip assignment discussed in our response to Comment 1. The HCM-based printouts are enclosed with this letter, and the results are summarized on the following tables:

Level of Service for at Middle Street at India Street

Lane Group	AM Peak Hour				PM Peak Hour			
	Predevelopment		Postdevelopment		Predevelopment		Postdevelopment	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Middle Street EB LTR	30	D	>50	F	>50	F	>50	F
Middle Street WB LTR	24	C	39	E	31	D	>50	F
India Street NB LTR	4	A	4	A	3	A	3	A
India Street SB LTR	<1	A	1	A	<1	A	1	A

Level of Service for Franklin Street Arterial at Middle Street

Lane Group	AM Peak Hour				PM Peak Hour			
	Predevelopment		Postdevelopment		Predevelopment		Postdevelopment	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Middle Street EB L	>80	F	>80	F	67	E	75	E
Middle Street EB TR	41	D	42	D	30	C	29	C
Middle Street WB LT	51	D	52	D	28	C	28	C
Middle Street WB RT	38	D	38	D	26	C	26	C
FS Arterial NB LTR	2	A	2	A	10	A	11	B
FS Arterial SB L	3	A	4	A	14	B	19	B
FS Arterial SB TR	4	A	4	A	9	A	10	B
Overall	15	B	15	B	20	C	22	C

Mr. Thomas Errico, PE
 March 13, 2006
 Page 4 of 6

Level of Service for Franklin Street Arterial at Fore Street

Lane Group	AM Peak Hour				PM Peak Hour			
	Predevelopment		Postdevelopment		Predevelopment		Postdevelopment	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Fore Street EB L	>80	F	>80	F	>80	F	>80	F
Fore Street EB TR	32	C	32	C	31	C	30	C
Fore Street WB LTR	56	E	56	E	38	D	38	D
FS Arterial NB LTR	3	A	3	A	4	A	4	A
FS Arterial SB LTR	6	A	6	A	6	A	7	A
Overall	25	C	27	C	34	C	35	C

Level of Service for Franklin Street Arterial at Commercial Street

Lane Group	AM Peak Hour				PM Peak Hour			
	Predevelopment		Postdevelopment		Predevelopment		Postdevelopment	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Commercial Street EB L	48	D	48	D	49	D	49	D
Commercial Street EB T	18	B	18	B	20	C	19	B
Commercial Street EB R	16	B	16	B	17	B	17	B
Commercial Street WB LT	45	D	45	D	48	D	48	D
Commercial Street WB R	29	C	29	C	33	C	33	C
State Pier NB LT	23	C	23	C	25	C	26	C
State Pier NB R	<1	A	<1	A	24	C	24	C
FS Arterial SB L	41	D	40	D	35	D	34	D
FS Arterial SB T	42	D	42	D	46	D	46	D
FS Arterial SB R	>80	F	>80	F	80	F	82	F
Overall	59	E	59	E	42	D	43	D

Based on the HCM analyses, movements at each study area location operate with delay. However, in the case of the Franklin Street Arterial intersections, these are all side street movements and are not affected by the addition of site-generated traffic. As additional improvements are not feasible, this is considered acceptable in an urban compact as per the MaineDOT traffic permitting rules.

The intersection of Middle Street at India Street indicates additional delay with the addition of site-generated traffic, particularly for the westbound approach of Middle Street. However, the postdevelopment volumes at this location do not satisfy the MUTCD four hour or peak hour warrants (Warrants 2 and 3), so signalization is not recommended. As this location benefits from adjacent signals at Franklin Street Arterial and Fore Street, it is the opinion of our office that this location will operate with less delay than indicated in the HCM printouts. In addition, given the width of this roadway and the desire to preserve on-street parking, our office does not anticipate feasible improvements. The signal warrant sheets are enclosed with this letter.

Mr. Thomas Errico, PE
March 13, 2006
Page 5 of 6

Comment 3: *The applicant should provide printouts of the turning movement count sheets.*

Response: We have enclosed the turning movement count sheets for the Franklin Street Arterial intersections as well as the Pearl Street intersections. The AM sheet at Middle and Fore is enclosed; the PM data was obtained from ETE as part of its traffic impact study for the Jordan's redevelopment.

Comment 4: *The applicant should conduct a pedestrian facility assessment between the proposed site and the proposed Longfellow Parking facility.*

Response: Based on the proposed location for the Longfellow Parking facility, it is the opinion of our office that pedestrians will exit the facility via the access proposed on Fore Street adjacent to the right-turn only vehicular access. They will proceed along Fore Street through India Street and Franklin Street Arterial, continuing to the proposed site.

Several areas within this pedestrian corridor have already been improved. As part of the off-site improvements associated with 280 Fore Street, pedestrian striping, barrier-free facilities, and signal phasing were improved at the intersection of Franklin Street Arterial and Fore Street. As part of The Longfellow at Ocean Gateway project, sidewalk will be upgraded along Fore Street and India Street. In addition, sidewalk along the northwest side of Fore Street between India Street and Franklin Street Arterial will be upgraded as part of the Jordan's site redevelopment. It is the opinion of our office that the work associated with these projects should comply with local, state and ADA requirements, and based on conversations with Eaton Traffic Engineering, the Jordan's improvements will comply with these requirements. As such, it is the opinion of our office that the pedestrian facilities will be able to accommodate pedestrian traffic from The Longfellow to 300 Fore Street.

Comment 5: *An occupancy permit for the site should not be granted until the Longfellow Parking garage is completed or parking alternatives have been identified.*

Response: In the event that the project is completed prior to approval of the Ocean Gateway garage, there is sufficient surface parking available from Shipyard Brewing Company. In the event that 300 Fore Street is completed while the Ocean Gateway garage is under construction, it is our understanding that Olympia Companies will make arrangements to lease spaces during this period from the Top of the Old Port.

Comment 6: *The applicant shall make a monetary contribution to the implementation of improvements identified for Franklin Arterial and the India Street/Middle Street intersection from the Portland Peninsula Study. I'll need to work with staff in calculating the estimate.*

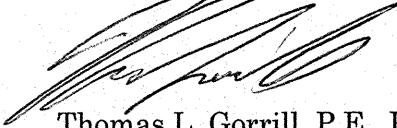
Response: None required.

Mr. Thomas Errico, PE
March 13, 2006
Page 6 of 6

Please contact me should you have any further questions regarding these matters.

Sincerely,

Gorrill-Palmer Consulting Engineers, Inc.



Thomas L. Gorrill, P.E., PTOE
President

Enclosure

Copy: Tom Errico, Wilbur Smith
Tim Levine, Olympia
Chris Osterrieder, Deluca-Hoffman

TLG/jjb/JN1317/Errico3-6-06.doc



Office of Finance
and Administration

August 6, 2021

Mary E. Costigan,
Bernstien Shur
100 Middle Street, West Tower
Portland, ME 04101

Dear Ms. Costigan:

This letter is to confirm that the University of Maine School of Law (Maine Law) has the financial capacity to operate the Law School and graduate programs at 300 Fore Street in Portland.

Maine Law's annual budget received an additional 1.5 million in funds for operating costs related to the building from the Governor's Supplemental Budget. These funds will cover the cost of the lease and all other operating costs associated with the relocation to 300 Fore Street.

Please let me know if you need any additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nicole Vinal Harvie".

Nicole Vinal Harvie
Assistant Dean for Finance and Administration

CONSTRUCTION NOTES:

- RECONSTRUCT BRICK SIDEWALK. LAY BRICK IN RUNNING BOND PATTERN.
- CONSTRUCT NEW BRICK SIDEWALK AND INSTALL VERTICAL GRANITE CURB. PROPOSED CURBLINE TO BE A MINIMUM OF 10' FROM BUILDING. FINAL CURBLINE LOCATION TO BE BASED UPON DEPARTMENT OF PUBLIC WORKS APPROVAL OF ROADWAY DESIGN PLANS PREPARED BY GORRILL-PALMER CONSULTING ENGINEERS.
- INSTALL NEW STREET LIGHTS (6). COORDINATE LOCATION WITH FINAL ELECTRIC UTILITY RELOCATION. CONNECT TO EXISTING STREET LIGHTING SYSTEM.
- THE SIDEWALK BETWEEN 280 FORE STREET AND THE NEW PROPOSED SIDEWALK SHALL BE RECONSTRUCTED OF BRICK SIDEWALK IN ACCORDANCE WITH THE PRIOR SITE PLAN APPROVAL FOR THE 280 FORE STREET PROJECT.
- REMOVE AND RECONSTRUCT 5' WIDE PORTION OF CUSTOM HOUSE STREET IMMEDIATELY ADJACENT TO NEW CURB LINE.
- GRIND AND OVERLAY AREA OF FORE STREET IN ACCORDANCE WITH CITY OF PORTLAND STREET EXCAVATION ORDINANCE.
- AREA TO BE DESIGNATED FOR LOADING ZONE.
- INSTALL PARKING METERS IN ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS STANDARDS.

ZONING DISTRICT: B-3
PERMITTED USE: OFFICE BUILDING

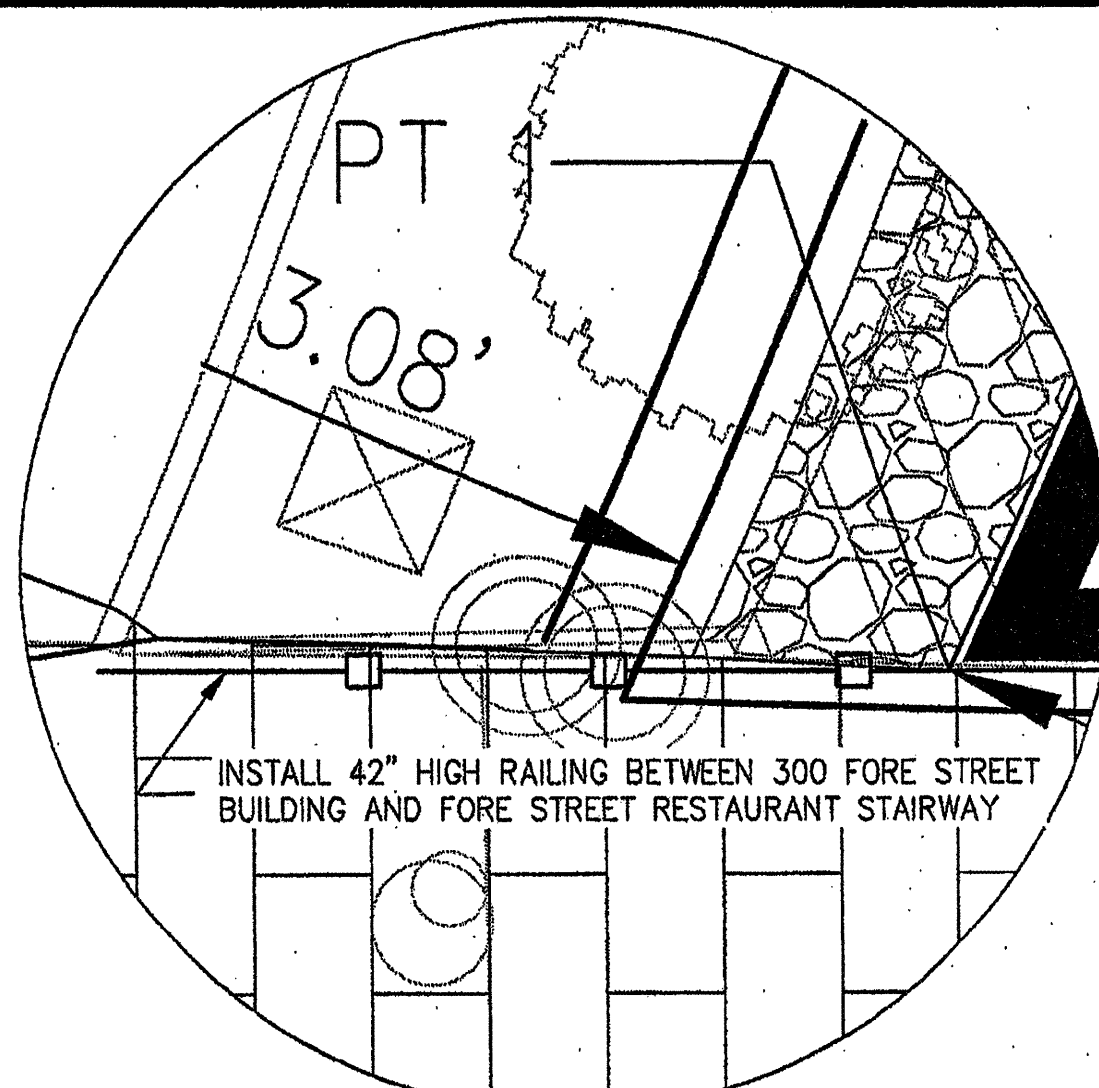
SPACE AND BULK REQUIREMENTS:

MINIMUM LOT SIZE:	REQUIRED	PROVIDED
MINIMUM YARD SETBACK:	NONE	3'-1"
MAXIMUM LOT COVERAGE:	NONE	98%
MAXIMUM BUILDING HEIGHT:	NONE	64'-10"

ID	NORTHING	EASTING	DESCRIPTION
CP100	9834.1071	9930.3737	TRAVERSE CONTROL POINT
CP101	9715.6005	10071.7823	TRAVERSE CONTROL POINT
PT1	9996.8924	9998.9209	PROPOSED BUILDING CORNER
PT2	9873.4716	9961.5755	PROPOSED BUILDING CORNER
PT3	9835.1221	10009.9020	PROPOSED BUILDING CORNER
PT4	9907.6801	10104.4356	PROPOSED BUILDING CORNER
PT5	90108.9191	10007.1174	PROPOSED CURB LINE
PT6	10015.3206	9993.8069	PROPOSED CURB LINE
PT7	9896.8017	9958.1741	PROPOSED CURB LINE
PT8	9886.4615	9950.8884	PROPOSED CURB LINE
PT9	9850.3906	9961.7053	PROPOSED CURB LINE
PT10	9845.6852	9973.5743	PROPOSED CURB LINE
PT11	9819.9188	10003.9575	PROPOSED CURB LINE
PT12	9870.3630	9962.7559	CENTER POINT CURB RADIUS

CURBING LEGEND

	TYPE 1 VERTICAL GRANITE CURB
	7' TIPDOWN
	FULL DEPTH RECONSTRUCTION
	SPECIAL CUSTOM HOUSE STREET RECONSTRUCTION SECTION



DETAIL BLOW-UP AREA

STRIPING LEGEND	
SIGNAGE, STRIPING AND PAYMENT MARKING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REGARDING SIZE, INSTALLATION, LOCATION & REFLECTIVITY.	
4"SWLL - 4" WIDTH SOLID WHITE LANE LINE	
4"DYCL - 4" WIDTH DOUBLE YELLOW CENTERLINE	

SIGN LEGEND	
	LOADING ZONE
	STOP
	15 MINUTE PARKING

N/F
EAST BROWN COW LIMITED
11835/88
029- -K-002

N/F
OLYMPIA EQUITY INVESTORS IV B, LLC
029- -K-001

N/F
OLYMPIA EQUITY INVESTORS IV, LLC
029- -K-001

PROPOSED 11,320 SF
(FOOTPRINT) (68,836 SF
TOTAL) OFFICE BUILDING

F.F.E.=22.60 CIVIL'S

11.75 STONE'S
11.75 ARCH'S
OR
11'-9"

FORE STREET RESTAURANT

WOOD DECK

(25 MPH)

