

STORMWATER MANAGEMENT REPORT



1. Overview

This Exhibit demonstrates the developer has made adequate provision for controlling Stormwater Runoff.

2. Introduction

Gorrill Palmer has been retained by 101 York Street, LLC to prepare a Stormwater Management Report for a proposed five story multi-use building and two level parking structure at the corner of York Street and High Street in Portland, Maine. The redevelopment of the site is anticipated to include a 17,505 square foot footprint five story building with a total floor area of 97,753 square feet and 213 space parking garage. Figure 1 is a map showing the project location.

8-7-15

3. Stormwater Management

Section 14-526.b.3.b of the Land Use Ordinance states that all development other than Level I residential shall comply with Section 5 of the Technical Manual including Basic, General, and Flooding standards as applicable to prevent and control the release of pollutants to waterbodies, watercourses, wetlands and groundwater, and reduce adverse impacts associated with increases or changes in flow, soil erosion and sedimentation.

Section 5.II.c of the Technical Manual states that Level II and III site plans shall be required to submit a stormwater management plan pursuant to the regulations of Maine DEP Chapter 500 Stormwater Management Rules, including Basic, General and Flooding standards.

4. Basic Standard

The **Basic Standard** is met by the Erosion and Sedimentation Control Report submitted with this application.

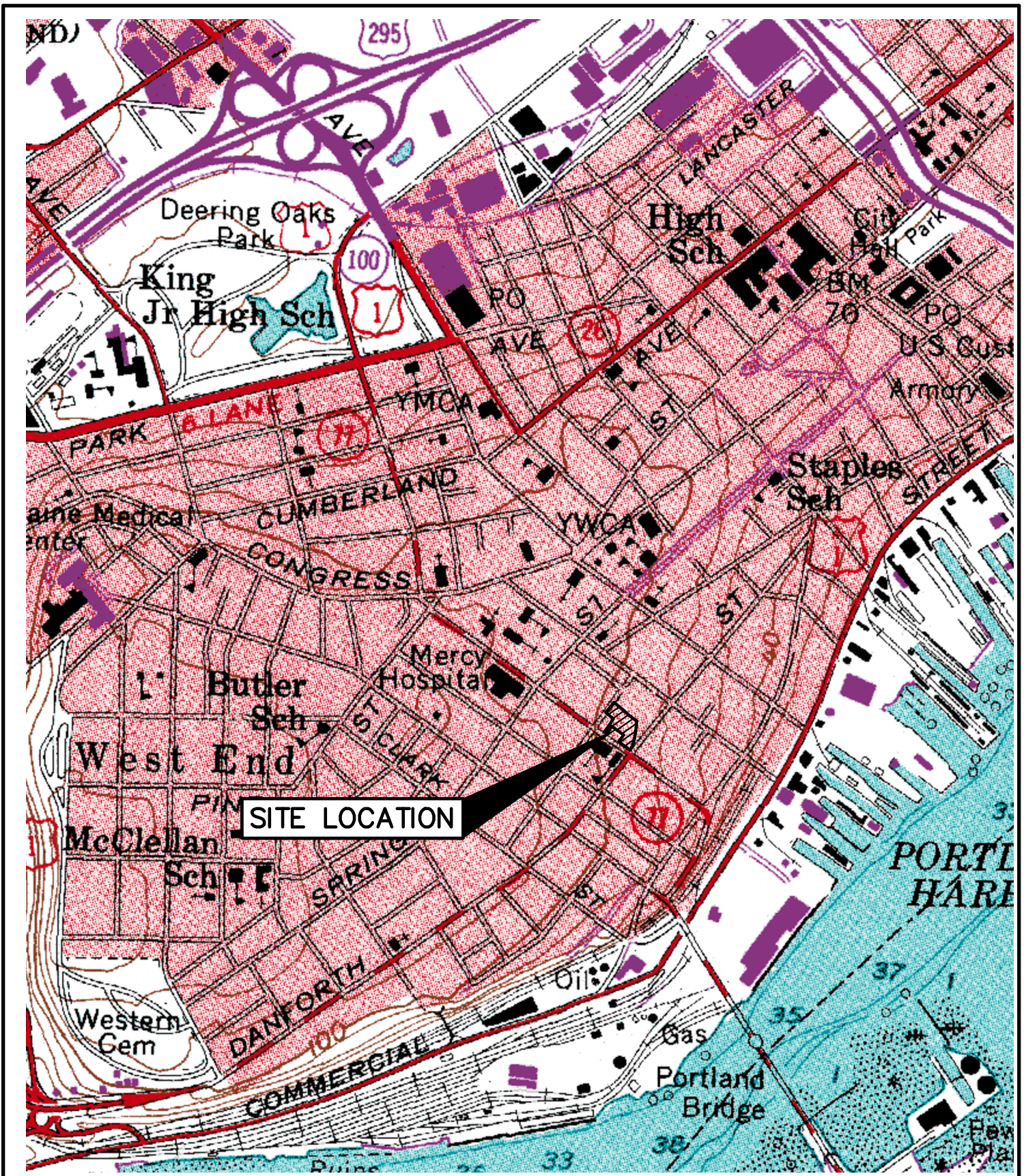
5. General Standard

The project site is not tributary to an Urban Impaired Stream. Section 5.III.4.B.1 States when general Standards must be met for areas not tributary to Urban Impaired Streams: A project disturbing one acre or more and resulting in any of the following must meet the general standards:

5.III.4.B.1.b - Other stream, coastal and freshwater wetland watersheds. One acre or more of impervious area, or 5 acres or more of developed area, in any other stream, coastal, or wetland watershed.

Section 5.III.4.B.3.e contains requirements for redevelopment; Stormwater Management Law project including redevelopment. For a project requiring a Stormwater Management Law permit that includes redevelopment of impervious area that was in existence as of November 16, 2005 (the effective date of Chapter 500 revisions), the redevelopment of that impervious area is not required to meet General standards provided the department determines that the new use of the existing impervious area is not likely to increase stormwater impacts resulting from the proposed project's stormwater runoff beyond the level of impact already caused by the runoff from the existing impervious area. The requirements of Appendix D must still be met, if applicable.