FORE STREET

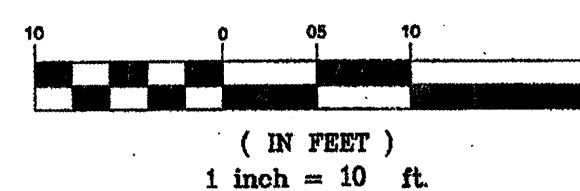
CUSTOM HOUSE STREET

N/F
25 PEARL MHR LLC
029- -E-009

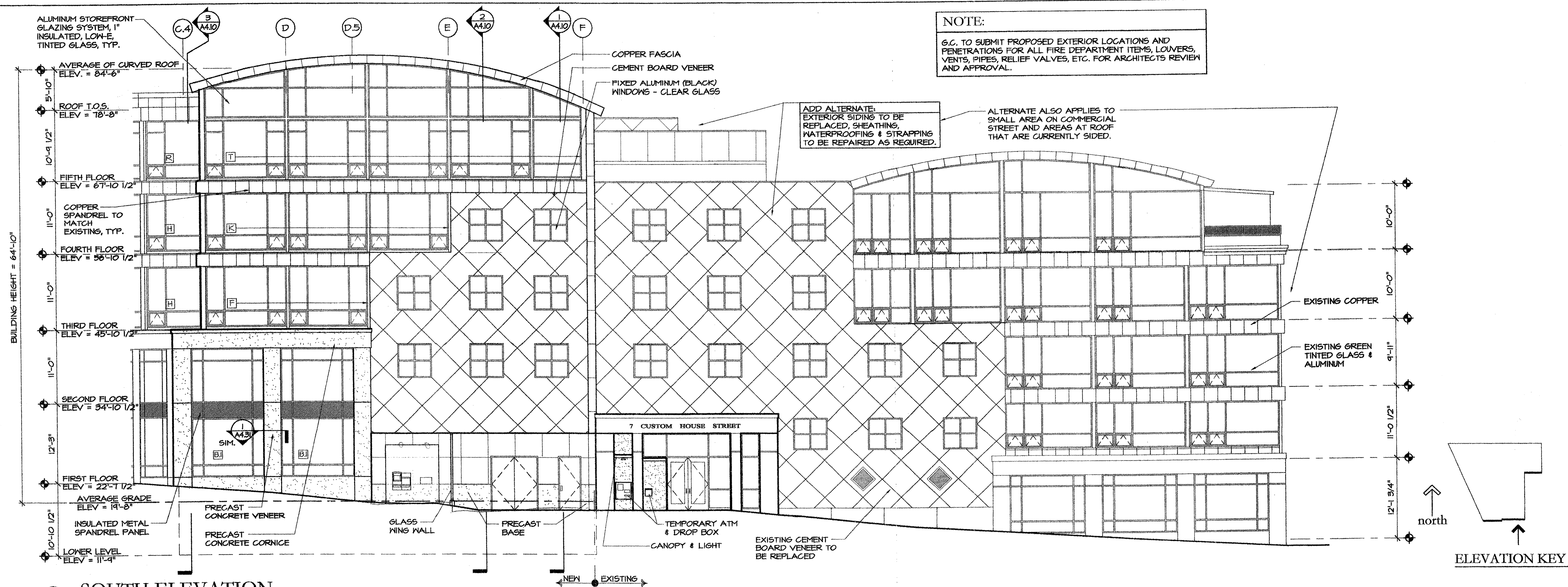
N/F
SAMUEL L NOVICK
029- -E-012

N/F
JACK I NOVICK &
ROSE NOVICK
029- -E-010

GRAPHIC SCALE

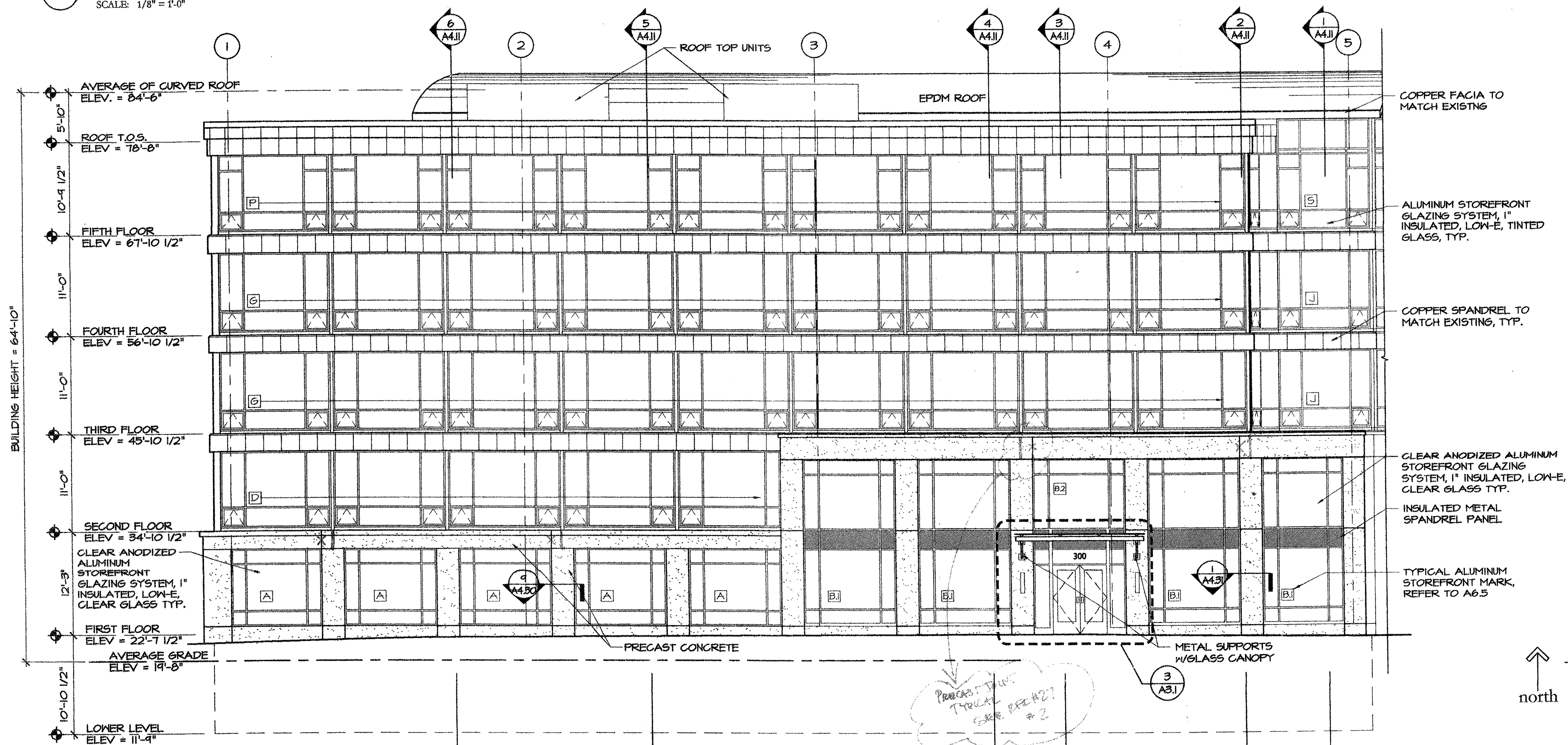


STATE OF MAINE CHARTERED 1789 REGISTERED PROFESSIONAL ENGINEER NOVEMBER 2005 RENEWED 2008 RENEWED 2011 RENEWED 2014 RENEWED 2017 RENEWED 2020 RENEWED 2023 RENEWED 2026 RENEWED 2029 RENEWED 2032 RENEWED 2035 RENEWED 2038 RENEWED 2041 RENEWED 2044 RENEWED 2047 RENEWED 2050 RENEWED 2053 RENEWED 2056 RENEWED 2059 RENEWED 2062 RENEWED 2065 RENEWED 2068 RENEWED 2071 RENEWED 2074 RENEWED 2077 RENEWED 2080 RENEWED 2083 RENEWED 2086 RENEWED 2089 RENEWED 2092 RENEWED 2095 RENEWED 2098 RENEWED 2101 RENEWED 2104 RENEWED 2107 RENEWED 2110 RENEWED 2113 RENEWED 2116 RENEWED 2119 RENEWED 2122 RENEWED 2125 RENEWED 2128 RENEWED 2131 RENEWED 2134 RENEWED 2137 RENEWED 2140 RENEWED 2143 RENEWED 2146 RENEWED 2149 RENEWED 2152 RENEWED 2155 RENEWED 2158 RENEWED 2161 RENEWED 2164 RENEWED 2167 RENEWED 2170 RENEWED 2173 RENEWED 2176 RENEWED 2179 RENEWED 2182 RENEWED 2185 RENEWED 2188 RENEWED 2191 RENEWED 2194 RENEWED 2197 RENEWED 2200 RENEWED 2203 RENEWED 2206 RENEWED 2209 RENEWED 2212 RENEWED 2215 RENEWED 2218 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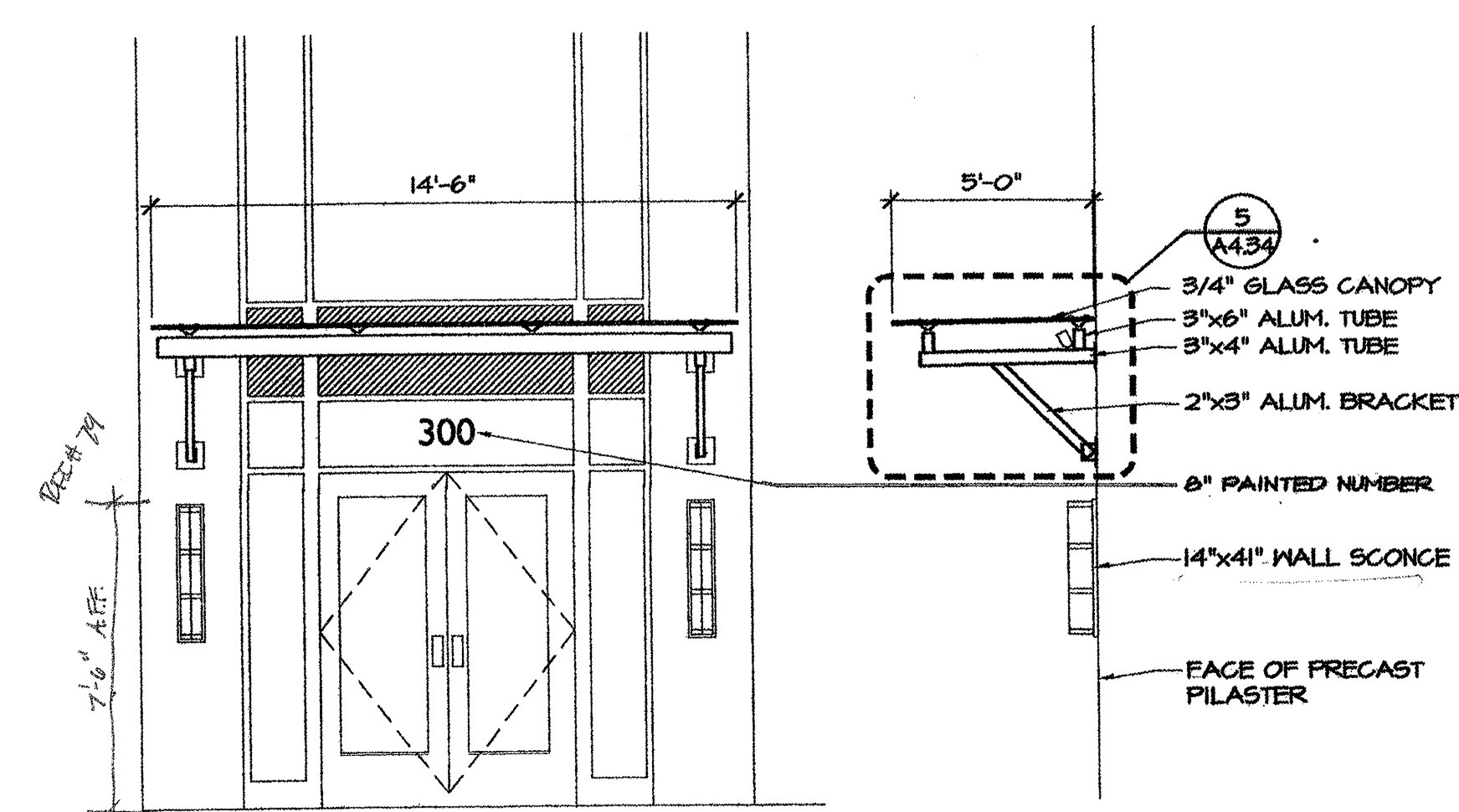
1 SOUTH ELEVATION

SCALE: 1/8" = 1'-0"



2 WEST ELEVATION

SCALE: 1/8" = 1'-0"



3 PROPOSED CANOPY

SCALE: 1/4" = 1'-0"

GENERAL NOTES

- ALL INDICATIONS AND NOTATIONS ON THE DRAWINGS APPLYING TO ONE AREA, COMPONENT OR CONDITION SHOWN APPLY TO ALL OTHER SIMILAR AREAS, COMPONENTS UNLESS CLEARLY INDICATED OTHERWISE.
- REFER TO SHEET A6.1 FOR THE WINDOW SCHEDULE
- THE FINISHED FIRST FLOOR ELEVATION IS NOTED AS 22'-1 1/2"
- REFER TO WALL SECTIONS & PLAN DETAILS FOR THE LOCATION AND SIZE OF THE PRE-CAST CONCRETE PROJECTIONS

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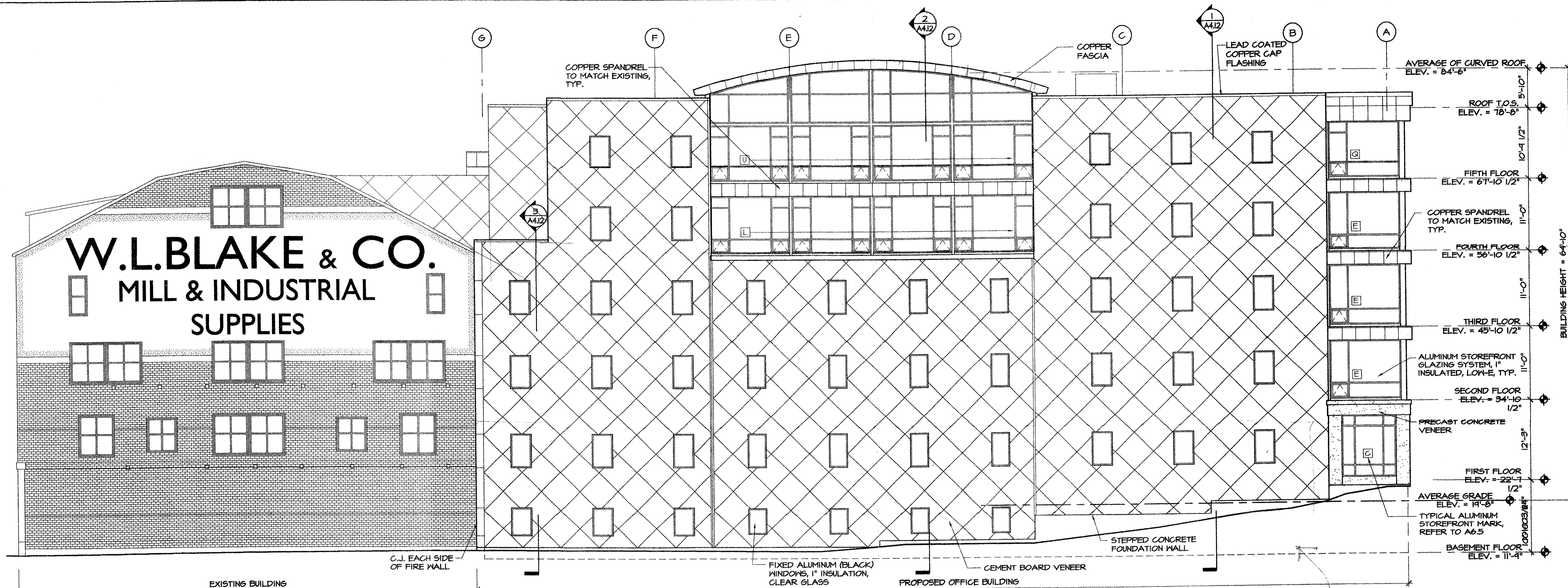
CUSTOM HOUSE SQUARE
300 FORD STREET
PORTLAND, MAINE

EXTERIOR ELEVATIONS

PROJECT ARCHITECT:
MW
DRAWN BY:
SO, BR
PROJECT #:
300506

A3.1

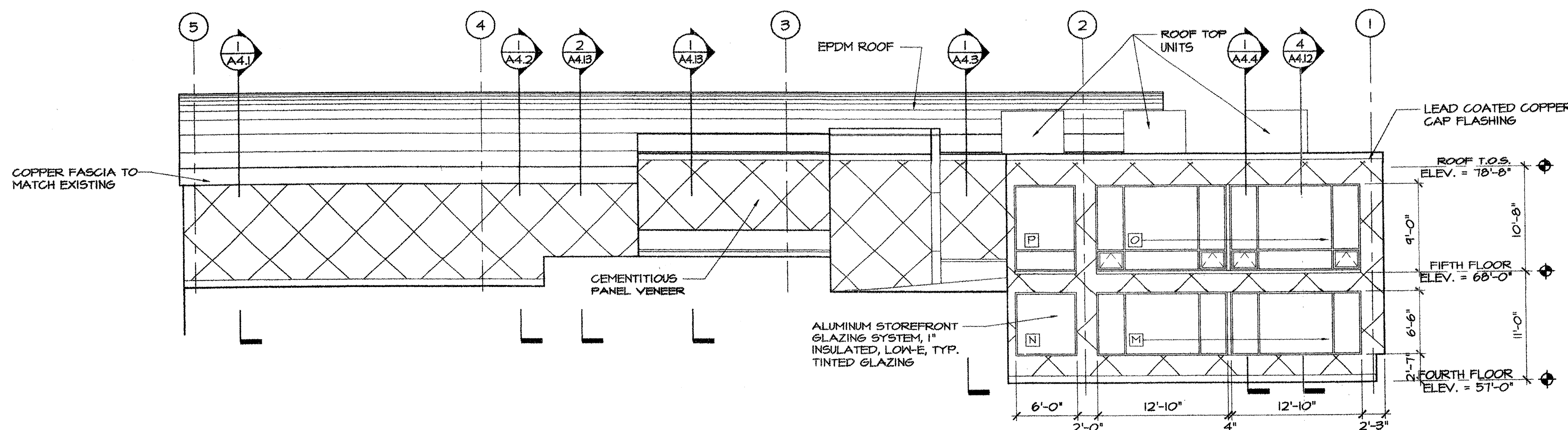
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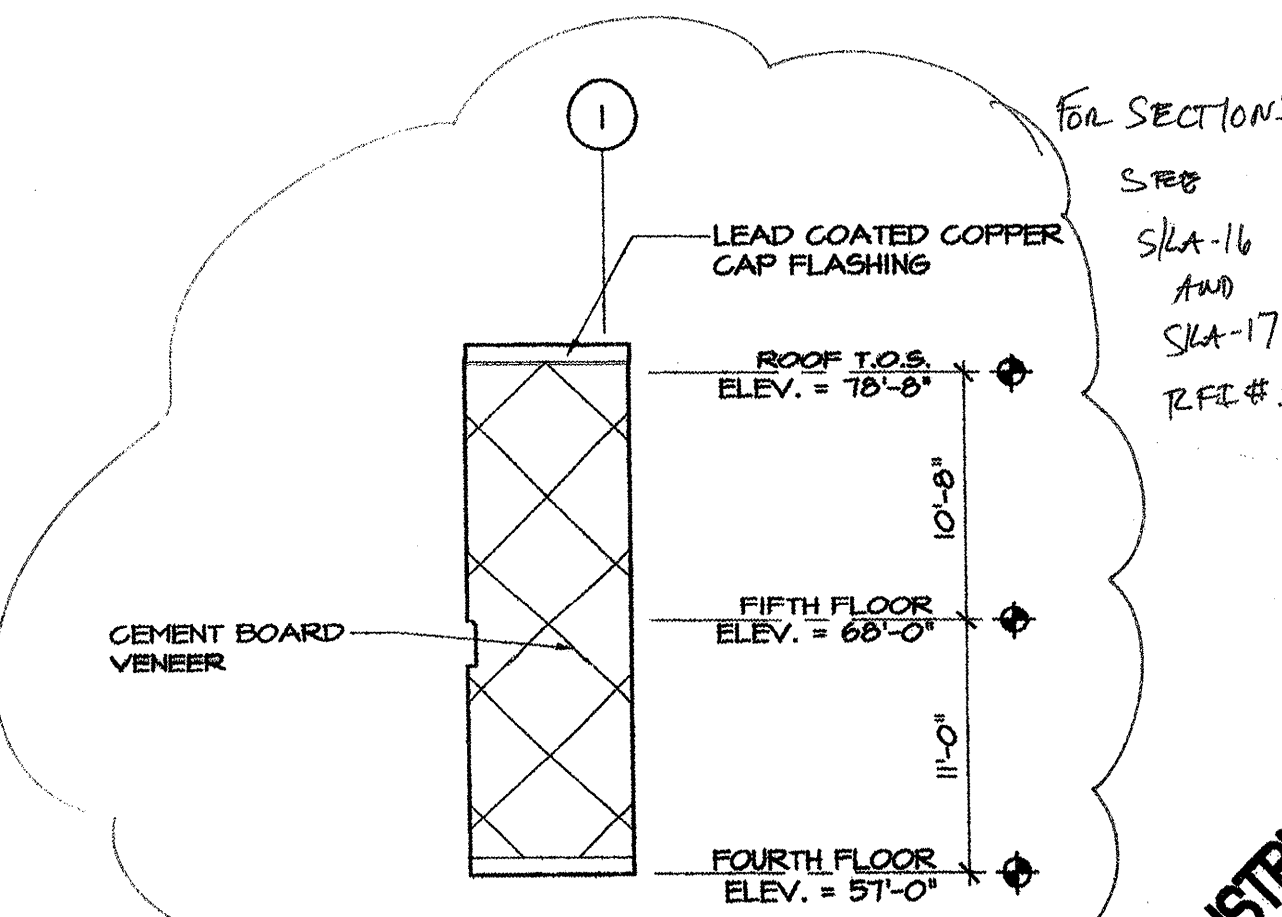
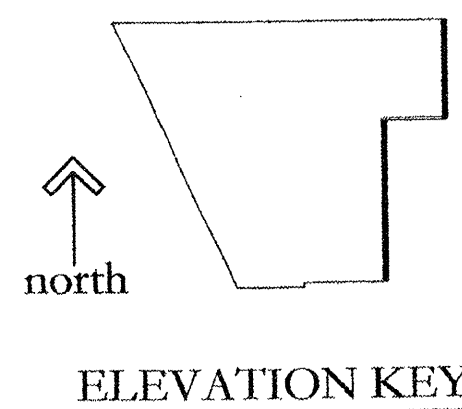
1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

NOTE: SEE NEXT PAGE FOR CHANGES TO NORTH ELEVATION.
PC1-009 PC#48

- GENERAL NOTES**
- ALL INDICATIONS AND NOTATIONS ON THE DRAWINGS APPLYING TO ONE AREA, COMPONENT OR CONDITION SHOWN APPLY TO ALL OTHER SIMILAR AREAS, COMPONENTS UNLESS CLEARLY INDICATED OTHERWISE.
 - REFER TO SHEET A6.1 FOR THE WINDOW SCHEDULE
 - THE FINISHED FIRST FLOOR ELEVATION IS NOTED AS 22'-7 1/2"
 - REFER TO WALL SECTIONS & PLAN DETAILS FOR THE LOCATION AND SIZE OF THE PRE-CAST CONCRETE PROJECTIONS



2 PARTIAL EAST ELEV. @ 4TH & 5TH FLOORS
SCALE: 1/8" = 1'-0"



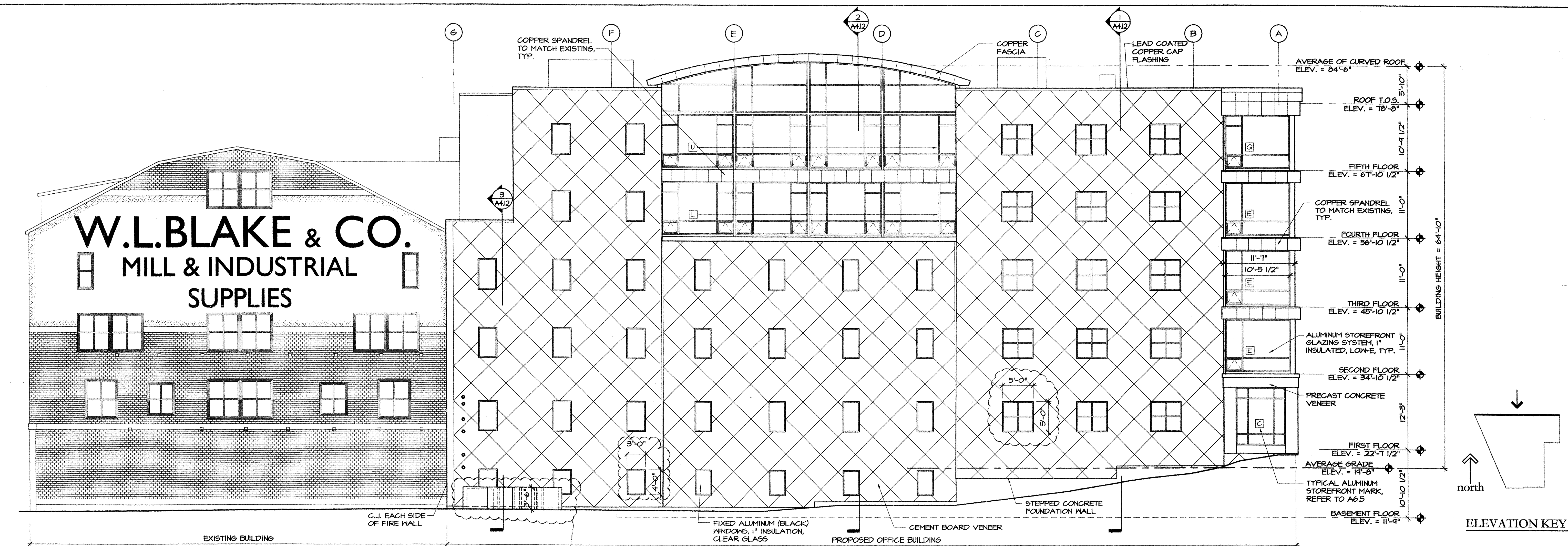
3 PARTIAL EAST ELEV. @ 4TH & 5TH FLOORS
SCALE: 1/8" = 1'-0"

CUSTOM HOUSE SQUARE
300 FORE STREET
PORTLAND, MAINE

EXTERIOR ELEVATIONS

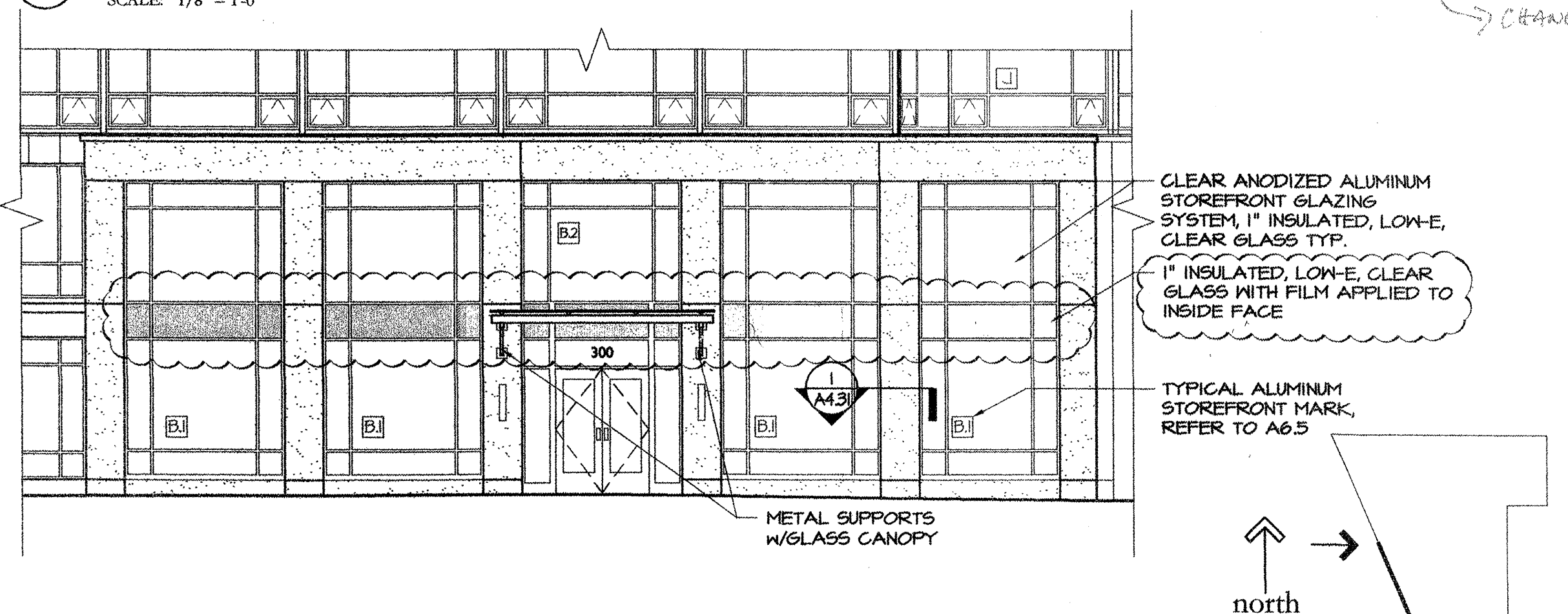
PROJECT ARCHITECT:
MW
DRAWN BY:
SO, BR
PROJECT #:
300506

A3.2



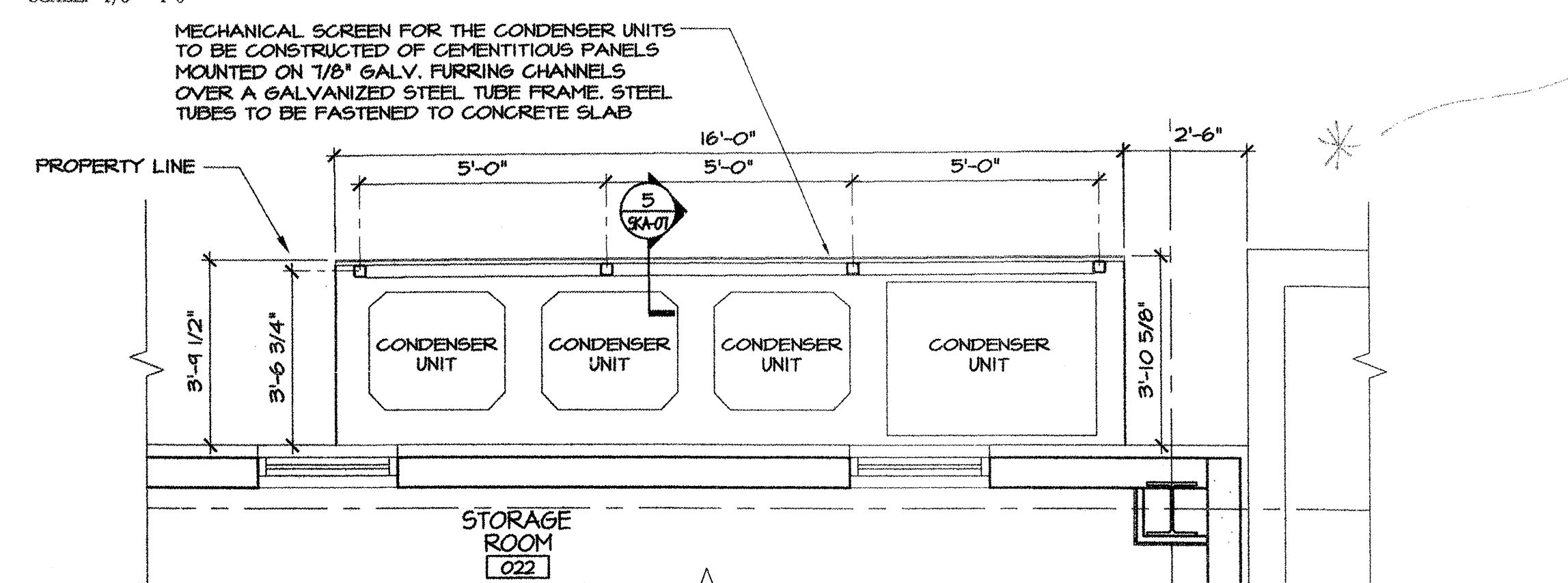
NORTH ELEVATION

SCALE: 1/8" = 1'-0"



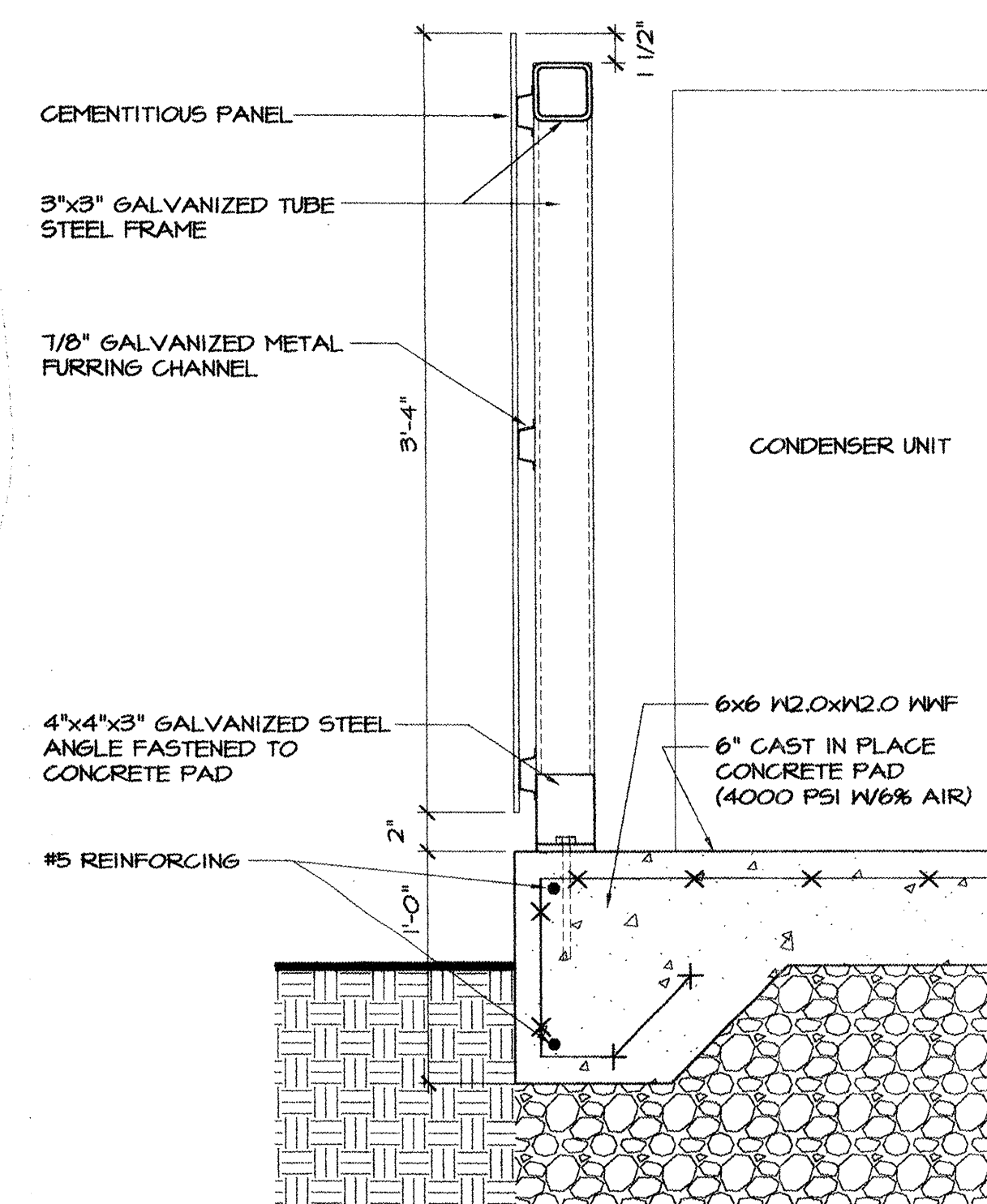
PARTIAL WEST ELEVATION

SCALE: 1/8" = 1'-0"