The Owner of the project site owns additional parcels adjacent to the site. The proposed disturbed area includes portions of these adjacent properties as well as area within the City right-of-way. The proposed



U.S.G.S. Location Map
 York Street Condominiums - Portland, Maine
 Portland West, Maine-7.5 Minute Series (Topographic)

Design: CEH	Date: AUG 2015
Draft: CG	Job No.: 3018
Checked: AMP	Scale: None
File Name: 3018-LOCATION.dwg	



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Figure

1

project will disturb approximately 77,510.4 sf (1.78 acres) and is a redevelopment of an existing developed site. The project will result in an impervious area of approximately 66,072 sf (1.52 acres) of which 1,236 sf (0.03 acres) is new impervious area.

The following table presents a comparison of the predevelopment and post development land cover.

Table I		
	Predevelopment	Post Development
Roof/Walkway	9,659 sf	29,354 sf
Impervious Parking/Drives	55,176.9 sf	36,717.7 sf
Total Impervious	64,835.9 sf	66,071.7 sf
Vegetated	12,674.5 sf	11,438.7 sf
Total Area	77,510.4 sf	77,510.4 sf

As can be seen from the table above, the area of Impervious Parking/Drives has been reduced in the post development condition by 18,459.2 sf, while the area of roof and walkways has increased in the post development condition by 19,695 sf. The reduction in Parking/Drives area will result in a reduction of the pollutant load from the site and therefore is not likely to increase stormwater impacts from the project site. See surface cover plans in Attachment A. Since the total post development impervious area increases by 1,236 sf, the Applicant proposes to treat an equivalent area of impervious surface in stormwater planters proposed along York Street.

The stormwater planters are biocells enclosed on the sides by concrete planter walls. The planters contain 18” of soil media over 14” of underdrain gravel. The planters are open at the bottom and the stormwater runoff is conveyed from the planters by a 6” perforated underdrain. The plan set contains details of the proposed planters. The surface of the soil media is set 6” below the adjacent street level to provide for 6” of ponding within the planter area. Per MDEP design criteria for bioretention cells, one third of the soil filter volume has been included as storage volume. The tributary area is 95% impervious and will produce a runoff volume greater than the capacity of the stormwater planters based upon the MDEP requirement of 1” of runoff from impervious surfaces and 0.4 “ of runoff from vegetated surfaces. The excess runoff and runoff from larger storms will bypass the planters along the gutter line once the 6” ponding depth is reached. The following table presents the treatment capacity of the stormwater planters.