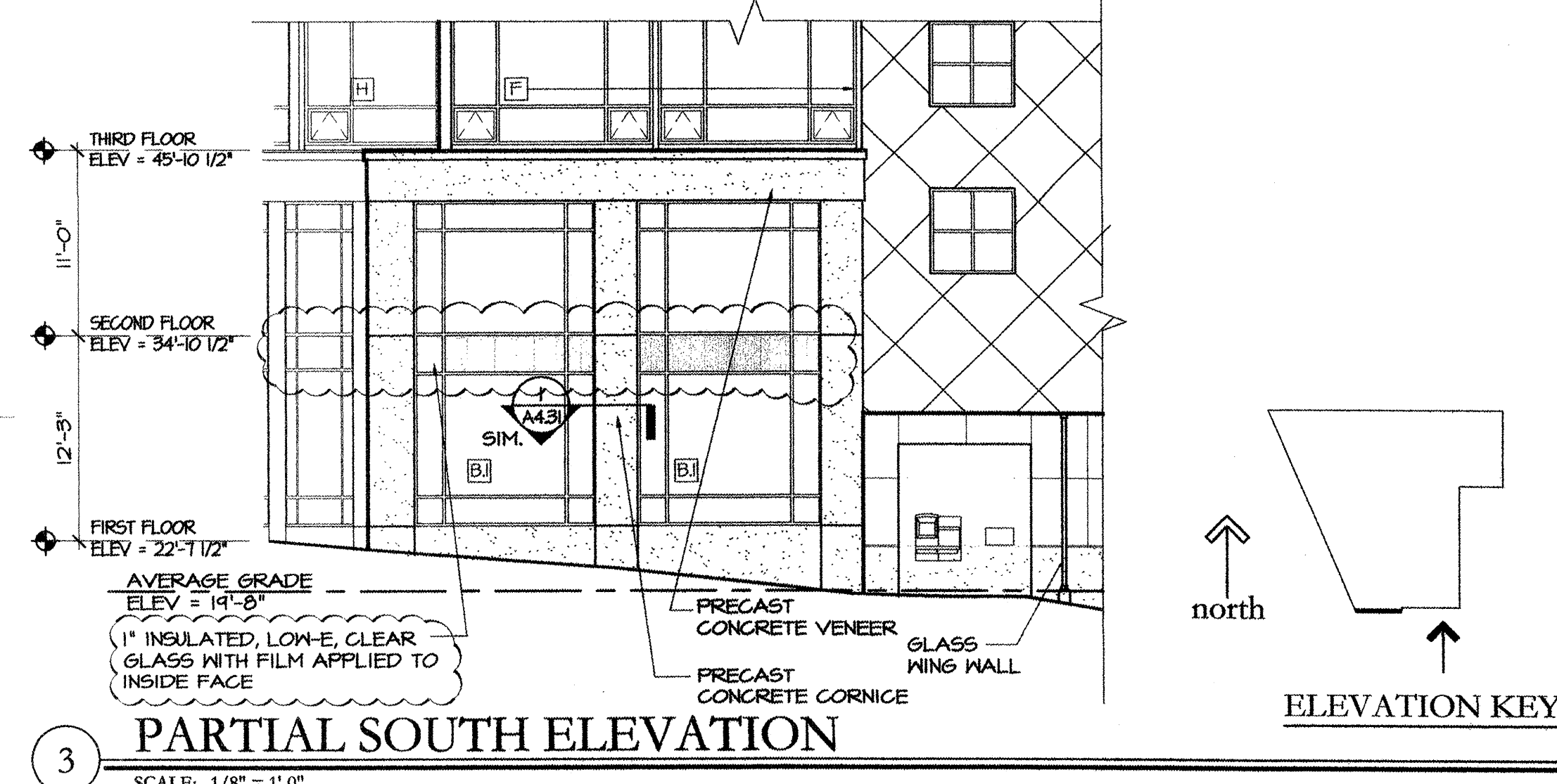
PLAN DETAIL AT CONDENSER SCREEN

4 SCALE: 3/8" = 1'-0"



SECTION AT SCREEN

SCALE: $1\frac{1}{2}" = 1'-0"$

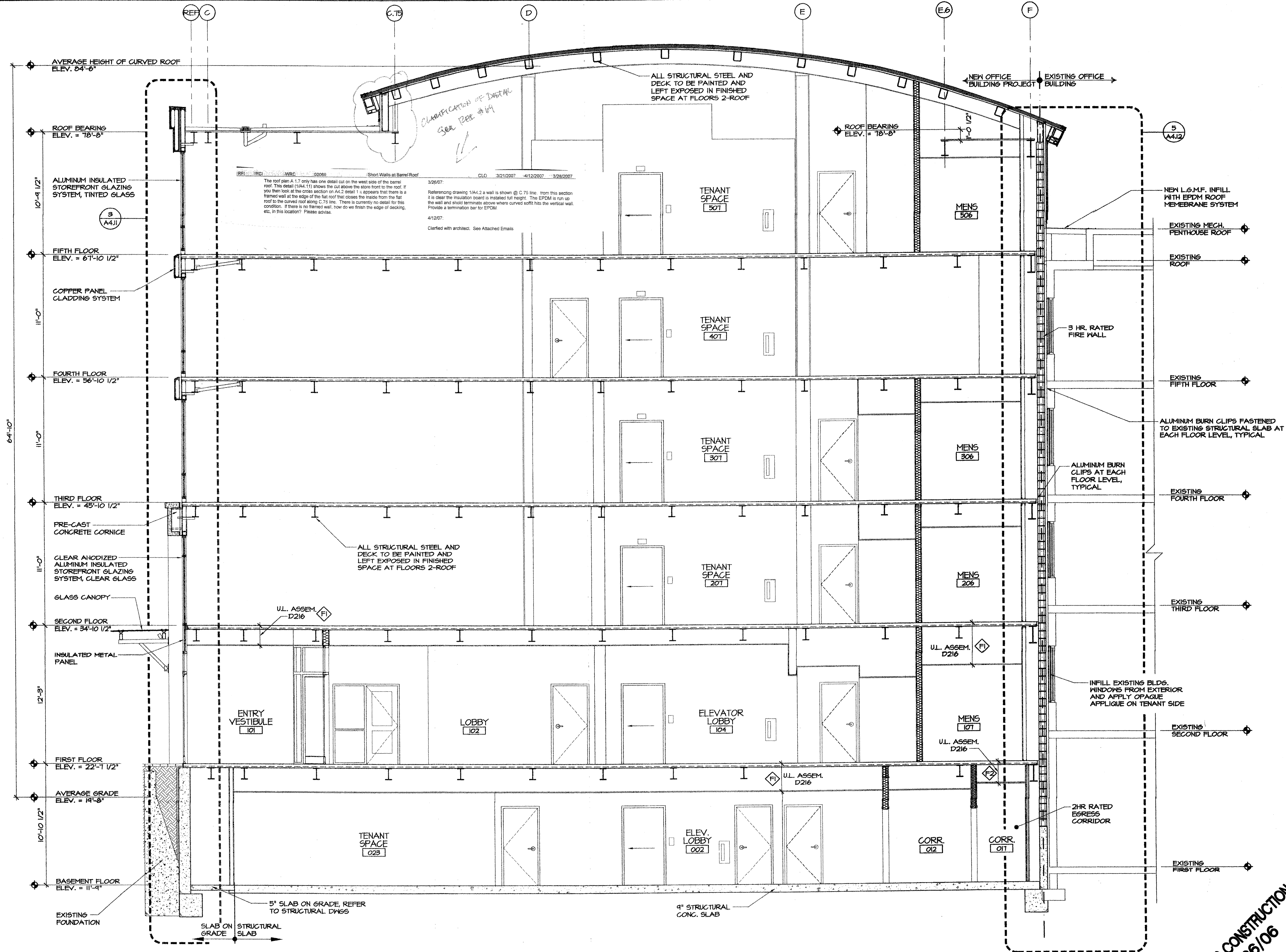


PARTIAL SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

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1 BUILDING SECTION
SCALE: 1/4" = 1'-0"

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CUSTOM HOUSE SQUARE
300 FORE STREET
PORTLAND, MAINE
BUILDING SECTION

PROJECT ARCHITECT:
MW
DRAWN BY:
SO, BR
PROJECT #:
300506

A4.2



CUSTOM HOUSE SQUARE

300 FORE STREET
PORTLAND, MAINE

BUILDING SECTION

PROJECT ARCHITECT
MW
DRAWN BY:
SO, BR
PROJECT #:
300506

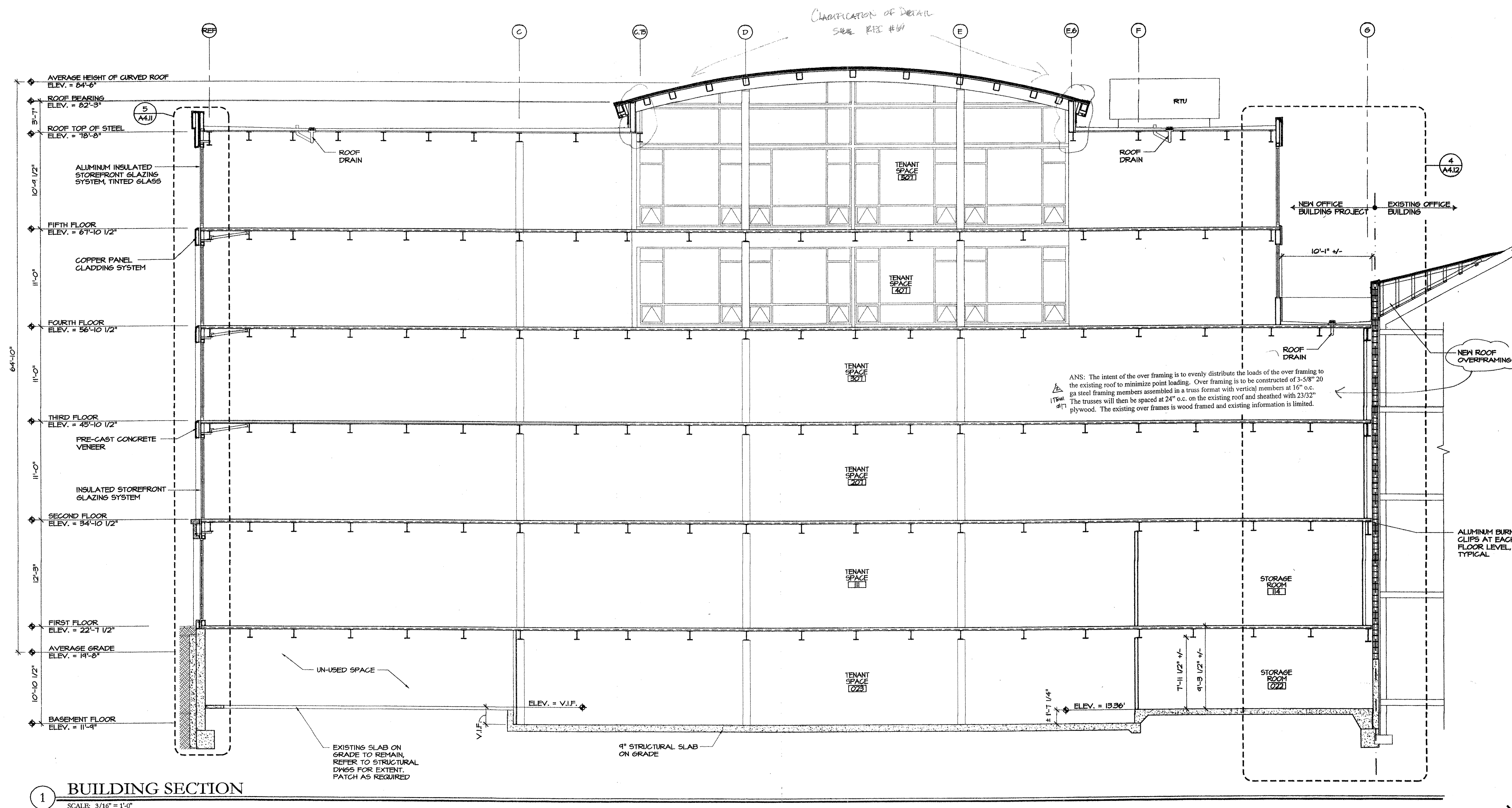
A4.3

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1 BUILDING SECTION
SCALE: 3/16" = 1'-0"

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05/26/06

CUSTOM HOUSE SQUARE
300 FORE STREET
PORTLAND, MAINE
BUILDING SECTION

PROJECT ARCHITECT:	MW
DRAWN BY:	SO, BR
PROJECT #:	300506

A4.4

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PLANNING BOARD REPORT PORTLAND, MAINE

5-7 India Street
Amendment to Approved Site Plan - On-street parking
PL-000678-2019
Carroll Block, LLC., Applicant

Submitted to: Portland Planning Board
Public Hearing Date: August 10, 2021

Prepared by: Caitlin Cameron, Urban Designer
Date: August 6, 2021

I. INTRODUCTION

Carroll Block, LLC. requests approval for the creation of six on-street parking spaces on India Street to accommodate retail parking and commercial loading needs in association with an amended Site Plan for 5-7 India Street - a residential project on India Street between Thames and Fore streets in the India Street neighborhood. The approved Site Plan includes a single, four-story building with 24 market-rate apartments on floors two through four with 2,500 square feet of ground floor retail space. The required parking is provided off-site through a lease with the Ocean Gateway Garage. The project is located in the India Street Form-Based Code (IS-FBC) zone (Urban Active subdistrict) and is within the Old Port Historic District. As the project is located in the IS-FBC zone, an accompanying Level II Site Plan application was reviewed and approved by the Planning Authority on March 6, 2020.

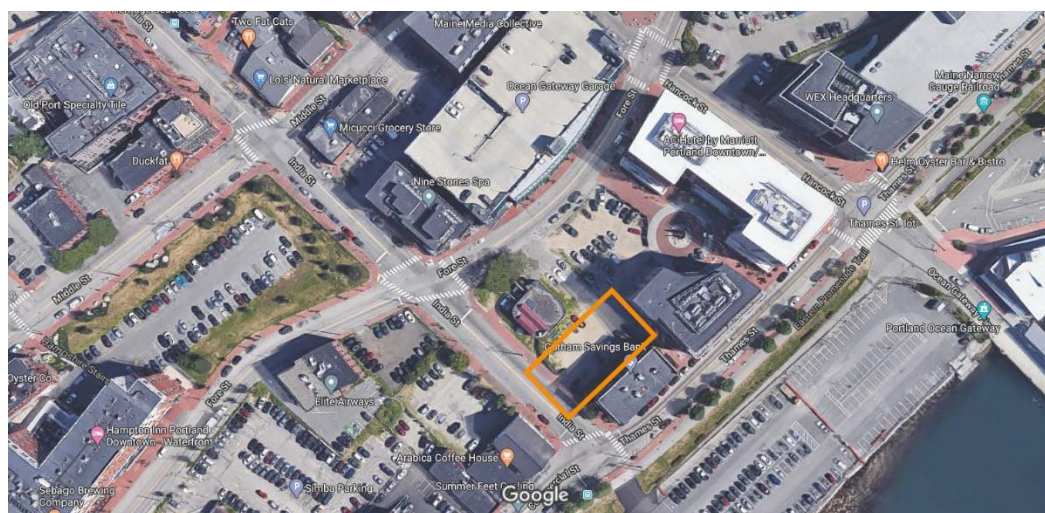


Figure 1 Project Location

Applicant: Carroll Block, LLC (represented by Scott Lindsay)
Agent and Engineer: Ransom Consulting Engineers (Maureen McGlone)
Landscape Architect: Carroll Associates Landscape Architects (Pat Carroll)

II. REQUIRED REVIEWS

Review Type	Applicable Standards
Planning Board	
City Code Ch 28 Traffic and Motor Vehicles – addition of six on-street parking spaces	Ch. 28-24 (g) (1) i. Change of “no parking” to parking (Planning Board)
Planning Authority	(see Attachment 2: Statement of Findings)
Site Plan Amendments	Sec. 14.6 Site Plan Review
Waivers	Citation
Driveway separation less than 125’	City of Portland Technical Manual 1.7.2.7 Location and Spacing of Driveways – driveway separation
Intersection separation less than 150’	City of Portland Technical Manual 1.7.2.7 Location and Spacing of Driveways – location from intersection

III. EXISTING CONDITIONS

The subject property is within the India Street neighborhood and has frontage on India Street. The site is within the India Street Form-based Code (IS-FBC) zone and near a prominent, gateway corner of Thames and India streets. India Street is designated as Urban Active (UA) zoning subdistrict which emphasizes active frontage.

India Street is considered the main street of the neighborhood and includes two historic districts; this proposal is within the Old Port Historic District due to its proximity to and visibility from Commercial Street. On India Street, one important consideration is maintaining the views down the street to the water.

Parking is limited in this neighborhood of dense development. Many new projects in this area rely on the Ocean Gateway Garage to provide off-site, proximate parking (for which the garage was initially built). This allows the new development to have a good relationship to the street wall and maximize the lot for active uses.

Currently, India Street does not have on-street parking on the east side of the street within this block (between Thames and Fore streets). On-street parking is allowed on the west side of the street within this block and on both sides of the street for the remainder of India Street.

IV. PROPOSED AMENDMENT

- Amendment to on-street parking schedule on India Street to create six new on-street parking spaces on India Street between Thames Street and Fore Street, see Figure 3 below.

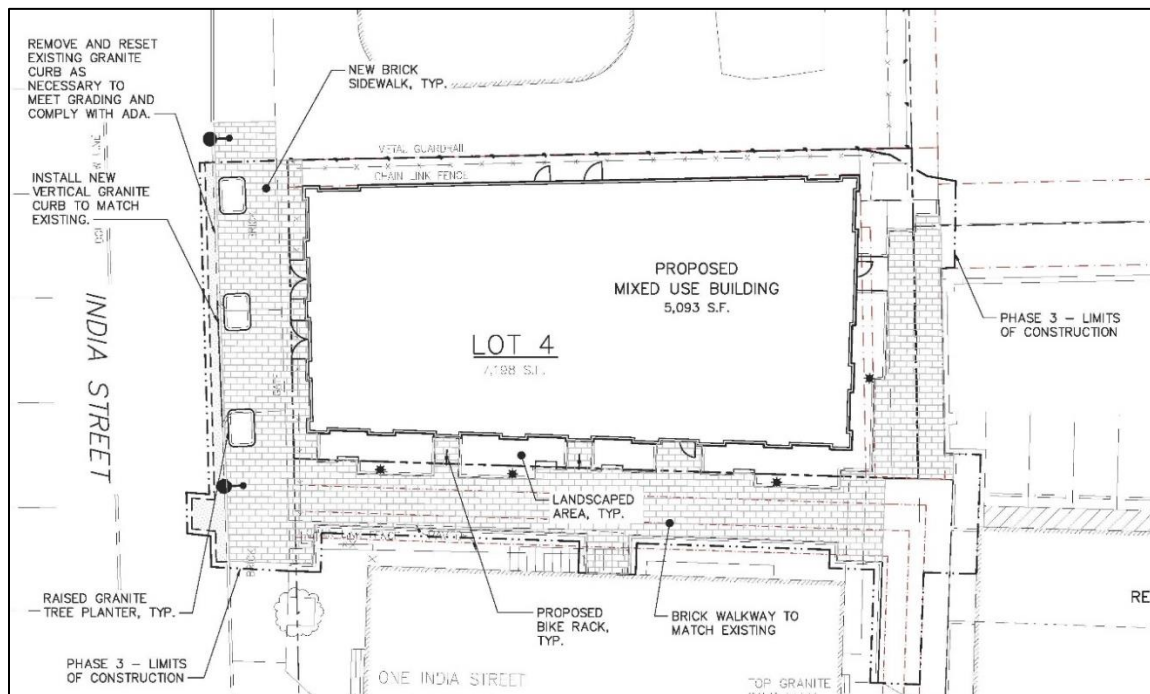


Figure 2 Approved Site Plan (March, 2020)

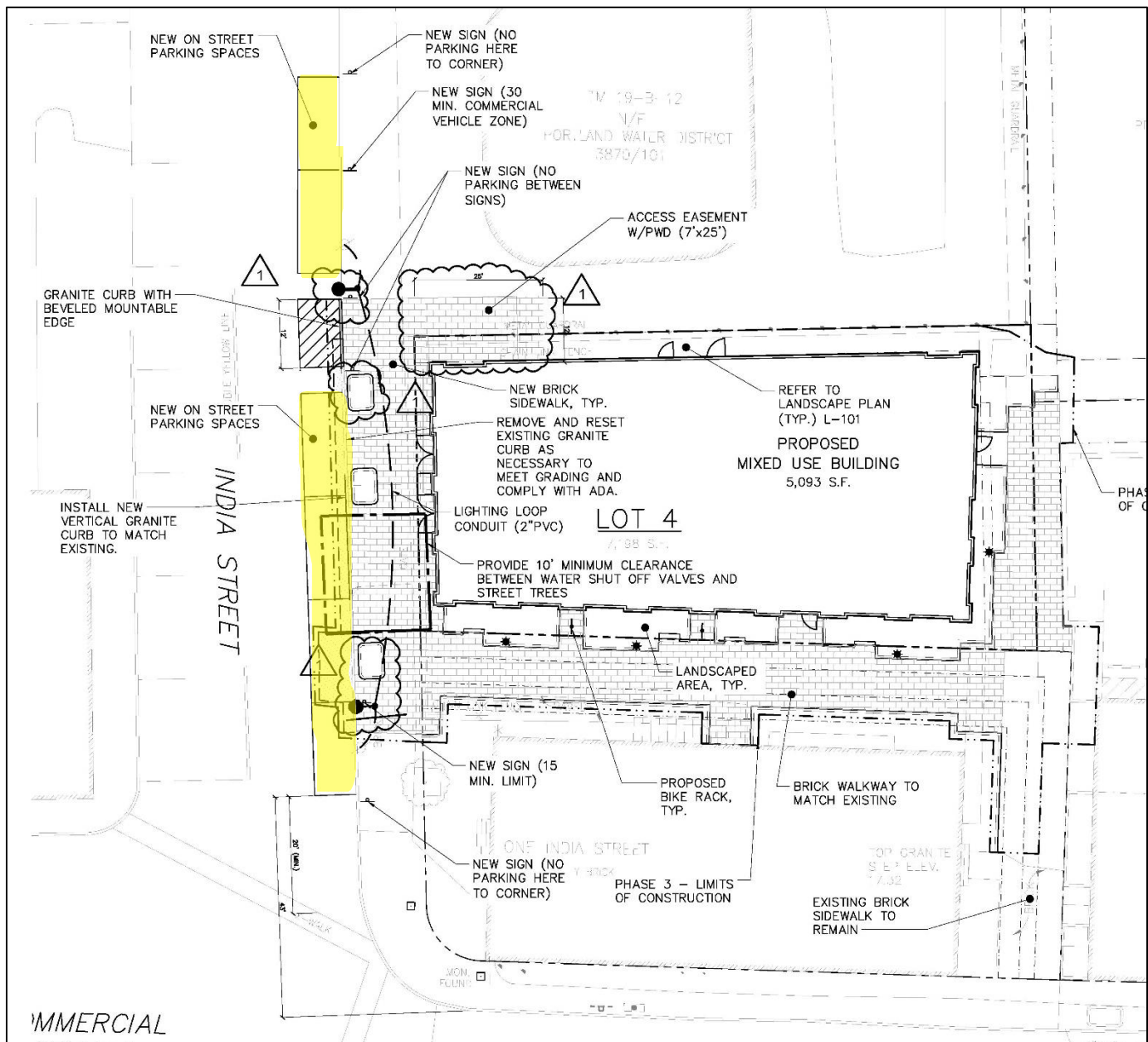


Figure 3 Amended Site Plan

V. PUBLIC COMMENT

This Hearing was noticed to 228 neighbors and interested parties and the public notice appeared in the *Portland Press-Herald* on July 31st and August 1st 2021. No public comment has been received.

VIII. REVIEW OF STANDARDS

A. TRAFFIC AND MOTOR VEHICLES

Sec. 28-24 Regulatory powers. In addition to any other authority granted under this Code, the city traffic engineer shall have authority to:

(g) (1) Establish parking regulations and publish them in the traffic schedule, except the following actions require amendment of the traffic schedule by order of the city council:

i. Change of parking to “no parking any time” or “no parking anytime” to parking;

Currently no parking is allowed on the East side of India Street between Fore Street and Thames Street.

The Applicant is requesting to change an area that is “no parking anytime” to six on-street spaces with the following designations:

- One (1) 15-minute parking space for Gorham Savings Bank customers
- One (1) 30-minute commercial parking space for loading/delivery vehicles
- Four (4) 2-hour parking spaces

City Traffic Engineer, Jeremiah Bartlett, supports the proposal with the following comments (Attachment 1):

- 1.) I support the provision of a single 15-minute space for customers accessing Gorham Savings Bank.*
- 2.) I support the provision of a single 30-minute commercial parking space for loading/delivery vehicles.*
- 3.) I support the provision of four 2-hour non-metered spaces for parking flexibility, including as on-street parking supply for local residents with parking stickers.*

iv. City Council approval of amendments to the traffic schedule for the actions in i. and ii. above shall not be required for:

- c. Amendments to the traffic schedule to change an on-street parking layout after review and approval by the Planning Board.*

With this authority, the Planning Board is therefore being asked to review and approve the addition of six new on-street parking spaces as depicted in the Applicant’s submittal.

(g) (2) Whenever any time limit parking is imposed, . . . the city traffic engineer shall erect appropriate signs or meters, as applicable, giving notice thereof, and no such regulation shall be effective until and unless such signs or meters are erected.

The Applicant shall, as a part of their proposal, erect the appropriate signs as indicated in the proposed Site Plan amendment.

IX. PROPOSED MOTIONS

A. ON-STREET PARKING

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on August 10, 2021 for the amendment to the Site Plan associated with application PL-000678-2019, the Planning Board **approves/does not approve** the change of traffic schedule to allow for on-street parking for the portion of India Street between Fore Street and Thames Street as submitted.

ATTACHMENTS:

Attachments to Report

1. Traffic Engineer – On-street Parking assessment

2. DPW review comments
3. Statement of Findings – Site Plan Amendment

Public Comments

Applicant's Submittal

- A. Letter describing amendments
- B. Right, title and Interest – Description of easements
- C. Permission to make improvements on adjacent property

Plans

- P1 C1.1 Site Plan
- P2 C1.2 Utility Plan
- P3 L1.0 Landscape and Lighting Plan
- P4 SK-1 Relocation of Overhead Electric

Caitlin Cameron <ccameron@portlandmaine.gov>

5 India Street

2 messages

Jeremiah Bartlett <jbartlett@portlandmaine.gov>
To: "Cameron, Caitlin" <ccameron@portlandmaine.gov>

Wed, Aug 4, 2021 at 8:42 AM

Good Morning Caitlin,

I have the following feedback to offer on 5 India Street:

- 1.) I support the provision of a single 15-minute space for customers accessing Gorham Savings Bank.
- 2.) I support the provision of a single 30-minute commercial parking space for loading/delivery vehicles.
- 3.) I support the provision of four 2-hour non-metered spaces for parking flexibility, including as on-street parking supply for local residents with parking stickers.
- 4.) I support the waiver for driveway separation of less than 125 feet.
- 5.) I support the waiver for intersection separation of less than 150 feet.
- 6.) I **do not support** backing movements from the proposed loading area to India Street, which is an arterial roadway and close to an intersection with limited visibility.

Please let me know if you have any additional questions regarding this.

Thank you,
Jeremiah

Jeremiah J. Bartlett, PE, PTOE
Transportation Systems Engineer
Department of Public Works
212 Canco Road, Suite B
Portland, Maine 04103
jbartlett@portlandmaine.gov
(207) 874-8891

Caitlin Cameron <ccameron@portlandmaine.gov>
To: Jeremiah Bartlett <jbartlett@portlandmaine.gov>

Wed, Aug 4, 2021 at 12:31 PM

Thank you!

[Quoted text hidden]

--

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

5 India amendment - Parking and loading

1 message

Mike Tremblay <mtremblay@portlandmaine.gov>

Wed, Jun 2, 2021 at 11:08 AM

To: Caitlin Cameron <ccameron@portlandmaine.gov>

Cc: James Rather <jrather@portlandmaine.gov>, Tom Errico <thomas.errico@tylin.com>, Jeremiah Bartlett <jbartlett@portlandmaine.gov>

Caitlin,

Here are my comments/concerns on 5 India:

- In my previous discussions with the applicant, we had discussed an on-street loading zone OR an off-street loading area. This application proposes two of each., including two separate driveways (one shared with PWD) and two distinct on-street commercial parking zones. The Applicant should justify why such a large amount of loading space is needed. There is a significant demand for parking in this area, and significant pedestrian traffic on India Street, so loading needs must be considered in the context of public street parking and pedestrian safety.
- India Street is a minor arterial. The two proposed driveways are located about 50 feet apart; the driveway separation standard for a 30mph roadway is 125 feet. The proposed northerly driveway is about 55 feet from the existing PWD driveway on India Street. Additionally, the southern driveway is located approximately 58 feet from Commercial Street; the standard for intersection separation along arterials and collectors is 150 feet. As proposed, two waivers from Technical Manual Section 1.7.2.7 would be required.
- The northern driveway/parking area serving PWD is proposed to be 20 feet long. If larger vehicles use this parking area, they may block the sidewalk. This would be unacceptable. The Applicant should confirm that 20 feet is sufficient space.
- The PWD site already has two driveways; this would constitute a third driveway which is not permitted under the Technical Manual 1.7.2.8.
- The Applicant, or PWD, should specify the expected frequency of use of the northerly driveway. Heavier use may warrant a standard driveway apron. Additionally, as this is a new parking area serving an existing site, the Applicant/PWD should explain why this parking area is necessary.
- The repurposing of the pedestrian easement to a driveway is a significant change in the approved site plan. It is unlikely that this area is needed for emergency vehicle access, as there are no changes to the building from the approved site plan.
- The Applicant should specify the expected frequency of use of the southerly driveway. Heavier use may warrant a standard driveway apron.
- Any approved driveway(s) will be required to be reconstructed to the City's driveway standard, regardless of whether mountable curbs are used. This will ensure that the sidewalk is not damaged due to vehicle traffic.

Mike Tremblay, P.E.
 Senior Engineer
 Engineering Division
 Department of Public Works
 City of Portland, ME
mtremblay@portlandmaine.gov
 P. 207.874.8881 F. 207.874.8852



Memorandum

Planning and Urban Development Department

Planning Division



Written By: Caitlin Cameron, Urban Designer
 Date: August 6, 2021
 Re: **Statement of Findings**
 Amendment to a Level III Site Plan (PL-000678-2019)
 5-7 India Street
 Carroll Block, LLC., Applicant

I. INTRODUCTION

Carroll Block, LLC. seeks approval for amendments to the Site Plan including a service loading area, relocation of utility lines and other sidewalk elements. The approved Site Plan includes a single, four-story building with 24 market-rate apartments on floors two through four with 2,500 square feet of ground floor retail space. The required parking is provided off-site through a lease with the Ocean Gateway Garage. The project is located in the India Street Form-Based Code (IS-FBC) zone (Urban Active subdistrict) and is within the Old Port Historic District. As the project is located in the IS-FBC zone, an accompanying Level II Site Plan application was reviewed and approved by the Planning Authority on March 6, 2020.