Table 2		
Proposed Stormwater Planter #1		
	Required	Provided
Impervious Area		6,233 sq. ft.
Developed Area (non-impervious)		375 sq. ft.
Treatment Volume	531.92 cu. ft.	121.75 cu. ft.
Filter Surface Area		121.75 sq. ft.
Volume used for vegetated treatment = $(0.4/12)(375)$		12.5 cu. ft.
Volume available for impervious treatment = $121.75-12.5$		109.25 cu. ft.
Equivalent square footage of impervious area treated = $(109.25 \text{ cu. ft.}/(1''/12''/\text{ft.}))$		1,311 sq. ft.
7%(imp. Area) +3%(landscaped Area) for equiv. square footage	103.02 sq. ft.	121.75 sq. ft.
Cell Base Elevation		28.95 ft.
Channel Protection Volume elevation		29.45 ft.

Table 3		
Proposed Stormwater Planter #2		
	Required	Provided
Impervious Area		1,693 sq. ft.
Developed Area (non-impervious)		95 sq. ft.
Treatment Volume	144.25 cu. ft.	96.75 cu. ft.
Filter Surface Area		96.75 sq. ft.
Volume used for vegetated treatment = $(0.4/12)(95)$		3.17 cu. ft.
Volume available for impervious treatment = $96.75-3.17$		93.58 cu. ft.
Equivalent square footage of impervious area treated = $(93.58 \text{ cu. ft.}/(1''/12''/\text{ft.}))$		1,122.96 sq. ft.
7%(imp. Area) +3%(landscaped Area) for equiv. square footage	81.46 sq. ft.	96.75 sq. ft.
Cell Base Elevation		28.32 ft.
Channel Protection Volume elevation		28.82 ft.

Stormwater Planter #1 provides treatment for the equivalent of 1,311 sf of impervious area and Stormwater Planter #2 provides treatment for the equivalent of 1,123 sf of impervious area. The total equivalent area treated is 2,434 sf of impervious area. See WQ map in Attachment A.

The project is a redevelopment of a site with impervious area in existence as of November 16, 2005. The project results in approximately 1,236 sf of new impervious area and proposes treatment of runoff from approximately 2,434 sf of impervious area. Since the project is a redevelopment which will not increase stormwater impacts and treats runoff from 2,434 sf of impervious area, the General Standards have been met.

Due to the elevation constraints of the site, the stormdrain system discharge from the site has been directed to two outlet points. The proposed building roof drain, storm drain from the upper parking level, and foundation drain from the northwest side of the building are proposed to be connected to the City storm drain system in High Street. The site stormdrain will connect to the existing catch basin at the northerly corner of High Street and York Street.

The stormdrain systems that pick up runoff from the lower areas of the site cannot be directed to the High Street catch basin since the invert of the High Street system is higher than the inverts of the site drainage system. The stormdrain outlets from the stormwater planters, lower level of the proposed parking, and the foundation drain from the easterly side of the proposed building have proposed connections to the combined sewer in York Street as shown on the plans. The applicant proposes two connections to the York Street sewer. The foundation drain will be connected separately and will have a check valve on the outlet pipe. The lower level parking drainage and stormwater planter outlet will be combined and connected to the York Street sewer. The proposed stormdrain outlet pipe will have a check valve installed. The lower level parking stormwater system will include an oil/water separator.

6. Flooding Standard

Section 5.III.4.E states: If required, the flooding standard applies in addition to the basic standards, general standards, phosphorus standards and urban impaired stream standards.

When the flooding standard must be met: If a project results in three acres or more of impervious area or 20 acres or more of developed area, requires review pursuant to the Site Law, or is a Site Law modification of any size, the flooding standard must be met.