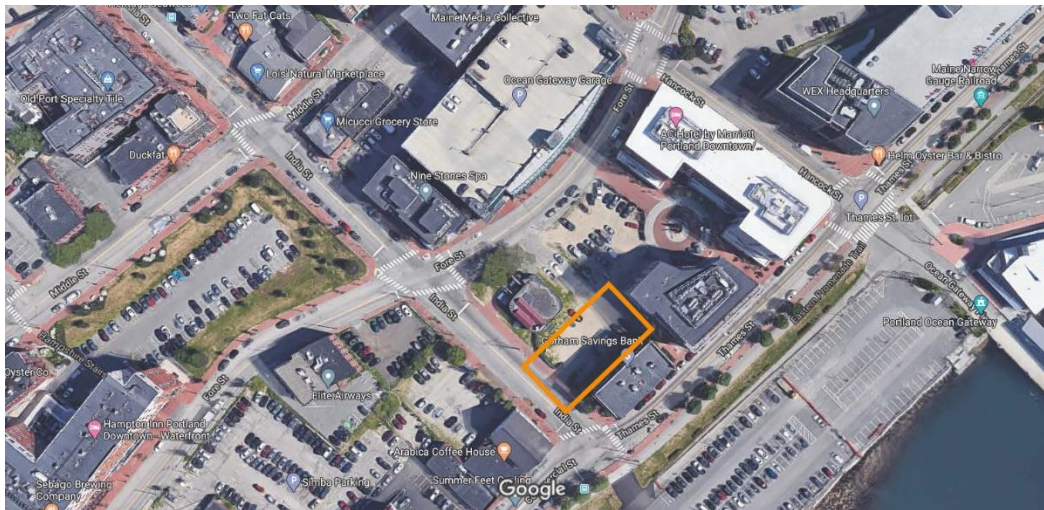


Figure 1 Project Location

Applicant: Carroll Block, LLC (represented by Scott Lindsay)
Agent and Engineer: Ransom Consulting Engineers (Maureen McGlone)
Landscape Architect: Carroll Associates Landscape Architects (Pat Carroll)

II. REQUIRED REVIEWS – PLANNING AUTHORITY

Review Type	Applicable Standards
Site Plan Amendments	Sec. 14.6 Site Plan Review
Waivers	Citation
Driveway separation less than 125'	City of Portland Technical Manual 1.7.2.7 Location and Spacing of Driveways – driveway separation
Intersection separation less than 150'	City of Portland Technical Manual 1.7.2.7 Location and Spacing of Driveways – location from intersection

III. PROJECT DATA

SUBJECT	DATA
Total area of the site	7,196 sf
Total Disturbed Area	7,196 sf
Existing Zoning	ISFBC (UA)
Existing Use	Vacant
Proposed Use	Residential, retail
Impervious Surface Area	
--Existing	7,196 sf
--Proposed	5,500 sf
--Net Change	-1,696 sf
Building Footprint	
--Existing	0 sf
--Proposed	5,093 sf
--Net Change	+5,093 sf
Building Floor Area	
--Existing	0 sf
--Proposed	20,325 sf
--Net Change	+20,325 sf
Proposed Room Mix	
-Efficiency	3
-One-bedroom	21
-Two-bedroom	0
Parking Spaces	48 (Ocean Gateway Garage; 27 required)
Bicycle parking Spaces	28 (none existing)

IV. EXISTING CONDITIONS

The subject property is within the India Street neighborhood and has frontage on India Street. The property is currently vacant between the Water District pump station and the recently renovated Grand Trunk office building. Several new buildings have recently been completed or are under construction around this site as part of a common scheme of development – 20 Thames Street, the AC Hotel, and the future 170 Fore Street.

The site is within the India Street Form-based Code (IS-FBC) zone and near a prominent, gateway corner of Thames and India streets. India Street is designated as Urban Active (UA) zoning subdistrict which emphasizes active frontage.

India Street is considered the main street of the neighborhood and includes two historic districts; this proposal is within the Old Port Historic District due to its proximity to and visibility from Commercial Street. On India Street, one important consideration is maintaining the views down the street to the water.

Parking is limited in this neighborhood of dense development. Many new projects in this area rely on the Ocean Gateway Garage to provide off-site, proximate parking (for which the garage was initially built). This allows the new development to have a good relationship to the street wall and maximize the lot for active uses.

Currently, India Street does not have on-street parking on the East side of the street within this block (between Thames and Fore streets). On-street parking is allowed on the west side of the street within this block and on both sides of the street for the remainder of India Street.

V. PROPOSED AMENDMENTS

- 1) Relocation of overhead utilities to meet emergency access requirement
- 2) Creation of an off-street service drive with mountable curb – crossing the property line
- 3) Relocation of sidewalk elements (street trees, decorative lights) to accommodate utilities and new loading area

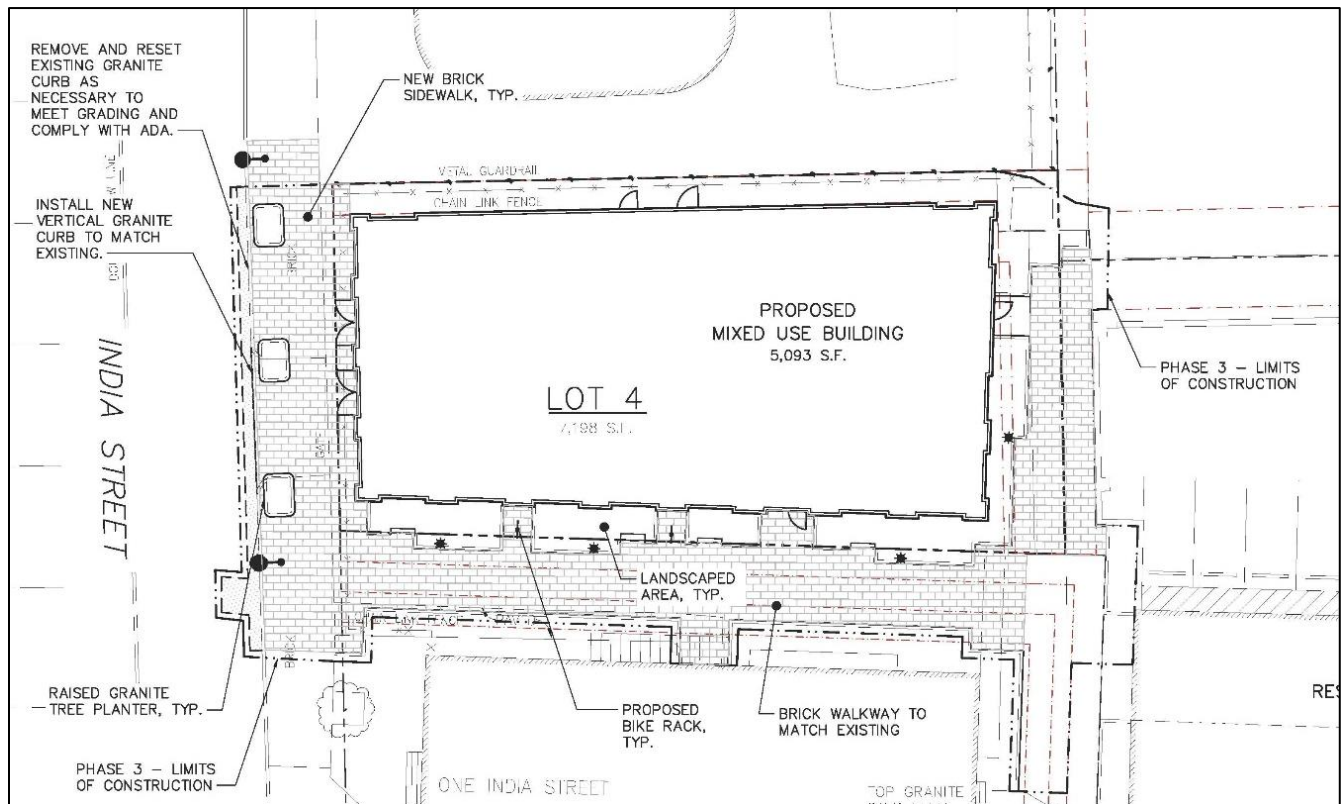


Figure 2 Approved Site Plan (March 6, 2020)

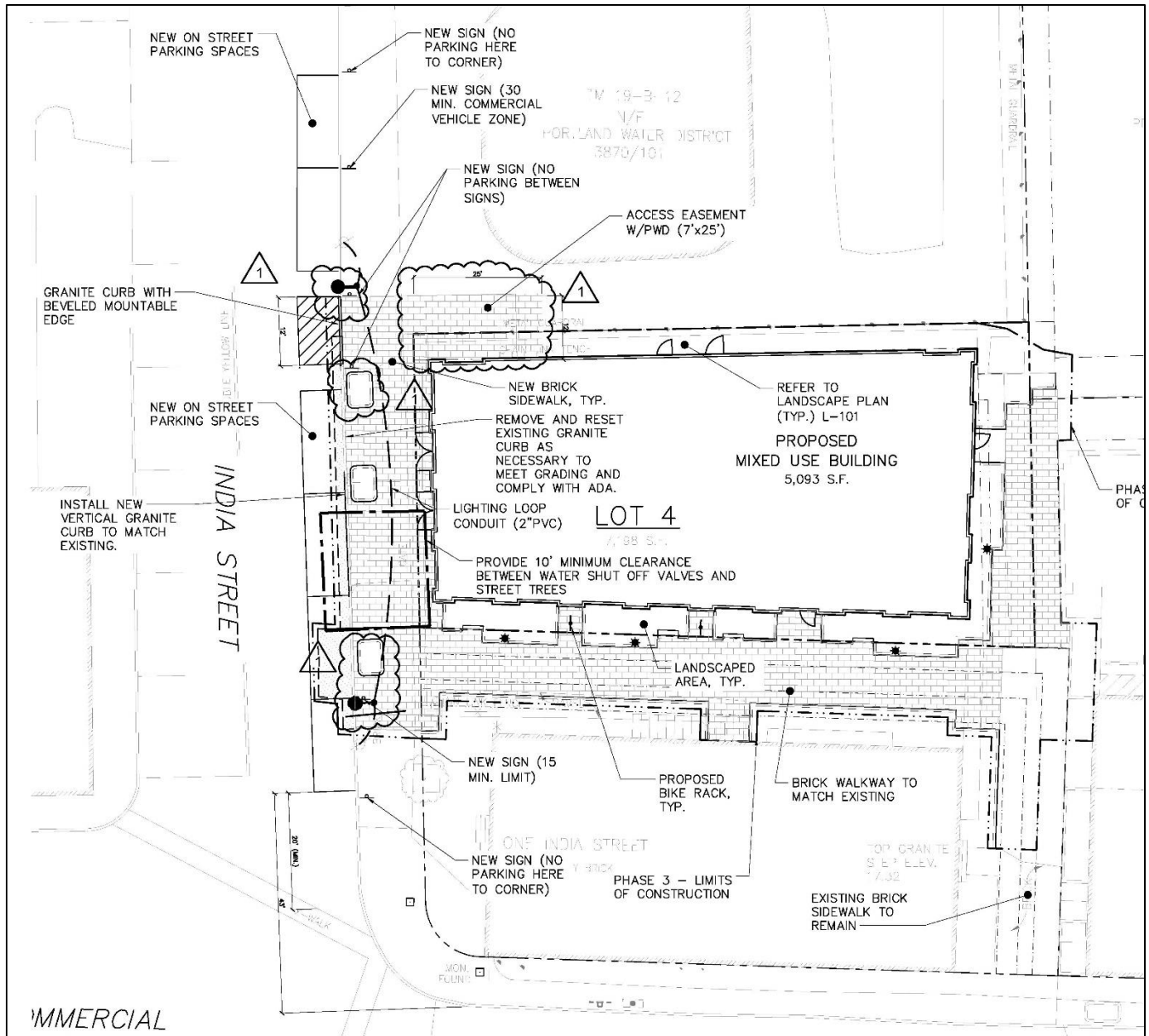


Figure 3 Amended Site Plan

VI. PUBLIC COMMENT

No public comment has been received.

VI. RIGHT, TITLE AND INTEREST AND FINANCIAL/TECHNICAL CAPACITY

The applicant provided evidence of Right, Title, and Interest in the form of draft easements between the applicant and Portland Water District ([Attachment B](#)). There is a letter from the abutter, Portland Water District, ([Attachment C](#)) granting permission to make the site improvements that cross into the easement area as part of this Site Plan amendment. There is an existing easement from the Portland Water District allowing access onto the property for construction and staging.

VII. REVIEW OF STANDARDS

“Not applicable” is indicated with “N/A” where amendments do not implicate specific Site Plan Standards.

A. SITE PLAN STANDARDS

Ch 14 14.6 Site Plan Review Standards

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland’s site plan ordinance. Staff comments are below and in *Attachments 1-2*.

Traffic - Access, Circulation, Loading and Servicing - The amendment proposes to introduce a service/loading driveway on the north side yard of the property. The site plan shows a new brick driveway area accessed from India Street using mountable curbing. The area will be paved with bricks and used for loading and service vehicles for the 7 India Street property. The driveway is now required because the property has changed ownership and can no longer access the abutting properties for service and loading. The driveway will be accessed from India Street using a mountable curb (rather than a curb cut). The access to this driveway will be kept clear with new signage.

Transportation Systems Engineer Jeremiah Bartlett has the following comments regarding the loading driveway ([Attachment 1](#)):

- *I support the waiver for driveway separation of less than 125 feet.*
- *I support the waiver for intersection separation of less than 150 feet.*
- *I do not support backing movements from the proposed loading area to India Street, which is an arterial roadway and close to an intersection with limited visibility.*

DPW Senior Engineer Mike Tremblay has the following comments regarding the drive ([Attachment 2](#)):

- *The northern driveway/parking area . . . is proposed to be 20 feet long. If larger vehicles use this parking area, they may block the sidewalk. . . . The applicant should confirm that 20 feet is sufficient space.*

In response to staff comment, the Applicant proposes the loading area will be accessed by vehicles backing into the service drive to prevent backing maneuvers into the roadway. The applicant’s materials claim the driveway length is sufficient for the intended service vehicles anticipated.

Sidewalks

The current site plan shows a portion of India Street being reconstructed as part of this project. The spacing and layout of street trees, utility poles, and decorative light fixtures are altered as part of this amendment to accommodate the new service drive. The City Technical Manual Standards for sidewalk design and construction continue to be met – no new curb cuts are proposed. One condition of approval is requested based on the following staff comment.

DPW Senior Engineer Mike Tremblay has the following comments regarding the drive (Attachment 2):

- *Any approved driveway(s) will be required to be reconstructed to the City's driveway standard, regardless of whether mountable curbs are used. This will ensure that the sidewalk is not damaged due to vehicle traffic.*

Public Transit Access – N/A

Parking – N/A

Snow Storage – N/A

Transportation Demand Management – N/A

Landscape Preservation / Site Landscaping and Screening – N/A

Landscape Plan –The applicant does not significantly alter the landscape plan other than the relocation of proposed street tree wells within the sidewalk. The street trees continue to meet the City standards, the number of trees provided has not changed and does not affect the tree fee-in-lieu amount.

Water Quality, Stormwater Management and Erosion Control – The amendment does not increase or otherwise change the area of impervious surface associated with the property.

Public Safety – N/A

Fire Prevention and Public Utilities – As part of this Amendment proposal, the applicant proposes to relocate overhead utilities to meet emergency access requirement (P4). This change meets the previous staff comments for the approved Site Plan regarding emergency access to the front of the building and removing conflicts with utility lines and emergency vehicles.

Massing, Ventilation and Wind Impact and Shadows – N/A

Historic Resources – N/A

Exterior Lighting incl Street Lighting - Building and site lighting must comply with Section 12 of the City of Portland Technical Manual. The relocation of specified street light fixtures continues to comply with the required spacing as specified in the Technical Manual. The correct fixture is also specified and not proposed to be amended.

Noise and Vibration – N/A

VIII. STAFF RECOMMENDATION

Based on the applicant's submission and staff review contained within this report and attachments, the Planning Authority approves the proposed amendments with the following conditions and waivers:

WAIVERS

- 1) The Planning Authority finds that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual *Section 1.7.2.7 Location and Spacing of Driveways*. The Planning Authority waives Technical Manual Section 1.7.2.7 to allow driveway separation of less than 125 feet.
- 2) The Planning Authority finds that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual *Section 1.7.2.7 Location and Spacing of Driveways*. The Planning Authority waives Technical Manual Section 1.7.2.7 to allow driveway separation from the intersection of less than 150 feet.

CONDITIONS

- 1) That the approved driveway shall be required to be reconstructed to the City's driveway standard.

July 30, 2021

Caitlin Cameron, AICP, Associate AIA, LEED AP
Urban Designer
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101

RE: 5 India Street Amendment to Approved Site Plan

Good Morning Caitlin,

Attached please find revised Site Plans and other documents in support of our proposed Amendment to the Approved Site Plan for 5 India Street.

This Amendment is requested to provide the following modifications to the approved plan:

1. Relocation of the overhead power lines that were extending across the front of the new building. This situation created setback issues for the CMP power lines, requiring relocation around the building. Two new poles have been set, one on the south side of India Street and a second adjacent to the 1 India Street building. This is indicated on the revised Utility Plan.
2. Creation of a short service drive off of India Street straddling the property line between 5 India Street and the PWD Pup Station. The size of this driveway is proposed to be 12 ft x 25 ft, and will be accessed by a mountable curb on India Street. Sidewalk grades will be maintained, and the driveway will be constructed using a heavy-duty base under the brick pavers to accommodate truck traffic. The intent of this service driveway is to allow service vehicles to park off-street when performing emergency and routine service calls at the 5 India Street building. Signage will restrict use to service vehicles only. It is noted that no increase in impervious cover on 5 India Street property is envisioned, but the driveway will add 175 sf of impervious cover on PWD land. We believe this minor increase in overall impervious does not impact the overall stormwater management plan for the project.
3. We are requesting a number of on-street parking spaces be designated along this section of India Street. Currently no parking is allowed on this side of the street, we are proposing to create 5 -6 on-street spaces, two of which we would propose to be restricted- one would be 15-minute parking to allow short term parking for customers of the Gorham Savings Bank and the new retail space at 5 India Street; the second would be restricted to 30-minute commercial parking, allowing delivery vehicles for the retail spaces to park on the street rather than pulling into the service drive. We believe both of these spaces will provide necessary needs to the retail uses at both 1 India Street and 5 India Street, as its proximity to the Ferry Terminal and Old Port ensures that any on-street parking is in high demand and could be discouraging for vendors and short-term customers.

In response to your questions regarding right-title, and interest in creation of the service drive on PWD property, I have attached a proposed easement granting rights to both PWD and the Owner of 5 India Street, as well as an email chain between attorneys outlining the conditions of any such agreement. The final language of the easement will be drafted upon approval by the PWD Board of Trustees at their regular Board meeting in August, and this Agreement is intended to be recorded with the Registry of

Title: 5 India Street Site Plan Amendment
Revised Amendment Request
Date: July 30, 2021
Page: Page 2 of 2

Deeds. A signed and recorded copy of the Agreement will be submitted to your office prior to any construction activity.

Please review this letter and the revised site plans and other support documents. We would be glad to either meet on-site or in a Zoom call to discuss further, and look forward to discussion with the Planning Board on August 10. Please contact me if you have any questions or need additional information.

With Regards,
CARROLL ASSOCIATES

A handwritten signature in black ink, appearing to read 'P. Carroll', with a long horizontal stroke extending to the right.

Patrick J Carroll, Principal

Enc.

CC: Scott Lindsay
Richard Bryant
Maureen McGlone

Patrick Carroll

Subject: 5 India Street - PWD/J. Alfred Poor Block, LLC - Easement Swap
Attachments: DRAFT 5 India+PWD Easements 2021.07.23 (004).pdf

From: Richard N. Bryant <rbryant@vblawfirm.com>
Sent: Tuesday, July 27, 2021 12:23 PM
To: Patrick Carroll <pcarroll@carroll-assoc.com>
Cc: Scott A. Lindsay (<scott@scottalindsay.com> <scott@scottalindsay.com>); Donna Katsiaficas <dkatsiaficas@pwd.org>
Subject: FW: 5 India Street - PWD/J. Alfred Poor Block, LLC - Easement Swap

Patrick:

Donna Katsiaficas, General Counsel of the Portland Water District, has confirmed below her agreement with my summary of the terms of the PWD / J. Alfred Poor Block, LLC easement swap for the 5 India Street project.

Feel free to forward this email string to the City, along with your plan of the 5' excavation easement to be granted to PWD and the 7' x 25' access easement to be granted to J. Alfred Poor Block, LLC for the proposed service vehicle access for 5 India Street along the property line beyond the sidewalk.

Let me know if there is anything further you will need to pursue the City approval of the 5 India Street site plan modifications now in process.

I'll keep you apprised of the progress of the formal approval of the easement swap by the PWD Board of Trustees, as well as the follow-up documentation that Donna and I will draft for recording.

Regards

Richard

Richard N. Bryant, Esq.
Van Meer & Belanger, P.A.
215 Commercial Street, 4th Floor
Portland, ME 04101
Office: (207) 871-7500
Fax: (207) 871-7505
Cell (207) 233-6734
rbryant@vblawfirm.com

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From: Donna Katsiaficas <dkatsiaficas@pwd.org>
Sent: Tuesday, July 27, 2021 12:13 PM
To: Richard N. Bryant <rbryant@vblawfirm.com>
Subject: RE: 5 India Street - PWD/J. Alfred Poor Block, LLC - Easement Swap

I am in agreement with your representation of the proposed agreement between your client and PWD.

Donna

From: Richard N. Bryant <rbryant@vblawfirm.com>
Sent: Tuesday, July 27, 2021 11:54 AM
To: Donna Katsiaficas <dkatsiaficas@pwd.org>
Cc: Scott A. Lindsay (scott@scottalindsay.com) <scott@scottalindsay.com>; Patrick Carroll <pcarroll@carroll-assoc.com>
Subject: 5 India Street - PWD/J. Alfred Poor Block, LLC - Easement Swap

ATTENTION: This email did NOT originate from Portland Water District. This email is from an external source outside of the District. Exercise EXTREME caution when opening external attachments or links from unknown senders.

Hi Donna:

Per our conversation yesterday, I would appreciate your responding to this email to confirm the basic terms of the proposed agreement between PWD and J. Alfred Poor Block, LLC for the easement swap between the 5 India Street property and the adjacent PWD pump station lot. I have summarized the negotiated terms below, consistent with the PWD staff submission seeking the PWD Planning Committee's recommendation to the full PWD Board of Trustees to authorize the transaction. For your convenience, I have attached Patrick Carroll's plan showing both easements.

The following terms have been negotiated between Chris Crovo of PWD and Scott Lindsay of J. Alfred Poor Block, LLC, and await PWD Trustees' review and approval at their August meeting.

- 1) J. Alfred Poor Block, LLC will grant to PWD a 5' wide excavation easement along the common boundary with PWD to facilitate PWD's future access to and repair of the sewer line between the buildings.
- 2) PWD will grant to J. Alfred Poor Block, LLC a 7' x 25" access easement along the common boundary near India Street to facilitate a service vehicle access for 5 India Street beyond the public sidewalk.
- 3) Simultaneous with the easement exchange, J. Alfred Poor Block, LLC will make a lump sum contribution to PWD to help defray anticipated costs of PWD's upgrades of its property and maintenance of the sewer line.
- 4) Upon receipt of the contribution, PWD will acknowledge the release of J. Alfred Poor Block, LLC from obligations related to 5 India Street which PWD negotiated in 2006 with the owner of the unrealized Riverwalk development that included 5 India Street.

Upon receipt of your affirmative email response confirming the accuracy of this summary, I will have Patrick Carroll forward along the entire email string to the City to supplement the pending application for 5 India Street site plan modifications.

Thanks again for your assistance.

Richard

Richard N. Bryant, Esq.
Van Meer & Belanger, P.A.

215 Commercial Street, 4th Floor
Portland, ME 04101
Office: (207) 871-7500
Fax: (207) 871-7505
Cell (207) 233-6734
rbryant@vblawfirm.com

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Donna Katsiaficas

Corporate Counsel

Portland Water District
Phone: 207-774-5961 Ext. 3912
E-mail: dkatsiaficas@pwd.org
<http://www.pwd.org>

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 Please consider the environment before printing this email

INDIA STREET

6" C

36" S
OHW

33" PCC FM

TM 19-B-12
N/F
PORTLAND WATER DISTRICT
3870/101

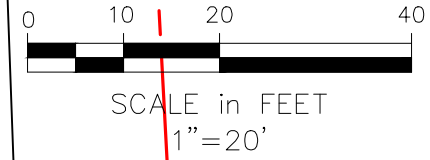
33" PCC FM
25'

7' X 25' ACCESS EASEMENT
TO J. ALFRED POOR BLOCK, LLC

TM 19-B-1
N/F
ONE INDIA STREET, LLC
33589/311

10' ELECTRICAL
EASEMENT

5' EXCAVATION
EASEMENT TO PWD



SHEET NO.

1.0

CARROLL ASSOCIATES
Landscape Architects
217 Commercial St. Portland, ME
Ph: 207.772.1552 FAX: 207.772.0712

DATE: JULY 27, 2021

SCALE: AS SHOWN

PROJECT: 5 INDIA STREET

DRAWING
TITLE:
**MUTUAL EASEMENTS BETWEEN
PORTLAND WATER COMPANY
AND J. ALFRED POOR, LLC**

5 India amendment - missing documents

Patrick Carroll <pcarroll@carroll-assoc.com>

Sun, Aug 1, 2021 at 5:16 PM

To: "Caitlin Cameron (ccameron@portlandmaine.gov)" <ccameron@portlandmaine.gov>

Cc: "Richard N. Bryant" <rbryant@vblawfirm.com>, "scott@scottalindsay.com" <scott@scottalindsay.com>

Hi Caitlin,

Please take a look at Richard Bryant's response below to your request for clarification of an Agreement to make permanent improvements to the PWD land. Please give me or Richard a call if you have any questions.

With regards,

Patrick J. Carroll, Principal

Carroll Associates Landscape Architects

217 Commercial Street, Suite 200

Portland, ME 04101

207-772-1552 v

207-329-8976 c

pcarroll@carroll-assoc.com

www.carrolldesignassociates.com

From: Richard N. Bryant <rbryant@vblawfirm.com>

Sent: Sunday, August 1, 2021 4:23 PM

To: Patrick Carroll <pcarroll@carroll-assoc.com>

Cc: Scott A. Lindsay (scott@scottalindsay.com) <scott@scottalindsay.com>

Subject: RE: 5 India amendment - missing documents

Pat:

The easement swap agreement between PWD and J. Alfred Poor Block, LLC does indeed contemplate permanent improvements upon the PWD lot to be built by the owner of 5 India. The negotiations have been premised upon our client's being responsible for constructing and maintaining that portion of the 5 India service drive within the 7' x 25' access easement upon the PWD lot. The improvements will be tied to the 5 India site plan amendment, including the heavy-duty base layer under brick pavers you specified.

Donna Katsiaficas and I have not drafted final language for either the service drive access easement for J. Alfred Poor Block, LLC or the excavation easement for PWD. However, the 7' x 25' access easement over the PWD lot will include an express right to make those permanent improvements. That right to improve will be accompanied by an express obligation to maintain all such improvements in good condition and repair.

Both of the swapped easements will include other standard provisions to be crafted by Donna and me, such as indemnities protecting the servient estate against claims or liabilities arising from the dominant estate's exercise of the easement.

Please let me know if you need anything further from me for Caitlin in advance of the August 10 Planning Board meeting.

Regards

Richard

Richard N. Bryant, Esq.

Van Meer & Belanger, P.A.

215 Commercial Street, 4th Floor

Portland, ME 04101

Office: (207) 871-7500

Fax: (207) 871-7505

Cell (207) 233-6734

rbryant@vblawfirm.com

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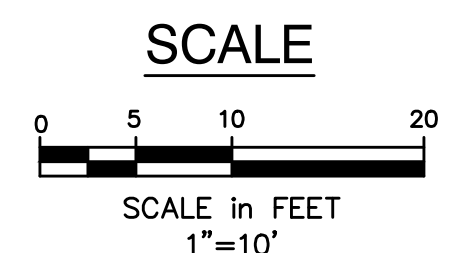
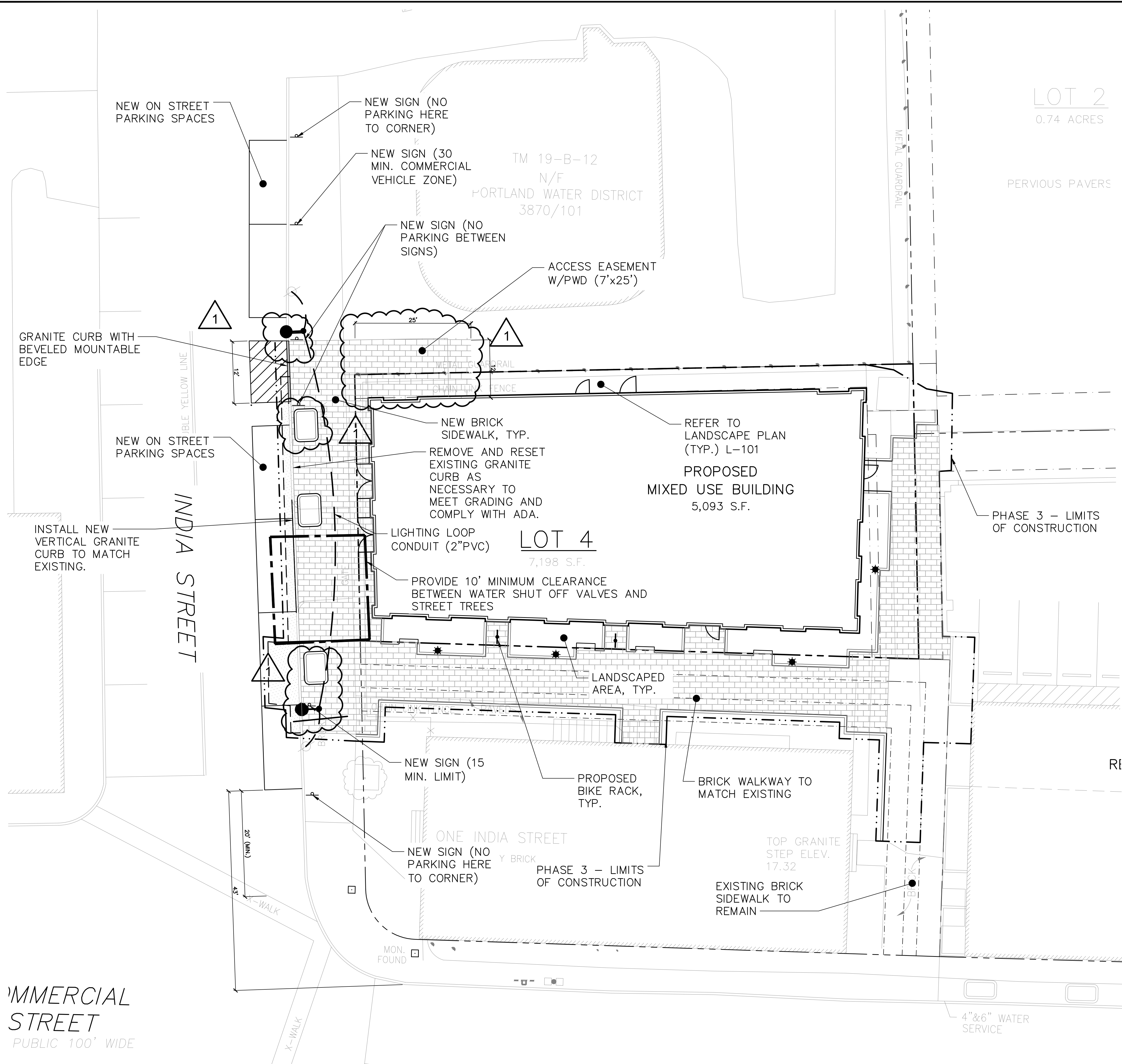
From: Caitlin Cameron <ccameron@portlandmaine.gov>

Sent: Friday, July 30, 2021 2:29 PM

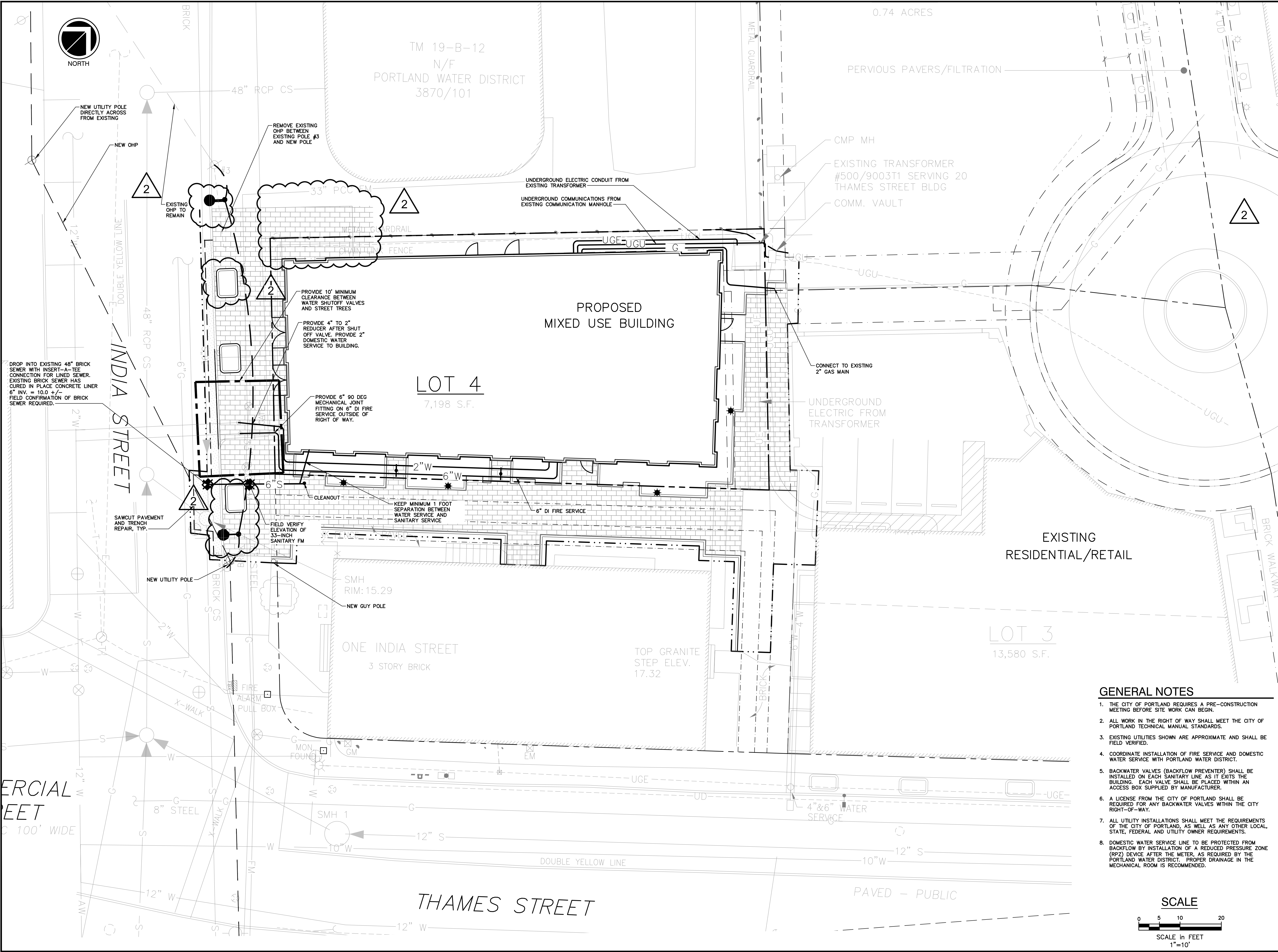
To: Patrick Carroll <pcarroll@carroll-assoc.com>