The project results in a total of 66,072 sf (1.52 acres) of impervious area and 77,510.4 sf (1.78 acres) of developed area, therefore the flooding standard does not apply. The 1,236 sf of new impervious area is believed to be an insignificant increase in impervious surface. The insignificant increase in impervious surface along with attenuation within the proposed stormwater planters ensures that the project will not have an adverse effect on downstream areas.

Since the proposed impervious and developed area are less than the Chapter 500 thresholds and the increase in new impervious area of 1,236 sf is insignificant, the Flooding Standard is met.

7. Additional Permits

The disturbed area is greater than one acre, therefore a Construction General Permit is required. Since the project will not result in excess of 3 acres of new non-vegetated surfaces, a Site Location of Development Act Permit is not required.

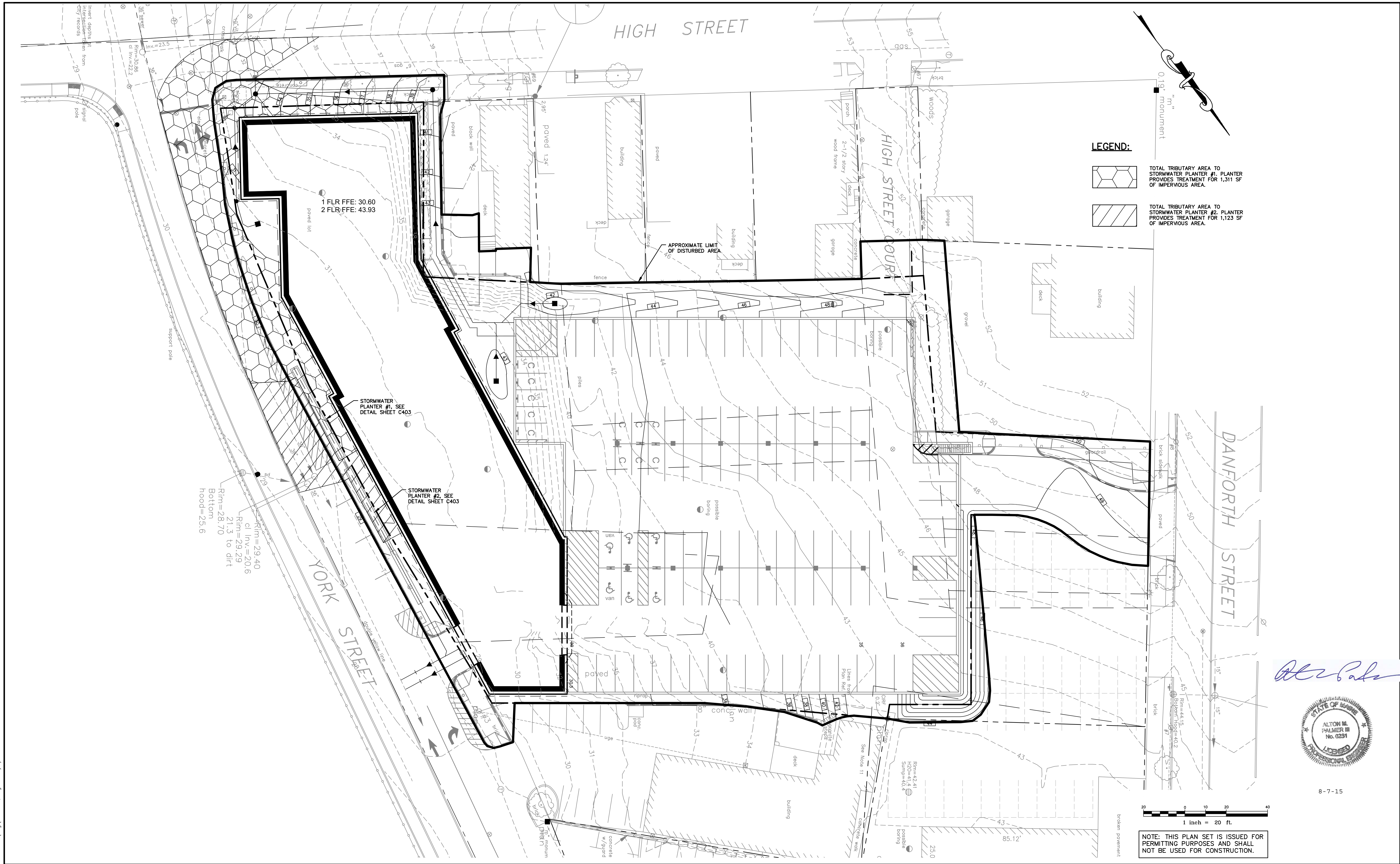
8. Conclusion

The proposed project is a redevelopment of an existing restaurant and parking area and results in 1,236 sf of new impervious area. Treatment of 2,434 sf of impervious area is provided by stormwater planters which satisfies the General Standard. The threshold areas for the Flooding Standard have not been reached by this project therefore the slight increase in impervious area along with the attenuation of runoff within the stormwater planter's results in an insignificant impact to downstream areas. The Basic Standard has been met by the Erosion and Sedimentation Control Report submitted to the City.

Attachments

Attachment A - Surface Cover and Water Quality Maps

ATTACHMENT A
Surface Cover and Water Quality Maps



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Rev.	Date	Revision

SITE PLAN REVIEW	8/7/15	AMP
Issued For	Date	By

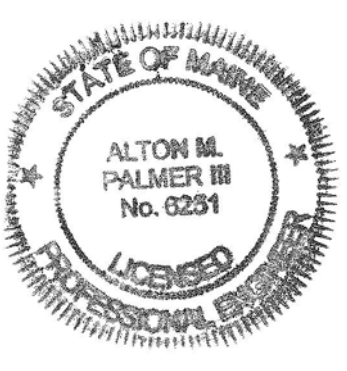
Design: JWA Draft: CG Date: JUNE 2015
 Checked: AMP Scale: 1"=20' Job No.: 3018
 File Name: 3018-WQ.dwg
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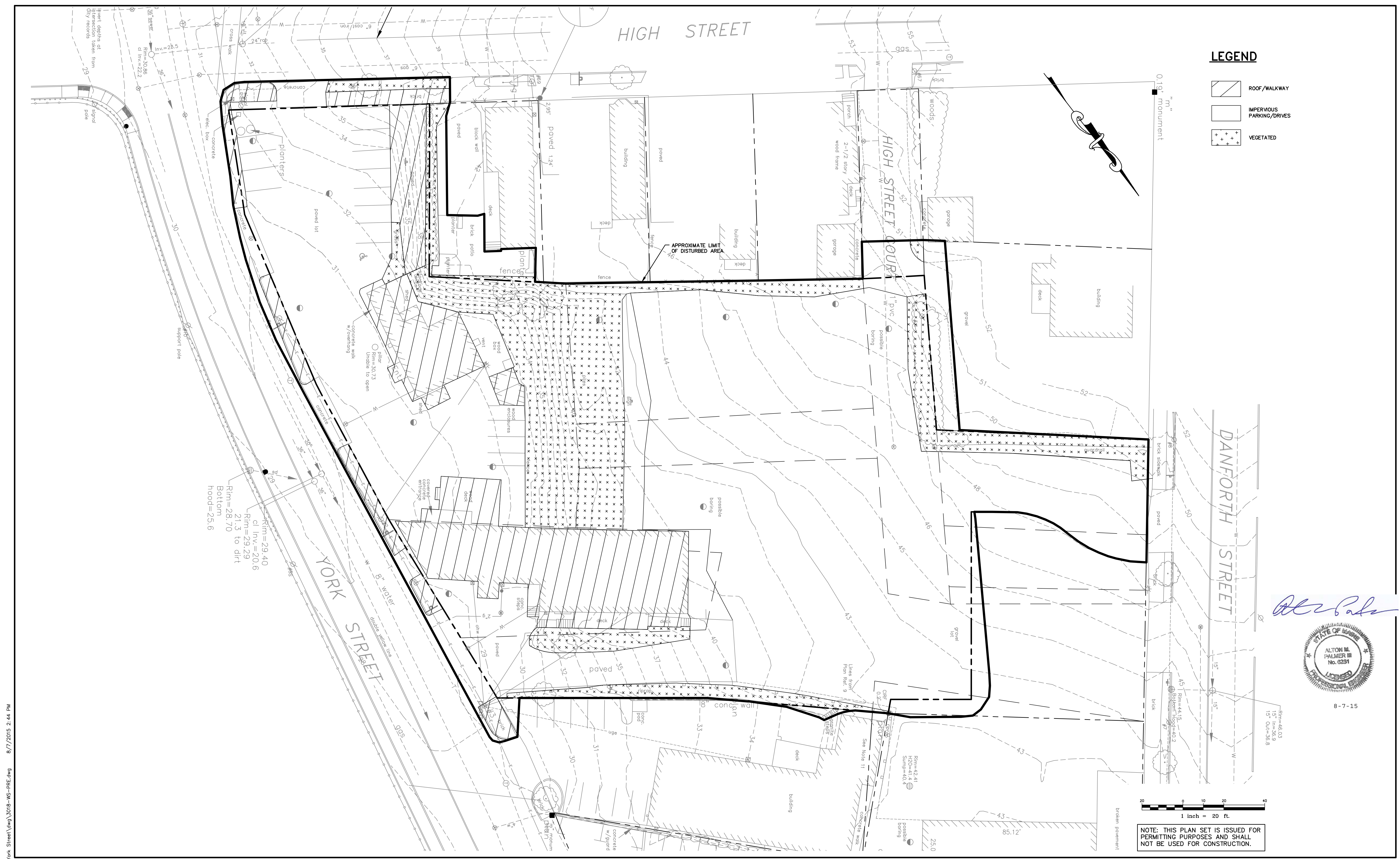
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Drawing Name:	Water Quality Map
Project:	York Street - Mixed Use Development Portland, Maine
Client:	York Street, LLC 36 Danforth Street, Portland, ME 04101