[Quoted text hidden]

[Quoted text hidden]



Sheet 4 of 14



Project:

FIVE INDIA STREET BUILDING

5 INDIA STREET
PORTLAND, MAINE

Owner:

J. ALFRED POOR BLOCK, LLC
P.O. BOX 7626
PORTLAND, ME 04112

Applicant:

J. ALFRED POOR BLOCK, LLC
P.O. BOX 7626
PORTLAND, ME 04112

RANSOM
Consulting
Engineers
and Scientists

400 Commercial Street, Suite 404
Portland, ME 04101
Tel. (207) 772-2891
Fax (207) 772-3248
www.ransomenv.com

UTILITY PLAN

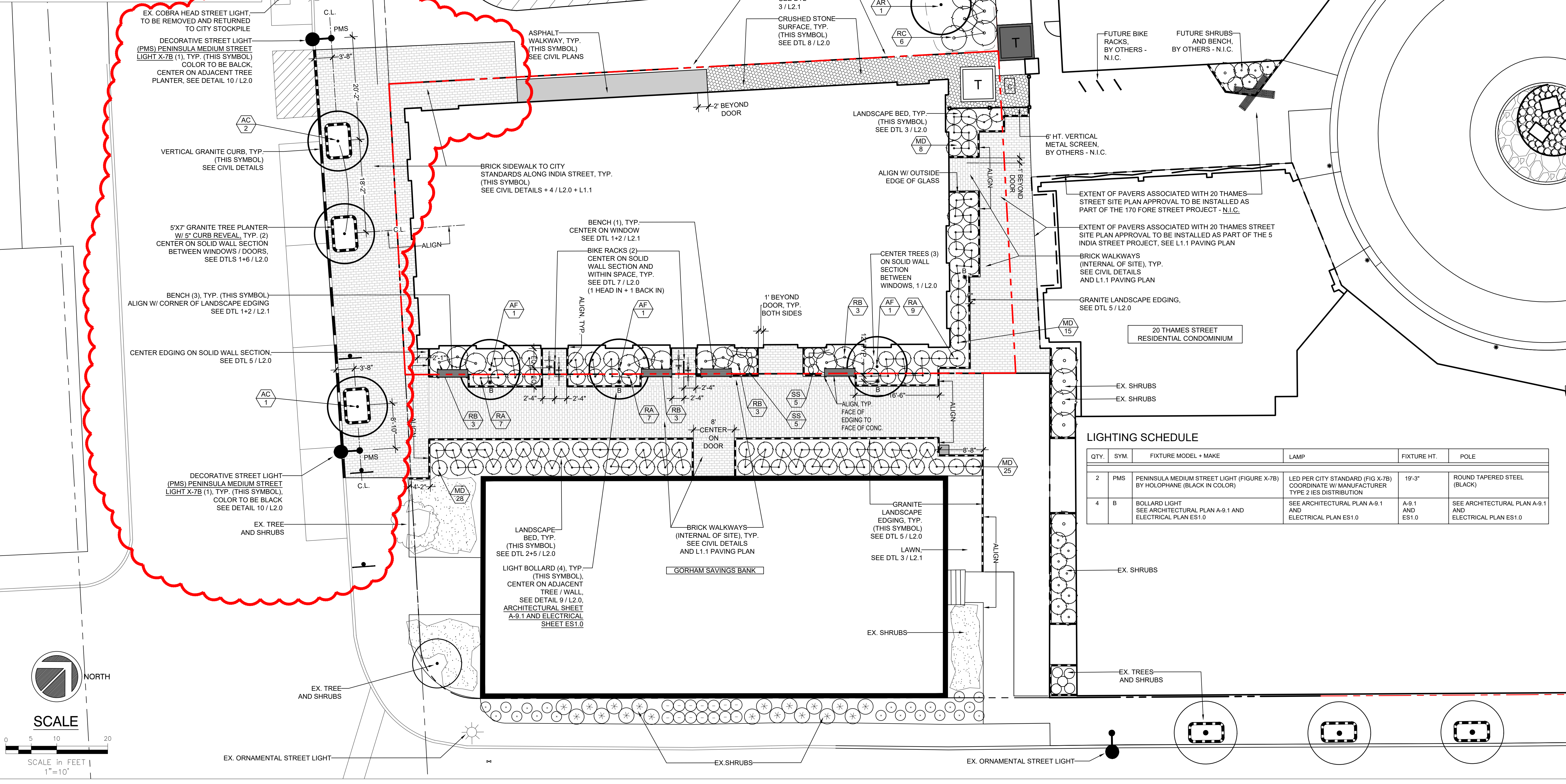
2	PARKING AND POWER MODS	07/15/21
1	POWER MODIFICATION	05/26/21
D	REVS PER CITY AND PWD	04/01/20
C	REVS PER CITY AND PWD	03/04/20
B	90% PRICING DOCUMENTS	12/13/19
A	CITY SUBMISSION/PRICING	05/20/19

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Design by:	MPM	Checked by: SJB
Drawn by:	JAR	Approved by: SJB
Project:	150.06094	Date: MARCH 2019
Sheet No:	C1.2	
Sheet 6 of 11		

PLANTING NOTES

1. CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL FINAL ACCEPTANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF WATERING AND MAINTENANCE.
2. CONTRACTOR SHALL SUPPLY PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE WORK SHOWN ON THE PLAN. ANY DISCREPANCY BETWEEN THE QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED ON THE PLAN SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL RENUNERATION. ANY DISCREPANCIES SHALL BE CLARIFIED WITH THE LANDSCAPE ARCHITECT PRIOR TO ORDERING PLANT MATERIAL.
3. ALL MATERIALS SHALL CONFORM TO SPECIFICATIONS OF THE AMERICAN STANDARDS FOR NURSERY STOCK (LATEST EDITION) AS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS THE ORIGINAL GRADES BEFORE DIGGING.
5. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
6. ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT AT THE NURSERY AND AT THE SITE.
7. ALL PLANT BEDS SHALL MEET MINIMUM TOPSOIL REQUIREMENTS (SEE SPECIFICATIONS).
8. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL GRUBBING, BED PREPARATION, AND FINISH GRADING HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
9. ALL PLANT BEDS AND TREE WELLS SHALL HAVE A MINIMUM OF 3" OF UNIFORMLY DISTRIBUTED, DARK, SHREDDED BARK MULCH.
10. CONTRACTOR SHALL SUBMIT SOIL SAMPLE AND TEST OF TOPSOIL TO LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. SOIL ADMIXTURE SHALL BE ADDED TO EXISTING SOIL (BY CONTRACTOR) IF DEEMED NECESSARY BY SOIL TEST RESULTS.
11. ROUGH GRADING AND BED PREPARATION SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANT INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT 48 HOURS PRIOR TO REQUIRED SITE VISIT.
12. ALL PLANTS SHALL BE BALLED AND WRAPPED OR CONTAINER GROWN AS SPECIFIED. ALL ROOT WRAPPING AND CONTAINER MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED AT THE TIME OF PLANTING.
13. ALL BROAD LEAF EVERGREEN PLANTS SHALL BE SPRAYED WITH AN ANTI-DESSICANT AT THE BEGINNING OF THEIR FIRST WINTER.
14. ALL PLANTS SHALL BE INSTALLED AS PER DETAILS AND THE CONTRACT SPECIFICATIONS. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
15. CONTRACTOR SHALL STAKE TREES IF DEEMED NECESSARY BY LANDSCAPE ARCHITECT.
16. THE LANDSCAPE CONTRACTOR SHALL PROVIDE LOAM FILL AS PER THE CONTRACT SPECIFICATIONS.
17. ALL PLANTS SHALL BE WATERED BY THE CONTRACTOR, AS NECESSARY TO INSURE HEALTH UNTIL FINAL ACCEPTANCE.
18. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE PLANT LIST AND PLANTING SPECIFICATIONS FOR SEASONAL REQUIREMENTS AND OTHER RESTRICTIONS RELATED TO THE TIME AND SEASON OF PLANTING.
19. PLANTING SOIL MIX: 1 PART COMPOST, 8 PARTS TOPSOIL, 3 PARTS HUMUS.
TOPSOIL: FERTILE, FRIABLE, NATURAL TOPSOIL OF LOAMY CHARACTER, WITHOUT ADMIXTURE OF SUBSOIL MATERIAL, FREE FROM CLAY, LUMPS, COARSE SANDS, STONES, PLANTS, ROOTS, STICKS, AND OTHER FOREIGN MATERIALS GREATER THAN 1" IN ANY DIMENSION, PH RANGE 5.0-7.0, AND SHALL CONTAIN NOT LESS THAN 6% ORGANIC MATTER BY WEIGHT.
SANDY LOAM OR LOAM SOIL AS DEFINED BY THE USDA SOIL CONSERVATION SERVICE, AND HAVE THE FOLLOWING MECHANICAL ANALYSIS:

TEXTURAL CLASS	% OF TOTAL WEIGHT	AVERAGE %
SAND (0.05-2.0 MM)	45 TO 75%	60%
SILT (0.002-0.05 MM)	15 TO 35%	25%
CLAY (<0.002 MM)	5 TO 25%	15%



PLANT SCHEDULE

QTY.	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES					
3	AC	ACER CAMPESTRE 'EVELYN' OR 'PANACEK'	HEDGE MAPLE	3" CAL.	B&B / HEAVY
3	AF	ACER X FREEMANII 'ARMSTRONG'	ARMSTRONG MAPLE	3" CAL.	B&B / HEAVY
1	AR	ACER RUBRUM 'RED POINTE'	RED MAPLE	3" CAL.	B&B / HEAVY
SHRUBS / PERENNIALS					
76	MD	MICROBIOTA DECUSATA	SIBERIAN CARPET CYPRESS	#7 CONT.	
23	RA	RHUS AROMATICA 'GRO-LOW'	FRAGRANT SUMAC	#7 CONT.	
12	RB	RHODODENDRON 'BOULE-DE-NEIGE'	RHODODENDRON	3'-3.5' HT.	B&B / HEAVY
6	RC	RHODODENDRON CATAWBIENSE 'NOVA ZEMBLA'	RHODODENDRON	3.5'-4' HT.	B&B / HEAVY
10	SS	SCHIZACHYRIUM SCOPARIUM 'PRAIRIE BLUES'	LITTLE BLUESTEM	#3 CONT.	

LIGHTING SCHEDULE

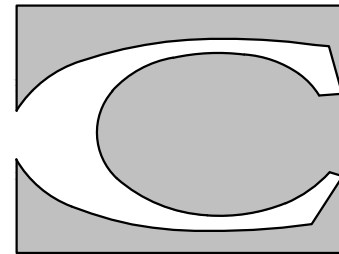
QTY.	SYM.	FIXTURE MODEL + MAKE	LAMP	FIXTURE HT.	POLE
2	PMS	PENINSULA MEDIUM STREET LIGHT (FIGURE X-7B) BY HOLOPHANE (BLACK IN COLOR)	LED PER CITY STANDARD (FIG X-7B) COORDINATE W/ MANUFACTURER TYPE 2IES DISTRIBUTION	19'-3"	ROUND TAPERED STEEL (BLACK)
4	B	BOLLARD LIGHT SEE ARCHITECTURAL PLAN A-9.1 AND ELECTRICAL PLAN ES1.0	SEE ARCHITECTURAL PLAN A-9.1 AND ELECTRICAL PLAN ES1.0	A-9.1 AND ES1.0	SEE ARCHITECTURAL PLAN A-9.1 AND ELECTRICAL PLAN ES1.0

FIVE INDIA STREET BUILDING

5 INDIA STREET
PORTLAND, MAINE

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CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS

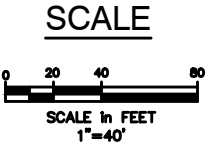
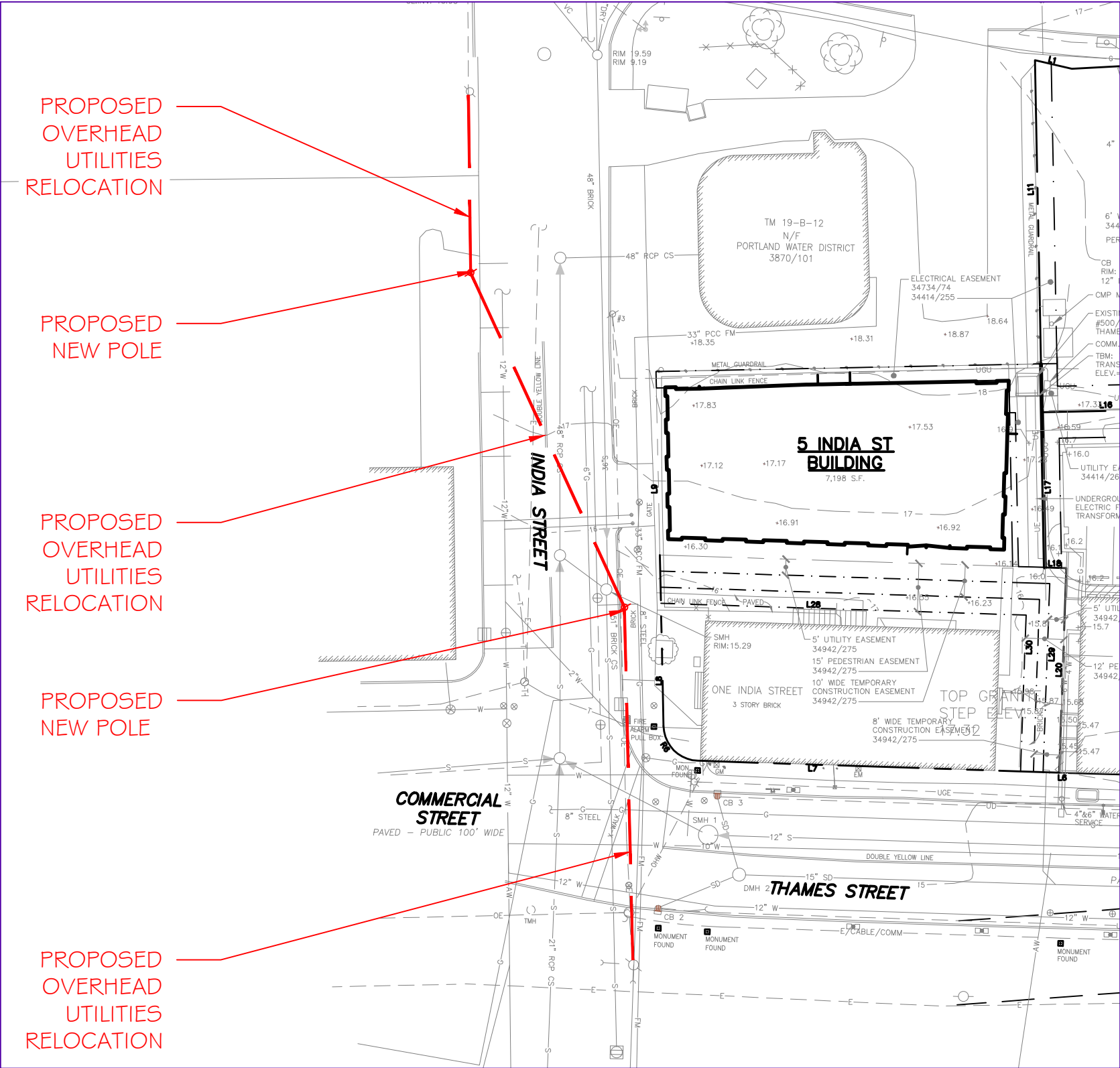
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LANDSCAPE AND LIGHTING PLAN

5	PARKING + POWER MODS	07.28.21
4	CITY REVIEW	05.06.21
3	REVS PER CITY COMMENTS	02.26.20
2	90% PRICING DOCUMENTS	12.13.19
1	CITY SUBMISSION / PRICING	05.20.19
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Drawn by: MAP		
Project:		Date: MARCH 2018
Sheet No:		
L1.0		
Sheet of		



Project:

FIVE INDIA STREET BUILDING
5 INDIA STREET
PORTLAND, MAINE

Owner:

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Applicant:

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**RELOCATION
OVERHEAD ELECTRIC**

No.	Revision/Issue	Date
A	ISSUED FOR REVIEW	03/01/21

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Drawn by:	Approved by:
BGC	MPM
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