Drawing No.
WQ

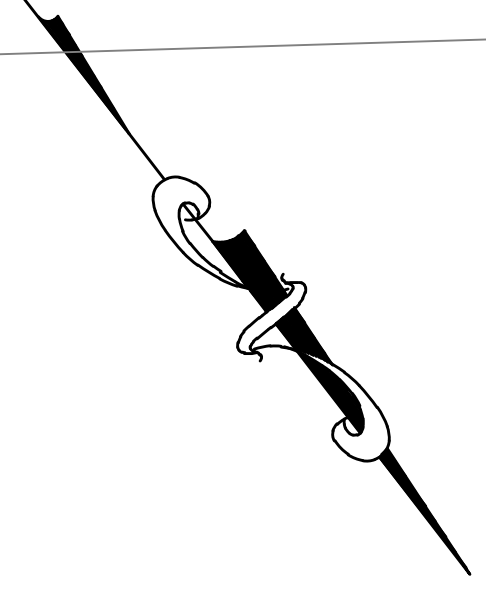


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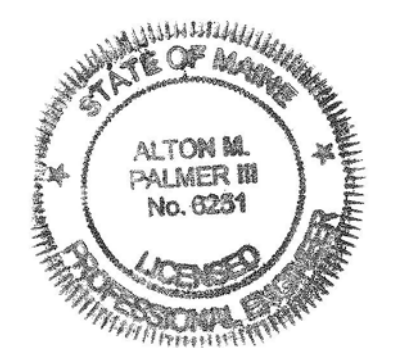
LEGEND

- ROOF/WALKWAY
- IMPERVIOUS PARKING/DRIVES
- VEGETATED

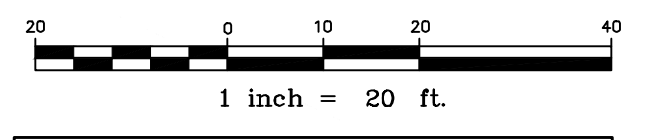


0.19' monument

Alton Palmer



8-7-15



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

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Rev.	Date	Revision

SITE PLAN REVIEW	8/7/15	AMP
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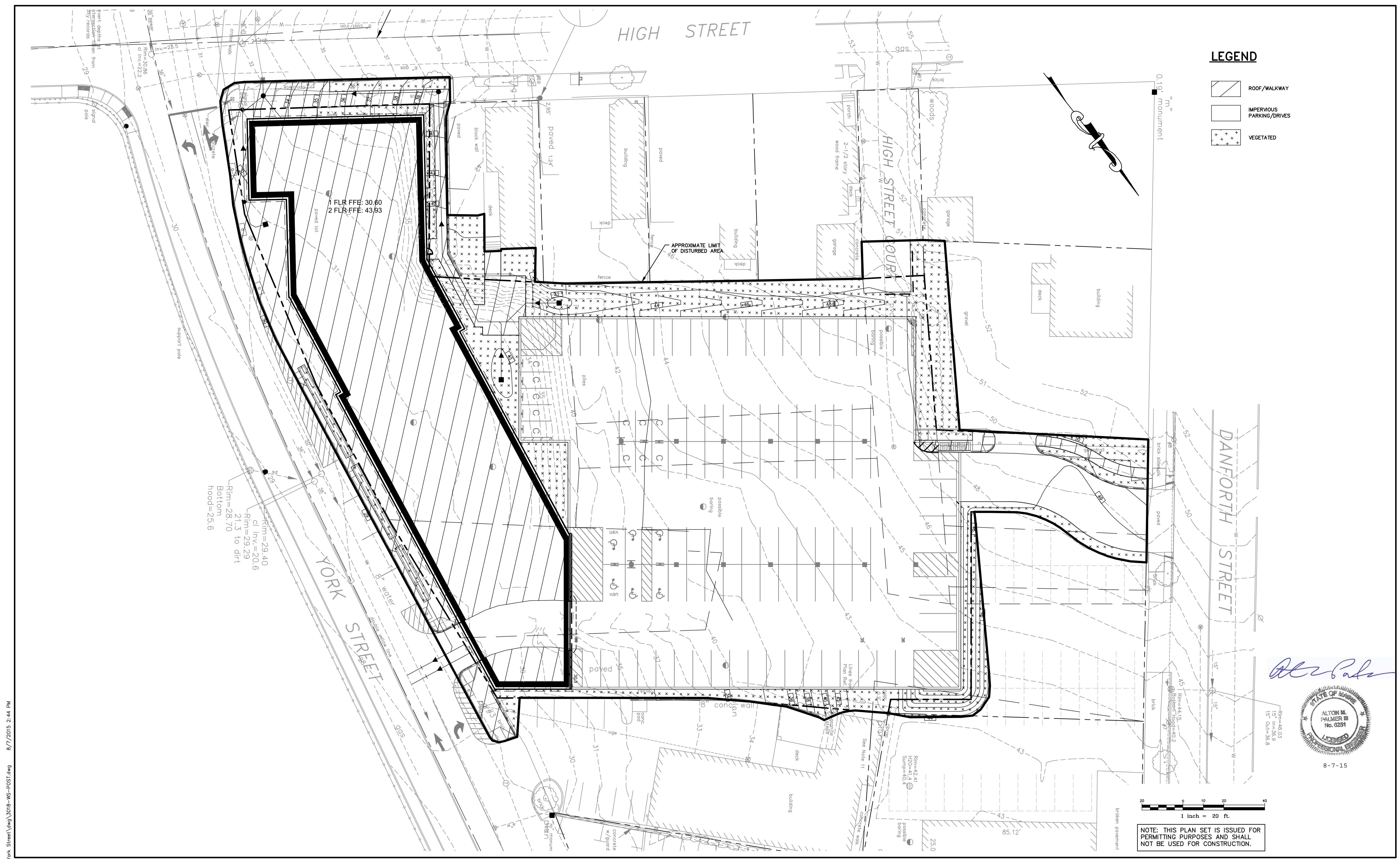
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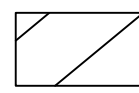
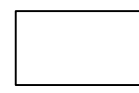
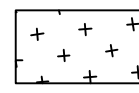
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Drawing Name:	Pre Development Cover Type Map
Project:	York Street - Mixed Use Development Portland, Maine
Client:	York Street, LLC 36 Danforth Street, Portland, ME 04101

Drawing No.
W1



LEGEND

-  ROOF/WALKWAY
-  IMPERVIOUS PARKING/DRIVES
-  VEGETATED

0.19' monument
 1" = 20'

1 inch = 20 ft.

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Alton Palmer



8-7-15

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Drawing No.
W2